

CHILDREN AND FAMILY JUSTICE CENTER

Contract 00863C13

Volume 12 of 14

Request For Proposal

Part E – Reference Documents

Part F - Financial Capability

Part G - DRAFT Design Build Contract

Part H - DIVISION 1 – General Requirements

December 2014



King County

Department of Executive Services
Facilities Management Division

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King County Children and Family Justice Center Project

Part H

Division 1 – General Requirements

December 13, 2013



King County

**Department of Executive Services
Facilities Management Division**
500 4th Avenue, Room 800
Seattle, WA 98104

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SUMMARY OF WORK**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes summary of work including:

- 1.1.1.1 Work covered by Contract Documents
- 1.1.1.2 Work under other contracts
- 1.1.1.3 Future work
- 1.1.1.4 Work sequence
- 1.1.1.5 Cooperation of Design Builder and coordination with other work
- 1.1.1.6 Maintenance
- 1.1.1.7 Occupancy requirements
- 1.1.1.8 Reference Standards
- 1.1.1.9 Products or services ordered in advance
- 1.1.1.10 County furnished products

1.2 WORK COVERED BY CONTRACT DOCUMENTS

1.2.1 Work of Contract includes, but is not limited to:

The Project will be comprised of a newly constructed courthouse, juvenile detention facility and a parking structure located on the existing Youth Services Center site in the First Hill neighborhood of Seattle, Washington. These new facilities will provide juvenile and family court with space for co-location of programs and services for youth and families, an efficient detention facility with built-in flexibility to respond to changes in the detention population, and improved visibility, security, and safety.

The proposed Children and Family Justice Center Project will be located on a rectangular, 9.1-acre parcel. The site is bordered by E. Spruce Street on the south, 12th Avenue on the west, E. Remington Court on the north, and 14th Avenue on the east. The Site is located in an area that includes single-family and multi-family residential developments on the north, east and south. On the west side along 12th Avenue there is mixed use, retail and office developments.

The Project will be constructed in phases adjacent to the existing Youth Services Center which is a 24/7 operating facility. Phase 1A scope includes the construction of a new complex of buildings generally on the north half of the site construction consists of approximately 235,000 gross square feet of space within two connected structures. The two connected buildings will include a new Courthouse Building containing 10 courtrooms and associated support spaces and facilities (a total of approximately 137,000 gross square feet) and a new juvenile detention center providing space for 154 dorms (approximately 98,000

gross square feet). Phase 1B scope includes demolition of the existing Youth Services Center after move-in and occupancy of the new Courthouse and Detention buildings and constructing a new parking structure on the south half of the site. The parking structure is approximately 145,000 gross square feet and will accommodate up to 440 parking spaces.

The design for the Courthouse Building, Detention Building and Parking Structure must take into account possible future expansion desired by the County. The proposed courthouse and parking structure must be designed to not exceed the maximum height limits established in zoning requirements by the City of Seattle, and as may be modified by the County's proposed text amendment, while still allowing for future expansion of two floors on top of the Courthouse and two additional levels on top of the parking structure

In addition to the new building complex, associated site improvements for the project include a bus stop, surface parking, entry plaza, driveways/roadways, walkways, ramps, stairs, landscaping, bio-swales, exterior lighting, directional/monument signage, underground utilities and miscellaneous site design elements. Design Builder will be required to remove hazardous materials discovered on Site and within the existing building to be demolished.

The Contract requires Design Builder to complete all Work on the Children and Family Justice Center in accordance with the terms and conditions of the Contract Documents. The Work is more fully described in the Facility Performance Standards and Facility Program documents included with this RFP and the Design Builder's Proposal.

- 1.2.2 Unless provided otherwise in the Contract Documents, all risk of loss to Work covered by the Contract Documents shall rest with Design Builder until Final Acceptance of the Work or termination of the Design Build Contract.

1.3 WORK UNDER OTHER CONTRACTS

- 1.3.1 The County may be performing work at the Site under separate contracts during the Project including, but not limited to, the following:

- 1.3.1.1 Furniture Procurement and Installation (FF&E)
- 1.3.1.2 1% for Arts
- 1.3.1.3 Commissioning (CxA)

1.4 Reserved

1.5 WORK SEQUENCE

- 1.5.1 The Design Builder shall construct the Work in stages and at times to accommodate County and Youth Services Center operational requirements during the construction period and shall coordinate its construction schedule and operations with County.

1.6 COOPERATION OF DESIGN BUILDER AND COORDINATION WITH OTHER WORK.

1.6.1 Should construction work, or work of any other nature, be underway by other forces or by other contractors within or adjacent to the limits of the Work at the time of executing the Contract, or should work be performed under the contracts listed in paragraphs 1.3 and 1.4 above, the Design Builder shall cooperate with all such other contractors or forces to the end that any delay or hindrance to their work will be avoided. The cost of such cooperation will be considered as included in the contract price and no additional payment will be made. Design Builder shall coordinate with such other contractors and forces as required by the Contract and General Conditions.

1.6.2 County reserves the right to perform other or additional work, within or adjacent to the limits of the Work specified, at any time by the use of other forces. Design Builder shall coordinate with County and any of County's forces, or other forces engaged by County, as required by the Contract and General Conditions. In the event that the performance of such other or additional work materially increases or decreases Design Builder's costs, the work and the amount to be paid therefore will be appropriately adjusted as determined by County.

1.6.3 Design Builder shall limit use of the Site for the Work and for construction operations to allow for:

1.6.3.1 County's operations

1.6.3.2 Youth Services Center operations

1.6.3.3 Work by other contractors and tenants

1.6.4 Design Builder shall coordinate use of and access to the Site with other contractors, utilities, and County's forces, as required by the Contract and General Conditions. County has final authority over coordination, use of premises, and access to the Site.

1.6.5 Design Builder shall cooperate with County and others who may occupy or begin work on Site and inside any building thereon prior to completion of Work of this Contract.

1.6.6 Design Builder shall cooperate with contractors for other area work, not included in Contract, but which may take place during construction period.

1.6.7 Design Builder, and all design consultants and major Subcontractors shall participate in two (2) days of partnering sessions with County, at such time and date as shall be reasonably requested by County. Partnering shall be conducted as described in Document 01 11 20 Design Services and Deliverables.

1.7 MAINTENANCE

1.7.1 Cost of maintenance of systems and equipment prior to Substantial Completion, as defined in Article 6.6 of the General Conditions, is included in the Contract Price and no additional payment will be made therefor.

1.8 OCCUPANCY REQUIREMENTS

- 1.8.1 "Beneficial Occupancy": Whenever, in the opinion of County, the Work or any part thereof is in a condition suitable for use, and the best interest of County requires such use, County may occupy or make use of any part of the Work and connect to, open for public use, or use the Work or such part thereof pursuant to Article 6.6 Substantial Completion of the General Terms and Conditions. In such case, County will inspect the Work or part thereof, and issue a Certificate of Substantial Completion for that part of Work.
- 1.8.2 Prior to date of Final Acceptance of the Work by County, all necessary repairs or renewals in Work or part thereof so used, not due to ordinary wear and tear, but due to defective design, materials or workmanship or to operations of Design Builder, shall be made at expense of Design Builder, as required in the Contract and General Conditions.
- 1.8.3 Use by County of Work or part thereof as contemplated by this Section shall in no case be construed as constituting Final Acceptance of Work or any part thereof. Such use shall neither relieve Design Builder of any responsibilities under Contract, nor act as waiver by County of any of the requirements thereof.
- 1.8.4 County may specify in the Contract Documents that portions of the Work, including electrical and mechanical systems or separate structures, shall be substantially completed on milestone dates prior to the Substantial Completion of all of the Work. Design Builder shall notify County in writing when Design Builder considers any such part of the Work ready for its intended use and substantially complete and request County to issue a Certificate of Substantial Completion for that part of the Work.

1.9 CONTRACT TIME

- 1.9.1 The Work of this Contract shall be commenced immediately upon the effective date established in the written Notice to Proceed. The Work shall be Substantially Complete, as defined in the General Terms and Conditions of the Contract within the time frame identified within the Contract.
- 1.9.2 Contract Time may be changed only by amendment to the Contract, signed by both parties.

1.10 LIQUIDATED DAMAGES

- 1.10.1 For each calendar day after the date fixed for Substantial Completion of the Contract that the Work remains uncompleted, the Contractor shall pay the Owner a Sum identified within Article 5 of the Contract per day as fixed, agreed, liquidated damages, but not as a penalty.
- 1.10.2 Liquidated damages for failure to achieve Final Acceptance, the Contractor shall pay the Owner a Sum identified within Article 5 of the Contract per day as fixed, agreed, liquidated damages, but not as a penalty.

- 1.10.3 Liquidated damage shall not be assessed when the delay in completion of the Work is due to an act of Force Majeure.

PART 2 - PRODUCTS

2.1 REFERENCE STANDARDS

For products specified by association or trade standards, comply with requirements of standards, except where more rigid requirements are specified or are required by applicable codes.

2.2 PRODUCTS OR SERVICES ORDERED IN ADVANCE

County-furnished products listed in paragraph 2.3 below will be procured under separate contracts and provided by County or vendor to Design Builder for installation under the terms of paragraph 1.6 above. Design Builder to provide utility service and stub out connections as necessary for the installation of County furnished products.

2.3 OWNER FURNISHED PRODUCTS

The Design-Builder (Contractor) will assist and work closely with the County in the selection and procurement of Owner Furnished–Owner Installed (OFOI) and Owner Furnished–Contractor Installed (OFCl) products. It is the Design-Builder's responsibility in determining and providing the infrastructure support systems to receive the OFOI and OFCl products including but not limited to all floor, wall and ceiling support systems and all plumbing, mechanical, and electrical systems and connections.

2.3.1 Owner's Project Representative will arrange for and deliver Shop Drawings, Product Data, and Samples to Contractor.

2.3.2 Owner's Project Representative will arrange and pay for delivery of Owner's Project Representative-furnished items to the Project Site.

2.3.3 After delivery, Owner's Project Representative will inspect delivered items for damage. Contractor shall be present for and assist in Owner's Project Representative's inspection.

2.3.4 If Owner-furnished items are damaged, defective, or missing, Owner's Project Representative will arrange for replacement.

2.3.5 Owner's Project Representative will arrange for manufacturer's field services and for delivery of manufacturer's warranties.

2.3.6 Owner's Project Representative will furnish Contractor the earliest possible delivery date for Owner-furnished products. Using Owner's Project Representative-furnished earliest possible delivery dates, Contractor shall

designate delivery dates of Owner-furnished items in Contractor's Construction Schedule.

- 2.3.7 Contractor shall review Shop Drawings, Product Data, and Samples and return them to Owner's Project Representative noting discrepancies or anticipated problems in use of product.
- 2.3.8 Contractor is responsible for receiving, unloading and handling Owner-furnished items at Project Site. The Contractor will be responsible for any and all on-site storage and security thereof for products delivered to the site.
- 2.3.9 Contractor is responsible for protecting Owner-furnished items from damage during storage and handling, including damage from exposure to the elements.
- 2.3.10 If Owner-furnished items are damaged as a result of Contractor's operations, Contractor shall repair or replace them.

PART 3 - EXECUTION

3.1. INTERNET/WEB-BASED PROJECT MANAGEMENT SOFTWARE

- 3.1.1 The Design Builder is directed to use the Project's existing Internet/Web-based project management software, Oracle Primavera Unifier to track documents and manage the Project, as required in Section 01 31 23 (Project Website).

END OF SECTION

SECTION 01 11 20

DESIGN SERVICES AND DELIVERABLES**PART 1 - GENERAL**

1.1 SUMMARY

This Section includes summary of work including:

- 1.1.1 Design Services
- 1.1.2 Proposal Phase
- 1.1.3 Design Development Phase
- 1.1.4 Construction Documents Phase
- 1.1.5 Construction Phase
- 1.1.6 Operation/Project Close Out

1.2 DESIGN SERVICES

1.2.1 Summary of Design and Technical Requirements

1.2.1.1. The RFP, Facility Program and Facility Performance Standards documents, pursuant to the Contract, set forth the County's minimum design and construction requirements for the Project that the Design Builder shall meet in preparing designs and constructing the Project. Design Builder shall prepare designs to meet these requirements and submit deliverables as described in these requirements. The requirements of this Section do not supersede the requirements of the Contract and General Conditions.

1.2.1.2. Design Builder shall submit designs and deliverables for review and approval meeting the requirements of the Contract Documents at one hundred percent (100%) Schematic Design, fifty percent (50%) and one hundred percent (100%) Design Development, and fifty percent (50%) and one hundred percent (100%) Construction Document completion. Design Builder may elect to create incremental packages of major building components or activities it deems advantageous towards scheduling or permitting efficiencies. If Design Builder elects to create such incremental packages, these shall also be submitted for review and approval. Design Builder shall submit designs and deliverables meeting the requirements of the Contract Documents at ninety percent (90%) Construction Document completion for review and comment by the Commissioning Agent, as required in Section 01 91 00 (General Commissioning Requirements).

1.2.1.3. With each submittal required in 1.2.1.2, the Design Builder shall

identify changes to design that potentially impact performance and program requirements, and must submit a narrative that clearly delineates any changes to the documents that impact program or performance requirements and describes the full impact of the change. Strike through and bold text in technical specifications is not an acceptable method of identification of these changes.

1.2.1.4. Unless specifically and expressly limited, Design Builder's scope of work shall include all engineering, procurement and construction necessary to complete the Project.

1.2.1.5. Design Builder shall ensure that design and construction administration are coordinated with the requirements of any Sustainable Design Requirements contained within this RFP.

1.2.2 Summary of Work

1.2.2.1. Unless specifically excluded from this Contract, Design Builder shall provide to County all professional architectural and engineering services necessary to perform Design Builder's obligations under the Contract Documents and to complete the Work.

1.2.2.2. Design Builder shall perform the Services using the persons and subconsultants required within the Request for Qualifications and as listed in Design Builder's Statement of Qualifications proposal submittals, and may substitute personnel or subconsultants only upon the County's written consent, which is in County's discretion but will not be unreasonably withheld, and subject to provisions of the General Conditions and the Contract. Design Builder represents that it and its subconsultants possess all necessary training, qualifications, licenses and permits to perform the Services, and that their performance of the Services will conform to the standard of practice of a professional that specializes in performing professional services for public works of improvement of like nature and complexity to the Project. Design Builder's licensed subconsultants (architectural and engineering) shall owe a duty of care to the County in performing their architectural and engineering portions of the Services.

1.2.2.3. Design Builder and its subconsultants shall make an independent assessment of the accuracy of the information provided by the County concerning existing conditions (including but not limited to existing utilities and structures and tie-ins to existing or contemplated facilities) and the adequacy of available design information/technical reports. Design Builder shall rely on the results of its own independent investigations and not on information provided by County. Design Builder shall conduct such further investigations of existing conditions as are necessary for Design Builder to perform the Services and shall advise County of any further information, design or other services necessary to complete the Project. Any cost associated with these additional investigations shall be included within the Budgeted GMP

- 1.2.2.4. Design Builder's design shall provide that all surfaces, fixtures and equipment are readily accessible for maintenance, repair or replacement by ladders, power lifts, cat walks, and the like without exceeding the design loads of the floors, roofs, ceilings, and that such access is in conformance with Washington State Department of Labor and Industries requirements. All drawings and specifications in the Construction Documents, structural and electrical design calculations, site data, cost estimates and any other deliverable required by State or Federal law shall comply with State and Federal standards. Design Builder shall comply with any other requirements of Other Agencies Having Jurisdiction, the Contract Documents, or tie-ins to the Project. Design Builder shall comply with the applicable standard of care of a specialist when preparing Construction Documents to comply with applicable building codes, ordinances, statutes, laws, standards, governmental regulations and private restrictions, including necessary tie-ins, applicable to the Project and the Services, including, but not limited to, all environmental, energy conservation, energy tie-in, and disabled access requirements, regulations and standards of State and local Fire Marshals or Other Authorities Having Jurisdiction over the Project.
- 1.2.2.5. County at all times shall have the right (but not the duty) to review Design Builder's design work, whether performed by Design Builder or a subconsultant of any tier, and whether in a final or preliminary form, to determine progress and conformance to the requirements of the Contract Documents. In the event the County should ever dispute the conformance of any design work (at any stage) with the intent of the Contract Documents, then the County's determination shall control and the Design Builder and/or its subconsultants shall perform the disputed design services and/or work to completion in accord with the County's determination. The Design Builder shall, however, retain its rights under the Contract and General Conditions for claims and disputes, and Design Builder may under that procedure and in its name advance any claim of a subconsultant of any tier.
- 1.2.2.6. All work associated with the abatement of Hazardous Materials is the responsibility of the Design Builder and as further discussed within this RFP. The Design Builder shall employ an industrial hygienist to perform and monitor the work. Refer to Section 01 88 25 for additional information.
- 1.2.2.7. All work associated with permanent and interim wayfinding is the responsibility of the Design Builder.
- 1.2.2.7.1. The Design Builder's Wayfinding and Signage subconsultant will work closely with the County to develop intuitive wayfinding designs that meets the needs of the clients and staff of the Project. The Wayfinding and Signage subconsultant shall address the following items while developing their design:

- a. Branding – Coordinate the graphics and wayfinding to integrate with the overall branding strategy of the Project.
 - b. Changeability – Design must allow for the cost effective modification as the needs of the Project change over time. Signage should be specified so that the County can easily update signage on site with on site equipment to be provided under this contract.
 - c. Durability and Maintenance – Signage and wayfinding materials must be extremely durable and easily maintainable. In addition, materials must meet sustainability requirements.
 - d. Coordination with other disciplines such as architecture, interior design, lighting design, and 4Culture (1% for Art) to ensure a coordinated and integrated wayfinding design.
 - e. Readability and Universal messages that intuitively meet the multi-lingual and multi-cultural clients and staff of the Project who are often under a high level of stress.
 - f. Sign quality hierarchy to appropriately address the public and service areas of the Project.
 - g. Code Compliance.
- 1.2.2.7.2. Permanent Wayfinding – Products may include, but are not limited to, the following:
- a. Exterior and site wayfinding that identifies the Project, main entry, vehicular access, pedestrian access, property boundaries, and directions on surrounding City streets.
 - b. Parking area signage that identifies access to the Project, and parking limitations.
 - c. Interior wayfinding that identifies the Project identity, department identification, room identification, and staff specific signage.
 - d. Enhanced environmental graphics that consider appropriate application of electronic media, interactive technologies, public artwork and architectural solutions to address wayfinding challenges.
- 1.2.2.7.3. Interim Wayfinding – Products may include, but are not

limited to, the following:

- a. Exterior and site wayfinding that identifies the Project, main entry, vehicular access, and pedestrian access.
- b. Parking area signage that identifies access to the Project, and parking limitations.
- c. Interior wayfinding that identifies the Project identity, department identification, room identification, and staff specific signage.

1.2.2.7.4. The Wayfinding and Signage consultant will submit their design for permanent and interim wayfinding to the County in accordance with the provisions of this Section.

1.2.2.8 Design Builder's Interior Design Services.

- 1.2.2.8.1. Design Builder's Responsibilities also include the preparation of Design Development and Construction Documents and all coordination necessary for accommodation of Furniture Fixtures and Equipment (FF&E) coordination, including coordination of finishes and infrastructure. The Project's design shall meet or exceed the design and performance criteria stipulated in the Facility Program and Facility Performance Standards documents.
- 1.2.2.8.2. The Design Builder shall prepare space plans showing all free standing furniture, equipment and modular systems furniture (MSF) workstations for the Project. Design Builder shall, in consultation with the County, indicate the re-use and placement of new and existing furniture in the space plans. The Design Builder shall coordinate with the furniture vendor/installer(s) to confirm dimensions, details, colors, materials and other pertinent information for the MSF workstations, and coordinate the design and development process with the furniture vendor/installer(s) for modular systems furniture provided by the either the Design Builder or County.
- 1.2.2.8.3. The Design Builder will prepare fully dimensioned floor plans including clear dimension requirements, showing the MSF requirements including work surfaces, storage units, computer related components and other accessories. The MSF workstation vendor/installer(s) will utilize the Design Builder's drawings to prepare "installation" drawings, which will be reviewed and approved by Design Builder for conformance to the space plan drawings.
- 1.2.2.8.4. The Design Builder will make available loading dock and

elevator operators as needed to support the MSF workstation vendor/installer(s) delivering, distributing, and installing the MSF workstation components. Once the MSF workstations are installed, the Design Builder will install and connect the necessary telecommunications cable within the MSF workstations, and connect the electrical power to the MSF workstations as required.

1.2.3 Coordination of Architectural and Engineering Subconsultants/Other Contractors

- 1.2.3.1. Design Builder shall fully coordinate all architectural and engineering disciplines and subconsultants involved in completing the Work, including but not limited to, all subconsultants employed by Subcontractors or suppliers. Design Builder's subconsultants of all tiers shall fully coordinate with Design Builder and all architectural and engineering disciplines and subconsultants involved in completing the Work.
- 1.2.3.2. Design Builder shall require its subconsultants to agree in their subcontracts to coordinate with Design Builder and other subconsultants.
- 1.2.3.3. See Document 01 31 19 (Project Meetings) for minimum meeting requirements.

1.2.4 Project Master Schedule

- 1.2.4.1. Design Builder shall complete or cause to be completed all services required under this Agreement in accordance within Contract Time as defined in the Contract as well as all approved Project schedules and updates thereto.
- 1.2.4.2. Design Builder shall provide County with a design and construction schedule that outlines dates and time periods for the delivery of Design Builder's services and requirements for information from the County for the performance of its services. The Project Master Schedule will include activities for completing the Project design documents (through release for construction), significant construction milestones, construction submittals and long lead item procurement, dates for decisions by County affecting schedule, and utility interruptions affecting Project operations. For more detailed information refer to Section 01 32 26 (Schedules and Reports).
- 1.2.4.3. The Project Master Schedule shall be updated monthly, and shall meet the following requirements:
 - a. The schedule shall fit within and coordinate with the overall Milestone Schedule in Document 01 12 16 (Work Sequence) including any and all design interfaces.
 - b. The schedule shall be in fully operational computer software

format as stipulated in Section 01 32 26 (Schedules and Reports).

- 1.2.4.4. Design Builder shall adjust and cause its retained subconsultants and Subcontractors to adjust activities, personnel levels, and the sequence, duration and relationship of services to be performed in a manner that will comply with the requirements of Section 01 32 26 (Schedules and Reports).
- 1.2.4.5. Design Builder has no restraints on when it may bid or assign work to Subcontractors.

1.2.5 Deliverables Required Under This Agreement – General

- 1.2.5.1. All deliverables required under this Agreement shall be submitted in full compliance with the Contract Documents, shall be submitted in at least triplicate (or such greater number as the County may reasonably request) and, when contained on electronic media, shall be submitted in printed form as well as on electronic media when requested by the County. In the event of a conflict between the electronic version and hard copy versions of Design Builder's documents, the hard copy shall govern.
- 1.2.5.2. Deficiencies in deliverables and modifications to conform to program requirements and modifications to achieve acceptability of deliverables to County, shall be promptly performed as part of the Contract Price.

1.3 PROPOSAL & RECONCILIATION PHASE

- 1.3.1 Proposal Phase Documents: Design Builder shall submit all Proposal deliverables as stipulated in the Request for Proposals (RFP).
- 1.3.2 Reconciliation Phase (100% Schematic Design): Following contract execution, the Design Builder shall complete the Schematic Design phase. This phase shall reconcile the Design Builders RFP documents to ensure that they are in compliance with the County's Facility Performance Standards and Facility Program requirements. The Design Builder shall receive the County's approval of this phase prior to beginning any work with regards to the Design Development and Construction Document phases.

1.4 PARTNERING

- 1.4.1 Design Builder shall schedule and coordinate partnering sessions to be held every six (6) months during the Project. The Design Builder shall include in partnering sessions representatives of the professional subconsultants preparing the Construction Documents and the construction Subcontractors, as appropriate. Attendees shall include, but not be limited to, representatives from County, the County's Project Partners, and the County's Construction

Management consultant. The Design Builder will invite representatives from Other Authorities Having Jurisdiction over the Project to attend partnering sessions when appropriate and with the concurrence of the County.

Partnering Sessions shall include the following:

- 1.4.1.1. A Project Kick-off Partnering Session immediately following the Notice to Proceed.
- 1.4.1.2. A Project Close-out Partnering Session held at approximately the 60% completion point of construction, to address occupancy, punch list, commissioning and close-out activities.
- 1.4.2 Partnering Sessions are a series of professionally facilitated off-site meetings involving the representatives of the Project team for the purposes of team building and problem solving. The Design Builder shall budget the cost of the partnering sessions within the Contract Price. The Design Builder and the County shall agree on the selection of the partnering facilitator and attendees.

1.5 DESIGN DEVELOPMENT PHASE

1.5.1 Period of Service.

- 1.5.1.1. After reconciliation of the Design Builder's Proposed Design, and upon written authorization from the County, Design Builder shall proceed with the performance of the services called for in the Design Development Phase. The intent of the Design Builder's Design Development Phase submittal is to obtain County approval for design revisions, refinements, and concept elaborations produced by the Design Builder during Design Development of Documents prior to Construction Document Production. Design Builder may elect to submit Design Development Documents incrementally by major building phases, components, or areas to facilitate economy of schedule provided overall design concept is clear and adhered to.
- 1.5.1.2. Design Builder shall submit the deliverables required by the Design Development Phase including preliminary design documents and a revised detailed estimate and cost breakdown of Total Project Costs, within the stipulated period required in the Project Master Schedule.
- 1.5.1.3. Design Builder shall at the outset of this Phase make full written disclosure to County, and obtain County's express written approval of, any proposed innovative, unique, proprietary or sole source design features. County retains full discretion to disapprove such features.

1.5.2 Lifecycle and Alternates

- 1.5.2.1. See Section 01 81 12 (Energy Performance Modeling and Verification Requirements)
- 1.5.2.2. See paragraph 1.5.4 of Section 01 81 13 (Sustainable Design Requirements)

1.5.3 General Scope of Project and Final Design Criteria.

1.5.3.1. After consultation with County and on the basis of the Facility Program and Facility Performance Standards, Design Builder shall determine the general scope, extent and character of the Project and establish final design criteria. Design Builder shall participate in or initiate periodic reviews or workshops as necessary with the County's Representative, County departmental and Project Partner stakeholders, and their consultants during the Design Development Phase. See Document 01 31 19 (Project Meetings) for minimum meeting requirements.

1.5.4 Design Development Documents. Design Builder shall prepare Design Development Documents consisting of final design criteria, preliminary drawings, outline specifications and written descriptions of the Project, BIM Model and as appropriate with renderings and models. These Design Development Documents shall include, but are not limited to:

1.5.4.1. General

1.5.4.1.1. A tabulation of both gross and assignable floor areas as proposed by the Design Builder showing a comparison to the program area requirements established in the Facility Program. Such tabulation shall be submitted in both written and electronic format. Room Data Files shall be on CD-ROM disks in either Microsoft Excel spreadsheets or Microsoft Access database files. It is encouraged that floor area tabulation files be linked to Revit and AutoCad drawing files to ensure accuracy through final design stages.

1.5.4.1.2. Design Builder shall provide to County's Representative for County approval two copies of a color matrix, samples of types and size acceptable to the County's Representative of textures and finishes of all materials in the Work at the Project.

1.5.4.2. Architectural

1.5.4.5.1. Scaled, dimensioned floor plans with final room locations including all openings.

1.5.4.5.2. 1/8" scale building sections and elevations showing dimensional relationships, materials and component relationships.

1.5.4.5.3. Identification of fixed equipment to be installed in contract.

1.5.4.5.4. Site plan completely drawn with beginning notes and dimensions including grading and paving.

- 1.5.4.5.5. Preliminary development of typical major details, wall sections, and large-scale blow-ups.
 - 1.5.4.5.6. Legend showing symbols used on drawings.
 - 1.5.4.5.7. Floor plans identifying location of fixed equipment and quantity and sizes of County furnished major movable equipment and furniture.
 - 1.5.4.5.8. Outline Specification for Architectural, structural, mechanical, electrical, civil and landscape manuals, systems and equipment.
 - 1.5.4.5.9. Typical reflected ceiling development including, as applicable, ceiling grid and heights, showing:
 - a. Light fixtures
 - b. Ceiling registers or diffusers
 - c. Access panels.
 - 1.5.4.5.10. Identify proposed roof system, deck, insulation system and drainage techniques.
 - 1.5.4.5.11. Finish, door, and window schedules.
- 1.5.4.3. Structural
- 1.5.4.3.1. Structural drawing with all major members located and sized.
 - 1.5.4.3.2. Establish revised building and floor elevations.
 - 1.5.4.3.3. Outline specifications.
 - 1.5.4.3.4. Identify foundation system(s) including fill requirements and piles, with associated soil pressure, water table and seismic center.
- 1.5.4.4. Mechanical/Plumbing
- 1.5.4.4.1. Heating and cooling load calculations and major duct or pipe runs sized to interface with structural work.
 - 1.5.4.4.2. Major mechanical equipment scheduled indicating size and capacity.
 - 1.5.4.4.3. Ductwork and piping substantially located and sized.
 - 1.5.4.4.4. Devices in ceiling located.

- 1.5.4.4.5. Legend showing symbols used on drawings.
- 1.5.4.4.6. Outline Specifications indicating quality level and manufacturer of equipment and fixtures.
- 1.5.4.5. Electrical
 - 1.5.4.5.1. Written design criteria for electrical systems.
 - 1.5.4.5.2. All lighting fixtures located and scheduled showing all types and quantities of fixtures to be used, including proposed lighting levels for each usable space.
 - 1.5.4.5.3. All major electrical equipment scheduled indicating size and capacity.
 - 1.5.4.5.4. Complete electrical distribution including a one-line diagram indicating final location of switchboards, communications, controls (high and low voltage), motor control centers, panels, transformers and emergency generators, if required.
 - 1.5.4.5.5. Legend showing all symbols used on drawings.
 - 1.5.4.5.6. Outline Specifications indicating quality level and manufacturer.
- 1.5.4.6. Civil
 - 1.5.4.6.1. Further refinement of Proposal Phase documents of onsite and offsite utility systems for sewer, electrical, water, storm drain and fire water. Includes, without limitation, pipe sizes, materials, invert elevation location and installation details.
 - 1.5.4.6.2. Further refinement of Proposal Phase roadways, parking and storm drainage improvements. Includes details and large scale drawings of curb and gutter, manhole, trust blocks, paved parking and roadway sections.
 - 1.5.4.6.3. Outline Specifications indicating quality level and manufacturer.
- 1.5.4.7. Landscape
 - 1.5.4.5.7. Further refinement of Proposal Phase concepts, includes coordination of hardscape, landscape planting, ground cover and irrigation main distribution lines.
 - 1.5.4.5.8. Outline Specifications indicating quality level and manufacturer.

- 1.5.5 Attend Required Meetings. Design Builder shall attend meetings with the community, representatives of the County and its designated consultants, Other Authorities Having Jurisdiction and appropriate governmental agencies and provide information and diagrams to fully describe the Project.
- 1.5.6 Deliverables. Design Builder shall provide twelve (12) hard copies and one electronic copy of the same on a CD for review by the County at the one hundred percent (100%) Design Development Phase.
- 1.5.7 Review of the Final Design by County. Design Builder shall participate and cooperate fully in a review of the Design Development Documents by County and any consultants engaged by it. Design Builder shall make full written disclosure to County, and obtain County's express written approval of, any proposed innovative, unique, proprietary or sole source design features.
- 1.5.8 Constructability Review. The County may conduct a constructability review of the 100% Design Development documents upon the Design Builder's completion of its 100% Design Development documents. The Design Builder will provide written responses to County reviewer comments that identify how issues will be resolved by the Design Builder.
- 1.5.9 Cost Estimate. The Design Builder shall submit to the County an updated Cost Estimate and identify cost changes since the Proposal (providing twelve (12) hard copies and one (1) electronic copy of the same on a compact disc). This estimate shall consist of unit costs applied to the Element Level (Level 3 National Institute of Standards and Technology Uniformat II Classification) items and quantities of work. This estimate shall be organized in a format acceptable to the County. The County will use this estimate for cost reconciliation and design change order reviews.
- 1.6 CONSTRUCTION DOCUMENTS PHASE
- 1.6.1 Period of Service
- 1.6.1.1 After acceptance by the County of the required deliverables in the Design Development Phase, and upon written authorization from the County, Design Builder shall proceed with the performance of the services called for in the Construction Documents Phase.
- 1.6.1.2 Design Builder shall submit the deliverables required by the Construction Documents Phase including preliminary design documents, within the stipulated period required in the Project Master Schedule.
- 1.6.2 Construction Documents. On the basis of the accepted Design Development Documents, Design Builder shall prepare for incorporation in the Contract Documents final Construction Documents to show the work to be furnished and performed by Design Builder. Construction Documents shall set forth in detail the requirement for construction of all work to be performed by Design

Builder. Construction Documents shall not supersede the Contract Documents where the Contract Documents contain a more stringent requirement.

1.6.2.1.1. Architectural

- a. Completed site plan.
- b. Completed floor plans, elevations, and sections.
- c. Architectural details and large blow-ups completed.
- d. Finish, door, and hardware schedules completed, including all details.
- e. Site utility plans completed.
- f. Fixed equipment details and identification completed.
- g. Reflected ceiling plans completed.

1.6.2.1.2. Structural

- a. Structural floor plans and sections with detailing completed.
- b. Structural calculations completed.

1.6.2.1.3. Mechanical

- a. Large scale mechanical details completed.
- b. Mechanical schedules for equipment completed.
- c. Completed mechanical schematic for environmental cooling and exhaust equipment.
- d. Complete energy conservation calculations and report necessary for compliance with requirements in the facility performance standards.

1.6.2.1.4. Electrical

- a. Lighting and power plan showing all switching and controls. Fixture schedule and lighting details completed.
- b. Distribution information on power consuming equipment, including lighting, power, signal and communication device(s) branch wiring completed.
- c. All electrical equipment schedules completed.

- d. Special system components plans completed.
 - e. Electrical load calculations completed.
 - f. Electronic detention security design completed.
- 1.6.2.1.5. Civil
- a. All site plans, site utilities, parking and roadway systems completed.
- 1.6.2.1.6. Landscaping
- a. All landscape, hardscape, and irrigation plans complete
- 1.6.3 Attend Required Meetings. Attend meetings with the community, representatives of the County and its designated consultants, Other Agencies Having Jurisdiction, and appropriate governmental agencies and provide information and diagrams to fully describe the Project.
- 1.6.4 Deliverables: Design Builder shall submit 12 hard copies and one (1) electronic copy of the same on a CD for review at the fifty percent (50%) and one hundred percent (100%) Construction Documents Phase.
- 1.6.5 Specifications shall be prepared in conformance with the latest edition Master Format of the Construction Specification Institute. Design Builder shall have complete responsibility to secure timely review and approval by all Other Agencies Having Jurisdiction. It is the intent of the County to work in close coordination to assist the Design Builder in the plan review process to support a timely review and approval process schedule.
- 1.6.6 The same architectural and engineering team (and team personnel) that prepared the design deliverables submitted to authorities with jurisdiction shall complete the Construction Documents, subject to the provisions of the Contract agreement and General Conditions.
- 1.6.7 Compliance with Codes, Regulations and Requirements. Prepare Construction Documents in full compliance with the Contract Documents, applicable building codes, ordinances, standards, governmental regulations and private restrictions, applicable to the Work.
- 1.6.8 Make full written disclosure to County, and obtain County's express written approval of, any proposed innovative, unique, proprietary or sole source design features.
- 1.6.9 Warranty. Design Builder warrants to County that the final design, as expressed in the Construction Documents:
- 1.6.9.1 Will be constructible, workable, serviceable and within the Design Builder's detailed estimate of costs and schedule;
 - 1.6.9.2 Will comply in all respects with the requirements of the

Contract Documents.

- 1.6.9.3 Will not call for the use of hazardous or banned materials.
 - 1.6.9.4 Will fully comply with applicable building codes, ordinances, standards, governmental regulations and private restrictions, applicable to the Work.
 - 1.6.10 Constructability Review. The County may conduct a constructability review of the 50% and 100% Construction Documents upon the Design Builder's completion of its 50% and 100% Construction Documents. The Design Builder will provide written responses to reviewer comments that identify how issues will be resolved by the Design Builder.
 - 1.6.11 Cost Estimate. The Design Builder shall submit to the County an updated Cost Estimate and identify cost changes since the 100% Design Development Estimate (providing twelve (12) hard copies and one (1) electronic copy of the same on a compact disc). This estimate shall consist of unit costs applied to the Element Level (Level 3 National Institute of Standards and Technology Uniformat II Classification) items and quantities of work. This estimate shall be organized in a format acceptable to the County. The County will use this estimate for cost reconciliation and design change order reviews.
- 1.7 CONSTRUCTION PHASE
- 1.7.1 Upon County's review and taking "no exceptions" of Design Builder's Construction Documents for technical divisions or other portions of the Work as Design Builder and County may agree, Design Builder may commence construction of the Work shown.
 - 1.7.2 General Administration of Construction. Design Builder's architectural, design, and engineering subconsultants, including the industrial hygienist, shall make regular visits to the site at intervals appropriate to the various stages of construction as necessary to assure that construction conforms to the final design of the Construction Documents as approved.
 - 1.7.3 Quality Control and Reporting. Design Builder's architectural, design, and engineering subconsultants, including the industrial hygienist, shall participate fully in Design Builder's required quality control program and shall have a duty to advise Design Builder and County in writing of any observations of defective work, work not in conformance with Construction Documents, and lack of progress consistent with the schedule of work in areas associated with their services. See Section 01 45 00 (Quality Control).
 - 1.7.4 Design Builder's architectural, design, and engineering subconsultants, including the industrial hygienist, shall establish and maintain to the satisfaction of County, a computer database compatible with databases maintained by County. The Design Builder's database shall maintain complete and accurate records regarding its activities related to fulfilling the requirements of Section 01 45 00 (Quality Control). Design Builder shall make such database available to County at all reasonable times and turn over

the database in both hard and electronic form to County upon completion or termination of this Agreement.

- 1.7.5 Together with County, Design Builder and Design Builder's architectural, design, and engineering subconsultants, including the industrial hygienist, shall visit the Project to observe any apparent defects in the construction, correct such deficiencies, and supply information as needed regarding replacement, correction, or diminished value of defective work.
- 1.7.6 Design Builder shall provide to County for County's approval two (2) copies of a color schedule, samples of types and size acceptable to the County of textures and finishes of all materials in the Work at the Project.

1.8 OPERATION/PROJECT CLOSE-OUT PHASE

- 1.8.1 Operation/Close Out. During the Operation/Project Close-Out Phase, Design Builder and Design Builder's architectural, design, and engineering subconsultants shall, when requested by County, provide all necessary architectural, design and engineering services, including services of its architectural, design and engineering subconsultants, for:

- 1.8.1.1 Refining, adjusting and correcting of any equipment or systems.
- 1.8.1.2 Start-up, testing and placing in operation all equipment and systems. See Section 01 91 00 (General Commissioning Requirements).
- 1.8.1.3 Completion of punchlist work and observation of any apparent defects in the completed construction, correction of such deficiencies, and supply information as needed regarding replacement, correction, or diminished value of defective work.
- 1.8.1.4 Training County's and Project Partner's staff to operate and maintain all equipment and systems.
- 1.8.1.5 Assisting County in developing systems and procedures for control of the operation and maintenance of and record keeping for the Project.
- 1.8.1.6 Preparation of electronic record sets and sets of reproducible record prints or Drawings showing those changes made during the construction process, based on the marked-up prints, Drawings and other data.

1.9 DESIGN BUILDER'S OBLIGATION FOR FINISHED CONSTRUCTION

- 1.9.1 County's right to review Design Builder's design including, but not limited to, Construction Documents, shop drawings, samples and submittals, as specified in the Contract Documents, shall not relieve Design Builder of its responsibility for a complete design and construction complying with the requirements of the Contract Documents; but rather, such review shall be in furtherance of the County's monitoring and accepting the design as developed and issued by the Design Builder, consistent with these Contract Documents.

Design Builder's responsibility to design and construct the Project in conformance with the Contract Documents including, but not limited to, the applicable performance standard and any fully executed change orders, shall be absolute. Such duty may not be altered or diminished by any action other than a signed change order.

- 1.9.2 Auto CAD, Revit, and Other Electronic Data. Provide all electronic files of all Construction Documents drawings including as-bid, as-built, and all record Drawings, on Compact Disks. Prepare electronic record sets and sets of reproducible record prints or Drawings showing those changes made during the construction process. Electronic data shall conform to County requirements for compatibility with County equipment and software.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

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SECTION 01 12 16

WORK SEQUENCE

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This Section discusses the sequencing of the major site preparation, construction, and project completion components of the Project.

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 11 00 (Summary of Work)

1.1.2.2 Section 01 11 20 (Design Services and Deliverables)

1.1.2.3 Section 01 32 16 (Construction Progress Schedule)

1.2 SEQUENCING

1.2.1 The Design Builder shall sequence the Work to accommodate site logistics, site utilization and minimize impact to neighboring properties and public roadways, and facilitate the required project approvals to overlap work.

1.2.2 Design Builder shall be responsible for developing the detailed plan for phasing and sequencing for completion of the Work for the Project and to allow for continuous operation of the County's court and detention functions located on the site. Final phasing and sequencing must be approved by the County.

1.2.3 The Design Builder's phasing shall fit within and coordinate with the Contract Times specified in the Contract and within constraints outlined in the RFP.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

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PART 1 - GENERAL**1.1 RELATED DOCUMENTS**

- 1.1.1 Drawings and general provisions of the Contract, including General Terms and Conditions and other Division 1 Specification Sections, apply to this Section.

Related Sections include the following: Section 01 11 00 (Summary of Work) for procedures regarding utility interruptions, and Design Builder's use of the Site.

- 1.1.1.1 Section 01 41 00 (Regulatory Requirements) for related codes.
- 1.1.1.2 Section 01 31 00 (Project Management and Coordination) for meeting and communication.
- 1.1.1.3 Section 01 45 00 (Quality Control) for QC plan and personnel.
- 1.1.1.4 Section 01 73 32 (Selective Demolition) for pre-demolition conference and understanding of project conditions.
- 1.1.1.5 Section 01 42 00 (References) for reference standards.

1.2 SUBMITTALS

- 1.2.1 Design Builder shall make submittals as provided in Section 01 33 00 (Submittal Procedures).

1.3 TRAINING

- 1.3.1 Provide training and orientation regarding safety and other procedures for all personnel employed by the Design Builder, subcontractors, and any other personnel entering the Site in support of the Design Builder, as provided in the Design-Builder's Project Specific Safety Manual.

1.4 UTILITY INTERRUPTIONS AND PRIOR NOTIFICATION

- 1.4.1 Shutdown or interruption of any utility system requires written notice a minimum of seven (7) Business Days in advance. Design Builder is not authorized to interrupt utility services without this advance notification and the prior approval of the County's Representative.

1.5 ENVIRONMENTAL CONTROLS

- 1.5.1 Environmental Mitigation Measures: Design Builder shall become familiar with the full text of the Project's SEPA and any Addendums and take responsibility for compliance with all mitigations measures.
- 1.5.2 Noise: During construction, care and concern must be exercised to not disrupt adjacent neighbors. The Design Builder shall develop a Construction Noise

Management Plan that meets the requirements of the City of Seattle, for approval, which demonstrates noise considerations for adjacent neighbors and the County's Youth Services Center operations.

- 1.5.3 Dust: Dust control is a critical activity given the proximity of construction to adjacent neighbors. The Design Builder shall prepare a submittal that identifies source air pollution and related pollution reduction measures. Compliance with any mitigation requirements by the City of Seattle and/or other Agencies the following dust control measures shall be employed:
- 1.5.3.1 If necessary, install a water misting system along fence perimeter or any other necessary area to prevent fugitive dust from creating a nuisance to the public.
 - 1.5.3.2 Reduce the use of diesel fuel powered equipment and use equipment with alternative fuel whenever practical to minimize diesel exhaust emissions.
 - 1.5.3.3 Schedule haul trucks and material delivery trucks to prevent traffic congestion and impede the normal operation of adjacent neighbors. Set up truck queuing area and have staff communicate via cell phone for efficiency and reduced traffic.
 - 1.5.3.4 Limit the number of haul trucks on Site and establish a haul route. Install a gravel or base road on site for loading trucks.
 - 1.5.3.5 Provide a boundary/zone where equipment shall not enter because of proximity to the adjacent neighbors.
- 1.5.4 Demolition: The Design Builder shall plan any demolition activities to minimize environmental impacts on Project operations in accordance with Section 01 73 29 (Cutting and Patching). The Design Builder is required to recycle demolished building material, see Section 01 50 50 (Construction Waste Management and Disposal), but must do so in compliance with these Contract Documents and regulations. In addition to the above mitigation measures, the following applies to demolition activities:
- 1.5.4.1 Identify the material that are recyclable and if possible, send to recycling facility.
 - 1.5.4.2 All surface area of structures shall be saturated with water prior to start of demolition.
 - 1.5.4.3 Waste and debris shall be segregated, processed, and recycled to minimize waste volume and number of trips.
 - 1.5.4.4 If debris is to be separated for recycling purposes, a jaw-crusher type attachment shall be used instead of a concrete breaker to separate concrete and rebar (if this is not feasible, perhaps negotiate with local concrete and other recycling facilities to meet recycling

requirements).

- 1.5.5 Odors: When odors are a concern, arrangements shall be made by the Design Builder for their containment or control. Where controllable, fumes and odors shall not be allowed to migrate to areas adjacent neighbors. The Design Builder shall immediately notify the County's Representative of any migrating odors.

1.6 SHIPMENTS AND MATERIALS

- 1.6.1 Equipment and materials shall not be shipped to the Site unless specific arrangements are made for receipt and acceptance of these items. When such shipments are authorized, they are the total responsibility of the Design Builder. The County accepts no responsibility for the receipt, storage, or protection of the Design Builder's materials and equipment.

1.7 SALVAGE AND DISPOSAL

- 1.7.1 All existing property of the County that is removed from the construction site and has been identified to be salvaged by the County shall be delivered to a secure site as specified by the County's Representative.
- 1.7.2 Construction debris, or material that has no redeemable value, is to be placed in Design Builder-furnished refuse bins for safe and legal removal from the premises.

1.8 PARKING

- 1.8.1 The County will meet with the Design Builder to determine parking requirements.
- 1.8.2 The primary parking and storage area shall be designated areas.
- 1.8.3 Design Builder and related personnel shall park in authorized areas only.

1.9 SANITARY

- 1.9.1 Design Builder shall provide temporary toilet facilities adjacent to all areas where Work is being performed.
- 1.9.2 Sanitary Facilities shall be in accordance with OSHA regulations.

1.10 FOOD

- 1.10.1 Construction personnel shall police their own areas. All cups, cans, paper, wrappers, and discarded food must be placed in trash receptacles at the end of each break.
- 1.10.2 Design Builder shall submit the proposed location of any break and eating areas, which shall be outside of areas under construction, to the County for approval.

1.11 PHONES

1.11.1 Construction personnel shall pay for separate phone services.

1.12 SMOKING AND TOBACCO

1.12.1 Smoking is not permitted within the facilities under construction.

1.12.2 Smoking is permitted in designated areas. Design Builder to contact County for approved smoking areas.

1.12.3 All ashes and cigarette butts must be deposited in approved receptors.

1.12.4 No chewing tobacco or spitting of tobacco is permitted.

1.13 SAFETY**1.13.1 General**

Design Builder shall prepare a Project Site Specific Safety Plan and comply with all requirements of the OCIP Safety Manual.

1.13.1.1 Operation of cranes, derricks, and hoists should be in accordance with manufacturer's recommendations and appropriate ANSI and OSHA regulations.

1.13.1.2 All construction operations and personnel are subject to OSHA and Environmental Health & Safety regulations.

1.13.2 Fire Prevention During Welding, Cutting, and Other Hot Work

1.13.2.1 Hot work includes welding, heat treating grinding, thawing pipe, powder-driven fasteners, hot riveting, and similar applications producing a spark, flame, or heat.

1.13.2.2 Hot work shall be performed in a designated area that is approved for hot work by the County.

1.13.2.3 The Design Builder shall ensure that only specialized apparatus, such as torches, manifolds, regulators, or pressure-reducing valves, and acetylene generators, are used.

1.13.2.4 The Design Builder shall ensure that all individuals involved in hot work are:

a. Trained in the safe operation of their equipment and the safe use of the process.

b. Have an awareness of the inherent risks involved and understand the emergency procedures in the event of a fire.

- c. Are aware if any special risks, such a flammable materials or hazardous conditions at the hot work site.

1.13.3 Project Inspector

1.13.3.1 Provision of inspectors by the County, if any, pursuant to provisions of this section shall be subject to following:

- a. Design Builder shall allow inspectors full access to the Site and the Work at all times Work is in progress.
- b. Design Builder shall not take any direction, approvals or disapprovals from inspectors.
- c. Design Builder shall not rely on inspectors to ensure Work is completed in accordance with Contract Documents.

1.13.3.2 Acts or omissions of any inspector (including, without limitation, inspector's failure to observe or report deficiencies in Design Builder's Work) shall not relieve Design Builder from its responsibility to complete Work in accordance with Contract Documents.

1.14 USE OF PREMISES

1.14.1 Use of Site: Limit use of premises to Work in areas as determined by the County. Do not disturb portions of Site beyond areas in which the Work is indicated.

1.14.1.1 Limits: Confine construction operations as agreed to by the Design Builder and the County. In those locations where existing vegetation or facilities are to remain, the Contractor must work around the material.

1.14.1.2 Owner Occupancy: Allow for Owner occupancy of Site and use by the public as required by the Owner's Representative.

1.14.1.3 Driveways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

- a. Schedule deliveries to minimize use of driveways and entrances.
- b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-Site.

1.14.1.4 Coordinate use of premises under the direction of the Owner's Project Representative.

1.14.1.5 Move any stored products, under Contractor's control, that interfere with the operations of the Owner.

1.14.2 Use of Existing Building: Existing buildings on site shall be for the exclusive use by the County during the initial phase of construction prior to occupancy of the new Courthouse and Detention facility. Protect building and its occupants during construction

1.15 OCCUPANCY REQUIREMENTS

1.15.1 Full Owner Occupancy: Owner will occupy designated portions of the Site and existing buildings during the initial phase of construction. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations.

1.15.2 Partial Owner Occupancy: Owner reserves the right to occupy and to place and install equipment in completed areas of building, before Substantial Completion, provided such occupancy does not interfere with completion of the Work. Such placement of equipment and partial occupancy shall not constitute acceptance of the total Work.

1.15.2.1 Owner's Project Representative will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied before Owner occupancy.

1.15.2.2 Obtain a Certificate of Occupancy from authorities having jurisdiction before Owner occupancy.

1.15.2.3 Before partial Owner occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, Owner will provide, operate, and maintain mechanical and electrical systems serving occupied portions of building.

1.15.2.4 On occupancy, Owner will assume responsibility for maintenance and custodial service for occupied portions of building.

1.16 WORK HOURS

1.16.1 Work shall be accomplished during the work hours listed below unless further restricted by the local authorities having jurisdiction or specified otherwise:

1.16.2 Regular Daytime Work Hours: 7:00 AM to 5:00 PM. Make advance arrangements with the County for Work Design Builder wants to perform between 5:00 PM and 7:00 AM.

- 1.16.3 Restricted Work Hours: Limit work producing excessive noise and noise-producing tools and equipment between 5:00 PM to 7:00 AM.
- 1.16.4 Limit work producing excessive noise and noise-producing tools and equipment between 5:00 PM to 7:00 AM.
- 1.16.5 Refer to SECTION 01 35 50 "PROJECT SECURITY" for Work within portions of the Site designated as the "security perimeter".
- 1.16.6 Refer to SECTION 01 50 00 "TEMPORAY FACILITIES AND CONTROLS" for definition of excessive noise.
- 1.16.7 Contractor shall submit a schedule of Working hours to the Owner's Project Representative for acceptance prior to the start of any Work on the Site.

1.17 CONSTRUCTION PHASING/SCHEDULING

1.17.1 Construction Scheduling:

- 1.17.1.1 The Contractor shall schedule construction and coordinate their Work with use of existing spaces in accordance with the following:
 - a. Work Within Existing Occupied Spaces: Requests for Work within existing occupied spaces will require a minimum of four (4) days written advance notice, requesting Owner's Project Representative's approval.
 - b. Interruption of Services: Requests for interruption of services must be in writing and include the type of interruption, the location of the interruption and the duration of interruption. Four (4) days prior written approval by the Owner's Project Representative is required for any interruption of services.
- 1.17.1.2 No additional compensation will be allowed for special equipment or overtime that may be required as a result of scheduling Work within occupied spaces and interruption of services.

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SECTION 01 21 00

ALLOWANCES**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements governing allowances.

1.1.1.1 Certain items are specified in the Contract Documents by allowances. These allowances have been established to accommodate work for which specific requirements and quantities are unknown. Each allowance is for a lump sum. The allowances are for:

1.1.1.1.1 Purchase and installation of furniture, fixtures, and equipment for the Courthouse portion of the project

1.1.1.1.2 Purchase and installation of furniture, fixtures, and equipment for the Detention portion of the project

See paragraph 3.3 below for a complete description of each allowance.

1.1.1.2 Include in the proposed Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or firms as County may direct.

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 26 00 (Contract Modification Procedures) for procedures for submitting and executing Change Orders for allowances

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 DESIGN OF ALLOWANCE ITEMS

3.1.1 The cost of all design, engineering, and installation services associated with the allowance items is to be included in the Allowance amount stated in paragraph 3.3 (Schedule of Allowances).

3.2 PAYMENT FOR ALLOWANCE ITEMS

3.2.1 Payment for Allowance items shall be by the actual quantity of furniture,

fixtures, and equipment to be purchased and installed by the Design Builder. Design Builder shall not include, or be permitted to recover, as part of any Allowance other costs arising out of or connected with the performance of the Allowance Work.

3.2.2 When Design Builder has performed any work covered by an Allowance, Design Builder shall submit a payment request in accordance with Section 01 26 00 (Contract Modification Procedures) as part of an application for payment. When the County has reviewed and approved the payment related to each allowance, the amount to be paid shall be deducted from the amount of the Allowance.

3.2.3 If the cost of requested items approved by the Owner exceeds the total amount covered by the Allowance, the County will prepare a Change Order to increase the Allowance amount. If the cost of the requested items approved by the Owner is less than the total amount of the Allowance, the balance will be credited to the County as a deductive Change Order.

3.3 SCHEDULE OF ALLOWANCES

3.3.1 Allowance No. One: Allow \$2,500,000 for the purchase and installation of workstations, courtroom furnishings (not including the bench), conference room equipment, building security freestanding equipment, electronic court information reader boards, and other items as identified by the Owner during the design phase of this contract.

3.3.2 Allowance No. Two: Allow \$2,500,000 for the purchase and installation of detention equipment and furnishings as identified by the Owner during the design phase of this contract.

END OF SECTION

SECTION 01 26 00

CONTRACT MODIFICATION PROCEDURES**PART 1 - GENERAL**

1.1 GENERAL

1.1.1 Only Design Builder or the County may initiate changes in scope of Work or deviation from Contract Documents.

1.1.1.1 Design Builder may initiate changes by submitting a Contractor Initiated Notification (CIN) to the County that a specific event or action is not included in the scope of work

1.1.1.2 The County may initiate changes in the Work or Contract Time by issuing Request for Proposal (RFP) to Design Builder. Such RFPs will detail all proposed changes in the Work and request a quotation of changes in Contract Price and Contract Time from Design Builder.

1.1.1.3 The County may also, by Construction Change Directive ("CCD"), order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Price and Contract Time being adjusted accordingly prior to agreement on an adjustment to either Contract Price and/or Contract Time. Upon reaching an agreement, the County shall prepare and execute a Change Order reflecting the terms of the agreement.

1.1.2 Allowances: Procedures in this Section shall be used to submit and execute Change Orders for allowances.

1.2 PROCEDURES

1.2.1 Cost Proposal and Procedures: Whenever Design Builder is required in this Section to prepare a Cost Proposal, and whenever Design Builder is entitled to submit a Cost Proposal and elects to do so, Design Builder shall prepare and submit to the County for consideration a Cost Proposal using the form agreeable to the County. All Cost Proposals must contain a complete breakdown of actual, current costs of credits, deducts, and extras; and itemizing materials, labor, taxes, overhead and profit. All Subcontractor Work shall be so indicated. Individual entries on the Cost Proposal form shall be determined as provided in this Section. After receipt of a Cost Proposal with a detailed breakdown, the County will act promptly thereon.

1.2.1.1 If the County accepts a Cost Proposal, the County will sign the Cost Proposal form and return to the Design Builder. Execution of the Cost Proposal form shall be the authorization for the Design Builder to proceed with the work. Approved cost proposals for CIN's, RFP's and CCD's shall be included in a Change Order for the County and Design Builder signatures, using the agreed upon form, prior to payment authorization for the approved cost proposals.

- 1.2.1.2 If the County determines that further clarification is needed on the Design Builders cost proposal, the County and the Design Builder shall meet to discuss the cost proposal. If after this meeting , parties are unable to determine an agreed upon adjustment to either the cost or time, the County will submit a response of what it believes to be a reasonable cost and/or adjustment, if any. Except as otherwise provided in this Section, Design Builder shall have fourteen (14) days in which to respond to the County with a revised Cost Proposal, unless otherwise agreed upon.
- 1.2.2 Construction Change Directives: The County may issue a Construction Change Directives (CCD). Upon receipt of a CCD, Design Builder shall promptly proceed with the change of Work involved and concurrently respond to the County's CCD within ten (10) Days.
 - 1.2.2.1 Design Builder's response must be any one of following:
 - 1.2.4.1.1 Return CCD signed, thereby accepting the County's response, time, and cost.
 - 1.2.4.1.2 Submit a (revised if applicable) Cost Proposal with supporting documentation (if applicable, reference original Cost Proposal number followed by letter A, B, etc. for each revision), if the County so requests.
 - 1.2.2.2 If the CCD provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
 - 1.2.4.2.1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation.
 - 1.2.4.2.2 Cost to be determined in a manner agreed.
 - 1.2.2.3 CCD signed by Design Builder indicates the agreement of Design Builder therewith, including adjustment in Contract Price and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded in a Change Order.
- 1.2.3 County issued Request for Proposal (RFP): Design Builder shall furnish a Cost Proposal within fourteen (14) Business Days of the County's RFP, unless otherwise agreed upon. The County's approval of the Design Builders scope and price for RFP will be the Design Builders authorization to proceed with the work.
- 1.2.4 Change Order: A change order will issued by the County that will include approved RFP's, CIN's, CCD's and other approved adjustments to the

Contract price or time. Payment for the work performed as part a RFP, CIN, CCD or other approved work will occur only after the Change Order is fully executed.

1.2.4.1. Change Orders shall be prepared monthly or at such intervals as the County and Design Builder deem most practical and will be numbered chronologically.

1.2.4.2. Change Proposals electronically submitted and approved by both parties shall form the content of the Change Order, as set forth in the General Conditions of the Contract.

1.2.4.3. Form: Change Orders will use the electronic form in Unifier and be approved electronically by both the County and Design Builder.

1.2.4.4. The County transmits electronically to Design Builder.

1.2.5 Compensation of Design Fees: Design Builder shall be compensated for all design services required as part of a RFP, CIN, or CCD based upon agreed hourly rates, level of effort, and approved reimbursable costs. Design service shall not include costs associated with time extensions.

1.2.6 Owner's Project Management Application (Unifier): Changes to the Contract will be made online using the County's project management application Unifier. Distribution of executed copies will be done electronically through Unifier

1.3 COST DETERMINATION

1.3.1 Total cost of Change Orders shall be the sum of labor costs, material costs, equipment rental costs, specialist costs, and all other direct and actual costs shall be in accordance with the Contract.

1.4 COST BREAKDOWN

1.4.1 Labor: Design Builder will be paid the actual cost of labor for workers as defined in the Contract.

1.4.2 Material: Only materials furnished by Design Builder and necessarily used in performance of extra Work will be paid for as defined in the Contract. Cost of such materials will be the actual cost, including any trade discounts, and delivery charges, to purchaser (Design Builder, Subcontractor or other forces) from supplier thereof, except as the following are applicable:

1.4.4.1 For materials salvaged upon completion of extra Work, salvage value of materials shall be deducted from cost, less discounts, of materials.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

COST PROPOSAL AND CHANGE ORDER FORMS FOLLOW

[Screenshot from FMD Project Management System Unifier]

The screenshot shows a web browser window titled "Contractor Change Orders - Change Order 6 - Project No. P-000003 - Windows Internet Explorer". The application interface includes a menu bar (File, Edit, View, Actions, Help) and a toolbar with "SOV" and "Close Window" buttons. The main content area is titled "Contractor Change Orders" and contains several sections:

- General:** Project Number: P-000003, Record Number: CCC-0010, Project Name: King County Sandbox, Creator: Jason Rich, Title: Change Order 6, Creation Date: 08/10/2010 11:47 AM Local (GMT-8), Due Date: (empty), Status: Approved.
- Master Contract Information:** Reference Commit: johnmcc, Amount: 605,000.00, Contract Type: Lump Sum, Contract Number: C89898C10, Contract Expiration Date: 08/09/2011, Master Contract Amount: 6,000,000.00, Vendor Name: H&A Electrical, Total Amount: 6,000,000.00.
- Negotiation Summary:** Scope of Work Summary: (empty text area), Summary of Negotiation (Justification): (empty text area).

At the bottom, there are tabs for "Task Details" and "Line Item List". A footer bar contains links for "Attachments (0)", "Linked Records (0)", "General Comments", and "Linked Mail (0)".



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[Screenshot from FMD Project Management System Unifier]

The screenshot shows a web browser window with the following content:

- Browser Title:** Change Proposal Requests - Change Proposal 13 - Project No. P-000003 - Windows Internet Explorer
- Menu:** File, Edit, View, Actions, Help
- Buttons:** Accept Task, Decline Task, Close Window
- Section: Change Proposal Requests**
 - General**
 - Project Number: P-000003
 - Record Number: CPR-0013
 - Project Name: King County Sandbox
 - Creator: Jason Rich
 - Title: Change Proposal 13
 - Creation Date: 08/10/2010 11:23 AM Local (GMT-8)
 - Due Date: [Empty]
 - Status: Pending
 - Master Contract Information**
 - Contractor SOV ID: johnmcc
 - Contract Type: Lump Sum
 - Contract Number: C89898C10
 - Contract Expiration Date: 08/09/2011
 - Master Contract Amount: 6,000,000.00
 - Vendor Name: H&A Electrical
 - Total Amount: 6,000,000.00
 - Change Summary**
 - Cost Impact: [Empty] Amount: 0.00
 - Schedule Impact: [Empty] Schedule Impact (days): 0
 - Justification**
 - Reason for Change: We would like to turn the building around on the site.
- Task Details**
 - Standard
 - Attachments (0)
 - Linked Records (0)
 - General Comments
 - Linked Mail (0)



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SECTION 01 29 00

PAYMENT PROCEDURES**PART 1 - GENERAL**

1.1 SUMMARY

This section describes requirements and procedures for determining amount of work done and for obtaining payment for work done.

1.1.1 Related Sections.

1.1.1.1 Section 01 11 00 (Summary of Work)

1.1.1.2 Section 01 11 20 (Design Services and Deliverables)

1.1.1.3 Section 01 26 00 (Contract Modification Procedures)

1.1.1.4 Section 01 32 26 (Construction Progress Schedule)

1.1.1.5 Section 01 33 00 (Submittal Procedures)

1.1.1.6 Section 01 77 00 (Closeout Procedures)

1.2 DEFINITIONS

1.2.1 Unifier – Online project management application used by FMD for project tracking. Electronic approvals shall be considered written approvals and the basis for reviewing Contractor's Applications for Payment.

1.3 DETERMINATION OF QUANTITIES

1.3.1 Quantity of work to be paid for under any item for which a unit price is fixed in the Contract Documents shall be the number, as determined by County, of units of work satisfactorily completed in accordance with Contract Documents and as directed pursuant to Contract Documents. Unless otherwise provided, determination of number of units of work so completed will be based on actual measurement or count within prescribed or ordered limits, and no payment will be made for work done outside of limits. Measurements and computations will be made by methods as County may consider appropriate for class of work measured.

1.4 SCOPE OF PAYMENT

1.4.1 Payment to Design Builder shall be full compensation for completing, in accordance with the Contract Documents, all design services and work required under the item or under the Contract, and for all expense incurred by Design Builder for any purpose in connection with the performance and completion of said work, including all incidental work necessary for completion of the Work.

- 1.4.2 For the materials and equipment where Design Builder requests payment on the basis of such materials and equipment not incorporated in the Work, Design Builder must satisfy the following conditions:
 - 1.4.3 The materials and/or equipment shall be delivered and suitably stored at the Site or at another local location agreed to in writing, for example, a mutually acceptable warehouse. Design Builder shall load and unload all materials and equipment. County shall not be obligated, nor shall County assist in any loading or unloading of any equipment or materials;
 - 1.4.4 Full title to the materials and/or equipment shall vest in County at the time of delivery to the Site, warehouse or other storage location;
 - 1.4.5 Design Builder shall obtain a negotiable warehouse receipt, endorsed over to County for materials and/or equipment stored in an off-site warehouse. No payment shall be made until such endorsed receipts are delivered to County;
 - 1.4.6 Stockpiled materials and/or equipment shall be available for County's inspection, but County shall have no obligation to inspect them and its inspection or failure to inspect shall not relieve Design Builder of any obligations under the Contract Documents. Materials and/or equipment shall be segregated and labeled or tagged to specifically identify them to the Project;
 - 1.4.7 After delivery of materials and/or equipment, if any inherent or acquired defects are discovered, defective materials and/or equipment shall be removed and replaced with suitable materials and/or equipment at Design Builder's expense;
 - 1.4.8 Design Builder's application for payment shall be accompanied by a bill of sale, invoice or other documentation warranting that County has received the materials and equipment free and clear of all liens and evidence that the materials and equipment are covered by appropriate property insurance and other arrangements to protect County's interest therein, all of which must be satisfactory to County. This documentation shall include, but not be limited to, conditional releases of mechanics' liens and stop notices from all those providing materials and equipment as to which the application for payment relates, as well as unconditional releases of the same from the same as to the previous applications for payment for which they have not already been provided.
- 1.5 PROGRESS PAYMENTS
- 1.5.1 Schedule of Values.
 - 1.5.1.1 Within the time frame set in Article 6 (Payment) of the General Conditions, Design Builder shall submit a detailed breakdown of the Contract Price by scheduled Work items and/or activities, including design, construction, coordination responsibilities and project record document responsibilities. The Project Schedule (see Section 01 32 26 (Schedules and Reports)) shall serve as the basis for developing the Schedule of Values. Design Builder shall furnish such breakdown of the

total Contract Price by assigning dollar values (cost estimates) to each applicable Progress Schedule network activity, which cumulative sum equals the total Contract Price. The format and detail of the breakdown shall correspond directly with the Project Schedule and as directed by County to facilitate and clarify future progress payments to Design Builder for direct Work under the Contract Documents. This breakdown shall be referred to as the Schedule of Values and shall form the basis for monthly progress payments.

1.5.1.2 Design Builder's overhead, profit, insurance, cost of bonds and/or other financing, as well as "general conditions costs," (e.g., site cleanup and maintenance, temporary power and lighting, security and the like), shall be prorated through Project duration.

1.5.1.3 County will review the breakdown in conjunction with the Progress Schedule to ensure that the dollar amounts of this Schedule of Values are, in fact, fair market cost allocations for the Work items listed. Upon favorable review by County, this Schedule of Values will be accepted for use by County.

1.5.2 Format and Content:

1.5.2.1 Submit the Schedule of Values in Unifier Each activity will need:

- a. A Short Description
- b. A Long Description
- c. A Scheduled Dollar Value rounded to nearest whole dollar.
- d. Correlate to the Schedule of Values

1.5.2.2 The Total shall equal Contract Price

1.5.3 Initial Application

1.5.3.1 Initial Application for Payment: In addition to the requirements of 1.5. (D) certain administrative actions and submittals must precede or coincide with submittal of first Application for Payment. These include but are not limited to the following:

- a. List of Consultants and major subcontractors.
- b. Schedule of Values.
- c. Contractor's Design and Construction Schedule.
- d. Design Submittal Schedule (preliminary if not final).
- e. List of Contractor's staff assignments.

f. Certificates of Insurance from all subcontractors.

1.5.4 Payment Requests

- 1.5.4.1 Each Application for Payment shall be consistent with previous applications and payments as approved by the Owner's Project Representative.
- 1.5.4.2 Payment Application Forms: Use the Owner's electronic Certificate for Payment form in Unifier.
- 1.5.4.3 Provide back up for the pay application as an attachment to the Pay request.
- 1.5.4.4 Electronic submittals shall be considered written correspondence and should be executed by person authorized to sign legal documents on behalf of Contractor. Owner's Project Representative will return incomplete applications without action.
- 1.5.4.5 Transmittal: Application for payment shall include as attachments an updated project schedule, affidavits signed by subcontractors, monthly construction waste management report with tip receipts, monthly utilization reports, and DBE utilization report (if applicable) as required by the General Terms and Conditions.
- 1.5.4.6 Unless otherwise agreed, Design Builder shall submit to the County, during the final week of each payment period, a draft request for payment projected out through the end of the payment period prior to submitting the application in Unifier. The County and Design Builder shall meet to review the draft request for payment to reach consensus on the percent of completion and the actual Cost of the Work to date. The Design Builder shall revise and resubmit request for payment to include agreed upon cost in the Owner's electronic Certificate of Payment form in Unifier.
- 1.5.4.7 Unless otherwise agreed, Design Builder shall submit to County, in Unifier, a request for payment, based on the actual Cost of the Work put in place during the previous one-month payment period. Such requests for progress payments shall be based upon actual cost of all labor and materials incorporated in the Work up until midnight of the last day of that one month period, less the aggregate of previous payments. The actual cost of the work shall be allocated to the appropriate line item in the Schedule of Values. If Design Builder is late submitting its payment request, that payment request may be processed at any time during the succeeding one month period, resulting in processing of Design Builder's payment request being delayed for more than a day for day basis.
- 1.5.4.8 Payment requests may include, but are not necessarily limited to the following:

- a. Services performed and material, equipment and labor reasonably and actually incurred by the Design Builder in the performance of the Work as defined , less any previous payments for the same;
 - b. Up to seventy five percent (75%) of the cost of major equipment if purchased and delivered to the Site or stored off site, as may be approved by County.
 - c. Up to seventy five percent (75%) of the cost of specifically fabricated for the Project that are not yet incorporated into the Work as may be approved by County.
- 1.5.4.9 Design Builder shall, at the time any payment request is submitted, certify in writing the accuracy of the payment request and that Design Builder has fulfilled all scheduling requirements of Section 01 32 26 (Schedules and Reports), including updates and revisions. The certification shall be executed by a responsible officer of Design Builder.
- 1.5.4.10 No progress payment will be processed prior to County receiving all requested, acceptable schedule update information as required in Section 01 32 26 Schedules and Reports.
- 1.5.4.11 Each payment request shall list each Change Order executed prior to date of submission, including the Change Order Number, and a description of the work activities, consistent with the descriptions of original work activities. Design Builder shall submit a monthly Change Order status log to County with their payment request.
- 1.5.4.12 If County requires substantiating data, Design Builder shall submit sufficient information to the County requested by County, with cover letter identifying Project, payment request number and date, and detailed list of enclosures. Design Builder shall submit one copy of substantiating data and cover letter for each copy Payment request submitted.
- 1.5.4.13 Monthly progress payments shall be made based on the actual Cost of the Work completed. Accumulated retainage will be shown as separate item in payment summary. If Design Builder fails or refuses to participate in construction progress evaluation with County, Design Builder shall not receive current payment until Design Builder has participated fully in providing construction progress information and schedule update information for County.
- 1.5.4.14 Legal title to all Work shall pass to and vest in County as Work is performed, and title to all materials and equipment shall pass to and vest in County when such materials and equipment are delivered to the Site or as soon as title passes from the vendor or supplier thereof. Design Builder shall keep the Site and all materials and equipment free and clear of all liens, stop notices and charges arising out of performance of the Contract Documents.

1.5.4.15 Design Builder shall promptly pay each Design Consultant and Subcontractor the amount to which it is entitled, and shall, by an appropriate agreement with each Design Consultant and Subcontractor, require each Design Consultant Subcontractor to make payments to its sub- Subcontractors or sub-consultants in a similar manner.

1.5.5 Progress Payments

1.5.5.1 Upon receiving Design Builder's payment request, County will review the payment request and shall notify the Design Builder if the County takes exception to any cost included in the payment request. One copy will be returned to Design Builder with a description of the exceptions. The Design Builder and the County shall review the exceptions and reach a consensus on the final disposition of each exception prior to payment by the County of the disputed amounts.

1.5.5.2 The payment request may be reviewed by County for the purpose of determining that the payment request is a proper payment request, and shall be rejected, revised or approved by County pursuant to the Schedule of Values prepared in accordance with this Section.

1.5.5.3 If it is determined that the payment request is not a proper payment request suitable for payment or certain elements of the payment request are not part of the Cost of the Work, County shall return it to Design Builder as soon as practicable, but no later than eight (8) working days after receipt, together with a document setting forth in writing the reasons why the payment request is not proper or why certain elements are not part of the Cost of the Work . If County determines that portions of the payment request are not proper or not due or not part of the Cost of the Work under the Contract Documents, then County may approve the other portions of the payment request, and in the case of disputed items or defective work not remedied, may withhold up to one hundred percent (100%) of the disputed amount from the progress payment.

1.5.5.4 Pursuant to RCW 39.76, if County fails to make any progress payment within thirty (30) Days after receipt of an undisputed and properly submitted payment request from a Design Builder, County shall pay interest to Design Builder equivalent to the legal rates set forth in subdivision (a) of Code of Civil Procedure § 685.010. The thirty (30) Day period shall be reduced by the number of days by which County exceeds the eight (8) Day return requirement set forth herein.

1.5.5.5 As soon as practicable after approval of each request for progress payment, County will pay to Design Builder in manner provided by law less any retainage amounts. Provided that payments may at any time be withheld if Work is not proceeding in accordance with the Contract Documents, or Design Builder is not complying with requirements of the Contract Documents, or to offset liquidated damages accruing or expected.

- 1.5.5.6 Before any progress payment or final payment is made, Design Builder may be required to submit satisfactory evidence that Design Builder is not delinquent in payments to employees, Subcontractors, suppliers, federal or state tax authorities, or creditors for labor and materials incorporated into Work.
- 1.5.5.7 County reserves and shall have the right to withhold payment for any equipment and/or specifically fabricated materials that, in the sole judgment of County, is not adequately and properly protected against weather and/or damage, prior to or following incorporation into the Work.
- 1.5.5.8 Granting of progress payment or payments by County, or receipt thereof by Design Builder, shall not be understood as constituting in any sense acceptance of Work or of any portion thereof, and shall in no way reduce Design Builder's responsibility to replace unsatisfactory work or material, though unsatisfactory character of work or material may have been apparent or detected at time payment was made.
- 1.5.5.9 When County shall charge a sum of money against Design Builder under any provision of the Contract Documents, amount of charge shall be deducted and retained by County from amount of next succeeding progress payment or from any other moneys due or that may become due Design Builder under the Contract Documents. If, on completion or termination of the Contract Documents, such moneys due Design Builder are found insufficient to cover County's charges against it, County shall have right to recover balance from Design Builder or Sureties.

1.6 FINAL PAYMENT

- 1.6.1 After all required Work is completed in accordance with the Contract Documents, Design Builder may submit an application for final payment. County will review the application in accordance with the procedure for progress payments, above. In addition to any other payment conditions, final payment will not become due to Design Builder until Design Builder has satisfied all of the requirements of the Contract Documents, in addition to the following:
 - 1.6.1.1 Certification that Owner's designated maintenance and operation personnel have been instructed as specified in Section 01770.
 - 1.6.1.2 Final cleaning has been completed as specified in Section 01770.
 - 1.6.1.3 Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
 - 1.6.1.4 Certificate of Compliance.

- 1.6.1.5 Final waste management report and tip receipts.
- 1.6.2 County will pay to Design Builder, in manner provided by law, unpaid balance of Contract Price, determined in accordance with terms of the Contract Documents, less sums as may be lawfully retained under any provisions of the Contract Documents or by law.
- 1.6.3 Prior progress payments shall be subject to correction in the final payment. County's determination of amount due as final payment shall be final and conclusive evidence of amount of Work performed by Design Builder under the Contract Documents, and shall be full measure of compensation to be received by Design Builder.
- 1.6.4 Design Builder and each assignee under an assignment in effect at time of final payment shall execute and deliver at time of final payment and as a condition precedent to final payment, shall issue a letter, discharging County, its officers, agents, employees and consultants of and from liabilities, obligations, and claims arising under the Contract Documents, except such claims as Design Building may except from the release in writing.

1.7 EFFECT OF PAYMENT

Payment will be made by County, based on County's observations of the Work, at the Site, and the data comprising the application for payment. Payment will not be a representation that County has:

- 1.7.1 Made exhaustive or continuous on-site inspections to check the quality or quantity of Work for either the design or construction of the Work;
- 1.7.2 Reviewed construction means, methods, techniques, sequences or procedures;
- 1.7.3 Reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by County to substantiate Design Builder's right to payment; or
- 1.7.4 Made an examination to ascertain how or for what purpose Design Builder has used money previously paid on account of the Contract Price.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 31 00

PROJECT MANAGEMENT AND COORDINATION**PART 1 - GENERAL**

1.1 SUMMARY

1.2.1 This Section describes requirements for job site administration, including:

1.1.1.1 County's Representative

1.1.1.2 Design Builder's Project Management Team.

1.2.2 Related Sections.

1.1.2.1 Section 01 11 00 (Summary of Work)

1.1.2.2 Section 01 32 26 (Schedules and Reports)

1.1.2.3 Section 01 33 00 (Submittal Procedures)

1.1.2.4 Section 01 78 39 (Project Record Documents)

1.2 COUNTY'S MANAGEMENT TEAM

1.2.3 County shall be represented on this Contract by Jim Burt, serving as County's representative, who will act personally or through authorized designees. The County has designated the Jim Burt to represent County in carrying out the duties of County. The County may delegate all or a portion of the County representative's duties to a Construction Manager or other County representative, who will then perform all or a portion of the County Representative's duties specified herein.

1.2.4 Functions of the County's representative include, but are not limited to, the following:

1.2.4.1 The County's Representative functions as the primary County representative with the Design Builder in all matters concerning the Project, monitoring the Design Builder's performance in all respects to ascertain that the Work is performed in accordance with all the requirements of the Contract Documents.

1.2.4.2 The County's Representative is the primary point of contact with the Design Builder regarding the Project. The County's Representative also performs this role with regard to all agency and utility construction interfaces with the Work under this Contract.

- 1.2.4.3 The Design Builder is required by the Contract to provide written notice of any and all potential claims arising during the performance of the Work. The County's Representative will administer the processing and resolution of any such claims in accordance with the requirements of the Contract.
- 1.2.4.4 All contractual correspondence, including submittals, shall be directed and processed through the County's Representative unless otherwise specifically directed in the Contract. Any required or requested communications between the Design Builder and County, the County's Representative, or any other representative of County, will be coordinated by the County's Representative.

1.3 DESIGN BUILDER'S PROJECT MANAGEMENT TEAM

- 1.3.1 The Design Builder shall staff the Project with a management team qualified and experienced in construction of a public works project of this value, nature and complexity including individuals Design Builder identified in its Proposal. This team shall possess the competency, skills and authority specified in Article 2 General Conditions.
 - 1.3.1.1 The Design Builder shall submit to County prior to Notice to Proceed the names, detailed project experience, references, and proposed project position for each team member. Key team members shall have appropriate experience in the proposed position.
 - 1.3.1.2 The Design Builder shall not replace members of the Design Builder's management team without prior written approval of the County. If, during the course of the Project, the Design Builder finds it necessary to replace a member of the Project Management Team, the name, qualifications, and experience of the proposed replacement shall be submitted to County for approval, and shall be subject to Article 2 of the General Conditions.
- 1.3.2 The Project Management Team shall be composed of members with the necessary skills and be sufficient in number to handle all duties normal to a project of this scale and complexity. Special attention shall be given to the responsibility for coordination and scheduling.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section describes the required project meetings for this work. These meetings include:

1.1.1.1 Predesign and Preconstruction Conferences.

1.1.1.2 Coordination Meetings.

1.1.1.3 Progress Meetings.

1.1.1.4 Scheduling Meetings.

1.1.1.5 Quality Control Meetings.

1.1.1.6 Special Meetings.

1.1.2 Related Sections.

1.1.2.1 Section 01 11 13 (Summary of Work)

1.1.2.2 Section 01 11 20 (Design Services and Deliverables)

1.1.2.3 Section 01 29 00 (Payment Procedures)

1.1.2.4 Section 01 32 26 (Schedules and Reports)

1.1.2.5 Section 01 33 00 (Submittal Procedures)

1.2 DESIGN & PRECONSTRUCTION CONFERENCES

1.2.1 County will call for and administer Design and Preconstruction Conferences at times and places to be announced. A Design Conference will occur as soon after issuance of the Notice to Proceed as can be reasonably scheduled.

1.2.2 Preconstruction Conferences will be scheduled no later than 30 days prior to the start of construction of the Work.

1.2.3 Design Builder, all Subconsultants and major suppliers shall attend the Design Conference(s). Agenda will include, without limitation, the following items:

1.2.3.1 Design Builder and County Coordination and Meeting Procedures

1.2.3.2 Design Builder's Design Coordination Plan with Subconsultants

- 1.2.3.3 Design Builder's Initial CPM Schedule for Design and Construction
- 1.2.3.4 Design Builder's Schedule of Values (including design activities)
- 1.2.3.5 Design Builder's Schedule of Deliverables and Agency Submittals
- 1.2.4 Design Builder, all Subcontractors, and all major suppliers shall attend the Preconstruction Conference(s). Agenda will include, without limitation, the following items:
 - 1.2.4.1 Schedules
 - 1.2.4.2 Personnel and vehicle permit procedures
 - 1.2.4.3 Use of premises
 - 1.2.4.4 Location of the Design Builder's on-site facilities
 - 1.2.4.5 Location of the Construction Facilities for County Use
 - 1.2.4.6 Security
 - 1.2.4.7 Housekeeping
 - 1.2.4.8 Design Builder's Quality Control Program
 - 1.2.4.9 Submittals
 - 1.2.4.10 Inspection and testing procedures, on-site and off-site
 - 1.2.4.11 Utility shutdown procedures
 - 1.2.4.12 Control and reference point survey procedures
 - 1.2.4.13 Injury and Illness Prevention Program/OCIP Plans, Programs and procedures
 - 1.2.4.14 Design Builder's Updated CPM Schedule
 - 1.2.4.15 Design Builder's Schedule of Values
 - 1.2.4.16 Design Builder's Schedule of Submittals
- 1.2.5 Design Builder will distribute copies of meeting record to attendees. Attendees shall have four (4) Business Days to submit comments or additions to meeting records. Meeting record will constitute final memorialization of results of any conference.
- 1.3 COORDINATION MEETINGS
 - 1.3.1 Design Phase Coordination

- 1.3.1.1 County will be available to participate in Design Phase Coordination meetings or workshops as reasonably requested by the Design Builder.
- 1.3.1.2 Design Builder shall conduct at least monthly design coordination meetings with all subconsultants employed by the Design Builder. Design Builder shall invite the County or its representative to participate in these meetings.

1.3.2 Construction Phase Coordination

- 1.3.2.1 County will be available as necessary to participate in Construction Phase Coordination Meetings.
- 1.3.2.2 Design Builder Construction Phase Coordination shall be integrated with the Design Builder's Quality Control Program, see Section 01 45 00 (Quality Control).
- 1.3.2.3 Design Builder shall conduct at least monthly Construction Phase Coordination Meetings with all Subcontractors employed by Design Builder. Design Builder shall invite County or its representative to participate in these meetings. At a minimum, County will attend Design Builder's Quality Control Meetings. County may elect to attend Subcontractor coordination meetings.

1.4 PROGRESS MEETINGS

- 1.4.1 Design Builder will schedule and administer Progress Meetings throughout the Design and Construction Work. Progress meetings will be held weekly unless otherwise agreed to by the Design Builder and County.
 - 1.4.1.1 Design Phase Progress Meetings shall be held at the offices of the Design Builder's Architect or at the Office of the County as is mutually agreed on in advance by Design Builder and County to be most advantageous for progressing the work.
 - 1.4.1.2 Construction Phase Meetings shall be held at the Design Builder's Site office unless otherwise agreed between Design Builder and the County.
 - 1.4.1.3 Design Builder will prepare an agenda and distribute it to the County and other participants four (4) Business Days in advance of meeting.
 - 1.4.1.4 Design Builder will preside at and conduct the meeting.
 - 1.4.1.5 Design Builder will record and distribute meeting records to the County, all other participants, and those affected by decisions made at meeting, within three (3) Business Days after each meeting.

Attendees shall have four (4) Business Days to submit comments or additions to the meeting records. Meeting records will constitute final memorialization of results of meeting.

1.5 SCHEDULING MEETINGS

1.5.1 Initial Schedule Review

1.5.1.1 Design Builder shall meet with the County and conduct initial review of the Design Builder's draft: Design Schedule, Design Deliverables Schedule, Shop Drawing and Sample Submittal Schedule, Schedule of Values, and Progress Schedule.

1.5.1.2 An authorized representative in the Design Builder's organization, designated in writing and who will be responsible for working and coordinating with County relative to preparation and maintenance of Progress Schedule, shall attend the initial review meeting.

1.5.2 Schedule Update Meetings

1.5.2.1 Design Builder will administer scheduling update meetings monthly and will distribute meeting records of scheduling meetings to attendees. Details for Schedule Update Meetings shall conform to description provided in Section 01 32 26 (Schedules and Reports).

1.6 QUALITY CONTROL MEETINGS

1.7.1 Design Builder shall conduct a minimum of weekly Quality Control Meetings as part of the Design Builder's Quality Control Program, see Section 01 45 00 (Quality Control).

1.7.2 Design Builder's attendees at Quality Control Meetings shall at a minimum include:

1.6.2.1 Design Builder's Quality Control Manager

1.6.2.2 Design Builder's LEED Coordinator

1.6.2.3 Design Builder's Commissioning Coordinator; as required

1.6.2.4 Design Builder's Safety Officer

1.6.2.5 Subcontractors actively working on Site or soon to mobilize.

1.6.2.6 Representatives of manufacturers and fabricators; as required

1.6.2.7 Design Builder's Architect

1.6.2.8 Subconsultant Engineers as activities dictate.

1.7.3 County's attendees at Quality Control Meetings shall at a minimum include:

- 1.7.3.1 County's designated project manager
- 1.7.4 Quality Control Meetings agenda shall include at a minimum:
 - 1.6.4.1 Submittal Review, including approval status and schedule
 - 1.6.4.1.1 Product Data and MSDS
 - 1.6.4.1.2 Shop Drawings & Coordination Documents
 - 1.6.4.1.3 Substitutions and Modifications Request
 - 1.6.4.1.4 Manufacture's Installation Requirements & Instructions
 - 1.6.4.1.5 Manufacture's Operating Requirements & Instructions
 - 1.6.4.2 Distribution of Testing and Inspection Reports
 - 1.6.4.3 Review of In-progress Activities for compliance and timeliness.
 - 1.6.4.4 Coordination of Upcoming Testing, Inspection and Observation Procedures & Requirements
 - 1.6.4.5 Summary of activity successes, deficiencies, and corrective measures
- 1.7 SPECIAL MEETINGS
 - 1.7.1 Design Builder Safety Meetings per approved Safety Plan.
 - 1.7.1.1 Design Builder shall invite County's designated safety representative to attend regularly scheduled Safety Meetings.
 - 1.7.2 Preparatory Meetings as activities dictate for Testing, Inspection and Observation.
 - 1.7.3 Commissioning Meetings pursuant to the approved Commissioning Plan and Schedule.
 - 1.7.3.1 Pre-Commissioning Planning
 - 1.7.3.2 Commissioning Plan Review
 - 1.7.3.3 Commissioning Scheduling and Procedures
 - 1.7.4 Community Meetings as directed by County.
 - 1.7.5 Ad Hoc Meetings as directed by County.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 31 23

PROJECT WEB SITE**PART 1 - GENERAL**

1.1 RELATED DOCUMENTS

- 1.1.1 All Contract Documents, including General Conditions, Supplementary Conditions, and other Division 1 - General Requirements, apply to the work of this section.
- 1.1.2 This section contains general information that applies to all work performed under the Contract, and is made inherently a part of each specification section.

1.2 GENERAL PROJECT MANAGEMENT

- 1.2.1 The County hereby directs Design Builder to use the Project's existing Internet/Web-based Oracle Primavera Unifier ("Unifier") project management software to track and manage the Project.
- 1.2.2 Use of this project management software will not replace or change any contractual responsibilities of the project team members.
- 1.2.3 Each Project Team Member of the Design Builder: Superintendent, Project Engineer, Scheduler, and Project Manager, etc., shall have access to the Internet, Microsoft Internet Explorer browser, and an Internet e-mail address in order to communicate with various project team members. The Design Builder shall provide immediately upon receipt of the Notice to Proceed confirmation of these conditions and the names, positions, and e-mail addresses to the County.

1.3 SOFTWARE AND HARDWARE REQUIREMENTS

- 1.3.1 The Design Builder is required to provide at both the field office and home office locations from where this project is managed, the computer hardware, software and high speed Internet access that meet the requirements of the Unifier project management software. Unifier is a web-based application that does not require the Design Builder to purchase Unifier software. The Design Builder will be given the ability to create additional user logins, as approved by the County, so that they may give access to those they determine to be necessary at no additional cost. Design Builder's access to the Children and Family Justice Center Project will be limited to in accordance with permission levels configured by the County.
- 1.3.2 The County shall provide the Design Builder with Unifier training (if required). The anticipated training will take place after the Notice to Proceed has been issued and will be held in Seattle, Washington. The County train up to fifteen (15) Design Builder staff members. Training for Design Builder is expected to

be completed in up to two separate half day sessions. Training for additional staff can be arranged directly with Unifier at additional cost to the Design Builder.

- 1.3.3 The administrator for this project is the County's Project Manager or authorized designee.
- 1.3.4 The Design Builder shall provide an adequate number of trained users to properly manage the Project in accordance with the Project schedule. The Design Builder shall have Internet access through an Internet service provider of its choice at its cost.
- 1.3.5 Software requirements are as follows:
 - 1.3.5.1 A 32-bit operating system such as Windows XP or above with Service Pack 2 or above
 - 1.3.5.2 Internet Explorer Version 7.0 or above
- 1.3.6 Hardware requirements are as follows:
 - 1.3.6.1 Pentium based (or equivalent) workstation or laptop
 - 1.3.6.2 1 gig RAM minimum; ideally 8 gigs of RAM or above
 - 1.3.6.3 A connection to the Internet (128 kb/s or above)
- 1.3.7 More information on Unifier may be obtained via the World Wide Web, at <http://www.oracle.com/us/products/applications/primavera/overview/index.html>.
- 1.4 SYSTEM MANAGEMENT AND USE
 - 1.4.1 The County's Representative will administer the Unifier user account.
 - 1.4.2 All costs associated with using this system, including computer hardware and internet service are the responsibility of the Design Builder.
- 1.5 USE BY SUBCONTRACTORS
 - 1.5.1 The Design Builder shall inform all Subcontractors of the purpose of the project management system and how it can assist them in obtaining information for the project.
- 1.6 COMMUNICATION PROCESS
 - 1.6.1 The County's Representative will outline and detail communication, correspondence and coordination procedures at the initial Project Team meeting.
 - 1.6.2 Most Project communication will take place in the Unifier project management system by creating and distributing documents directly within the system, or by entering manually in the system dates and descriptions of items to track over time. All documents requiring formal signatures will scanned and stored into the system.

- 1.6.3 The official submittal log will be maintained within Unifier. The Design Builder will use the Unifier transmittal format for each submittal transmittal; however, the Design Builder will distribute prints, samples, etc. in the traditional manner, outside the system. The Unifier project management system will be used to track and expedite processing of these items.
- 1.6.4 Design Builder will be required to maintain all current drawings within Unifier, including but not limited to the Program Verification and Schematic Design process, Design Development process as well as the development of the Construction Documents. The Design Builder will be able to control administration of the drawings which includes but is not limited to: the ability to create a custom folder structure; folder-level permissions; auto-notifications for certain events (e.g., delete, check out) using Unifier messaging system and the user's email address; auto-detection and uploading of a drawing's reference files; detailed history for a document, including revisions and access logs; check-in and check-out capabilities; view and markup capabilities.
- 1.6.5 Design Builder will be required to utilize modules including but not limited to: daily reports; meeting minutes; punch lists; requests for information (RFI); submittals; change proposal requests; and owner change order within the Unifier project management system. The Design Builder can enter an RFI and the Architect/Engineer respond to the RFI completely within the Unifier project management system without creating a hard copy. Support documentation in hard copy format for any document in Unifier may be scanned into an electronic file and attached in Unifier to documents.
- 1.6.6 Design Builder is required to use a digital camera in order to photo-document job progress and upload the associated images taken on a regular basis to the Unifier internet site. Each daily report required under Section 01 32 26 (Schedules and Reports) should be accompanied by a daily progress photo. Cost for digital camera to be borne by Design Builder.
- 1.7 ARCHIVING
- 1.7.1 County may, at its cost and expense, obtain backups (on CDs or otherwise) of documents in Unifier. In the event of any dispute as to what items are the true and correct project records, items contained on the backups will control.

PART 2 - PRODUCTS

- 2.1 Extranet application service provider shall be the following (no substitution) Primavera Unifier (<http://www.oracle.com/us/products/applications/primavera/overview/index.html>)

PART 3 - EXECUTION

- 3.1 Project Management Application is a web based Centralized Database of project information and consists of several separate modules or master file divisions for ease of organization. Available file divisions include but are not limited to: Correspondence,

Daily Reports, RFI's, Transmittals, Submittals, Meetings, Documents, Drawings, Specifications, Punch Lists, Reports, Project Photos, Project Team, Schedule of Values, change items, cost events, owner change orders, owner request for proposals, etc.

- 3.2 The County shall provide the Design Builder with access to the Children and Family Justice Center Project in Unifier described in paragraph 1.3.1 above. Each major team member for the Design Builder (i.e. project manager, superintendent, architect, etc.) must have access to Unifier and the required training to access the system. The Design Builder shall insure that all major team members on this project have Internet access available and access to Unifier during the duration of this Project.
- 3.3 Major Subcontractors are encouraged to utilize Unifier for the duration of their scope of work from commencement to completion of their scope of work. Major Subcontractors as a minimum shall be defined as sitework, mechanical, electrical, plumbing, structural, civil, landscape, telecommunications, concrete/masonry, security, curtainwall, drywall, roofing, and others deemed beneficial by the Design Builder.

All other Subcontractors and suppliers will be able to utilize email or fax for submission of documents to the Design Builder.

END OF SECTION

SECTION 01 32 26

SCHEDULES AND REPORTS**PART 1 - GENERAL**

1.0 RELATED SECTIONS

- 1.0.1 Division 1 Section 01 29 00 (Payment Procedures) for submitting the Schedule of Values.
- 1.0.2 Division 1 Section 01 31 00 (Project Management and Coordination) for submitting and distributing meeting and conference minutes.
- 1.0.3 Division 1 Section 01 33 00 (Submittal Procedures) for submitting schedules and reports.
- 1.0.4 Division 1 Section 01 45 00 (Quality Control) for submitting a schedule of tests and inspections

1.1 SUMMARY

- 1.1.1 Design Builder shall perform scheduling of Work under these Contract Documents in accordance with requirements of this Section 01 32 26 and Section 01 33 00 (Submittal Procedures).
 - 1.1.1.1 Development of schedule, cost loading of the Project Schedule, monthly payment requests and project status reporting requirements of the Contract Documents shall employ scheduling as required in this Section 01 32 26.
 - 1.1.1.2 Project Master Schedule, Design Schedule and Construction Schedules shall be time-scaled and cost-loaded. Monthly Schedule Updates shall be time-scaled and cost loaded. Cost loading shall be the basis of the Schedule of Values as specified in Section 01 29 00 (Payment Procedures).
 - 1.1.1.3 Computer Software: All Schedules shall be in Primavera® (latest edition), Microsoft Project for windows, or other software as approved by the County's Project Representative. All computer software format must be compatible with County's existing computer software format know as Primavera "Unifier".
 - 1.1.1.4 All Schedules shall be submitted prior to the dates identified in Section 01 33 00 (Submittal Procedures).
- 1.1.2 Design Builder's obligations under paragraph 1.1.1 of this Section 01 32 26 are hereby deemed material obligations. Nothing in this paragraph 1.1.2 or the lack of an express statement that any other Contract Document provision is or

is not material shall be considered in determining whether any such other provision is material.

- 1.1.3 Scheduling Consultant Qualifications: The Design Builder's team shall include a specialist in CPM scheduling and reporting acceptable to the County with experience performing scheduling required herein on at least two prior, similar projects, and with the capability of producing CPM reports and diagrams within 48 hours of County's request.
- 1.1.4 Transmit each item under form approved by County or following Section 01 33 00 (Submittal Procedures).
- 1.1.4.1 Identify Project with the County Contract number, and name of Design Builder.
- 1.1.4.2 Provide space for Design Builder's approval stamp and County's review stamps.
- 1.1.4.3 Submittals received from sources other than Design Builder will be returned to Design Builder without County's review.

1.2 GENERAL SCHEDULE REQUIREMENTS

- 1.2.1 Schedules: The Design Builder shall submit an operating electronic version of an original, plus hardcopy versions, of the following schedules to the County:
- 1.1.2.1 Proposed Schedule as included in the Design Builder's Proposal Package for the Request for Proposals as outlined in the Request for Proposals. The Proposed Schedule shall be in accordance with the requirements outlined in paragraph 1.3 below. The accepted Proposed Schedule shall serve as the basis for preparing the Project Master Schedule.
- 1.1.2.2 Project Master Schedule as required in paragraph 1.4 below.
- 1.1.2.3 Design Schedule as required in paragraph 1.5 below.
- 1.1.2.4 Construction Schedule as required in paragraph 1.6 below.
- 1.1.2.5 Look Ahead Schedule as required in paragraph 1.6 below.
- 1.2.2 Acceptance Procedures for Baseline Schedules:
- 1.2.2.1 Submittal of the Project Master Schedule, Design Schedule, and Construction Schedules shall adhere to the schedule submittal process outlined in Document 01 33 00 (Submittal Procedures), paragraph 1.5.
- 1.2.2.2 Original Master Project Schedule and Design Schedule shall be reviewed at the Design Conference. Within seven (7) Days after the

Design Conference, the County will review and either accept the Schedules or reject and provide comments, suggested changes, and revisions that must be addressed by the Design Builder to the satisfaction of the County. Design Builder shall correct and resubmit the Schedule within seven (7) Days.

1.2.2.3 Within seven (7) Days of receipt of revised Project Master Schedule and Design Schedule, the County will either accept the Schedules or reject and request further information and justification. Design Builder shall, within three (3) Days, provide County with a complete written narrative response to the County's request discussing how the baseline resubmittal addresses each of the contract conformance deficiencies noted in the original submittals.

1.2.2.4 Detailed Construction Schedules shall be reviewed at Pre-Construction Conferences for each major phase of work outlined in Section 01 31 19 (Project Meetings). Within seven (7) Days after the Pre-Construction Conference, the County will review and either accept the Schedule or reject and provide comments, suggested changes, and revisions that must be addressed by the Design Builder to the satisfaction of the County. Design Builder shall correct and resubmit the Schedule within seven (7) Days.

1.2.2.5 Within seven (7) Days of receipt of revised Detailed Construction Schedule, the County will either accept the Schedule or reject and request further information and justification. Design Builder shall, within three (3) Days, provide County with a complete written narrative response to the County's request discussing how the baseline resubmittal addresses each of the contract conformance deficiencies noted in the original submittals.

1.2.3 Time of Completion: Overall time of completion and time of completion for each Milestone shown on Project Master Schedule shall adhere to times in the Contract. Design Builder may otherwise choose to work to an earlier (advanced) schedule, but should it choose to do so:

1.2.3.1 It must first notify the County of its intention to work to an earlier (advanced) schedule and provide a written explanation of how it intends to improve on the Contract Times. County is not required to accept such an earlier (advanced) schedule, i.e., one that shows early completion dates for the Contract Times.

1.2.3.2 Design Builder shall not be entitled to extra compensation in the event Design Builder completes its Work, for whatever reason, beyond completion dates shown in such an earlier (advanced) schedule but within the Contract Times.

1.2.3.3 A schedule showing the work completed in less than the Contract Times shall be considered to have Project Float. The Project Float is

the time between the scheduled completion of the Work and the Contract Time for completion of the Work. Project Float is a resource available to both County and Design Builder.

- 1.2.4 Float Ownership: Neither County nor Design Builder owns float. The Project owns the float. As such, liability for delay to the Work rests with the party whose unexcused delay, last in time, actually causes delay to the Project.
- 1.2.4.1 For example, if Party A incurs unexcused delay and uses some, but not all of the float and Party B later incurs unexcused delay and uses the remainder of the float as well as additional time beyond the float, Party B shall be liable for the delay that represents a delay to the Work.
- 1.2.4.2 Party A would not be responsible for the delay since it did not consume all the float and additional float remained; therefore, completion was unaffected by Party A.
- 1.2.5 The Design and Construction Progress Schedules shall be the basis for evaluating job progress, payment requests, and time extension requests. Responsibility for developing Contract schedules and monitoring actual progress as compared to Progress Schedule rests with Design Builder.
- 1.2.6 Failure of the Progress Schedule to include any element of the Work or any inaccuracy in Progress Schedule will not relieve Design Builder from responsibility for accomplishing the Work in accordance with the Contract Documents. The County's acceptance of the Design and Construction Progress Schedules shall be for its use in monitoring and evaluating job progress, payment requests, and time extension requests, and shall not, in any manner, impose a duty of care upon County, or act to relieve Design Builder of its responsibility for means and methods of design and construction.
- 1.2.7 County Review Requirements: The Design Builder shall consider the County review requirements as specified in Section 01 11 20 (Design Services and Deliverables). The Design Builder shall have the responsibility to package and submit complete and coordinated submittal documents to County.

1.3 PROPOSED SCHEDULE

- 1.3.1 The Design Builder shall submit a Proposed Schedule as part of the response to the requirements specified in Request for Proposals. The Proposed Schedule shall fit within and coordinate with the Contract Times, including any and all design interfaces.
- 1.3.2 Preparation: Indicate each significant Contract activity separately. Activities to be included in the Proposed Schedule will be as follows:
- 1.3.2.1 Detailed activities for Design of all phases of the Work including but not limited to all design deliverables as required by Section 01 11 20

(Design Services and Deliverables), design coordination meetings, other Agency reviews, other third party reviews, and incorporation of comments, through Permit and acceptance of the Construction Documents. All activities described in this paragraph, shall be incorporated into the Proposed Schedule.

- 1.3.2.2 Detailed Submittal, review, and procurement activities for all critical and near-critical submittals for the Work.
- 1.3.2.3 Detailed plan for mobilization, execution of contracts, design as described in Section 01 11 20 (Design Services and Deliverables), submittals, procurement, and all work that must be performed prior to the start of construction of the Project.
- 1.3.2.4 Summarize activities related to construction for the remainder of the Work. The remainder of the Work will include, but shall not be limited to, the following activities in reasonable detail, and indicating the probable critical path:
 - 1.3.1.1.1 Critical lead times
 - 1.3.1.1.2 Building foundation and structure activities
 - 1.3.1.1.3 Building exterior skin and interior finishing activities
 - 1.3.1.1.4 Finish site work
 - 1.3.1.1.5 Building commissioning and move-in activities
 - 1.3.1.1.6 Hazardous materials abatement, demolition, and relocation of utilities associated with construction of the Project.
 - 1.3.1.1.7 Final site work activities

1.4 PROJECT MASTER SCHEDULE

- 1.4.1 The Design Builder shall prepare the Project Master Schedule, which shall adhere to times stated in the Contract (Agreement) and in the accepted Proposed Schedule. The Project Master Schedule will outline all dates and time periods for the delivery of all Design Builder's services and requirements for information from the County necessary for the performance of the Services. Failure to include any work item required for performance of this Contract on the Schedule shall not excuse Design Builder from completing all work within applicable completion dates, regardless of County's approval of the schedule. The Project Master Schedule will include the following items, but not limited to:
 - 1.4.1.1 Schedule for completing the project design documents (through release for construction), each required submittal and the times for submitting, reviewing and processing such submittal, as specified in Section 01 11 20 (Design Services and Deliverables).

- 1.4.1.2 Preparation and processing of Construction submittals.
- 1.4.1.3 Critical lead times.
- 1.4.1.4 Significant construction milestones (e.g., groundbreaking, start and completion of hazardous materials abatement, demolition, completion of site utilities, completion of foundation, completion of structural frame, completion of exterior shell, substantial completion, testing & commissioning, move-in, substantial completion project completion dates, etc.).
- 1.4.1.5 Date for decision from County on items affecting the Design Builder's schedule.
- 1.4.1.6 Utility interruptions, relocation, and connections affecting Project operations.
- 1.4.1.7 The Project Master Schedule shall be updated on a monthly basis and submitted as part of each Progress Payment Application.

1.5 DESIGN SCHEDULE

- 1.5.1 The Design Schedule shall adhere to Contract Times in the Contract (Agreement) and specified in the accepted Proposed Schedule. The Design Schedule shall include all activity detail for completing the design of all phases of the Work. Failure to include any work item required for performance of this Contract on the Schedule shall not excuse Design Builder from completing all work within applicable completion dates, regardless of County's approval of the schedule. The Design Schedule shall include, but not be limited to the following:
 - 1.5.1.1 Preparation and review of Design submittals and other critical design completion dates. Include all design deliverables as required by Document 01 11 20 (Design Services and Deliverables).
 - 1.5.1.2 Design coordination meetings
 - 1.5.1.3 Conference(s) with County and review times.
 - 1.5.1.4 Dates for decision from County on designated items or orders affecting schedule.
 - 1.5.1.5 Dates for reviews by Other Agencies Having Jurisdiction, Utility Companies and third parties.
 - 1.5.1.6 Time for incorporation of comments.
 - 1.5.1.7 Dates for submitting and obtaining Permits (building and land use)
 - 1.5.1.8 Acceptance of the Construction Documents for the Project

- 1.5.2 Design Builder shall resubmit Original Schedule to address County comments if requested by County. Resubmittal will be delivered no more than 5 Days after receipt of County comments or request.

1.6 CONSTRUCTION SCHEDULE

- 1.6.1 The Construction Schedule shall adhere to times in the Contract Document (Agreement) and specified in the accepted Proposed Schedule. The Construction Schedule (Original and updates) shall indicate all separate fabrication, procurement and field construction activities required for completion of the Work. Failure to include any work item required for performance of this Contract on the Schedule shall not excuse Design Builder from completing all Work within the Contract Times, regardless of County's approval of the schedule.
- 1.6.2 Activities: All Design Builder, Subcontractor, and assigned Design Builder work (including engineering and other professional services) shall be shown in a logical sequence that demonstrates a coordinated plan of work. The intent is to provide a common basis of acceptance, understanding, and communication, as well as interface among all parties involved in the Project, including but not limited to Subcontractors. Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Show dependencies and logic between activities so that the effect of progress (or lack of progress) on related activities and the overall schedule can be monitored. The list of activities shall include, but not be limited to, the following:
- 1.6.2.1 Submittal Preparation and Review: Include review and resubmittal times indicated in Section 01 33 00 (Submittal Procedures), in schedule. Coordinate submittal review times in Design Builder's Contract Schedule with Submittals Schedule. Phase the submittal process to ensure that items are submitted in order of their importance to the construction process. Implement a system that staggers submittals by "start no earlier than" date, complexity and number.
- 1.6.2.2 Include procurement process activities for long lead items and major items requiring a cycle of more than sixty (60) Days as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery. Delivery dates indicated stipulate the earliest possible delivery date.
- 1.6.2.3 Significant construction milestones including but not limited to:
- 1.6.2.3.1 Mobilization.
- 1.6.2.3.2 Earthwork and underground utility site work completion.
- 1.6.2.3.3 Foundation completion.

- 1.6.2.3.4 Structural frame completion.
- 1.6.2.3.5 Shell completion.
- 1.6.2.3.6 Plumbing installation.
- 1.6.2.3.7 Fire protection installation.
- 1.6.2.3.8 HVAC installation.
- 1.6.2.3.9 Electrical installation.
- 1.6.2.3.10 Security installation and completion
- 1.6.2.3.11 Substantial Completion
- 1.6.2.3.12 Owner testing and commissioning (shakedown)
- 1.6.2.3.13 Beneficial Occupancy
- 1.6.2.3.14 Final Project Completion & Acceptance
- 1.6.2.3.15 Demobilization.
- 1.6.2.4 Date of request of designated working spaces, storage areas, access, and other facilities to be furnished by the County.
- 1.6.2.5 Dates for decision from County on designated items or orders affecting schedule.
- 1.6.2.6 Mock-up construction.
- 1.6.2.7 Activities related to the delivery of Design Builder and County-furnished equipment to be Design Builder-installed per Contract shall be shown. Equipment requirements including, but not limited to, architecturally significant equipment, communications equipment, and security equipment. Design Builder shall include the latest date that County-furnished products are required to allow completion of the Work on schedule.
 - 1.6.2.7.1 The latest date that installation details must be provided to the Design Builder to avoid schedule delays.
 - 1.6.2.7.2 The latest delivery dates that will allow the project to be completed according to schedule.
- 1.6.2.8 Activities related to the delivery and installation of County or Design Builder furnished and installed furniture to be coordinated by the Design Builder. Furniture requirements include, but are not limited to, electrical and data connections. Design Builder shall include the latest date that County-furnished products are required to allow completion of the Work on schedule.
 - 1.6.2.8.1 The latest date that installation details must be provided to the Design Builder to avoid schedule delays.

- 1.6.2.8.2 The latest delivery dates that will allow the Work to be completed according to schedule.
- 1.6.2.9 Utility interruptions, relocation, and connections.
- 1.6.2.10 Show the effect of the following factors on the construction schedule:
 - 1.6.2.10.1 Use of premises restrictions.
 - 1.6.2.10.2 Environmental control.
- 1.6.2.11 Punch list preparation.
- 1.6.2.12 Work by County and/or by other contractors that may affect or be affected by Design Builder's activities. Include a separate activity for each contract, which may include, but are not limited to, utility companies, communications systems providers, equipment providers, and others.
- 1.6.2.13 Testing and commissioning. Include sufficient time to comply with the requirements of the Section 01 91 00 (General Commissioning Requirements); and any regulatory requirements; and assure completion of the Work within the Contract Time.
- 1.6.2.14 Licensing: allow time for administrative procedures necessary for certification of the Project.
- 1.6.2.15 All regulatory agency approvals
- 1.6.2.16 Move-in.
- 1.6.3 All activities shall be identified through codes or other identification to indicate the portion of the Work (i.e. Courthouse Building, Detention Building, Parking Structure, Site Work) and Design Builder/Subcontractor responsibility to which they pertain.
- 1.6.4 Break up the Work schedule into activities of durations of approximately fourteen (14) Days or less each, except for non-field design and activities as otherwise deemed acceptable by County.
- 1.6.5 Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates. Show the critical path in red. For each activity, show early start, late start, early finish, late finish, durations measured in Days, total and available float, resources, predecessor and successor activities, planned workday/week for the activity and scheduled/actual progress payments. "Critical path" shall mean all activities with zero float. A path with three (3) work days or less of float shall be considered a "near critical path" and shown in a lighter shade of red. No more than twenty percent (20%) of the schedule activities are to be considered

critical or near critical.

- 1.6.6 Seasonal weather conditions (which do not constitute a delay as defined herein) shall be considered in the planning and scheduling of all work. The Design Builder shall adhere to procedures as specified in the Contract Documents for giving notice of delays resulting from adverse weather.
- 1.6.7 Adverse Weather: Weather delays for normal weather conditions will not be considered. Non-compensable delays for adverse weather may be considered if it can be shown that the weather was unusually severe, and the activities affected were on the critical path of the current updated Construction Schedule.
- 1.6.8 Claims for additional time due to adverse weather will be based on Western Regional Climate Center (WRCC) 30-year weather data collected at the Seattle Tacoma Airport, Washington (457473). Weather conditions that could reasonably have been anticipated from the Western Regional Climate Center historical records shall not be construed as adverse.
- 1.6.9 The following table documents normal precipitation and cold temperatures as defined by the 30 year weather data collected at the WRCC, Seattle Tacoma Airport (457473). The number of rainy days exceeding those listed or the number of cold days exceeding those listed in any month are considered abnormally adverse and may impact the contractor's ability to complete the work within the contract time requirements.

Month	Precipitation		Temperature
	# of Rainy Days during the month with over .10"	# of Rainy Days during the month with over 1.0"	# of Cold Days during the month not exceeding 32°F. (High Temp)
January	13	1	1
February	10	0	1
March	11	0	0
April	7	0	0
May	5	0	0
June	4	0	0
July	2	0	0
August	7	0	0
September	3	0	0
October	8	0	0
November	13	1	1
December	13	1	1

- 1.6.10 In addition to weather conditions listed in the above table the following conditions shall be considered severe enough to warrant time extensions if so requested by the contractor.

- A. Daily minimum temperature equal to, or less than, 15 degrees Fahrenheit.
 - B. Daily maximum wind velocity equal to, or greater than, 50 mph at any time.
 - C. Ice, snow and other weather conditions may be considered as abnormal in the sole discretion of the County upon written request by the Contractor.
- 1.6.11 Written requests for time extensions due to adverse weather shall describe in detail the weather condition and identify specific impacts resulting from the weather condition as relates to the critical path of the Construction Schedule. In addition, substantial completion milestone dates that appear to be affected by the weather delay shall be noted in the notice of weather delay. The written notice of weather delay shall be submitted to King County within five days of the onset of the weather condition.
- 1.6.12 Temporary weather protection of the work for normally expected weather conditions is the responsibility of the Contractor as necessary to proceed in accordance with the Contractor's approved Project Schedule and environmental conditions as defined in the Specifications. Weather protection shall include but not be limited to protection of soils, subgrade preparation, exterior concrete, sealants, gypsum sheathing, roofing, and interior finishes. Delays and costs resulting from the contractor's failure to protect the work from damage due to weather are the sole responsibility of the contractor.
- 1.6.13 The Design Builder shall meet with the County to review and discuss each Schedule (i.e., Original Construction Schedule and each monthly update) within seven (7) Days after each Schedule has been submitted to County.
- 1.6.13.1 County's review and comment on any Schedule shall be limited to Contract conformance (with sequencing, coordination, and milestone
 - 1.6.13.2 Design Builder shall make corrections to Schedule necessary to comply with Contract requirements and shall adjust Schedule to incorporate any missing information requested by County. Design Builder shall resubmit Initial Original Schedule and Monthly Schedules if requested by County.
- 1.6.14 If Design Builder is of the opinion that any of the Work included on its Schedule has been impacted such that there will be a delay in achieving any Milestone, it shall submit to County a written Time Impact Evaluation ("TIE") in accordance with paragraph 1.10 below. The TIE shall be based on the most current update of the Schedule. A six (6) week "Look Ahead Schedule," detailed daily bar chart schedule shall be updated and issued weekly.
- 1.6.14.1 Look Ahead Schedule shall cover a forty-nine (49) Day period, beginning with the week preceding the 6-week detailed look ahead.

- 1.6.14.2 Use the Contract Schedule as the basis for generating the 6-week detailed schedule.
- 1.6.14.3 Format:
 - 1.6.14.3.1 Provide bar chart using same logic as Contract Schedule, with maximum fourteen (14 Day) construction activity duration. Provide activity identification used on the accepted Contract Schedule.
 - 1.6.14.3.2 Provide daily resource allocation for each trade.
 - 1.6.14.3.3 Provide exact activity location for scheduled Work.
- 1.6.14.4 Provide information for each significant activity, with special care taken to describe scheduling and coordination with other contracts, and Work by the County, including but not limited to utility shutdowns, road closures, etc.
- 1.6.14.5 Show the status of all outstanding and pending submittals including scheduled and actual submittal dates, the durations and expiration of submittal review periods, etc.

1.7 MONTHLY SCHEDULE UPDATE SUBMITTALS

- 1.7.1 Following acceptance of Design Builder's Project Master Schedule, Design Schedule and Construction Schedule, Design Builder shall monitor progress of Work and update Schedules each month to reflect actual progress on each activity and any anticipated changes to planned activities.
- 1.7.2 Updated schedules shall be submitted through Unifier
- 1.7.3 Monthly Schedule Updates shall include the following:
 - 1.7.3.1 Design Builder's estimated percentage complete for each activity in progress.
 - 1.7.3.2 Actual start/finish dates for all activities shown on initial Contract Schedule with all subsequent approved additions.
 - 1.7.3.3 List of materials and/or equipment delivered for which Design Builder is requesting payment and original invoice verifying cost.
 - 1.7.3.4 Identification of processing errors, if any, on the previous update reports.
 - 1.7.3.5 Resolution of any conflicts between actual progress and planned progress when out-of-sequence activities arise. Design Builder shall submit revisions to schedule logic to conform to current job status and directions, without changing original activity identification.

- 1.7.3.6 Each update shall include a written narrative report (as specified in Paragraph 1.12.1 below) with the updated progress analysis.
- 1.7.3.7 CPM Reports: Concurrent with CPM schedule updates, submit one (1) electronic and five (5) hardcopies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, cost loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, percent complete and total float.
- 1.7.3.7.1 A Predecessor / Successor Report: List of all activities showing associated predecessor / successor activities, their logical relationships, free float, total float, early start/early finish date.
- 1.7.3.7.2 Total Float Report: List of all activities sorted in ascending order of total float, and then early start/early finish date.
- 1.7.3.7.3 Earned Value Reports: Compilation of Design Builder's earnings from Notice to Proceed until the most recent Application for Payment. Show all activities sorted and grouped by project phase and location. For each activity show the Activity ID, description, budgeted cost, percent completed as of the last update, percent completed to-date, cost as of the previous period, cost this period, and cost-to-date.
- 1.7.3.7.4 The Design Builder shall submit any other type of report as deemed necessary by the County.
- 1.7.3.7.5 The Design Builder shall input all necessary reports and data into the County's Unifier project management system as directed by the County.
- 1.7.3.8 The updated Contract Schedule shall accurately represent the as-built condition of all completed Work and the percentage remaining of all in-progress Work activities as of the date of the updated Contract Schedule.
- 1.7.3.9 The updated Contract Schedule shall incorporate all changes mutually agreed upon by Design Builder and County during preceding periodic reviews, all changes resulting from Change Orders and Field Orders, and all remaining days of the inclement weather and regulatory review durations.
- 1.7.3.10 Design Builder shall perform the Work in accordance with the updated Contract Schedule. Design Builder may change the Contract Schedule to modify the order or sequence of accomplishing the Work only with the County's prior agreement.

- 1.7.3.11 Within the first (1st) week of each month, the County will administer a monthly schedule update meeting. At or before the monthly schedule update meeting, Design Builder shall submit a monthly updated schedule indicating activity status through the end of the previous month. Design Builder shall include in the monthly updated schedule any proposed schedule revisions as outlined in paragraph 1.8 below.
- 1.7.3.12 Procedures for review and acceptance of the monthly updated schedule are outlined in paragraph 1.8 below.
- 1.7.3.13 No Application for Payment will be processed, nor shall any progress payments become due, until updated Contract Schedules are uploaded into Unifier and accepted by the County's Representative.
- 1.7.3.14 The accepted, updated Contract Schedule shall be the Contract Schedule of record for the period it is current and shall be the basis for payment during that period.
- 1.7.3.15 The Design Builder shall upload into Unifier complete Primavera Project Planner data for the Contract Schedule update and computer-generated schedule and reports as determined by the County with each Application for Payment in Unifier. A CD ROM containing the complete Primavera Project Planner data for the Contract Schedule update and hard copies of computer-generated schedule and reports as determined by the County will be furnished to the County's Representative if requested. The Design Builder shall provide full access to electronic Primavera schedule files for the County.

1.8 SCHEDULE REVISIONS

- 1.8.1 The Design Builder will administer a monthly schedule update meeting to review and discuss each monthly updated schedule submittal.
 - 1.8.1.1 Included with each monthly updated schedule submittal, the Design Builder shall submit any proposed schedule revisions to the County's Representative, including, but not limited to, the following:
 - 1.8.1.1.1 Actual and anticipated duration changes including revisions due to inclement weather or regulatory agency review delays;
 - 1.8.1.1.2 TIEs for Change Orders and Time Extension Request;
 - 1.8.1.1.3 Schedule diagrams showing resolution of conflicts between actual Work progress and schedule logic when out-of-sequence activities develop because of actual construction progress. Design Builder shall submit

- revisions to schedule logic to conform to current job status and directions, without changing original activity identification;
- 1.8.1.1.4 Actual and anticipated Design Builder delays;
 - 1.8.1.1.5 A narrative report with the updated progress analysis, which shall include, but shall not be limited to, a description of problem areas, current and anticipated delaying factors and their impacts, and explanations of corrective action taken and any proposed revisions for a Recovery Plan as defined below.
- 1.8.1.2 These meetings are considered a critical component of overall monthly schedule update submittal; accordingly, Design Builder shall ensure that appropriate personnel from its organization attend. At a minimum, Design Builder's Senior Project Manager, General Superintendent and Lead Scheduler shall attend these meetings in person at the County's offices or as determined by the County..
- 1.8.1.3 Monthly Schedule update meetings will be scheduled for no less than four hours duration.
- 1.8.2 Within seven (7) Days after the monthly schedule update meeting, the County will either accept the Schedule or reject the Schedule and provide comments, suggested changes, and revisions that must be addressed by the Design Builder to the satisfaction of the County. Design Builder shall correct and resubmit the Schedule within seven (7) Days.
- 1.8.3 Neither the updating, changing, or revising of any report, curve, schedule or narrative submitted to County by Design Builder under this Contract, nor County's review or acceptance of any such report, curve, schedule, or narrative, shall have the effect of amending or modifying, in any way, Contract Time or milestone dates or of modifying or limiting, in any way, Design Builder's obligations under this Contract.
- 1.8.4 For rejected schedule update resubmittals, the County may request further information and justification and Design Builder shall, within three (3) Days, provide County with a complete written narrative response to the County's request discussing how the resubmittal addresses each of the remaining deficiencies noted in the schedule update resubmittal.
- 1.8.5 If the County does not accept Design Builder's schedule update resubmittal, and Design Builder disagrees with County's position, Design Builder has seven (7) Days from receipt of County's letter rejecting the revision to provide a written narrative providing full justification and explanation for the revision. Design Builder's failure to respond in writing within seven (7) Days of County's written rejection of a schedule revision shall constitute Design Builder's acceptance of County's position, and Design Builder thereby waives its rights to subsequently dispute or file a claim regarding the County's position. If Design Builder files a timely response as provided in this paragraph, and the parties are still unable to agree, Design Builder's sole right shall be to file a

Claim as provided in Article 12 (Claims by Design Builder) of the General Terms and Conditions.

1.9 RECOVERY SCHEDULE

- 1.9.1 If the Schedule Update or Look Ahead Schedule shows Milestone completion more than fourteen (14) Days beyond the Contract Time, or any individual milestone completion dates, Design Builder shall within seven (7) Days, submit to County a Recovery Plan to recover the lost time. As part of this submittal, Design Builder shall provide a written narrative and a Recovery Schedule to recapture the lost time. The Recovery Plan shall propose revisions to the Contract Schedule for the next 60-day period to show how the Design Builder intends to bring the Work back on schedule. If the Recovery Schedule includes sequence changes, Design Builder shall provide a schedule diagram comparing the original Design Builder sequence to the revised sequence of the Work. The Recovery Schedule shall show the intended critical path; Design Builder shall secure and document appropriate Subcontractor and supplier consent to the Recovery Schedule; the narrative shall explain trade flow and construction flow changes, duration changes, added/deleted activities, critical path changes and identify all near critical paths and resource loading assumptions for major Subcontractors. The Recovery Plan shall also describe how the measures that the Design Builder intends to take to regain schedule compliance will be accomplished without additional cost to the County.
- 1.9.2 The Recovery Schedule shall not be incorporated into any Schedule update until County has reviewed the Recovery Schedule.
- 1.9.3 If County does not accept Design Builder's Recovery Schedule, County and Design Builder shall follow the procedures in paragraphs 1.8.4 and 1.8.5 above.
- 1.9.4 At County's discretion, Design Builder can be required to provide Subcontractor certifications for any Recovery Schedule affecting said Subcontractors.
- 1.9.5 Design Builder shall provide supervision, labor, equipment and materials, as necessary, to recover the lost time.
- 1.9.6 If Design Builder believes that any portion of the delay addressed in the Recovery Schedule is due to circumstances entitling Design Builder to additional time or money, it may seek a modification of the Contract Documents under Article 14 (Modifications of the Contract Documents) of the General Terms and Conditions, or make a Claim for the same pursuant to Article 12 (Claims by Design Builder) of the General Terms and Conditions, and other applicable provisions of the Contract Documents.

1.10 TIME IMPACT EVALUATION FOR CHANGE ORDERS, AND OTHER DELAYS

- 1.10.1 Any request for an adjustment of the Contract Time(s) submitted by Design Builder for changes or alleged delays shall be accompanied by a complete

Time Impact Evaluation (“TIE”) which includes both a written narrative and a hard and fully operational electronic copy of a schedule diagram depicting how the changed work affects other schedule activities. The schedule diagram shall show how Design Builder proposes to incorporate the changed work in the schedule, and how it impacts the critical path on the current schedule update. Design Builder is responsible for requesting time extensions based on the TIE’s impact on the critical path. The diagram must be tied to the main sequence of schedule activities to enable County to evaluate the impact of changed work to the scheduled critical path.

- 1.10.2 Design Builder shall comply with the requirements of Paragraph 1.10.1 for all types of delays such as, but not limited to, Design Builder/Subcontractor delays, claimed County or third party caused delays, adverse weather delays, strikes, procurement delays, fabrication delays, etc.
- 1.10.3 Design Builder shall be responsible for all costs associated with the preparation of TIEs, and the process of incorporating them into the current schedule update. Design Builder shall provide County with an operational electronic copy and five (5) hardcopies of each TIE. Design Builder’s TIEs must be based on the as-built critical path as of the date of the alleged delay. The TIE shall also show the as-planned critical path at that time.
- 1.10.4 Once agreement has been reached on a TIE, the Contract Time will be adjusted accordingly. If agreement is not reached on a TIE, the Contract Time may be extended in an amount County allows, and Design Builder may submit a Claim for additional time claimed by Design Builder as provided in the General Terms and Conditions.

1.11 TIME EXTENSIONS

- 1.11.1 Design Builder is responsible for requesting Contract Time extensions for events that, in the opinion of Design Builder, affect the critical path as shown on the then-current schedule update. Notice of time impacts shall be given in accord with the General Terms and Conditions.
- 1.11.2 Where an event for which either Design Builder or County is responsible affects the projected Contract Time, Design Builder shall provide a written mitigation plan, including a schedule diagram, which explains how (e.g., increase crew size, overtime, etc.) the impact will be mitigated. Design Builder shall also include a detailed cost breakdown of the labor, equipment and material Design Builder would expend to mitigate the delay. Design Builder shall submit its mitigation plan to County within seven (7) Days from the date of discovery of the impact. Design Builder is responsible for the cost to prepare the mitigation plan.
- 1.11.3 Design Builder’s failure to give notice of a delay, request time, provide TIE, or provide the required mitigation plan will result in Design Builder waiving its right to a time extension and recovery of cost to mitigate the delay.
- 1.11.4 Design Builder shall be responsible to provide timely and proper notice to the County of all events that could result in Contract Time extensions and shall

comply with requirements as specified General Terms and Conditions..

- 1.11.5 No time will be granted under the Contract Documents for cumulative effect of impacts or changes.
- 1.11.6 County will not be obligated to consider any time extension request unless all requirements of Contract Documents are complied with.
- 1.11.7 Failure of Design Builder to perform in accordance with the current schedule update shall not be excused by submittal of time extension requests.

1.12 PROJECT STATUS REPORTING

- 1.12.1 Monthly. In addition to submittal requirements for scheduling identified in this Section 01 32 26, provide a monthly project status report (i.e., written narrative report) to be submitted in conjunction with each Schedule as specified herein in electronic and hard copy. Written status reports shall include:
 - 1.12.1.1 Status of major Project components (percent complete, amount of time ahead or behind schedule) and an explanation of how Project will be brought back on schedule if delays have occurred.
 - 1.12.1.2 Progress made on critical activities indicated on each Schedule, including inspections.
 - 1.12.1.3 Explanations for any lack of work on critical path activities planned to be performed during last month.
 - 1.12.1.4 Explanations for any schedule changes, including changes to logic or to activity durations.
 - 1.12.1.5 List of critical activities scheduled to be performed during the next month.
 - 1.12.1.6 Status of major material and equipment procurement.
 - 1.12.1.7 Description of problem areas, current and anticipated delaying factors and their impacts, and an explanation of corrective action taken.
 - 1.12.1.8 Any proposed revisions for a recovery plan.
 - 1.12.1.9 Design Builder may include any other information pertinent to status of Project.
 - 1.12.1.10 Design Builder shall produce additional status reports as requested by County at no additional cost.
 - 1.12.1.11 Status reports, and the information contained therein, shall not be construed as claims, notice of claims, notice of delay, or requests for changes or compensation.

- 1.12.2 Daily Construction Reports: At the close of each workday provide County with report (on Design Builder's County-approved form) of a description of work activities by location for the previous work-day including the following:
- 1.12.2.1 Daily photograph
 - 1.12.2.2 List of subcontractors at Project site.
 - 1.12.2.3 List of separate contractors at Project site.
 - 1.12.2.4 Count of personnel at Project site.
 - 1.12.2.5 Equipment at Project site.
 - 1.12.2.6 Material deliveries.
 - 1.12.2.7 High and low temperatures and general weather conditions.
 - 1.12.2.8 Rainfall, if any
 - 1.12.2.9 Total number of inclement weather days to date
 - 1.12.2.10 Accidents.
 - 1.12.2.11 Meetings and significant decisions.
 - 1.12.2.12 Unusual events (refer to special reports).
 - 1.12.2.13 Stoppages, delays, shortages, and losses.
 - 1.12.2.14 Meter readings and similar recordings.
 - 1.12.2.15 Inspections
 - 1.12.2.16 Emergency procedures.
 - 1.12.2.17 Orders, visits and requests of authorities having jurisdiction.
 - 1.12.2.18 Change Orders received and implemented.
 - 1.12.2.19 Services connected and disconnected.
 - 1.12.2.20 Equipment or system tests and startups.
 - 1.12.2.21 Partial Completions and occupancies.
 - 1.12.2.22 Substantial Completions authorized.
 - 1.12.2.23 Results of construction monitoring activities including, at a minimum:
 - 1.12.2.24 Noise control
 - 1.12.2.25 Dust control
- 1.12.3 Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- 1.12.4 Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a

detailed report. Include a detailed description of the differing conditions, together with recommendations for changing or proposed changes to the Construction Documents.

- 1.12.5 Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Design Builder's personnel, evaluation of results or effects, and similar pertinent information. Advise County in advance when these events are known or predictable.

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 Design Builder and County will jointly develop a list of submittals and shop drawings that are to be submitted to the County. Upon completion of the list, Design Builder will provide County with a preliminary schedule of shop drawings and submittals, which will list each submittal in order by specification section and the times for submitting, reviewing, and processing such submittal.

1.2 RELATED DOCUMENTS

- 1.2.1 Section 01 11 13 (Summary of Work)
- 1.2.2 Section 01 11 20 (Design Services and Deliverables)
- 1.2.3 Section 01 26 00 (Contract Modification Procedures)
- 1.2.4 Section 01 29 00 (Payment Procedures)
- 1.2.5 Section 01 31 19 (Project Meetings)
- 1.2.6 Section 01 32 26 (Schedules and Reports)
- 1.2.7 Section 01 45 00 (Quality Control)
- 1.2.8 Section 01 61 00 (Product Requirements)
- 1.2.9 Section 01 77 00 (Closeout Procedures)
- 1.2.10 Section 01 78 39 (Project Record Documents)
- 1.2.11 Section 01 91 00 (General Commissioning Requirements)

1.3 SUBMITTAL PROCEDURES

- 1.3.1 General: Submittals will be made electronically through the County's Project Management System, Unifier.
- 1.3.2 Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1.3.2.1 Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

- 1.3.2.2 Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - 1.3.2.2.1 County reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- 1.3.2.3 Before submitting each Submittal, Design Builder/Subcontractor shall have determined and verified:
 - 1.3.2.3.1 All field measurements (where possible), quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 - 1.3.2.3.2 All materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the Work; and
 - 1.3.2.3.3 All information relative to Design Builder's sole responsibilities and of design and means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- 1.3.3 Submittals Schedule: Comply with requirements in Section 01 32 26, (Schedules and Reports) for list of submittals and time requirements for scheduled performance of related construction activities.
- 1.3.4 Processing Time: Allow enough time for submittal review, including time for re-submittals.
- 1.3.5 Deviations: Shall be noted in Unifier. Design Builder shall give County specific written notice of all variations, if any, that the Submittal may have from the requirements of the accepted Contract Documents, and the reasons therefore. This notice shall be in Unifier. In addition, Design Builder shall cause a specific notation to be made on each Submittal submitted to County for review and approval of each such variation.
- 1.3.6 Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- 1.3.7 Use for Construction: Use only final submittals with status indicating action taken by County in connection with construction.

PART 2 – PRODUCTS**2.1 SUBMITTALS**

- 2.1.1 Enter submittals online in Unifier. Notification of approval will be sent electronically.
- 2.1.2 Schedule of Shop Drawings and Submittals: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, re-submittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 - 2.1.2.1 Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Design Builder's Construction Schedule.
 - 2.1.2.2 Initial Submittal: Submit concurrently with preliminary construction schedule. Include submittals required during the first 60 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication. This submittal shall be made electronically in Unifier.
 - 2.1.2.3 Final Submittal: Submit concurrently with the first complete submittal of Design Builder's Construction Schedule.
- 2.1.3 Site Specific Safety Plan: Neither Design Builder nor any Subcontractor will begin on on-site work until their Site Specific Safety Plan, if required, has been reviewed and accepted by County. Acceptance of the Site Specific Safety Plan shall not affect Design Builder's responsibility for maintaining a safe working place and instituting safety programs in connection with project. Neither the County nor any of its representatives assume any responsibility for Design Builder's safety related obligations. Design Builder shall have sole responsibility for safety on and off the Site.
- 2.1.4 Shop Drawings: Submit through Unifier, Shop Drawings for fabricated and other work, as required by Specifications and Drawings. Fabricate no work until Shop Drawings have been accepted.
 - 2.1.4.1 Show by whom materials, items, work, and installation are supplied, performed, or installed. Designate every item, material article, and the like, of installations. DO NOT use the expression "by others."
 - 2.1.4.2 Shop Drawings will not be reviewed without the Design Builder's signed review stamp affixed. It is the Design Builder's responsibility to verify dimensions and verify the number of each item required to complete the Work.
 - 2.1.4.3 If Shop Drawings show variations from Contract requirements because of standard shop practices or other reason, make specific mention of such variations in your submittal.
 - 2.1.4.3.1 If indicated departures affect a correlated function, item, article, work, installation or construction of other trades, make note of it in your submittal. If extra cost is involved in related changes, you assume all such costs.

- 2.1.4.4 Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
- 2.1.4.5 Design Calculations, if required.
- 2.1.4.6 Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheet sizes as directed by the Project Representative.
- 2.1.5 Product Data: Within sixty (60) Days after County's acceptance of completed Construction Documents for either entire Project or each accepted phase of work as maybe defined by Design Builder submit a complete list of major products proposed for use, with name of the manufacturer, trade name, and model number of each product.
 - 2.1.5.1 Mark each copy to identify applicable products, models, options, and other data; supplement manufacturers' standard data to provide information unique to the Work. Include manufacturers' installation instructions, product specifications, standard color charts, catalog cuts, wiring diagrams, printed performance curves, compliance with trade association standards, and compliance with recognized testing agency standards as required by the technical specifications.
 - 2.1.5.2 For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
 - 2.1.5.3 Tabulate products by specification number.
- 2.1.6 MSDS: For each and any chemical which is known to be present in the workplace, submit Materials Safety Data Sheets (MSDS) in accordance with WAC 296-62-0544 through 05427, Hazard Communication Standard (available from Department of Labor and Industries).
 - 2.1.6.1 Attach to each copy of product data above.
 - 2.1.6.2 Copies submitted to Owner's Project Representative are for information only and will not be reviewed for completeness or appropriateness on project site.
- 2.1.7 Samples:
 - 2.1.7.1 Communicate method of submittal through Unifier.
 - 2.1.7.2 Submit full range of manufacturer's colors, textures, and patterns for Owner's Project Representative's selection prior to ordering.
 - 2.1.7.3 Samples are required to illustrate product's functional characteristics with integral parts and attachment devices.
 - 2.1.7.4 Include identification on each sample, giving full information.

- 2.1.7.5 Provide field finishes at Project as required by individual specification section. Install sample complete and finished. Acceptable finishes in place may be retained in completed Work.
- 2.1.7.6 Mock-ups:
 - 2.1.7.6.1 Erect field samples and mock-ups in accordance with the requirements of Sections 01 43 39 (Mock Ups).
 - 2.1.7.6.2 Modify or make additional field samples and mock-ups as required to provide appearance and finishes accepted by County.
 - 2.1.7.6.3 Accepted field samples and mock-ups may be used in the Work upon approval.
- 2.1.8 Subcontractor List: Submit for County's approval, at the Pre-Construction Conference, a list of proposed subcontractors and suppliers who shall install, or furnish and install Work in the Project.
- 2.1.9 Design Builder's Construction Schedule: Comply with requirements in Section 01 32 26 (Schedules and Reports).
- 2.1.10 Application for Payment: Comply with requirements in Section 01 29 00, (Payment Procedures).
- 2.1.11 Schedule of Values: Comply with requirements in Section 01 29 00, (Payment Procedures).
- 2.1.12 Washington State Prevailing Wages for Public Works:
 - 2.1.12.1 All submittals to comply with the Washington State Prevailing Wage laws and regulations for this project are to be submitted to the County.
 - 2.1.12.2 Forms can be obtained from Industries Statistician, Washington State Department of Labor and Industries, Olympia, Washington. Questions shall be addressed to Washington State Department of Labor and Industries, Employment Standard Section at (360) 902-5335.
 - 2.1.12.3 No progress payments shall be made to the Design Builder until the Intent to Pay Prevailing Wages form from the Design Builder and all subcontractors included in that pay request are executed by the State and received by the County. It is the Design Builder's responsibility to collect the forms from all subcontractors and submit them to the County.
 - 2.1.12.4 Design Builder and all subcontractors shall familiarize themselves with the prevailing wage laws and regulations for this Contract. The Washington State Public Works Act Handbook is available from the State upon request.

2.1.12.5 Following Final Acceptance of the Contract, it is the Design Builder's responsibility to insure that all Affidavit of Wages Paid forms from the Design Builder and all subcontractors are executed, collected and submitted to the Owner's Project Representative. Retainage release cannot take place until Affidavits have been received by the County from the Design Builder and all subcontractors.

2.1.13 Informational Submittals: Prepare informational submittals required by other specification sections and submit electronically.

2.1.14 Quality Control Submittals:

2.1.14.1 Design Data:

- a. Indicate that the design data conforms to or exceeds the requirements of the Contract Documents.
- b. Submit supporting reference data, affidavits, and certifications as appropriate.
- c. Identify conflicts with test reports, certificates, manufacturer's instructions or specific aspect(s) of the Contract Documents.

2.1.14.2 Test Reports:

- a. Indicate that the material or product conforms to or exceeds specified requirements.
- b. Reports may be from recent or previous tests on material or product, but must be acceptable to County. Comply with requirements of each individual Specification.

2.1.14.3 Certificates:

- a. Indicate that the material or product conforms to or exceeds specified requirements.
- b. Submit supporting reference data, affidavits, and certifications as appropriate.
- c. Certificates may be recent or from previous test results on material or product, but must be acceptable to County.

2.1.14.4 Manufacturers' Instructions:

- a. Include manufacturers' printed instructions for delivery, storage, assembly, installation, startup, adjusting, and finishing.
- b. Identify conflicts between manufacturers' instructions and Contract Documents.

- 2.1.15 Computer Programs: When any equipment requires operation by computer program(s), submit a copy of the program on appropriate compact disk or appropriate media plus all user manuals and guides for operating the programs and making changes in the programs for upgrading and expanding the databases. Programs must be in a form acceptable to the County. Provide required licenses to the County at no additional cost.

PART 3 – EXECUTION

3.1 DESIGN BUILDER'S REVIEW

- 3.1.1 Design Builder shall also have reviewed and coordinated each Submittal with other Submittals and with the requirements of the Work and the Contract Documents.
- 3.1.1.1 Review each submittal and check for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner's Project Representative.
- 3.1.1.2 Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Design Builder's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
- 3.1.2 Design Builder's submission to County of a Submittal will constitute Design Builder's representation that it has satisfied its obligations under the Contract Documents, and as set forth immediately above, with respect to Design Builder's review and approval of that Submittal.
- 3.1.3 Prior to submitting to County, each of Design Builder's Submittals will have been reviewed by Design Build Architect and marked with actions defined as follows:
- 3.1.3.1 NO EXCEPTIONS TAKEN - Accepted subject to its compatibility with future Submittals and additional partial Submittals for portions of the Work not covered in this Submittal. Does not constitute approval or deletion of specified or required items not shown on the Submittal.
- 3.1.3.2 MAKE CORRECTIONS NOTED (NO RESUBMISSIONS REQUIRED) - Same as 1. above, except that minor corrections as noted shall be made by Design Builder.
- 3.1.3.3 AMEND AND RESUBMIT - Rejected because of major inconsistencies or errors which shall be resolved or corrected by Design Builder prior to subsequent review by County.
- 3.1.3.4 REJECTED - RESUBMIT - Submitted material does not conform to Drawings and Specifications in major respect, e.g., wrong size,

model, capacity, or material.

3.1.3.5 NOT REVIEWED - Submitted material has not been reviewed and is being returned to be acted upon by Design Builder without review.

3.1.3.6 Submittals marked Rejected – Resubmit or Amend and Resubmit shall not be sent to the County.

3.2 OWNER'S ACTION

3.2.1 General: Owner's Project Representative will not review submittals that do not bear Design Builder's approval stamp and will return them without action.

3.2.2 Submittals: Owner's Project Representative will review each submittal in Unifier, add comments and/or markups to indicate corrections or modifications required, and return it. Owner's Project Representative will assign a status to each submittal to indicate action taken, as follows.

3.2.2.1 Reviewed no exceptions

3.2.2.2 Reviewed exceptions noted.

3.2.2.3 Information Only

3.2.2.4 Revise and Resubmit

3.2.2.5 Rejected.

END OF SECTION

SECTION 01 35 50

PROJECT SECURITY**PART 1 – GENERAL**

1.1 RELATED DOCUMENTS

- 1.1.1 General provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
- 1.1.2 Section 01 11 00, Summary of Work.
- 1.1.3 Section 01 14 00, Work Restrictions.
- 1.1.4 Section 01 31 00, Project Management and Coordination.
- 1.1.5 Section 01 50 00, Temporary Facilities and Controls.

1.2 DESCRIPTION

- 1.2.1 General Requirements:
 - 1.2.1.1 Contractor, Subcontractors, suppliers, vendors, and others associated with the Work shall adhere strictly to these rules while on the Site and working within the secure perimeter.
- 1.2.2 SECTION includes requirements for:
 - 1.2.2.1 Contractor's security requirements.
 - 1.2.2.2 Project Site entry control.
 - 1.2.2.3 Approved individuals/cleared for entry.
 - 1.2.2.4 Search.
 - 1.2.2.5 Contraband.
 - 1.2.2.6 Association with inmates.
 - 1.2.2.7 Tools, materials, and equipment.
 - 1.2.2.8 Cameras and Photographs.
 - 1.2.2.9 Emergency procedures.
 - 1.2.2.10 Breach of security.

1.3 REFERENCES

- 1.3.1 Washington Administration Code (WAC) 296-155, Safety Standards for Construction Work.
- 1.3.2 Revised Code of Washington (RCW).
- 1.4 INSTITUTION DESCRIPTION
 - 1.4.1 The Youth Services Center (YSC), Seattle, 1211 East Alder WA, WA is operated by the King County Department of Adult and Juvenile Detention (DAJD). The YSC is comprised of courtrooms and office space but also contains secure areas operated by DAJD.
 - 1.4.2 Youth are housed in the Detention Facility 24 hours a day, 7 days a week. The facility will remain in full operation during the entire construction period for Phase 1A "Courthouse and Detention".
 - 1.4.3 Security Perimeter: Areas maintained and operated by DAJD at the YSC (detention facility, the courthouse, and all secure areas, passageways, elevators, sally ports, secure parking areas, secure service areas within and immediately around the YSC) shall be considered within the security perimeter. The Contractor is required to meet with the County and further define the exact security perimeter.
- 1.5 CONTRACTOR'S SECURITY REQUIREMENTS
 - 1.5.1 Protect Work, stored materials, tools and vehicles from loss, theft and unauthorized entry.
 - 1.5.2 Design Builder shall develop a Project Security Plan ("Security Program") to be submitted to the County for review and approval prior to commencing Work at the site. This program shall include a means to identify all personnel (with badging or other means) who have passed the required criminal background check before being allowed on Site.
 - 1.5.3 Maintain Security Program throughout the construction period until the Owner's Project Representative's acceptance of the Work precludes the need for Contractor security.
 - 1.5.4 Smoking is not permitted anywhere at the Site, interior or exterior.
 - 1.5.5 It is against the law to transport any alcoholic beverages, drugs, weapons or ammunition of any kind onto County property.
 - 1.5.6 No contact or conversation with any jail inmate is permitted unless the inmate is assigned to an inmate work party. Such work parties, while performing routine janitorial work, could potentially come within the vicinity of the Project Work area. If such instance should occur, the Contractor may direct the inmates to move out of the way if necessary. The Contractor, it's personnel, Subcontractors, or suppliers shall not respond in any manner to any question asked of them by an inmate not assigned to an inmate work party.
 - 1.5.7 Working hours within the security perimeter shall be coordinated in advance with the Owner's Project Representative. Confirm all such arrangements in writing.

- 1.5.8 Security personnel will give construction personnel and construction deliveries top priority with regard to ingress to and egress from Site and Site areas within the security perimeter. However, delays, regardless of frequency and duration, shall not be cause for claims for extra compensation or an extension of Contract Time.
- 1.5.9 Storage of materials inside the security perimeter shall be coordinated in advance with the Owner's Project Representative. Such storage shall be contingent on the written approval of DAJD.
- 1.5.10 No vehicles or equipment shall be stored inside the security perimeter or buildings, unless authorized in advance by the Owner's Project Representative.
- 1.5.11 Construction operations shall be confined to the area agreed to by the Design Builder and County. Conform to Site rules and regulations affecting the Work. Refer to Section 01 11 00 (Summary of Work) and Section 01 14 00 (Work Restrictions) for further information.
- 1.5.12 Keep existing driveways and entrances serving the premises clear and available to YSC personnel at all times. Use only designated areas for Contractor parking and delivery and storage of materials.
- 1.5.13 Passenger cars, trucks motorcycles, scooters, and motorized construction equipment, when parked and unattended, shall be locked and the ignition key removed.
- 1.5.14 Limitations on Site usage, as well as specific requirements that impact site utilization shall be identified by the Design Builder on a Site Utilization Plan produced by the Design Build Team and submitted to the County for review and approval.
- 1.5.15 The Design Builder shall indicate on the Site Utilization Plan available space allocation among Subcontractors needing both access and space so as to produce the best overall efficiency. Schedule deliveries to the Site to minimize space and time requirements for storage of materials and equipment.
- 1.5.16 All equipment shall be placed a minimum of 25-feet away from the security perimeter, or as far as physically possible in confined areas or in areas designated by the Owner Project Representative and DAJD.
- 1.5.17 A construction schedule shall be developed and submitted electronically to the Owner's Project Representative as specified in Section 01 32 26 (Schedules and Reports).
- 1.5.18 All vehicles entering or exiting the Site will be subject to search for contraband.
- 1.5.19 All power driven tools (ram sets, cartridges), hack saw blades, framing hammers, wire cutters, etc. must be inventoried in and out of the security perimeter each day, by correction personnel.
- 1.5.20 All construction personnel will be subject to search each time they enter or leave the security perimeter and shall carry a driver's license or other government-issue picture identification (I.D.).

1.6 PROJECT SITE ENTRY CONTROL

- 1.6.1 Entry to the Youth Services Center facility shall be in compliance with RCW 9A.76.140, 9A.76.150, and 9A.76.160. All persons and items entering and leaving the facility are subject to search by DAJD staff.
- 1.6.2 DAJD officers may deny entry to any persons not previously cleared by security or for any suspicious behavior.
- 1.6.3 All personnel of the Contractor and its Subcontractors shall be equipped with a mobile telephone and/or pager for communications with the Owner's Project Representative and DAJD personnel while working within the secure perimeter. Furnish a list of all such telephones and pagers to the Owner's Representative prior to beginning within the secure perimeter and update list as necessary during the course of the Work.
- 1.6.4 Security Perimeter Entry Procedures:
 - 1.6.4.1 Upon entry into the secure perimeter, Contractor's and its Subcontractors' personnel must follow all procedures as directed by DAJD personnel in the facility including the entry and security procedures required by Correctional Facility Personnel.

1.7 APPROVED INDIVIDUALS CLEARED FOR ENTRY

- 1.7.1 All personnel of the Contractor and its Subcontractors who will be working at the Site will be required to undergo background checks prior to working on the Site. Background checks will be conducted by the County, and may require up to 2 weeks to complete.
- 1.7.2 The Contractor shall designate alternate personnel for background checks at the beginning of the job to avoid potential delays during the course of the Work.
- 1.7.3 The Contractor shall be responsible for all Subcontractors and individuals at the Site under its supervision.
- 1.7.4 DAJD reserves the right to remove any and all persons from the Site to assure the safety and security of the facility.
- 1.7.5 All individuals shall carry a driver's license or other government-issue picture I.D.

1.8 SEARCH

- 1.8.1 Individuals entering the secure perimeter of the existing facility will be subject to search by King County correctional officers each time they enter or leave the building or secure perimeter.
- 1.8.2 Barring of any employees from the Site by corrections staff shall not be cause for any additional cost to the Owner and shall not be allowed as a reason for delays in the construction schedule.

1.9 CONTRABAND

- 1.9.1 Intoxicants, narcotics, dangerous drugs, firearms, edged weapons, mace, oleo capsicum, electronic weapons, ammunition, explosives, weapons, and/or

anything that could be construed as a weapon or illegal substance of any kind will be considered contraband and shall not be brought onto the Site for any reason.

- 1.9.2 Photography or videotaping is not allowed anywhere on the Site. Written authorization from the Owner's Project Representative must be requested in writing in advance by the Contractor to do any photographing or videotaping.

1.10 ASSOCIATION WITH INMATES

- 1.10.1 Except as otherwise specified hereinbefore, personnel of the Contractor and its Subcontractors shall avoid all contact with inmates.

- 1.10.2 Inappropriate behavior, remarks, gestures, and the like, by the Contractor, or its Subcontractors, or any persons under the Contractor's control shall be considered a breach of security as defined in Article 1.13.

1.11 TOOLS, MATERIALS AND EQUIPMENT

- 1.11.1 The Contractor shall maintain control and accounting of all tools, materials, and equipment at all times while working within the secure perimeter; any loss of such items shall be reported immediately to the correctional facility officers and Project Representative. Tools, Materials, and equipment must be stored in locked metal boxes when not in use. All power driven tools (ram sets, cartridges), hack saw blades, framing hammers and wire cutters, etc. must be inventoried in and out each day, by correction personnel.

- 1.11.2 Correctional facility staff will not loan any tools or equipment to the Contractor.

1.12 EMERGENCY PROCEDURES

Follow the direction of Correctional Officers immediately and without hesitation.

1.13 BREACH OF SECURITY

- 1.13.1 Non-compliance with the requirements of this SECTION shall be considered a breach of security.

- 1.13.2 Individuals causing breach of security will be subject to non-admittance or expulsion from the Site, and may be subject to arrest or prosecution.

- 1.13.3 Non-admittance or expulsion by correctional officers of non-cleared personnel, or of personnel causing any breach of security, shall not be considered a cause for Contract modification or extension of Contract Time.

END OF SECTION

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SECTION 01 41 00

REGULATORY REQUIREMENTS**PART 1 GENERAL**

1.1 RELATED DOCUMENTS

- 1.1.1 Drawings and general provisions of the Contract, including General Terms and Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION

- 1.2.1 This Section states general regulation requirements and standards that apply to the construction of this Project.

1.3 APPLICABLE CODES AND ORDINANCES

- 1.3.1 Comply with all governing laws, ordinances, statutes, rules and regulations, bearing on the conduct of the work as drawn and specified. This includes modifications, amendments, additions, and the like. Specific reference in the Contract Documents to codes and regulations or requirements of regulatory agencies shall mean the latest printed edition of each adopted by the regulatory agency in effect at the date of award of contract, even if an earlier version was used in development of the Design-Build Proposal, and/or specified elsewhere.
- 1.3.2 References to Regulatory Requirements: Referenced codes establish minimum requirement levels. Where provisions of various codes or standards conflict, the more stringent provisions govern.

Codes, laws, ordinances, rules and regulations referred to shall have full force and effect as though printed in full in these specifications. Codes, laws, ordinances, rules and regulations are not furnished to the Design Builder, since the Design Builder is assumed to be familiar with their requirements. The listing herein of applicable codes, laws and regulations for hazardous waste abatement work in the Contract Documents is supplied to the Design Builder as a courtesy and shall not limit the Design Builder's responsibility for complying with all applicable laws, regulations or ordinances having application to the Work. Where conflict among the requirements or with these specifications exists, the most stringent requirements shall be used.

Conform to referenced codes, laws, ordinances, rules and regulations.

Precedence:

Where specified requirements differ from the requirements of applicable codes, ordinances and standards, the more stringent requirements shall take precedence.

Where the Drawings, Plans or Specifications require or describe products or execution of better quality, higher standard or greater size than required by applicable codes, ordinances and standards, the Drawings, Plans and Specifications shall take precedence so long as such increase is legal.

Where no requirements are identified in the Drawings, Plans or Specifications, comply with all requirements of applicable codes, ordinances and standards of governing authorities having jurisdiction

- 1.3.3 Compliance requirements include, but are not limited to the following:
- 1.3.3.1 International Building Code and Related Standards, published by the Code Council, Uniform Plumbing Code, latest edition, as adopted by the municipal government where the construction occurs.
 - 1.3.3.2 Rules and Regulations by the State Board of Health.
 - 1.3.3.3 Rules and Regulations by King County Department of Health.
 - 1.3.3.4 Occupational Safety and Health Administration (OSHA).
 - 1.3.3.5 Department of Labor and Industries Regulations.
 - a. Hazard Communication Standard/WAC 296-62-054 through - 05427.
 - b. General Safety and Health Standards/WAC 296-24.
 - 1.3.3.6 Mechanical Work:
 - a. Uniform Plumbing Code. as adopted by the municipal government where the construction occurs.
 - 1.3.3.7 Electrical Work:
 - a. Underwriters' Laboratories (UL).
 - b. National Manufacturers' Association.
 - c. NFPA, National Electric Code (NEC), National Electric Safety Code, and above electrical listings as applicable.
 - d. State Electrical Construction Code as adopted by the municipal government where the construction occurs.

- 1.3.3.8 Environmental Requirements: All work to be performed in compliance with relevant statutes and regulations dealing with prevention of environmental pollution and preservation of public natural resources.
 - a. State Environmental Protection Act (SEPA).
- 1.3.3.9 Site and site utility work:
 - a. WSDOT-AWPW: Standard Specifications for Road, Bridge, and Municipal Construction, latest edition.
- 1.3.3.10 Local Zoning regulations.
- 1.3.4 Other Requirements
 - 1.3.4.1 National Fire Protection Association (NFPA): Pamphlet 101, Life Safety.
 - 1.3.4.2 The following NFPA Standards apply(latest edition): NFPA Standard
 - a. Installation of Sprinkler Systems
 - b. Installation of Standpipes and Hose Systems
 - c. 20 Installation of Centrifugal Fire Pumps
 - d. 24 Installation of Private Fire Service Mains
 - e. 50 Bulk Oxygen Systems
 - f. 72 National Fire Alarm Code (as amended)
 - g. 80 Fire Doors and Fire
 - h. Windows 92A Smoke Control Systems
 - i. 2001 Clean Agent Fire Extinguishing Systems
 - 1.3.4.3 The Design Builder shall comply with Standard Specifications such as ASTM, ANSI, AASHTO, AISC, Commercial Standards, Federal Specifications, NFPA, NEMA, AWWA, UL, and the like.
 - 1.3.4.4 References on the Drawings, Plans or in the Specifications to “code” or “building code” not otherwise identified shall mean the codes specified in this Section 01 41 00, together with all additions, amendments, changes, and interpretations adopted by code authorities of the jurisdiction.
 - 1.3.4.5 Design Builder shall provide access to all of the foregoing within twenty-four (24) hours and maintain a copy of each of

the above documents in the Design Builder's field office.

- 1.3.4.6 It shall be understood that manufacturers, producers, and their agents of materials are required either to have such specifications available for reference or to be fully familiar with their requirements as pertains to their project or material
- 1.3.4.7 Other Applicable Laws, Ordinances and Regulations:
 - a. Work shall be accomplished in conformance with all applicable laws, ordinances, rules and regulations of Federal, State and local governmental agencies and jurisdictions having authority over the Project.
 - b. Work shall be accomplished in conformance with all rules and regulations of public utilities and utility districts.
 - c. Where such laws, ordinances rules and regulations require more care or greater time to accomplish Work, or require better quality, higher standards or greater size of products, Work shall be accomplished in conformance to such requirements with no change to the Contract Time and Contract Sum, except where changes in laws, ordinances, rules and regulations occur subsequent to the time of opening of the Proposals.
- 1.3.4.8 Conflicts
 - a. Between referenced regulatory requirements: Comply with the one establishing the more stringent requirement.
 - b. Between referenced regulatory requirements and the Contract Documents: Comply with the one establishing the more stringent requirement.
- 1.3.4.9 Compliance With Americans With Disabilities Act
 - a. The Design Builder acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through the Design Builder, must be accessible to the disabled public. The Design Builder shall provide the services specified in this Agreement in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. The Design Builder shall not discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of the Design Builder, its employees, agents or assigns shall constitute a material breach of this

Agreement.

1.3.5 Permits:

- 1.3.5.1 The Design-Builder shall obtain and pay for all necessary permits, approvals, licenses, governmental charges and inspection fees, required for the prosecution of the Work by any government or quasi-government entity having jurisdiction over the Project.

END OF SECTION

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SECTION 01 42 00

REFERENCE STANDARDS**PART 1 - GENERAL****1.1 SUMMARY**

- 1.1.1 This section includes reference standards, abbreviations, symbols and definitions used in the Contract Documents.
- 1.1.2 Material and workmanship specified by reference to number, symbol, or title of specific standard such as state standard, commercial standard, federal specifications, technical society, or trade association standard, or other similar standard shall comply with requirements of standards except when more rigid requirements are specified or required by applicable codes.
- 1.1.3 Standards referred to, except as modified herein, shall have full force and effect as though printed in the Contract Documents. Standards are not furnished to the Design Builder, since manufacturers and trades involved are assumed to be familiar with their requirements.

1.2 REFERENCE TO STANDARDS AND SPECIFICATIONS OF TECHNICAL SOCIETIES; REPORTING AND RESOLVING DISCREPANCIES

- 1.2.1 Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard, specification, manual, code, or laws or regulations in effect at the time of issuance of the Request for Proposals, except as may be otherwise specifically stated in the Contract Documents.
- 1.2.2 If during the performance of the Work, Design Builder discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents or between the Contract Documents and any provision of any such law or regulation applicable to the performance of the Work or of any such standard, specification, manual, or code or of any instruction of any supplier, report it in writing at once by submitting a RFI to County, and do not proceed with the Work affected thereby until consent to do so is given by County.
- 1.2.3 Except as otherwise specifically stated in the Contract Documents or as may be provided by a Change Order, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:

- 1.2.3.1 The provisions of any such standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or The provisions of any such laws or regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such law or regulation).
- 1.2.4 No provision of any such standard, specification, manual, code, or instruction shall be effective to change the duties and responsibilities of County or Design Builder or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents, nor shall it be effective to assign to County or any of its consultants, agents, representatives or employees any duty or authority to supervise or direct the furnishing or performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.
- 1.2.5 Comply with the applicable portions of standards and specifications published by the technical societies, institutions, associations, and governmental agencies referred to in Specifications.
- 1.2.7.1 Comply with referenced standards and specifications; latest revision in effect at the time of opening of Proposals, unless otherwise identified by date.
- a. Exception: Comply with issues in effect as listed in governing legal requirements.
- 1.2.6 Referenced Grades, Classes, and Types: Design Builder shall present its proposed alternative or option to the County to review for conformance with the Contract Documents and for the County to determine if the Design Builder's selection provides an acceptable grade, class, type of product or execution.
- 1.2.7 Jobsite Copies:
- 1.2.7.2 Obtain and maintain at the Site copies of reference standards identified on Drawings and in Specifications in order to properly execute the Work.
- 1.2.7.3 At a minimum, the following shall be readily available at the Site:
- a. Safety Codes: Washington Industrial Safety and Health Act (WISHA) Safety regulations.
- 1.2.8 Edition Date of References:

ASTM and ANSI References: Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National

Standards Institute (ANSI) are identified in the Contract Documents by abbreviation and number only and may not be further identified by title, date, revision, or amendment. It is presumed that Design Builder is familiar with and has access to these nationally- and industry-recognized specifications and standards.

1.2.8.1 When an edition or effective date of a reference is not given, it shall be understood to be the current edition or latest revision published as of the date of issuance of the Request for Proposals.

1.2.8.2 All amendments, changes, errata and supplements as of the effective date shall be included.

1.3 QUALITY ASSURANCE

1.3.1 For products or workmanship specified by association, trade, or federal standards, comply with requirements of the standard, except when more rigid requirements are required by applicable codes or specified herein.

1.3.2 Comply with referenced standards that are current at the date of receipt of bids.

1.3.3 The contractual relationship of the Contracted parties shall not be altered by mention or inference otherwise in any reference document.

1.4 REFERENCED STANDARDS

Listed hereinafter are the various organizations or references which may appear in the Contract Documents, along with their respective acronyms and/or abbreviations

AA	Aluminum Association (www.aluminum.org)
AABC	Associated Air Balance Council (www.aabchq.com)
AAMA	American Architectural Manufacturers Association (www.aamanet.org)
AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and Transportation Officials (www.asshto.org)
AATCC	American Association of Textile Chemists and Colorists (www.aatcc.org)
ABMA	American Bearing Manufacturers Association (www.abma-dc.org)
ABMA	American Boiler Manufacturers Association (www.abma.com)
ACCA	Air Conditioning Contractors of America (www.acca.org)
ACI	American Concrete Institute (www.aci-int.org)
ACPA	American Concrete Pipe Association (www.concrete-pipe.org)
ACPPA	Asbestos Cement Pipe Producers Association (www.asbestos-institute.ca/pvc.html)
ADC	Air Diffusion Council (www.flexibleduct.org)
AEIC	Association of Edison Illuminating Companies (www.aeic.org)

AGA	American Gas Association (www.aga.org)
AGMA	American Gear Manufacturer's Association (www.agma.org)
AI	Asphalt Institute (www.asphaltinstitute.org)
AIA	American Institute of Architects
AISC	American Institute of Steel Construction (www.aisc.org)
AISE	Association of Iron and Steel Engineers (www.aise.org)
AISI	American Iron and Steel Institute (www.steel.org)
AITC	American Institute of Timber Construction (www.aitc-glulam.org)
AMCA	Air Movement and Control Association (www.amca.org)
ANLA	American Nursery and Landscape Association (www.anla.org)
ANSI	American National Standards Institute (www.ansi.org)
APA	The Engineered Wood Association (www.apawood.org)
API	American Petroleum Institute (www.api.org)
APT	Association for Preservation Technology International
APWA	American Public Works Association (www.apwa.net)
AREMA	American Railway Engineering and Maintenance-of-way Association (www.arema.org)
ARI	Air Conditioning and Refrigeration Institute (www.ari.org)
ARMA	Asphalt Roofing Manufacturers Association (www.asphaltroofing.org)
ASA	Acoustical Society of America (asa.aip.org)
ASC	Adhesive and Sealant Council (www.ascouncil.org)
ASCE	American Society of Civil Engineers (www.asce.org)
ASE	American Standard Safety Code for Elevators and Escalators
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers (www.ashrae.org)
ASME	American Society of Mechanical Engineers (www.asme.org)
ASNT	American Society for Nondestructive Testing (www.asnt.org)
ASQ	American Society for Quality (www.asq.org)
ASSE	American Society of Sanitary Engineering (www.asse-plumbing.org)
ASTM	American Society for Testing and Materials (www.astm.org)
AWI	Architectural Woodwork Institute (www.awinet.org)
AWPA	American Wood Preservers Association (www.awpa.com)
AWS	American Welding Society (www.amweld.org)
AWWA	American Water Works Association (www.awwa.org)
BHMA	Builders Hardware Manufacturers Association (www.buildershardware.com)
BIA	Brick Institute of America (www.bia.org)
BOCA	Building Officials and Code Administrators International (www.bocai.org)
BOR	Bureau of Reclamation (www.usbr.gov)
CABO	Council of American Building Officials (www.bocai.org)
CEMA	Conveyor Equipment Manufacturers Association (www.cemanet.org)
CGA	Compressed Gas Association (www.cganet.com)
CI	Chlorine Institute (www.cl2.com)
CISPI	Cast Iron Soil Pipe Institute (www.cispi.org)
CLFMI	Chain Link Fence Manufacturers Institute (www.chainlinkinfo.org)

CMAA	Crane Manufacturers Association of America (www.mhia.org/cmaa)
COE	Corps of Engineers (www.usace.army.mil)
CPSC	Consumer Product Safety Commission (www.cpsc.gov)
CRA	California Redwood Association (www.calredwood.org)
CRD	Corps of Engineers Specification
CRSI	Concrete Reinforcing Steel Institute (www.crsi.org)
CRI	Carpet and Rug Institute (www.carpet-rug.com)
CSI	Construction Specifications Institute (www.csinet.org)
CSA	Canadian Standards Association (www.csa.ca)
CTI	Cooling Technology Institute (www.cti.org)
CWHSSA	Contract Work Hours & Safety Standards Act
DASMA	Door and Access System Manufacturers Association (www.taol.com/dasma)
DHI	Door and Hardware Institute (www.dhi.org)
DIPRA	Ductile Iron Pipe Research Association (www.dipra.org)
DOE	Department of Ecology (www.ecy.wa.gov)
EEI	Edison Electric Institute (www.eei.org)
EIA	Electronic Industries Association (www.eia.org)
EIMA	EIFS Industry Members Association (www.eifsfacts.com)
EJMA	Expansion Joint Manufacturers Association (www.ejma.org)
EPA	United States Environmental Protection Agency (www.epa.gov)
FS	Federal Specifications (www.fss.gsa.gov/pub/fed-specs.cfm)
FED-STD	Federal Standards (www.fss.gsa.gov/pub/fed-specs.cfm)
FHWA	Federal Highway Administration (www.fhwa.dot.gov)
FM	Factory Mutual Engineering and Research (www.fmglobal.com)
FSUP	Forestry Suppliers (www.forestry-suppliers.com)
FCCCHR	Foundation for Cross-Connection Control and Hydraulic Research (www.usc.edu/dept/fccchr/)
GA	Gypsum Association (www.gypsum.org)
GANA	Glass Association of North America (www.glasswebsite.com)
GSI	Geosynthetic Institute (www.geosynthetic-institute.org)
HEI	Heat Exchange Institute (www.heatexchange.org)
HI	Hydraulic Institute (www.pumps.org)
HMI	Hoist Manufacturer's Institute (www.mhia.org/hmi)
HPVA	Hardwood Plywood and Veneer Association (www.hpva.org)
IAPMO	International Association of Plumbing and Mechanical Officials (www.iapmo.org)
IBC	International Building Code (Published by ICBO)
ICBO	International Conference of Building Officials (www.icbo.org)
ICAC	Institute of Clean Air Companies (www.icac.com)
ICEA	Insulated Cable Engineers Association (www.icea.net)
IEC	International Electrotechnical Commission (www.iec.ch)
IEEE	Institute of Electrical and Electronics Engineers (www.ieee.org)
IESNA	Illuminating Engineering Society of North America (www.iesna.org)
IFI	Industrial Fasteners Institute (www.industrial-fasteners.org)
IGMA	Insulating Glass Manufacturers Alliance (www.igmaonline.org)
IMC	International Mechanical Code (Published by ICBO)
IMSA	International Municipal Signal Association (www.imsasafety.org)

IPC	Institute for Interconnecting and Packaging Electronic Circuits (www.ipc.org)
IPC	International Plumbing Code (Published by IAPMO)
ISA	Instrument Society of America (www.isa.org)
ISO	International Organization for Standardization (www.iso.ch)
ISS	Iron and Steel Society (www.issource.org)
ISSA	International Slurry Surfacing Association (www.slurry.org)
LEED	Leadership in Energy and Environmental Design (www.usgbc.org/LEED)
MBMA	Metal Building Manufacturers Association (www.mbma.com)
MHI	Material Handling Industry of America (www.mhia.org)
MS	Military Standards (MIL-SPEC) (www.dodssp.daps.mil)
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry (www.mss-hq.com)
MSHA	Mine Safety and Health Administration (www.msha.gov)
MUTCD	Manual of Uniform Traffic Control Devices (www.mutcd.fhwa.dot.gov)
NAAMM	National Association of Architectural Metal Manufacturers (www.naamm.org)
NAIMA	North American Insulation Manufacturers Association (www.naima.org)
NACE	National Association of Corrosion Engineers (www.nace.org)
NBBPVI	National Board of Boiler and Pressure Vessel Inspectors (www.nationalboard.org)
NBS	National Bureau of Standards (now National Institute of Standards and Technology)
NCMA	National Concrete Masonry Association (www.ncma.org)
NDA	National Drilling Association (http://www.nda4u.com)
NEBB	National Environmental Balancing Bureau (www.nebb.org)
NEC	National Electric Code (www.nfpa.org/codes/)
NEMA	National Electrical Manufacturer's Association (www.nema.org) (www.cdc.gov/niosh/homepage.html)
NESC	National Electric Safety Code (http://standards.ieee.org/faqs/NESCFAQ.html)
NESHAP	National Emission Standards for Hazardous Air Pollutants (http://www.epa.gov/region4/air/asbestos/asbqa.htm)
NFLPA	National Fluid Power Association (www.nfpa.com)
NHLA	National Hardwood Lumber Association (www.natllhardwood.org)
NHPA	National Historic Preservation Act
NIOSH	National Institute of Occupational Safety and Health (www.cdc.gov/niosh/homepage.html)
NICET	National Institute of Certification in Engineering Technologies (www.nicet.org)
NIST	National Institute of Standards and Technology (www.nist.gov)
NFPA	National Fluid Power Association (www.nfpa.com)
NFPA	National Forest Products Association (www.forestprod.org)
NFPA	National Fire Protection Association (www.nfpa.org)
NPCA	National Paint and Coatings Association (www.paint.org)
NRCA	National Roofing Contractors Association (www.nrca.net)
NRMCA	National Ready-Mixed Concrete Association (www.nrmca.org)

NTIS	National Technical Information Services (www.ntis.gov)
NWWDA	National Wood Window and Door Association (www.nwwda.org)
OSHA	Occupational Safety and Health Act (www.osha.gov)
PCI	Precast/Prestressed Concrete Institute (www.pci.org)
PDI	Plumbing and Drainage Institute (www.pdionline.org)
PFI	Pipe Fabrication Institute (www.pfi-institute.org)
PPFA	Plastic Pipe and Fittings Association (www.ppfahome.org)
PPI	Plastics Pipe Institute (www.plasticpipe.org)
PPIC	Plumbing and Piping Industry Council
PSCAA	Puget Sound Clean Air Agency (www.pscleanair.org)
RCMA	Roof Coatings Manufacturers Association (www.roofcoatings.org)
RMA	Rubber Manufacturers Association (www.rma.org)
SAE	Society of Automotive Engineers (www.sae.org)
SAMA	Scientific Apparatus Makers Association Group of Associations
SDI	Steel Deck Institute (www.sdi.org)
SDOI	Steel Door Institute (www.steeldoor.org)
SJI	Steel Joist Institute (www.steeljoist.org)
SMA	Screen Manufacturers Association (www.smainfo.org)
SMACNA	Sheet Metal and Air Conditioning Contractors National Association (www.smacna.org)
SOI	Secretary of the Interior (Standard for the Treatment of Historic Properties)
SPRI	Single Ply Roofing Institute (www.spri.org)
SSPC	Society for Protective Coatings (www.sspc.org)
STI	Steel Tank Institute (www.steeltank.com)
SWI	Steel Window Institute (www.steelwindows.com)
TCA	Tile Council of America (www.tileusa.com)
TEMA	Tubular Exchanger Manufacturer's Association (www.tema.org)
TPI	Truss Plate Institute (www.tpinst.org)
UBPPA	Uni-bell PVC Pipe Association (www.uni-bell.org)
UL	Underwriters Laboratories (www.ul.com)
USBR	Bureau of Reclamation, U.S. Department of Interior (www.usbr.gov)
USGBC	United States Green Building Council (www.usgbc.org)
WAC	Washington Administrative Code (www.mrsc.org/wac.htm)
WCLIB	West Coast Lumber Inspection Bureau (www.wclib.org)
WDOE	Washington Department of Ecology (www.wa.gov/ecology/)
WEF	Water Environment Federation
WISHA	Washington Industrial Safety and Health Act (www.lni.wa.gov/wisha/)
WQA	Water Quality Association
WSDOT-APWA	Washington State Dept. of Transportation and American Public Works Association, Standard Specifications for Road, Bridge, and Municipal Construction
WWPA	Western Wood Products Association (www.wwpa.org)
WWPI	Western Wood Preservers Institute (www.wwpinstitute.org)
WAQTC	Western Alliance for Quality Transportation Construction (www.waqtc.org)

1.5 ACRONYMS

In addition to the above listings, the following acronyms will have the meaning listed:

APP	Accident Prevention Program
BMP	Best Management Practice
CFR	Code of Federal Regulations
HASP	Contractor's Site Specific Health and Safety Plan
EA	Energy and Atmosphere
IAQ	Indoor Air Quality
IEQ	Indoor Environmental Quality
MERV	Minimum Efficiency Reporting Value
MR	Materials and Resources
MSDS	Material Safety Data Sheets
NTP	Notice to Proceed.
SS	Sustainable Sites
VOC	Volatile Organic Compounds
WE	Water Efficiency

1.6 ABBREVIATIONS IN SPECIFICATIONS

awg	American Wire Gauge
accord	Accordance
Co.	Company
Corp.	Corporation
cm.	centimeter (centimeters)
cu.	Cubic
Div.	Division
dia.	Diameter
ft.	foot (feet)
g./gr.	gram (grams)
gal.	gallon (gallons)
gpd	gallons per day
gpm	gallons per minute
hr.	Hour
kg.	kilogram (kilograms)
in.	inch (inches)
Inc.	Incorporated
km.	kilometer (kilometers)

Kw	Kilowatt
l.	liter (liters)
lbs.	Pounds
m	meter (meters)
Mfg.	Manufacturing
Mg.	milligram (milligrams)
ml./mls.	milliliter (milliliters)
mm.	millimeter (millimeters)
No.	Number
o.c.	on centers
O.D.	outside diameter
psi	pounds per square inch
psf	pounds per square foot
sq.	Square
T & G	tongue and groove
U.S.	United States
yd.	yard (yards)

1.7 ABBREVIATIONS ON DRAWINGS

Additional abbreviations, used only on drawings, are indicated thereon.

1.8 SYMBOLS

1.8.1 Symbols in Specifications:

:	“shall be” or “shall” - where used within sentences or paragraphs
#1	Number
1#	Pound
&	And
%	Percent
C	Centigrade
F	Fahrenheit
°	Degree
/	per, except where used to combine words; example: power/fuel, and in that case it means and
“	inch (inches)
‘	foot (feet)

@ At

1.8.2 Symbols on Drawings:

Symbols, used only on Drawings, are indicated thereon.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 43 39

MOCK-UPS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements for the pre- construction and construction inspection of mock-ups.

1.1.2 Related sections include the following:

1.1.2.1 Section 01 11 00 (Summary of Work).

1.1.2.2 Section 01 21 00 (Allowances).

1.1.2.3 Section 01 33 00 (Submittal Procedures).

1.1.2.4 Section 01 45 00 (Quality Control).

1.1.2.5 Facility Performance Standards

1.2 DEFINITIONS

1.2.1 Mock-ups: Full-size, physical assemblies that are constructed on-site or off-site to illustrate special relationships, finished dimensions, colors, furnishings, equipment and materials as required for owner review, evaluation and approvals. Mock-ups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mock-ups establish the standard by which the relevant portions of the Work will be judged.

1.2.2 There are two basic categories of Mock-ups, Type 1 and Type 2. Both types of Mock-ups are intended to establish that design intent has been met, establish review of basic quality control measures, and establish approval of installation means and methods by the County prior to construction. The two types of Mock-ups are described below:

1.2.2.1 Type 1 Mock-ups shall be unfinished (temporary) and be utilized to verify the spatial quality, sight lines and design component relationships and functionality of space(s) so that a review of the design can take place for validation of operations within the space(s). The components of each mock-up shall include but shall not be limited to: unfinished (e.g. plywood) materials to indicate all floor, wall, ceiling/wall surfaces, and structural elements. Marked locations of all communication and electrical devices, door and sidelight, windows, headwall, millwork and/or casework and all elements required to define the space shall be indicated within the mock-up.

Furniture, fixtures and equipment to be supplied will be provided within space as part of County review process by the Design Builder.

- 1.2.2.2 Type 2 Mock-ups shall be finished spaces/building elements located within or on exterior of the permanent structure and be utilized to verify materials, interfaces, quality and performance criteria. This mock-up consists of independent structures, preordered materials and trades required to complete the mock-up. It is the County's intent to verify materials, system interfaces, and to establish the minimum quality that is required. The Type 2 mock-up may be a part of the completed building or system within the building. The Type 2 mock-up is not intended to replace the product samples that are required.

1.3 REQUIREMENTS

- 1.3.1 This Article describes the requirements for special/visual mock ups (Type 1): It is the County's intent to verify the spatial quality, functionality, furniture layout, equipment and device location, and system placement so a review of the design can take place for validation of spaces, elements, and systems. The components of each mock-up shall include but shall not be limited to: unfinished (i.e. plywood) materials to indicate all floor, wall, ceiling surfaces, and structural elements. Locations of all communication and electrical devices, doors and sidelights, windows, headwall, millwork and/or casework, furniture, equipment and all elements required to define the space shall be indicated within the mock-up. The intent is to have the following areas approved, including but not limited to:

- A) Exterior Façade Mock-ups: Design Builder to recommend for County approval, appropriate requirements using the performance standards and section 1.3.3 below as guideline requirements.
- B) Central Control Room including detention security electronic system touch screen system. Design Builder to recommend for County approval, appropriate requirements using the performance standards as a guideline
- C) Detention Sleeping Rooms/Cells: design Builder to recommend for county approval, appropriate mockup.
- D) Courtroom Bench: see requirements below:

- 1.3.1.1 Courtroom Bench Mockup: During the Design Development Phase the Design Builder will provide a full size mock up of the typical courtroom including, but not limited to the design elements/areas listed below. The mock-up will be used by the County to illustrate sight lines, adjacencies, spatial relationships, volumes of space, etc. for user evaluation of functions and operations within the courtroom space. The Design Builder shall prepare the visual mock-up prior to completion of the "Design Development Phase" and obtain County approval prior to proceeding with final design drawings, Contract Documents and any courtroom casework shop drawings.

- 1.3.1.2 Build mock-up to comply with the following requirements:

- 1.3.1.2.1 Location: At location within the Seattle area as

designated by the Design Builder.

- 1.3.1.2.2 Include Judge; clerk and witness stations, attorney area, bailiff station, work surfaces, built in casework and rail at spectator seating.
- 1.3.1.2.3 Construct an elevated floor for support of benches to simulate the actual conditions that will exist in the Courtroom.
- 1.3.1.2.4 Provide a minimum of 30-days notice to County of time when mock-up will be available for evaluation.

1.3.2 **Courtroom Bench (Type 2):** This Article describes the requirements for Courtroom Bench Mock-up (Type 2 for finishes): After approval of Type 1 Courtroom Bench Mock-up and shop drawings/finish submittals for this area, the Design Builder shall prepare the visual mock-up utilizing approved millwork, finishes and hardware to obtain County approval prior to proceeding with final fabrication for the courtroom casework and wall panel finishes (if any).

1.3.2.1 Build mock-up to comply with the following requirements:

- 1.3.2.1.1 Location: At location within the Seattle area as designated by the Design Builder.
- 1.3.2.1.2 Include Judge; clerk and witness stations, jury area, work surfaces, built in casework and rail at spectator seating.
- 1.3.2.1.3 Judicial/Witness Bench shall be fabricated complete and with all finished components proposed for the Project. Install the ballistic protection sheet behind the finished panels.
- 1.3.2.1.4 Construct an elevated floor for support of benches to simulate the actual conditions that will exist in the Courtroom.
- 1.3.2.1.5 Portion of the Judges/Clerk Bench and Witness Stand shall utilize the same materials proposed for the Project; construct mock-up in sections as planned for the final work; employ a method of joining individual front panel and transaction counter sections which will enable disassembly and possible reuse, while demonstrating joint design and tightness. All wood veneers and solid stock shall be finished to match previously approved samples.
- 1.3.2.1.6 Fabricate and erect mock-up utilizing the same

craftspeople as that intended to be used for the actual Work. Should field installation be accomplished by a firm other than the fabricator, the firm responsible for the field installation must be present during all phases of shop assembly of the mock-up.

- 1.3.2.1.7 Provide a minimum of 30 -days notice to the County of time when mock-up will be available for evaluation.
 - 1.3.2.1.8 Mock-up will be examined to ascertain quality of the Work and conformity to AWI (Architectural Woodwork Institute) quality standards and specification requirements. Approved mock-up shall serve as a standard of comparison for all remaining casework with respect to workmanship, design, materials, finish, joining, and tolerances.
 - 1.3.2.1.9 Provide additional materials and labor if required to obtain approval of mock-up at no additional cost to the County.
 - 1.3.2.1.10 Design-Builder may reuse as much of the approved mockup as is practical, when approved by the County; the decision as to methods employed in constructing mock-up to maximize its reuse shall rest with the fabricator. Fabricator shall not be entitled to additional compensation if it is determined upon disassembly that all, or a portion of the approved mock-up is not acceptable for reuse within the building.
 - 1.3.2.1.11 Provide and/or coordinate with County equipment and furnishings vendors for placement.
 - 1.3.2.1.12 Provide a ceiling system including diffusers and locations.
 - 1.3.2.1.13 Provide blanks of all components in walls and wall systems.
 - 1.3.2.1.14 Provide all floor and wall finishes.
- 1.3.3 **Building Façade (Type 2):** Scope as indicated on Drawings. Provide evaluation mock-up at location as directed by the County to illustrate erection and installation of the rainscreen wall assembly, anchorage of window wall system, sealants, glass, glazing, and finishes.
- 1.3.3.1 Design Concept: Design the mock-up as a complete and independent structure, including required structural supports. Design Builder shall make necessary additions and modifications to the details as required.

- 1.3.3.2 Evaluation mock-up shall be built of the same materials, components and using the construction procedures and subcontractors proposed for the Work.
- 1.3.3.3 Modifications to the Work, if needed, to obtain the quality of workmanship and finish required in the finished structure shall be made during construction of the mock-up.
- 1.3.3.4 Design-Builder may reuse as much of the approved mockup as is practical, when approved by the County; the decision as to methods employed in constructing mock-up to maximize its reuse shall rest with the fabricator. Fabricator shall not be entitled to additional compensation if it is determined upon disassembly that all, or a portion of the approved mock-up is not acceptable for reuse within the building.
- 1.3.3.5 Mock-ups shall be prepared after shop drawing review and prior to ordering of materials.
- 1.3.3.6 Exterior wall mock-ups are to be designed as a composite of conditions and interfaces of systems to allow the County, Construction Manager, Inspectors of Record (IORs) and Design Builder to review actual construction sequencing, tolerances, quality control, installation methodology, back-up systems, flashing and counter flashing, finish appearance and other variables to maximize quality control and establish installation techniques prior to design completion, mass delivery, and ordering of components.
- 1.3.3.7 The main exterior mock-up shall consist of the components listed in paragraph 1.3.3 above as a minimum. The drawing showing all conditions for the mock- up shall be reviewed and approved by the County. The purpose of the Design Builder mock-up shall be to illustrate actual construction techniques and systems to be implemented on the Project.
- 1.3.3.8 Provide mock-up of all the design elements, systems, structure and materials that will compose the proposed building facades for the Project.

1.4 SUBMITTALS

- 1.4.1 Work Plan and Schedule: The Design Builder shall submit a schedule for the construction of mock-ups for review and approval by the County prior to construction.
- 1.4.2 Shop Drawings: Submit detailed, dimensioned, large scale Shop Drawings of each required mock-up in compliance with the requirements of Section 01 33 00 (Submittal Procedures).

- 1.4.3 Reports: Testing Laboratory shall report the results of all specified tests with supporting data including the following; test data, measurements, record drawings, photographs of the test specimen prior to the start of testing, at the conclusion of the testing program, and at regular intervals during the tests. Identify all materials by reference to a known standard such as ASTM, ANSI, FS or by make and model number.

1.5 QUALITY ASSURANCE

- 1.5.1 Design Builder's Project Manager: The Design Builder shall designate a Project Manager to oversee all work associated with this Section 01 43 39 (Mock-Ups). The Project Manger will be the main contact throughout the process of building, revising, and approving all mock-ups.
- 1.5.2 Mock-ups: Before installing portions of the Work requiring mock-ups, build mock-ups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
- 1.5.2.1 Build mock-ups full-size and in the location as indicated by the Design Builder and approved by the County.
 - 1.5.2.2 Notify County 30 days in advance of dates and times when mock-ups will be constructed.
 - 1.5.2.3 Demonstrate the proposed range of aesthetic effects and workmanship.
 - 1.5.2.4 Obtain County approval of mock-ups before starting work, fabrication, or construction.
 - 1.5.2.5 Type 2 Mock-ups: An in-place review of items, areas, devices and systems prior to execution, with approval by County. It is not the intent to modify materials or installation but to verify quality control expectations of the County. The mock-ups shall include all materials, finishes, outlets, fixtures, structural elements and construction details to complete the finished appearance of a room or area. The exact location shall be verified with the Design Builder's sequencing and with the County. The inspection requests shall be at each key stage of development. It is the County's intent to establish quality and code compliance procedures with the approving agency or governmental Authorities or private authorities with jurisdiction.
 - 1.5.2.6 Maintain mock-ups during construction in an undisturbed condition as a standard for judging the completed Work.
 - 1.5.2.7 Demolish and remove Type 1 mock-ups when directed, unless otherwise indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- 2.1.1 Materials and finishes for mock-ups shall comply with the requirements specified in the various applicable sections of the specifications, and shall match previously submitted and approved samples.
- 2.1.2 Type 2 Mock-ups shall incorporate all related construction materials and finishes upon the completed Work.

PART 3 - EXECUTION

3.1 MOCK-UP INSTALLATION

- 3.1.1 Mock-ups shall be constructed in accordance with the approved Construction Documents, specific mock-up drawings, and approved shop drawings and product data. If changes are required, the Design Builder shall complete modifications to all documents.
- 3.1.2 Type 1 Mock-ups will be built off-site in a location secured by the Design Builder. Type 1 Mock-ups shall be revised as required to achieve proper spatial and functionality requirements of the Contract Documents.
- 3.1.3 Type 2 Mock-ups shall be built "in place" as part of the permanent construction. Periodic inspections by the County and the Design Builder will be made during the construction process to review the installation.
 - 3.1.3.1 Insofar as possible, mock-ups shall illustrate contiguous materials and finishes, and be arranged in the same relationship as they will appear in the finish construction.
 - 3.1.3.2 Each kind of material shall be fabricated, installed and finished by the various subcontractors or others who will be furnishing and performing the Work in the permanent construction.
 - 3.1.3.3 Protect and clean as required to leave the mock-up and adjacent areas in proper condition, upon completion of the Work.
 - 3.1.3.4 Remedial measures, which may be necessary on mock-ups, shall maintain standards of quality and durability required by the Contract Documents, and shall be subject to approval by the County.
 - 3.1.3.5 When so directed by the County, Type 1 mock-ups shall be dismantled and the materials disposed of by the Design Builder.
 - 3.1.3.6 Type 2 Mock-ups shall be approved by the County, before materials are ordered for the Project.

3.2 MOCK-UP INSPECTION

- 3.2.1 Notify County at the start of construction of mock-ups and provide progress reports to allow the County to schedule inspections.

- 3.2.2 The County and other interested parties may visually examine the mock-ups during construction.
 - 3.2.3 After approximately fifty percent (50%) of each mock-up has been built, request County's preliminary review before completion. Incorporate visual and technical changes or variations requested by the County into mock-ups during their construction and prior to their completion, insofar as possible.
 - 3.2.4 Obtain County's acceptance of visual and technical qualities of mock-ups before commencing the corresponding Work for the Project. Revise the Construction Schedule, as needed, to reflect required mock-up revisions.
 - 3.2.5 Should the Type 1 or Type 2 mock-ups fail to meet the County's approval, they shall be taken down or dismantled, and reconstructed to the extent necessary, until acceptance has been obtained.
 - 3.2.6 Time the completion and reworking of mock-ups necessary to obtain acceptance to avoid delay in construction of the Project. Update the Construction Schedule to reflect required revisions to mock-ups.
- 3.3 REPAIR AND PROTECTION
- 3.3.1 Retain, maintain, and protect the mock-ups during construction to serve as a standard for judging work incorporated into the Project.
 - 3.3.2 Maintain mock-ups and surrounding site in a safe and clean condition. Repair any damage to mock-ups immediately upon occurrence.
- 3.4 REMOVAL
- 3.4.1 Remove mock-ups at the completion of the Work upon the authorization of the County. Complete site work at the mock-up location in accordance with the Contract Documents.
 - 3.4.2 Final finished mock-up(s) as approved by testing agencies and the County may be integrated into the final construction. All testing and contractual requirements for the installed system(s) be satisfied and approved in writing by the County.
 - 3.4.3 Final finished mock-up(s) as approved by testing agencies and the County may be integrated into the final construction. All testing and contractual requirements for the installed system(s) be satisfied and approved in writing by the County.

END OF SECTION

PART 1 - GENERAL**1.1 SUMMARY**

- 1.1.1 This Section includes administrative and procedural requirements for the following:
 - 1.1.1.1 Quality assurance and quality control.
 - 1.1.1.2 Quality Control Plan.
 - 1.1.1.3 Special testing and inspection.
- 1.1.2 Materials to be furnished under the Contract Documents are subject to testing and inspection for compliance with the Contract Documents. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Design Builder of responsibility for compliance with the Contract Document requirements.
 - 1.1.2.1 Specific quality assurance and control requirements for individual construction activities are contained in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - 1.1.2.2 Specified tests, inspections, and related actions do not limit Design Builder's other quality assurance and control procedures that facilitate compliance with the Contract Document requirements.
 - 1.1.2.3 Requirements for Design Builder to provide quality assurance and control services required by County are not limited by provisions of this Section.
- 1.1.3 Related Sections include the following:
 - 1.1.3.1 Section 01 32 26 (Schedules and Reports) for developing a schedule of required tests and inspections.
 - 1.1.3.2 Section 01 43 39 (Mock-Ups) for the specific quality requirements associated with the construction and inspection of mock-ups.
 - 1.1.3.3 Section 01 73 00 (Cutting and Patching) for repair and restoration of construction disturbed by testing and inspecting activities.
 - 1.1.3.4 Divisions 2 through 33 for specific test and inspection requirements as developed by the Design-Build Team.

1.2 DEFINITIONS

- 1.2.1 Quality Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- 1.2.2 Quality Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by County.
- 1.2.3 NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
- 1.2.4 NVLAP: A testing agency accredited according to the National Institute of Standards and Technology's (NIST's) National Voluntary Laboratory Accreditation Program.
- 1.2.5 Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- 1.2.6 Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to County, to establish product performance and compliance with industry standards.
- 1.2.7 Source Quality Control Testing: Tests and inspections that are performed at the source (i.e., a plant, mill, factory, or shop).
- 1.2.8 Field Quality Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- 1.2.9 Testing Agency: An entity engaged to perform specific tests, inspections, or both that is certified as meeting the requirements applicable to the Work. Testing laboratory shall mean the same as testing agency.
- 1.2.10 Installer/Applicator/Erector: Design Builder or another entity engaged by Design Builder as an employee or Subcontractor of any tier to perform a particular construction operation, including installation, erection, application, and similar operations.
- 1.2.11 Experienced: As used herein, an individual or entity that has successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction to work in the State of Washington.

1.3 CONFLICTING REQUIREMENTS

- 1.3.1 General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to County for a decision before proceeding.
- 1.3.2 Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to County for a decision before proceeding.

1.4 QUALITY CONTROL PERSONNEL

- 1.4.1 Quality Control Manager: Provide a Quality Control Manager at the Site to manage and implement the Quality Control Plan. The only duties and responsibilities of the Quality Control Manager will be to manage and implement the Quality Control Plan. The Quality Control Manager's duties and responsibilities include, but are not limited to:
- 1.4.1.1 Attending the Coordination and Detailing Activity (CDA) meetings, Weekly Construction Progress Meetings, Pre-installation Meetings, and Commissioning Meetings.
 - 1.4.1.2 Conducting Quality Control meetings, as necessary.
 - 1.4.1.3 Reviewing submittals.
 - 1.4.1.4 Preparing, monitoring and following through on Requests for Information, Change Orders, and Deferred Approvals.
 - 1.4.1.5 Preparing, coordinating and following through on Requests for Inspection.
 - 1.4.1.6 Ensuring testing is performed.
 - 1.4.1.7 Preparing required Quality Control certifications and documentation.
- No Work or testing may be performed unless the Quality Control Manager or a Designated Alternate Quality Control Manager is on the Site. The Quality Control Manager shall report directly to an officer of the Design Build firm who shall not be the same individual as, nor be subordinate to, the Project Manager or Superintendent.
- 1.4.2 Qualifications: The Quality Control Manager must be a graduate of a four year accredited college program in one of the following disciplines:

engineering, architecture, construction management, engineering technology, building construction, or building science with a minimum of ten (10) years experience as a superintendent, inspector, Quality Control Manager, project manager, or construction manager on major and complex projects.

- 1.4.3 Other Quality Control Personnel: Provide additional quality control personnel (e.g., Quality Control Specialists, administrative support staff) as described in the Quality Control Plan and as required to implement the Quality Control Plan. The County, at its sole discretion, may require the Design Builder to assign additional quality control personnel to the Project if the County believes the Design Builder's assigned personnel are not capable of implementing the Quality Control Plan to the County's satisfaction. The Design Builder shall provide any additional personnel required by the County at no additional cost. Other active members of the Quality Control Program shall include a minimum of a full time architectural and engineering coordinator, Contractor's LEED Coordinator as defined in Section 01 81 13 (Sustainable Design Requirements), and Contractor's Commissioning Coordinator as defined in Section 01 91 00 (General Commissioning Requirements). The Quality Control Manager and supporting members' responsibility is to ensure compliance with Contract Documents and is a requirement of the Contractor's Quality Control Program.

1.5 SUBMITTALS

- 1.5.1 Qualification Data: For testing agencies specified in paragraph 1.6 (Quality Assurance) below to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- 1.5.1.1 Testing, Inspection and Observation Program: Prepare according to the Authority Having Jurisdiction (AHJ) requirements. Submit to County for approval prior to issuance of the building permit.
- 1.5.2 Reports: Reports of all tests made shall be provided to County regardless of whether test results indicate that the material tested is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Prepare and submit certified written reports that include the following:
- 1.5.2.1 Date of issue.
- 1.5.2.2 County's Project title and number.
- 1.5.2.3 Name, address, and telephone number of testing agency.
- 1.5.2.4 Dates and locations of samples and tests or inspections.
- 1.5.2.5 Applicable Drawing, detail, and Specification numbers.

- 1.5.2.6 Names of individuals making tests and inspections.
- 1.5.2.7 Description of the Work and test and inspection method.
- 1.5.2.8 Identification of product and Specification Section including specified design strength or other applicable criteria.
- 1.5.2.9 Complete test or inspection data.
- 1.5.2.10 Test and inspection results and an interpretation of test results.
- 1.5.2.11 Record of temperature and weather conditions at time of sample taking and testing and inspecting.
- 1.5.2.12 Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
- 1.5.2.13 Name and signature of laboratory inspector.
- 1.5.2.14 Recommendations on retesting and reinspecting, if any.
- 1.5.3 Permits, Licenses, and Certificates: For County's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.
- 1.5.4 Quality Control Plan: Prepare a plan describing procedures and methods the Design Builder will utilize to control the quality of the Work. At a minimum the Quality Control Plan shall include:
 - 1.5.4.1 An organizational structure description, including Quality Control supervision, and inspection reporting structure. Delineate personnel training and qualification activities.
 - 1.5.4.2 Plans and procedures for testing and inspections to verify attributes delineated in the Contract Documents, including those specified in referenced Codes and standards. Include documents that identify individual inspection or testing points and acceptance criteria, and include provisions for recording results and the responsible inspection/test personnel. This documentation shall be traceable to the particular material, items, processes or systems evaluated, including notification requirements.
 - 1.5.4.3 Procedures for identifying and invoking the applicable technical and quality requirements in the Specifications on vendors supplying materials, parts and services.
 - 1.5.4.4 Plans and procedures for receiving, inspecting and accepting

material and items. These shall include examination of physical condition and compliance with purchasing requirements, including markings for class type and grade, and conformance of supplied documentation. These shall also include provisions for:

- 1.5.4.4.1 Identifying, controlling and processing non-conforming items, including notification of the County.
- 1.5.4.4.2 Inspection of materials for authenticity to preclude counterfeit parts, for items and attributes of concern identified by County.
- 1.5.4.4.3 Verifying for compliance and traceability, maintaining, and turnover to the County, certificates of conformance and mill certificates required by Contract Documents or codes or standards invoked, for materials received.
- 1.5.4.5 Provisions for identifying defective Work. Bring to County's attention, for consultation and possible relief, those cases where correction within the specified requirements may create a significant schedule impact, personnel hazard, or compromise the quality of installed items, or is otherwise impractical.
- 1.5.4.6 Controls to assure that only the Contract Documents and "Approved for Inspection" Construction Documents are utilized in the Work.
 - 1.5.4.6.1 This includes provisions for removing superseded versions from the work area, except where explicitly and prominently marked "Void - For Information Only"; such as to retain annotated installation data.
- 1.5.4.7 Detailed formal procedures or instructions for the performance of special processes, such as welding or concrete placement. These procedures/instructions and personnel performing special processes shall be qualified and certified as required by codes and standards invoked in the Contract Documents.
- 1.5.4.8 Controls providing for periodic calibration of testing and measurement equipment, including unique equipment identification and calibration tracking.
- 1.5.4.9 Maintain records documenting the implementation of the above activities, including tests, inspections, special process qualification and execution, vendor documentation and defective Work resolution. These records shall be indexed, protected and retrievable for final submission to County.
- 1.5.4.10 Identify all tests and inspections that Design Builder proposes to be conducted by the County.

- 1.5.4.11 Approval: The Quality Control Plan must be approved before the start of construction and shall reflect the requirements of the approved Testing, Inspection and Observation Program. The County reserves the right to require revisions of the Quality Control Plan that are necessary to ensure the specified quality of the Work. The County may interview Quality Control personnel at any time to verify their submitted qualifications.
- 1.5.4.12 Changes: The Design Builder shall submit any proposed changes to the Quality Control Plan, including changes in personnel, to the County in writing. Proposed changes must be submitted at least seven (7) Days in advance of the desired effective date of the change. No change in the Quality Control Plan shall be implemented without the County's written approval.

1.6 QUALITY ASSURANCE

- 1.6.1 General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- 1.6.2 Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance. Installers shall be qualified by the product or equipment manufacturer, if required for warranty or other performance guarantees.
- 1.6.3 Manufacturer Qualifications: A firm experienced in fabricating products or systems indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units as required to meet the Project schedule.
- 1.6.4 Fabricator Qualifications: A firm experienced in procuring and fabricating products indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units as required to meet the Project schedule.
- 1.6.5 Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in Washington and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of systems, assemblies, or products that are similar to those indicated for this Project in material, design, and extent.
- 1.6.6 Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

- 1.6.6.1 Requirement for specialists shall not supersede building codes and regulations governing the Work.
- 1.6.7 Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, including the requirements of ASTM D3666, D3740, E329, E543, and E548 as applicable; and with additional qualifications specified in individual Sections; and that is acceptable to County. All testing shall be performed under the supervision and control of a Washington registered professional engineer employed by the testing agency.
- 1.6.8 Factory-Authorized Service Representative Qualifications: An authorized representative of a manufacturer who is trained and approved by the manufacturer to inspect installation of the manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- 1.6.9 Preconstruction Testing: Where a testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
 - 1.6.9.1 Design Builder's responsibilities include the following:
 - 1.6.9.1.1 Provide test specimens representative of proposed products and construction.
 - 1.6.9.1.2 Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
 - 1.6.9.1.3 Provide sizes and configurations of test assemblies to adequately demonstrate capability of products to comply with performance requirements.
 - 1.6.9.1.4 Build site-assembled test assemblies using installers who will perform same tasks for Project.
 - 1.6.9.1.5 When testing is complete, remove test specimens and assemblies; do not reuse products on Project.
 - 1.6.9.2 Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality assurance service to Design Builder, with a copy to the County. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents or accepted Construction Documents.

1.7 QUALITY CONTROL

- 1.7.1 County Responsibilities: Where quality control services are indicated

as County's responsibility, County will engage a qualified testing agency to perform these services.

- 1.7.1.1 Specified inspection and testing shall be performed in accordance with the Authority Having Jurisdiction (AHJ) Regulations.
- 1.7.1.2 County will furnish Design Builder with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspections they are engaged to perform.
- 1.7.1.3 Payment for these services will be by the Design Builder.
- 1.7.1.4 Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Design Builder.
- 1.7.2 Design Builder's Responsibilities: Tests and inspections not explicitly assigned to County are Design Builder's responsibility
 - 1.7.2.1 Where services are indicated as Design Builder's responsibility, engage a qualified testing agency to perform these quality control services.
 - 1.7.2.2 Notify testing agencies and the County at least seventy-two (72) hours in advance of time when Work that requires testing or inspecting will be performed.
 - 1.7.2.3 Where quality control services are indicated as Design Builder's responsibility, submit a certified written report, in duplicate, of each quality control service to the County.
 - 1.7.2.4 Testing and inspecting requested by Design Builder and not required by the Contract Documents are Design Builder's responsibility.
 - 1.7.2.5 Submit additional copies of each written report directly to authorities having jurisdiction, when so directed by the County.
 - 1.7.2.6 Do not cover work before required tests and inspections are performed .
- 1.7.3 Disqualified Material: Material shipped or delivered to the site by the Design Builder from the source of supply prior to satisfactorily passing required tests or inspections, or prior to the receipt of a notice from the County that such testing or inspection is not required shall not be incorporated into the Work.
- 1.7.4 Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components

and equipment installation, including service connections. Report results in writing as specified in Section 01 33 00 (Submittal Procedures).

- 1.7.5 Retesting/Reinspecting: Regardless of whether original tests or inspections were Design Builder's responsibility, provide quality control services, including retesting and reinspection, for construction that replaces Work that failed to comply with the Contract Documents.
- 1.7.5.1 If such additional tests or inspections establish that such portion of the Work fails to comply with the Contract Documents, all costs of such additional tests and inspections, and all other costs resulting from such failure, including compensation for County and County's consultants shall be deducted from the Contract Sum by Change Order.
- 1.7.5.2 In addition, the Design Builder shall pay for: Additional costs, including compensation for travel and daily living expenses which are beyond normal inspection costs, when the County's Testing Laboratory is required to conduct inspections outside of the Seattle area.
- 1.7.5.2.1 Cost of retesting Work revised or replaced by Design Builder, where required tests were performed on original construction.
- 1.7.5.2.2 Cost of retesting construction used as temporary facilities by the Design Builder.
- 1.7.5.2.3 Costs of testing construction required by Design Builder's substitutions.
- 1.7.6 Testing Agency Responsibilities: Cooperate with County and Design Builder in performance of duties. Provide qualified personnel to perform required tests and inspections:
- 1.7.6.1 Notify County and Design Builder promptly of irregularities or deficiencies observed in the Work during performance of services.
- 1.7.6.2 Determine the location(s) from which test samples will be taken and in which in-situ tests are conducted.
- 1.7.6.3 Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
- 1.7.6.4 Submit a certified written report, in duplicate, of each test, inspection, and similar quality control service to County through Design Builder.
- 1.7.6.5 Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the

Work.

1.7.6.6 Do not perform any duties of Design Builder.

1.7.7 Associated Services: The Design Builder shall cooperate with agencies performing required tests, inspections, and similar quality control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1.7.7.1 Access to the Work.

1.7.7.2 Incidental labor and facilities necessary to facilitate tests and inspections.

1.7.7.3 Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.

1.7.7.4 Facilities for storage and field curing of test samples.

1.7.7.5 Delivery of specified quantities of representative samples of materials proposed for use as specified to testing agencies.

1.7.7.6 Preliminary design mix proposed for use for material mixes that require control by testing agency.

1.7.7.7 Security and protection for samples and for testing and inspecting equipment at Site.

1.7.8 Coordination: Coordinate sequence of activities to accommodate required quality assurance and quality control services with a minimum of delay and to avoid of the need to remove and replace construction to accommodate testing and inspecting.

1.7.8.1 Schedule times for tests, inspections, obtaining samples, and similar activities.

1.7.8.2 Do not cover any piping, wiring, ducts, or other installations until they have been inspected and approved by the County or certified, if certification is required.

1.8 SPECIAL TESTS AND INSPECTIONS

1.8.1 Special Tests and Inspections: The County will engage a qualified special inspector to conduct special tests and inspections required by the Authority Having Jurisdiction (AHJ). The responsibilities of the Special Inspector are as follows:

1.8.1.1 Verifying that manufacturer maintains detailed fabrication and quality control procedures and reviewing the completeness and

adequacy of those procedures to perform the Work.

- 1.8.1.2 Notifying County promptly of irregularities and deficiencies observed in the Work during performance of its services.
 - 1.8.1.3 Submitting a certified written report of each test, inspection, and similar quality control service to County with copy to Design Builder.
 - 1.8.1.4 Submitting a final report of special tests and inspections at Substantial Completion, this includes a list of unresolved deficiencies.
 - 1.8.1.5 Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents or approved Construction Documents.
 - 1.8.1.6 Retesting and re-inspecting corrected work, as needed.
- 1.8.2 The County shall review and approve the agencies and/or individuals conducting the special tests and inspections prior to issuing the building Permit or prior to the commencement of related work.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION

3.1 INSPECTION

- 3.1.1 The Design Builder shall provide access to the Work, including the facilities where the Work is in preparation, at all times for the purpose of inspection. The Design Builder shall maintain proper facilities and provide safe access for such inspection at all times.
- 3.1.2 The County shall have the right to reject materials and workmanship that are defective, or to require their correction. Rejected workmanship shall be satisfactorily corrected and rejected materials shall be removed from the Site without charge to the County.
- 3.1.3 The County may make an examination of work already completed by requiring the Design Builder to remove or tear out such work at any time before final acceptance of the Work. Upon request, the Design Builder shall provide all facilities, labor and materials necessary to remove the portion of the Work designated by the County. If such work is found to be defective in any respect, the Design Builder shall be responsible for all expenses of such examination and satisfactory reconstruction. If such work is found to meet the requirements of the Contract Documents, the additional cost of

labor and materials involved in the examination shall be allowed to the Design Builder.

3.2 QUALITY CONTROL REPORTS

3.2.1 Frequency: Reports are required for each day that Work is performed, for every seven (7) consecutive Days of no work, and on the last day of a no-work period. Account for each day throughout the life of the Contract. The reporting of Work shall be identified by Specification number and title and terminology consistent with the Contract Schedule. Design Builder Quality Control Reports shall be prepared, signed and dated by the Quality Control Manager and shall contain the following information:

- 3.2.1.1 Identify the part or parts of the Work that is the subject of the report.
- 3.2.1.2 Indicate, as applicable, that for this portion of the Work, the Construction Documents have been reviewed, submittals have been approved, materials comply with approved submittals, materials are stored properly, preliminary work was done correctly, the testing plan has been reviewed, and work methods and schedule have been discussed.
- 3.2.1.3 Indicate, as applicable, that for this portion of the Work, the preliminary work was done correctly, samples have been prepared and approved, the workmanship is satisfactory, test results are acceptable, work is in compliance with the Contract Documents and approved Construction Documents, and the required testing has been performed. Include a list of who performed the tests.
- 3.2.1.4 Results of off-site quality control work, if applicable, including actions taken.
- 3.2.1.5 List any rework items identified but not corrected by close of business.
- 3.2.1.6 List the rework items corrected from the rework items list along with the corrective action taken.
- 3.2.1.7 Include a "Comments" section in the report that contains pertinent information including directions received, quality control problem areas, deviations from the Quality Control Plan, deficiencies encountered, Quality Control meetings held, acknowledgement that as-built drawings have been updated, corrective direction given by the Quality Control Manager, and corrective action taken by the Design Builder.
- 3.2.1.8 Contractor Quality Control Report certification.

3.3 TEST AND INSPECTION LOG

- 3.3.1 Prepare a sequentially numbered record of tests and inspections. Include the following:
 - 3.3.1.1 Request for Inspection
 - 3.3.1.2 Date test or inspection was conducted.
 - 3.3.1.3 Description of the Work tested or inspected.
 - 3.3.1.4 Applicable Construction Documents
 - 3.3.1.5 Date test or inspection results were transmitted to County.
 - 3.3.1.6 Identification of testing agency or special inspector conducting test or inspection.
- 3.3.2 Maintain log at Site. Post changes and modifications as they occur. Provide access to test and inspection log for County's reference during normal working hours.
- 3.4 REPAIR AND PROTECTION
 - 3.4.1 General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
 - 3.4.1.1 Comply with the Contract Document requirements for Section 01 73 00 (Cutting and Patching).
 - 3.4.2 Protect construction exposed by or for quality control service activities.
 - 3.4.3 Repair and protection are Design Builder's responsibility, regardless of the assignment of responsibility for quality control services.
- 3.5 GEOTECHNICAL ENGINEERING
 - 3.5.1 The Design Builder's geotechnical engineer or his representative will provide the following tests and inspections:
 - 3.5.1.1 Continuous inspection of fill placement
 - 3.5.1.2 Evaluation of onsite and imported earth materials before placement.
 - 3.5.1.3 Field test fill and earth backfill as placed and compacted.
 - 3.5.1.4 Inspect excavations and subgrade before concrete is placed
 - 3.5.1.5 Provide continuous inspection of pile boring.
 - 3.5.1.6 Provide periodic inspection of open excavations, embankments, and other cuts or vertical surfaces of earth.

- 3.5.1.7 The Geotechnical Engineer will submit reports of tests and inspections. These reports will indicate compliance or noncompliance with the Contract Documents, results of compaction tests and that soil conditions encountered do or do not confirm anticipated conditions and support their design recommendations.
- 3.5.2 Design Builder shall remove unsatisfactory material, re-compact, adjust moisture, place new material, or in the case of excavations, provide proper protective measures, perform other operations necessary, as determined by the geotechnical engineer and directed by the County, whose decisions and directions will be considered final.
- 3.5.3 Soils Test and Inspection Procedure
- 3.5.3.1 Allow sufficient time for testing and evaluation of results before material is needed. The Geotechnical Engineer, in consultation with the County, will be the sole and final judge of suitability of all materials.
- 3.5.3.2 Laboratory compaction tests to be used will be in accordance with ASTM D 1557.
- 3.5.3.3 Field density tests will be made in accordance with ASTM D 1556.
- 3.5.3.4 The number of tests will be determined by the Geotechnical Engineer and County. Materials in question may not be used, pending test results.
- 3.5.3.5 The Geotechnical Engineer will visually or otherwise examine excavations and embankments.
- 3.6 CONCRETE TESTS AND INSPECTIONS
- 3.6.1 Tests
- 3.6.1.1 Notify Architect, County and testing agency of brand and type of cement and sources of aggregates in time for review, sampling and testing. Test cement in accordance with the Authority Having Jurisdiction (AHJ) requirements and/or regulations.
- 3.6.1.2 Aggregate: The County's testing agency will test at least one sample for every two hundred (200) cubic yards of aggregate. Aggregates from a known source of supply that have shown by actual service to produce concrete of the required quality will be tested only for gradation and deleterious substances.
- 3.6.1.3 Obtain at least one set of samples for strength tests of each separate design mix of concrete placed each day. Frequency of sampling shall be not less than once per day, nor less than once for each fifty (50) cubic yards of concrete, nor less than once per 2,000 square feet of surface area for slabs or walls. Obtain one

additional set of samples for testing at the start of concrete work for each class of concrete, and whenever the mix or aggregate is changed.

- 3.6.1.4 One set of samples consists of four cylinders.
- 3.6.1.5 Cylinders will be taken so as to represent as nearly as possible the batch of concrete from which they are taken. Sampling procedures shall conform to ASTM C 172.
- 3.6.1.6 Test cylinders shall be made and cured in compliance with ASTM C 31, except as modified hereinafter. Tests will comply with ACI 301 for strength, slump, and air entrainment tests.
- 3.6.1.7 Test cylinders from respective batches, one at age of seven (7) Days, and two at age twenty-eight (28) Days. The fourth cylinder shall be held in reserve and tested only at the direction of the Architect or County. Cylinder testing procedures shall conform to ASTM C 39 for strength.
- 3.6.1.8 Slump tests shall be taken as required by Testing Laboratory to certify compliance with the Contract Documents and approved Construction Documents. Slump shall be tested in accordance with ASTM C 143.
- 3.6.1.9 Minimum compressive strength of test cylinders, in pounds per square inch, shall not be less than the specified required design strength.
- 3.6.1.10 If minimum strengths of test cylinder fall below those specified, Architect or County may require test cores from hardened concrete to be taken and tested. Each core test, if taken shall consist of three cores. The cost of such cores and tests shall be borne by the Design Builder. Cores shall be taken in accordance with ASTM C 42, from locations selected by the Architect or County. The Design Builder shall repair core holes with a non-shrinking natural aggregate grout.
 - 3.6.1.10.1 Concrete testing by coring shall be considered acceptable if the average strength of the three cores is equal to at least .85 of the minimum specified twenty-eight (28) day strength and if no single core strength is less than five hundred (500) psi below the twenty-eight (28) day strength.

3.6.2 Concrete Inspections

- 3.6.2.1 An authorized inspector from the testing agency shall be present at all times during placing of structural cast-in-place concrete. The inspector shall inspect and accept the accuracy of all reinforcing

steel before concrete is placed. Concrete construction activities shall not proceed until inspections are complete and the inspected construction is approved.

3.6.3 Concrete Mix Designs

3.6.3.1 Refer to Specification Division 3 (Concrete) as provided by the Design-Builder.

3.6.4 Concrete Plant Inspection

3.6.4.1 Structural concrete manufacturer(s) shall deliver a certificate in accordance with ASTM C 94, Section 15.1, and all items of Section 15.2 with the addition of type and brand of cement and admixtures, source and identification of aggregates to the Inspector with each mixer truck. Certificates shall be from a public weighmaster. The inspector shall not accept concrete that is not accompanied and identified by a certificate from a batch plant inspector.

3.6.4.2 Concrete shall be mixed at certified automatic concrete batch plants and shall have quality control as follows:

3.6.4.2.1 Laboratory designed mixes using adequate cement factors.

3.6.4.2.2 The testing agency shall perform continuous batch plant inspection.

3.6.4.2.3 Periodic inspection of quality of materials used may be made by testing laboratory, acceptable to Design Build Architect and/or County.

3.7 HIGH-STRENGTH GROUT

3.7.1 This Article applies to structural grout used below base plates and similar applications.

3.7.2 The placement of grout materials will be continuously inspected by the County's testing agency.

3.7.3 Grout compressive strength testing: The Design Builder will obtain a set of three samples from each batch. Samples will be tested at one (1) or three (3) days and seven (7) days following mixing. Compressive strengths shall exceed the manufacturer's published minimum strengths or eighty percent (80%) of their published typical compressive strengths.

3.8 EXPANSION ANCHOR BOLTS

3.8.1 Expansion type concrete anchor bolts shall be Hilti Kwik Bolt II or equal and

as indicated on the Design Builder approved Construction Documents. Other brands of similar anchors will be acceptable with demonstration of equivalency. Submit manufacturer's specifications and ICBO reports. All anchors shall be installed with special inspection in accordance with the requirements of the Building Code.

3.8.2 Fifty percent of the anchors or alternate bolts in any group arrangement shall be proof tested in tension or torque, as specified in the Construction Documents.

3.8.3 Testing Requirements:

3.8.3.1 Anchor diameter refers to the thread size.

3.8.3.2 Apply proof test loads to anchors without removing the nut, if possible. If not possible, remove nut and install a threaded coupler to the same tightness as the original nut using a torque wrench and apply load.

3.8.3.3 Reaction loads from test fixtures may be applied close to the anchor being tested, provided the anchor is not restrained from withdrawing by the fixture(s).

3.8.3.4 Test equipment is to be calibrated by an approved testing laboratory in accordance with standard recognized procedures.

3.8.3.5 The following criteria are applicable for the approval of installed anchors:

3.8.3.5.1 Hydraulic Ram Method: The anchor should have no observable movement at the applicable test load. For wedge and sleeve type anchors, a practical way to determine observable movement is that the washer under the nut becomes loose.

3.8.3.5.2 Torque Wrench Method: The applicable test torque must be reached within the following limits:

a. One half (1/2) turn of the nut.

b. One quarter (1/4) turn of the nut for the 3/8" sleeve anchor only.

3.8.3.5.3 Testing should occur a minimum of twenty-four (24) hours after installation of the subject anchors.

3.9 ADHESIVE ANCHORS

3.9.1 Installation Testing: Fifty percent of the anchors shall be pull-tested.

- 3.9.2 Proof Test Load: Pull test to twice the ICBO evaluation report design tension values or as indicated on the drawings.
- 3.9.3 Inspection: Installation of adhesive anchors will be continuously inspected in accordance with the requirements of the Architect and/or Engineer of Record and Authority Having Jurisdiction (AHJ).

3.10 EPOXY AND CEMENTITIOUS GROUTED DOWELS

- 3.10.1 Initial Testing: Install three anchors for each anchor size and installation position planned in allocation acceptable to the Architect or County. These anchors shall not be incorporated into the finished construction. The testing agency will pull-test these anchors at one hundred twenty-five percent (125%) of the values specified on the drawings.
- 3.10.2 Testing: The testing agency will pull-test fifty percent (50%) of the dowels in accordance with the schedule shown on the drawings. If any failures occur, the agency will pull-test one hundred percent (100%) of dowels in the vicinity or placed with the same batch of grout until at least twenty (20) tests demonstrate compliance. The Design Builder shall bear the cost of replacing failed dowels and re-inspection.
- 3.10.3 Inspection: Installation of epoxy grouted dowels will be continuously inspected in accordance with the Architect and/or Engineer of record and AHJ requirements or regulations.

3.11 REINFORCING STEEL

3.11.1 Tests

- 3.11.1.1 Tests shall be performed before the delivery of steel to the Site. Steel that does not meet specifications shall not be shipped to the Project.
- 3.11.1.2 Testing procedure shall conform to ASTM A 615.
- 3.11.1.3 Sample at the place of distribution, before shipment. Make one tensile strength test and one bending test from samples out of 10 tons, or fraction thereof, each size and kind of reinforcing steel, where taken from bundles as delivered from the mill and properly identified as to heat number. Mill analysis shall accompany report. Where identification number cannot be ascertained, or where random samples are taken, make one series of tests from each two and a half (2-1/2) tons, or fraction thereof, of each size and kind of reinforcing steel. Samples shall include not fewer than two pieces, each eighteen (18) inches long, of each size and kind of reinforcing steel.
- 3.11.1.4 Welds: Reinforcing bar welds shall be inspected. Tests of reinforcing bar welds shall be in accordance with ASTM E 709 and AWS D1.4. Chemical testing of reinforcing bars for welding shall

conform to AHJ requirements. Inspector will inspect all reinforcement for concrete construction for size, dimensions, locations and proper placement. Special Inspector required for welding as required by AHJ. Inspector shall be present during welding of all reinforced steel.

3.12 MASONRY

3.12.1 Job Inspector

3.12.1.1 All masonry work will be continuously inspected during laying and grouting by an inspector specially trained in such inspections. The inspector shall make test samples and perform such tests as are required.

3.12.1.2 The inspector shall check the materials, details of construction and construction procedure. The inspector shall furnish a verified report that of his own personal knowledge the work covered by the report has been performed and materials used and installed are in every particular in accordance with, and in conformity to, the Contract Documents and duly approved Construction Documents.

3.12.2 Stone Veneer

3.12.2.1 All veneer shall be continuously inspected as required by the AHJ.

3.13 STRUCTURAL STEEL INCLUDING MISCELLANEOUS STEEL

3.13.1 Mill certificates or affidavits and manufacturers' certifications shall be supplied to the inspector for verification of steel materials. Testing agency shall be notified at least three working days in advance of fabrication and supplied with the reports so that the inspector can make a shop inspection of the steel.

3.13.2 Inspection requests shall be based on applicable Building Codes, Volume 2, Seismic Provisions for Structural Steel Buildings of the American Institute of Steel Construction, 2002.

3.13.3 Identify and mark steel in accordance with Section 2202B. Structural steel properly identifies need not be tested.

3.13.4 Tests of Steel Materials: If structural steel cannot be identified by heat or melt numbers, or if its source is questionable, not less than one tension test and one bend test will be made for each five tons or fractional part thereof. The cost of such testing will be borne by the Design Builder.

3.13.5 Testing and Inspection of Structural Steel:

3.13.5.1 Testing agency will visit the fabricator's plant to verify that materials used check with the mill tests, affidavits of test reports, and that fabrication and welding procedures meet specifications.

Testing agency shall visually check fabricated steel delivered to the Project against the working and reviewed shop drawings for compliance, and make physical tests and measurements as required to meet the Specifications.

- 3.13.5.2 Inspection of welding shall be in accordance with the requirements of AHJ.
- 3.13.5.3 Erection Inspection: Testing agency will visually inspect bolted and field welded connections, perform such additional tests and inspections of the field work as are required by the Architect or Engineer of Record and prepare test reports for the approval.
- 3.13.6 Ultrasonic Testing: All complete penetration multi-pass groove welds will be ultrasonically tested:
 - 3.13.6.1 The Design Builder's testing agency will perform ultrasonic testing immediately after welding is complete. A second ultrasonic testing will be performed near the end of field welding for at least twenty-five percent (25%) of the field welded groove welds.
 - 3.13.6.2 All defective welds shall be repaired and re-tested with ultrasonic equipment.
 - 3.13.6.3 When ultrasonic indications arising from the weld root can be interpreted as either a weld defect or the backing strip itself, the backing strip shall be removed at the Design Builder's expense and, if no root defect is visible, the weld shall be retested. If no defect is indicated on this re-test, and no significant amount of the base and weld metal have been removed, no further repair or welding is necessary. If a defect is indicated, it shall be repaired at the Design Builder's expense.
 - 3.13.6.4 The ultrasonic instrumentation shall be calibrated by the technician to evaluate the quality of the welds in accordance with AWS D1.1.
 - 3.13.6.5 Should defects appear in welds tested, repairs shall be similarly inspected at the Design Builder's expense and at the direction of the Architect or Engineer of Record until satisfactory performance is assured.
 - 3.13.6.6 Other methods of inspection, for example, x-ray, gamma ray, magnetic particle, or dye penetrant, may be used on welds if deemed necessary by the Architect or Engineer of Record.
- 3.13.7 The testing laboratory will review welding procedure specifications and related documentation to verify compliance with AWS and the Contract Documents.

3.14 HIGH-STRENGTH BOLTS, NUTS AND WASHERS

- 3.14.1 Material Tests: High-strength bolts, nuts and washers will be sampled and tested in accordance with the requirements of the specification for High-Strength Bolts for Structural Steel Joints, including Suitable Nuts and Plain Hardened Washers, ASTM A325, or for Quenched and Tempered Alloy Steel Bolts for Structural Steel Joints, ASTM 490, latest editions, details of construction, and installation procedure.
- 3.14.2 Inspection of High-Strength bolt Installation: Inspection of high-strength bolt installations shall be made in accordance with AHJ by an inspector specially approved for that purpose by Design Builder. The inspector will check the materials, equipment, details of construction, and installation procedure. The inspector shall furnish the County with a report that the Work has been completed in every respect in compliance with the Contract Documents and approved Construction Documents.

3.15 METAL DECKING

3.15.1 Tests and Inspections:

3.15.1.1 Inspection by a qualified welding inspector of all deck welding will be made in accordance with all applicable building codes and AHJ.

3.15.1.2 Materials Testing:

3.15.1.2.1 Identified Steel: Materials testing is waived for steel identified in accordance with all applicable building codes and AHJ.

3.15.1.2.2 Unidentified Steel: Steel will be sampled and testing to confirm compliance with the strength and chemical requirements of the appropriate ASTM standard. Frequency of sampling will be as determined by the Architect or County. The Design Builder shall supply samples and test pieces and provide facilities for inspection without extra charge. The Design Builder shall schedule construction activities so that costs of inspection to the Owner will be kept to a minimum.

3.15.2 Inspection shall be in accordance with the AHJ requirements. Inspection of steel welding shall be made to ensure that seam welds and puddle welds are made in accordance with the Contract Documents. Inspection shall ensure that proper electrodes, current, travel, and speed are used, and that no cracks, serious undercutting, overlap, surface holes or slag inclusions occur. The provisions of inspection by the Architect of record, Engineer of Record or County shall not relieve the Design Builder from performing the work in accordance with the Contract Documents and approved Construction Documents.

3.16 LOAD BEARING METAL STUD, LIGHT GAGE FRAMING WELDING TESTS AND INSPECTIONS

- 3.16.1 All shop and field welding of cold formed metal framing members, including cold formed metal framing welded to structural steel, will be continuously inspected by the Design Builder's special inspector.
- 3.16.2 Framing erection will be periodically inspected by the Design Builder's inspector.
- 3.16.3 Acceptable or rejectable weld quality, including concavity and convexity will be determined by the Design Builder's special inspector. Repair or replace welds and welded components, as directed by the Architect of Record or Engineer of Record, if any welds are deemed unacceptable by the County's special inspector.
- 3.16.4 Sheet to structural steel and structural steel to sheet welding will be continuously inspected by the Design Builder's testing agency and shall comply with both AWS D1.1-98 and AWS D1.3-98. Structural steel is material whose thickness exceeds 0.18".

3.17 WELDED STUD AND REBAR CONNECTORS

- 3.17.1 Inspection: Perform pre-production testing, stud installation, and production testing under continuous inspection of the Testing Laboratory Welding Inspector. In addition to standard reports, inspector's report shall detail the location of all defective studs with repair or replacement action taken, damage resulting from stud installation, and all defects and unusual occurrences.
- 3.17.2 Exception: Inspection and testing is waived for studs connecting non-structural and non-stressed finish materials.
- 3.17.3 Pre-Production Testing: Perform the following tests with each welding equipment power source at the start of each production period (the time period from start-up to any shutdown of any stud welding equipment) at the start of any new welding procedure, and after any change in the welding procedure.
 - 3.17.3.1 Pre-Production Tests – Stud Shear Connectors: After cooling, test the first two studs on a member by hammer bending to a forty-five (45) degree angle. If a failure occurs in the weld zone of either stud, correct the procedure, and weld and bend test two more studs on the member. If either of the second two studs fails, continue all additional welding on separate materials until two consecutive studs are tested and found to be satisfactory. Then weld two studs to the same member, bend test, and find satisfactory before any more studs are welded to the member.
 - 3.17.3.2 Pre-Production Tests – Studs other than Shear Connectors: Weld

two studs to separate material in the same general position (such as flat, vertical, sloping, or overhead) and of similar steel material and thickness as members to receive studs. After cooling, hammer bend the studs to a thirty (30) degree angle. If failure occurs in any stud shank, ascertain and correct the cause before making any further welds. If a failure occurs in the weld zone of either stud, correct the procedure and successfully weld and test two successive studs before any studs are welded to members.

3.17.4 Production Inspection and Testing

3.17.4.1 Inspection of Stud Shear Connectors: After cooling, test at least one stud on each member by hammer bending to a fifteen (15) degree angle, or test each stud by striking twice with a six (6) pound hammer to verify that quality welds have been obtained. If failure occurs either in weld zone or stud shank, follow method of correction as required herein for pre production testing until successful installations are produced, and replace all defective studs. Test all studs:

3.17.4.1.1 Not showing full three hundred sixty (360) degree fillet weld

3.17.4.1.2 That have been repaired by welding

3.17.4.1.3 All replacement studs

3.17.4.1.4 All studs in which reduction in length is less than correct by hammer bending to a fifteen (15) degree angle

For studs showing less than a three hundred sixty (360) degree weld fillet, bend the stud in the direction opposite to the missing weld fillet. Remove and replace studs that crack either in the weld zone, base metal, or shank under inspection and testing, or under subsequent straightening.

3.17.4.2 Inspection of Studs other than Shear Connectors: Test at least one stud in every 100 studs by hammer bending to a fifteen (15) degree angle or, if threaded, torque test with a calibrated torque wrench to an approved value for stud diameter and thread in an approved device. If the stud fails, correct the welding procedure as required herein for pre-production testing and bend or torque test two more in-place studs. If either of the two second studs fails, all studs represented by the tests shall be bend or torque, or shall be rejected and replaced. The extent of additional inspection and testing for critical structural connections shall be as designated by County.

- 3.17.5 Straightening: Leave in a bent condition those stud shear connectors and shear transfer devices that are bent less than sixteen (16) degree, and are free of failure provided no portion of the studs is within 1" of and exposed concrete surface. Perform stud bending and straightening without heating and before completion of each day's stud welding operations. Obtain inspection and approval of straightened studs before covering.
- 3.17.6 Load Testing: The testing agency shall load test studs to the extent and by the methods directed.

3.18 PRODUCT WARRANTY

- 3.18.1 The Design Builder warrants to the County that all materials and equipment furnished under this Contract will be new unless otherwise specified, and that all Work will be of good quality, free from faults and defects and in conformance with the Contract Documents. All Work not so conforming to these standards may be considered defective. If required by the County's Project Representative, the Design Builder shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The warranty provided herein shall be in addition to and not in limitation of any other warranty or remedy required by law or by the Contract Documents. For the purposes of this Subsection "new materials and equipment" means that all such materials and equipment shall be in current production at time of bidding. No discontinued lines, patterns, materials, or colors will be permitted unless otherwise specified.

END OF SECTION

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SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 Section Includes:

- 1.1.1.1 Temporary Electricity
- 1.1.1.2 Temporary Communications
- 1.1.1.3 Temporary Water
- 1.1.1.4 Fences
- 1.1.1.5 Protection of Public and Private Property
- 1.1.1.6 Temporary Sanitary Facilities
- 1.1.1.7 Temporary Barriers and Enclosures
- 1.1.1.8 Water Control
- 1.1.1.9 Pollution Control
- 1.1.1.10 Construction Aids
- 1.1.1.11 Erosion Control
- 1.1.1.12 Noise Control
- 1.1.1.13 Traffic Control
- 1.1.1.14 Removal of Temporary Facilities and Controls
- 1.1.1.15 Interim Wayfinding

1.2 TEMPORARY ELECTRICITY

- 1.2.1 Design Builder shall provide, maintain, and pay for electrical power at the Site for construction purposes and for Design Builder's trailers. Design Builder shall be responsible to obtain and pay for power, which may be obtained from Seattle City Light, but Design Builder must provide all necessary wiring and appurtenances for connection Seattle City Light system.

1.3 TEMPORARY COMMUNICATIONS

- 1.3.1 Provide, maintain, and pay for all applicable communications and data service connections (including without limitation telephone, facsimile, e-mail and internet) to field office commencing at time of Project mobilization, including all installation and connection charges. In addition, Design Builder shall provide, maintain and pay for a high speed cable internet service as required to use the County's project management system Unifier(at the Site).

1.4 TEMPORARY WATER

- 1.4.1 Provide, maintain, and pay for suitable quality water service required for construction operations.
- 1.4.2 All water required for and in connection with the Work, including without limitation for dust control, shall be furnished by and at the expense of Design Builder. In coordination with the requirements of the local water district,

Design Builder shall furnish necessary pipe, hose, nozzles, meter, and tools and perform all necessary labor. Unnecessary waste of water will not be permitted. Special hydrant wrenches shall be used for opening and closing fire hydrants; in no case shall pipe wrenches be used for this purpose.

1.5 FENCES

1.5.1 All existing fences affected by the Work shall be maintained by Design Builder until Final Completion. Fences which interfere with construction operations shall not be relocated or dismantled until County gives written permission to do so, and the period the fence may be left relocated or dismantled has been agreed upon. Where fences must be maintained across the construction easement, adequate gates shall be installed. Gates shall be kept closed and locked at all times when not in use. The Design Builder shall provide three (3) complete sets of keys to the County for all gate locks. If additional sets of keys are required by the County, the Design Builder shall provide them at no additional cost.

1.5.2 On completion of the Work across any tract of land, Design Builder shall restore all fences to their original condition and to their original locations.

1.6 PROTECTION OF PUBLIC AND PRIVATE PROPERTY

1.6.1 Design Builder shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by its construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, together with all sod and shrubs in yards, parkways, and medians, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.

1.6.2 Design Builder shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location or character, which may be caused by transporting equipment, materials, or workers to or from the Work, Site or any part thereof, whether by Design Builder or Subcontractors.

1.6.3 Design Builder shall make satisfactory and acceptable arrangements with the County, or the agency or authority having jurisdiction over the damaged property, concerning its repair or replacement or payment of costs incurred in connection with the damage.

1.6.4 All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.

1.7 TEMPORARY SANITARY FACILITIES

1.7.1 Provide and maintain required temporary buildings with sanitary toilets for use of all workers. At a minimum, sanitary facilities shall be located at trailer site, staging area, and adjacent to work area.

1.7.2 Sanitary facilities shall be of reasonable capacity, properly maintained throughout the construction period, and obscured from public view to the greatest practical extent. If toilets of the chemically treated type are used, at least one toilet will be furnished for each twenty (20) persons. Design Builder shall enforce the use of such sanitary facilities by all personnel at the Site.

1.7.3 Comply with all minimum requirements of the Health Department or other public agency having jurisdiction; maintain in a sanitary condition at all times.

1.8 TEMPORARY BARRIERS AND ENCLOSURES

1.8.1 Provide barriers to prevent unauthorized entry to construction areas, to allow for County's use of Site, and to protect existing facilities and adjacent properties from damage from construction operations.

1.8.2 Provide barricades required by governing authorities for public access to existing buildings.

1.8.3 Protect vehicular traffic, stored materials, Site, and structures from damage.

1.8.4 Provide Site Plan including off-site lay down and parking areas indicating construction fencing, location of construction gates, fire access gates and locations of existing fire hydrants for approval by local Fire Department.

1.9 WATER CONTROL

1.9.1 Grade Site to drain.

1.9.2 Maintain excavations free of water.

1.9.3 Protect Site from puddling or running water.

1.9.4 Provide water barriers as required to protect Site from soil erosion.

1.9.5 Provide for drainage of storm water and such water as may be applied or discharged on the Site in performance of the Work. Drainage facilities shall be adequate to prevent damage to the Work, the Site, and adjacent property.

1.9.6 Clean, enlarge and/or supplement existing drainage channels and conduit as necessary to carry all increased runoff attributable to Design Builder's operations. Construct dikes as necessary to divert increased runoff from entering adjacent property (except in natural channels), to protect County's facilities and the Work, and to direct water to drainage channels or conduits. Provide ponding as necessary to prevent downstream flooding.

1.10 POLLUTION CONTROL

1.10.1 Design Builder shall prevent the pollution of drains and watercourses by sanitary wastes, sediment, debris, and other substances resulting from construction activities. No sanitary wastes shall be permitted to enter any

drain or watercourse other than sanitary sewers. No sediment, debris, or other substance shall be permitted to enter sanitary sewers without authorization of the receiving sanitary sewer service, and all possible Best Management Practices (BMPs) shall be taken to prevent such materials from entering any drain to watercourse.

- 1.10.2 Design Builder shall implement BMPs during construction activities and shall comply with all requirements mandated by the Authority Having Jurisdiction (AHJ). Erosion and sedimentation control practices shall include installation of silt fences, straw wattle, soil stabilization, revegetation, and runoff control to limit increases in sediment in stormwater runoff, including but not limited to, detention basins, straw bales, silt fences, check dams, geofabrics, drainage swales, and sand bag dikes.
- 1.10.3 In the event that dewatering of excavations is required, Design Builder shall obtain the necessary permits for discharge of the dewatering effluent from the local jurisdiction. Design Builder shall be responsible for assuring that water quality of such discharge meets the appropriate permit requirements prior to any discharge.

1.11 CONSTRUCTION AIDS

- 1.11.1 Design Builder and/or its Subcontractors shall furnish, install, maintain, and operate all construction aids required by it and its Subcontractors in the performance of the Work, except as otherwise provided herein. Such construction aids shall include elevators and hoists, cranes, temporary enclosures, swing staging, scaffolding and temporary stairs. In the event of conflict, Design Builder furnishing the equipment shall determine priorities in the best interest of the Project.
- 1.11.2 When sandblasting, spray painting, spraying of insulation, or other activities inconveniencing or dangerous to property or the health of employees or the public are in progress, the area of activity shall be enclosed adequately to contain the dust, over-spray, or other hazard. In the event there are no permanent enclosures of the area, or such enclosures are incomplete or inadequate, Design Builder shall provide suitable temporary enclosures.
- 1.11.3 Temporary shoring and bracing of construction shall be provided wherever necessary and shall be adequate for all loads to which the structure may be subject during construction including seismic, wind, materials, equipment and operation of same. Leave temporary shoring and bracing in place as long as may be required for safety. Design Builder shall submit temporary shoring and bracing designs, including calculations, to structural engineer of record for review.

1.12 EROSION CONTROL

- 1.12.1 Design Builder shall prevent soil erosion on the Site and adjacent property resulting from its construction activities consistent with an approved Storm Water Pollution Prevention Plan ("SWPPP"). Effective measures shall be initiated prior to the commencement of clearing, grading, excavation, or other

operations that will disturb the natural protection.

- 1.12.2 Work shall be scheduled to expose areas subject to erosion for the shortest possible time, and natural vegetation shall be preserved to the greatest extent practicable. Temporary storage and construction buildings shall be located, and construction traffic routed, to minimize erosion. Temporary fast-growing vegetation or other suitable ground cover shall be provided as necessary to control runoff.

1.13 NOISE CONTROL

- 1.13.1 Exterior noise levels shall not exceed those established by the authority having jurisdiction. Conformance to this requirement shall be included in the Contract Price and no additional compensation will be allowed for specific equipment, overtime, etc. which may be required, to meet the regulations stated.
- 1.13.2 As portions of the Project Site are adjacent to fully occupied buildings, at no time shall the Contractor cause disruption to ongoing building operations, as a result of excessive noise. Excessive noise is defined to include, but not be limited to the following work activities: construction equipment operation, roto-hammering, use of power-activated fasteners, jackhammering, continuous hammering with hand-held hammers, and the like.
- 1.13.3 If, in the sole opinion of the Owner's Project Representative or his or her designee, excessive noise is produced, upon notification, the Contractor shall immediately cease such activity and reschedule it after normal tenant working hours. Contractor shall not be entitled to extra monetary compensation or extra time for work completion as a result of such rescheduled work. Refer to SECTION 01 14 00 "WORK RESTRICTIONS" for further information.
- 1.13.4 When required by WISHA OSHA Standards, construction workers shall be provided with ear protection to operate equipment.
- 1.13.5 Design Builder shall take reasonable measures to avoid unnecessary noise. Such measures shall be appropriate for the normal ambient sound levels in the area during working hours. All construction machinery and vehicles shall be equipped with practical sound-muffling devices, and operated in a manner to cause the least noise consistent with efficient performance of the Work. During construction activities on or adjacent to occupied buildings, and when appropriate, Design Builder shall erect screens or barriers effective in reducing noise in the building and shall conduct its operations to avoid unnecessary noise which might interfere with the activities of building occupants. If noise levels disrupt or adversely interfere with the Youth Services Center operations, upon verbal and/or written notice by the County, the Design Builder shall immediately cease such disruptive actions. If rescheduling of work is necessary, then the Design Builder shall do so at no additional expense to the County for any overtime or any premium time for labor or equipment..
- 1.13.6 Ensure and provide certification to County that all construction equipment and vehicles used for the Work are:

1.13.6.1 Maintained in good mechanical condition

1.13.6.2 Equipped with properly installed engine mufflers

1.14 TRAFFIC CONTROL

1.14.1 All traffic associated with the construction, including without limitation delivery and mail trucks, shall enter Design Builder's access gate and road. Design Builder shall provide signs directing construction and delivery traffic to this gate.

1.14.2 Design Builder shall take all necessary steps to minimize inconvenience to the general public throughout all work under this Contract. No driveways or private roads shall be blocked without notifying the property owner, and access must be restored during all non-working hours. Safe access must be maintained for pedestrian traffic throughout any public work area at all times.

1.14.3 At least one lane of traffic in each direction on all roads used on the Project must be kept open at all times unless prior approval is provided by the County and any affected agency. No roads shall be blocked or made inaccessible, due to Design Builder's work, without prior written approval of the County and the affected agencies in the form of an encroachment permit. Design Builder shall not block or obstruct fire lanes at any time.

1.14.4 Traffic control shall be in accordance with the City of Seattle regulations . Design Builder shall submit its traffic control plans to the appropriate agency for approval prior to work on public streets. Traffic control shall include signs, warning lights, reflectors, barriers, and other necessary safety devices and measures, including sufficient flaggers to direct vehicular traffic through the construction areas. No material or equipment shall be stored/parked where it will interfere with the free and safe passage of public traffic, and at the end of each day's work, and at other times when construction operations are suspended for any reason, Design Builder shall remove all equipment and other obstructions from the public right-of-way.

1.15 REMOVAL OF TEMPORARY FACILITIES AND CONTROLS

1.15.1 Remove temporary utilities, equipment, facilities, and materials prior to final inspection.

1.15.2 Remove underground installations.

1.15.3 Clean and repair damage caused by installation or use of temporary work.

1.15.4 Restore existing facilities used during construction to original condition. permanent facilities used during construction to specified condition.

1.16 INTERIM WAYFINDING

1.16.1 In order to respond to the dynamic nature of the construction process, interim wayfinding shall utilize modular, movable, reusable and changeable signage

elements that allow rapid deployment and removal. Cost effective materials selection and efficient use of materials shall be considered in the design process.

- 1.16.2 Interim Wayfinding elements may be in place for extended periods of time due to the length of demolition and construction of the Project. Therefore, all interim wayfinding will be durable, easily maintainable, readable to multi-lingual/cultural clients, and meet the Project's existing standard of quality. All interim wayfinding elements will be procured from a licensed signage company.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

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SECTION 01 52 00

CONSTRUCTION FACILITIES FOR COUNTY USE**PART 1 - GENERAL**

1.1 SUMMARY

- 1.1.1 General: The Design Builder shall provide the County a separate stand-alone Field Office Space and contents, for the County's exclusive use during the Design and Construction of the Project.
- 1.1.2 Property: The Office Space, furniture and equipment supplied by the Design Builder shall remain the property of the Design Builder.
- 1.1.3 Modifications: The County reserves the right to modify the Office Space and contents as may be deemed proper by the County.
- 1.1.4 Condition: The Office Space and contents shall be clean and safe condition for use and operation; the Office Space and contents shall be in new or like new condition.
- 1.1.5 Installation Timing: Provide safe, fully furnished, functional, complete, and finished Office Space ready for use, within twenty-one (21) Days of the start of Design Builder site mobilization or by date agreed to by the County. Facilities shall be vacated by County in "as found" condition, ordinary wear and tear excepted, within thirty (30) Days after Final Completion.
- 1.1.6 RESPONSIBILITY FOR COST OF FACILITIES: All costs such as tenant improvements, furniture, furnishings, equipment, utilities, janitorial service, and other services and amenities as listed in this Article shall be paid for by the Design Builder. All costs are to be included as part of the Contract Price, including, but not limited to: modular building leasing and installation; furniture, furnishings and equipment; utilities (including but not limited to: water, power, sewer, high speed data lines, phone and fax lines); drinking water, and janitorial services as further described below.

1.2 SUBMITTALS

- 1.2.1 The Design Builder shall submit to the County for its review prior to procurement or installation by Design Builder:
 - 1.2.1.1 Office Space Data: Manufacturer's descriptive data, technical descriptions, regulatory compliance, industry standards, installation, removal, and maintenance instructions.
 - 1.2.1.2 Equipment Data: Manufacturer data for each type of equipment, if directed by the County.
 - 1.2.1.3 Furniture and Furnishings Data: Manufacturer data for each type of

equipment, if directed by the County.

1.3 REGULATORY REQUIREMENTS

- 1.3.1 In addition to any other regulatory compliance required by the Contract Documents, if Design Builder provides Office Space in part or in whole by means of trailers, any such space shall comply with Washington state law that regulate such trailers.
- 1.3.2 The Design Builder shall design, construct and maintain all necessary improvements to be used for the Project Field Office for the entire duration of the Work. The Design Builder shall construct and install all improvements to meet Code requirements. The size, configuration and location of the Project Field Office must be approved in writing in advance by the County.

1.4 FACILITY REQUIREMENTS

- 1.4.1 **Services:** All costs such as tenant improvements, furniture, furnishings, equipment, utilities, express mail, janitorial services, and other services and amenities as listed in this Article shall be paid for by the Design Builder. All costs are to be included as part of the stipulated sum, including, but not limited to: modular building leasing and installation; furniture, furnishings and equipment; utilities (including, but not limited to: water, power, sewer, high speed data lines, phone and fax lines); express mail, document reproduction, bottled drinking water, and janitorial services as further described below.
- 1.4.2 **Furniture, Fixtures and Equipment:** The Design Builder shall provide office furniture, furnishings, equipment and other items required by the County as described in this section, including cost for maintenance agreements, repairs and/or replacement, including owner-furnished items as described in this section. All office furniture, furnishings, equipment and other items shall be new unless otherwise approved in writing by the County prior to deliver to the field office.
- 1.4.3 **Security and Parking:** The Project Field Office for the Design Builder and the County's Project Management Team shall be secured, alarmed and monitored to detect entry. Design Builder shall provide a minimum of six (6) parking stalls for the County Project Management Team in close proximity to the Project Field Office.

PART 2 - PRODUCTS

2.1 OFFICE SPACE

- 2.1.1 **General:** Provide Field Office Space of type, function, operation, capacity, size, complete with controls, safety devices, and accessories, for proper and durable installation. Partitions, walls, ceiling, and other interior and exterior surfaces shall be appropriately finished, including, but not limited to, trim, painting, wall base, floor covering, window coverings, and suspended or similar ceiling; provide systems, components, units, nuts, bolts, screws, anchoring devices, fastening devices, washers, accessories, adhesives,

sealants, and other items of type, grade, and class required for the particular use, not identified but required for a complete, weather-tight, appropriately operating, and finished installation.

2.1.2 Program: Space shall be maintained in good, proper, safe, clean, and properly finished condition during the Contract.

2.1.2.1 Offices (6 total): Minimum 80 square feet per office. Two (2) private offices with lockable doors, and four (4) cubicles with minimum 48" high partitions. One (1) telephone cable & outlet and one (1) high speed computer network cable & outlet per office. Furniture items for each office (as shown or equal to):

QTY	ITEM	DESCRIPTION	MODEL NO.	DIMENSIONS
1	Desk	HON-Metro Series	P3266-L-ML	29-1/2"H x 66"W x 30"D
1	Return	HON-Metro Series	P3236L-MR	26-1/2"H x 42"W x 24"D
1	Chair	HON Comfortask	5903AB,72T	40-1/2"H x 24"W x 34-1/4"D
1	File Cabinet	HON, Legal Size	D562C-L	29"H x 18-1/4"W x 25"D
1	Waste	HARPER, Blk. Plas.	Rolled Rim	28 Quart
1	Chair Mat	Tenex	FNX11390	48 x 56
1	Bookcase	HON, Steele, 4	S60ABC-L	59"H x 34-1/2" W x 12-
1	Dry Erase Bd	Boone, Non-Magnetic	BON10389	4'H x 6" W
1	Dry Erase	EXPO Low Odor Dry Erase Starter	Markers, Eraser & Cleaner	

2.1.2.2 Conference Room: (1 Total) Conference Table and chairs to seat up to twenty (20) people. Telephone and speaker phone for conferencing and two (2) four foot by six foot Dry erase marker boards with rails and markers/erasers and cleaner. Interactive electronic whiteboard (e.g. Smart Board Model SBX or equal) with projector system fully connected to an desktop CPU with internet connectivity.

2.1.2.3 Support Area for Files, Equipment, Supplies and Miscellaneous: (1 total) 300 square feet. Furniture (as shown or equal to):

QTY	ITEM	DESCRIPTION	MODEL NO.	DIMENSIONS
6	Lateral Files	HON, Series 600 Lateral	584L-L	53-1/4"H x 36"W x 19-1/4"D
2	Tables, Global	Folding Table	VCE3096WW W- 16G	29"H x 72"W x 36"D
4	Bookcase	HON, Steele, 5 Shelves	S60ABC-L	59"H x 34-1/2" W x 12-5/8"D
2	Storage Cabinet	HON, 5 Adjustable Shelves	SCL1872-L	72"H x 18" W x 36" D
1	Waste basket	HARPER, Blk. Plas.	Rolled Rim	10 Gallon

1	Interactive Whiteboard	Smartboard with remote	SBX880i4	66 1/8"W x 51 1/8" H x 6 1/2" D
1	Projector System	Smart UF65 Projector System	UF65	18 1/2"W X 15 1/2"H x 50 1/4" D

- 2.1.2.4 Coffee/Break Area: Provide Coffee/Break Area with sink with counter top, base and wall cabinets with space and outlets for refrigerator, microwave oven and counter top coffee machine.
- 2.1.2.5 Restrooms: Provide separate restrooms for each gender if shared with Design Builder, unisex shared restroom if within County space.
- 2.1.2.6 Stairs, Platform and ramps (if applicable): Provide properly finished stairs, platforms, and ramps.
- 2.1.2.7 Doors: Provide two, 3 foot wide exterior doors with locksets; finished ramp, steps, and entry platform at each exterior door as required.
- 2.1.2.8 Keys: Submit six (6) keys for each door and two (2) keys for each, furniture unit, and accessory items. There shall be no other key copies or originals available; each key shall be identified for the County; and shall be labeled, or tagged or both, as directed by the County.
- 2.1.2.9 HVAC system for heating and cooling with programmable controls.
- 2.1.2.10 Lighting: 65 foot-candles illumination minimum at any point, at 30 inches above finished floor throughout from fluorescent light source, exclusively, or as directed by the County.
- 2.1.2.11 Electrical Outlets: Provide 1 duplex outlet evenly spaced every 12 linear horizontal feet of wall face, and electrical service ready for use.
- 2.1.2.12 Telephones and Telephone Outlets: Provide (8) telephone wired, (1) high speed business class data line (Comcast/Xfinity business class or equal), connected to telephone utility service, and ready for use, and 8 telephone handsets/instruments, each with 4-line capability, speed dial, hands-free feature and conf/speaker; locate each outlet as directed by the County.

Phone System – Rolm, “Phonemail system with Centrex System” or equal Features shall include, but not limited to:

- Central answering and transfer station
- Conference call
- Speaker phone
- Automatic answering
- Mute
- Hold
- Transfer

- Call waiting
- Caller Identification

2.2 OTHER EQUIPMENT AND MAINTENANCE

2.2.1 General: Provide the Open Office Space with the following:

- 2.2.1.1 One (1) Plan Table: 36 inches deep, by 72 inches wide, 42 inches high, adjustable, wood or steel; with lockable plan and pencil drawers.
 - 2.2.1.2 One (1) Drafting Stool: Swiveling, steel, padded, adjustable; with footrest, and casters.
 - 2.2.1.3 One (1) full-size Plan Rack: 1 wheel mounted.
 - 2.2.1.4 Waste Baskets: 1 large capacity.
 - 2.2.1.5 Two (2) Printers: One (1) Laser Jet 4600, One (1) HP Color Inkjet EP1700 or approval equal.
 - 2.2.1.6 Copier color Kyocera TASKalpha 3550ci or equivalent.
 - 2.2.1.7 All in one Copier/Scanner/Facsimile.
 - 2.2.1.8 Two (2) PC's w/ specifications as follows: Flat Panel VGA Display Monitors for PC.
 - 2.2.1.9 Bottled drinking water dispenser with a refrigerated/hot water spigot.
 - 2.2.1.10 Digital Projector: One professional-grade digital projector with all accessories capable of projecting images from a standard business laptop computer.
- 2.2.2 Maintenance: The Design Builder shall purchase service agreements for each unit of equipment for the duration of the Project plus 2 months, and shall maintain all equipment in proper working condition. Service agreements shall include provision or replacement of filters and other items required to effect proper unit use.
- 2.2.2.1 Unlimited Service Call.
 - 2.2.2.2 Same Day Response.
 - 2.2.2.3 All parts, labor, preventative maintenance and mileage.
 - 2.2.2.4 System training and setup.
 - 2.2.2.5 Sanitary Holding tanks (if applicable): 1, each shall include hook-up and removal; shall be pumped 1 time a week or as necessary to prevent overflow.

2.3 UTILITIES AND SERVICES

- 2.3.1 The Design Builder shall maintain and pay for all utilities including but not limited to those items listed below for the duration of the Project.
- 2.3.2 Telephone Service: The Design Builder shall provide telephone service for the County's service, including long-distance use.
- 2.3.3 Internet Service: The Design Builder shall provide high speed business class service
- 2.3.4 Electrical, Gas, Water and Sewer Service: Provide all proper connections for power/lighting thru utility service providers.
- 2.3.5 Bottled Drinking water service.

2.4 FINISHES

- 2.4.1 General: Manufacturer standard finish system over surfaces properly cleaned, pretreated, and prepared to obtain proper bond; all visible surfaces shall be coated.
- 2.4.2 Finish: Color as selected by the County from manufacturer standard palette.

PART 3 - EXECUTION

3.1 INSTALLATION

- 3.1.2 General: Prepare area and affected items to receive the Work. Set Work accurately in location, alignment, and elevation; rigidly, securely, and firmly anchor to appropriate structure; install plumb, straight, square, level, true, without racking, rigidly anchored to solid blocking or substrate; provide appropriate type and quantity of reinforcements, fasteners, adhesives, self-adhesive and other tapes; lubricants, coatings and accessories, as required for a complete, structurally rigid, stable, sound, and finished installation, in accordance with manufacturer's published instructions. Moving parts shall be installed without binding, looseness, noise, and the like.
- 3.1.3 Installation: If a trailer, install in accordance with Washington State regulations and as directed by the County; jack up Space and level both ways; mount on proper concrete piers with all load off wheels; provide required tie down and accessories per Washington State regulations and as directed by the County.
- 3.1.4 Rejected Work: Work, equipment, materials, unit, items and systems, not accepted by the County shall be deemed rejected; and shall be removed and replaced with proper and new equipment, items and systems at no cost to the County.
- 3.1.5 Standard: Comply with manufacturer's published instructions.
- 3.1.6 Location: To be determined.

- 3.1.7 Fire Resistance: Construct and install in accordance with UL requirements.
- 3.1.8 Maintenance: The Design Builder shall maintain Space and adjacent areas in a safe, clean and hygienic condition throughout the duration of the Work, and as directed by the County. Repair or replace furniture or other items, as directed by the County. Remove unsafe, damaged, or broken furniture, or similar items, and replace with safe and proper items. The Design Builder shall pay cost of all services, repair, and maintenance, or replacement of each item.
- 3.1.9 Janitorial Service: Provide professional janitorial, including, but not by limitation, trash, recycling, waste paper baskets, fill paper dispensers; clean, and dust all furniture, files, and the like; and sweep and mop resilient and similar flooring; vacuum carpeting and similar flooring. Maintain paper towel, hand was soap, seat liner and toilet paper supplies.
- 3.1.8.1 Frequency: 1 time each week, minimum, or as directed by the County.
- 3.1.10 Removal: Properly remove the Office Space and contents from the Facility upon completion of the Contract, or as directed by the County in writing. Patch and repair affected areas; replace damaged items with new items. Carefully and properly inventory, clean, pack, store, and protect County property; submit County property to the County at a date, time and location as directed by the County.

END OF SECTION

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SECTION 01 61 00

PRODUCT REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements for selection of products for use in the Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and product substitutions.

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 42 00 (References) for applicable industry standards for products specified.

1.1.2.2 Section 01 77 00 (Closeout Procedures) for submitting warranties for Contract closeout.

1.2 DEFINITIONS

1.2.1 Products: Items purchased for incorporating into the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1.2.1.1 Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.

1.2.1.2 New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.

1.2.2 Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Design Builder.

1.2.2.1 The following are not considered substitutions:

1.2.2.1.1 Revisions to Contract Documents requested by the County.

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- 1.2.2.1.2 Specified options of products and construction methods included in Contract Documents.
 - 1.2.2.1.3 The Design Builder's determination of and compliance with governing regulations and orders issued by governing authorities.
 - 1.2.2.2 Design Builder will be held responsible for: (a) all costs and claims arising from any cost or schedule impact resulting from the County's approval of a requested substitution and (b) all costs and claims arising from any cost or schedule impact resulting from any substitution not approved by the County.
- 1.3 SUBMITTALS
- 1.3.1 Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
 - 1.3.1.1 Coordinate product list with Design Builder's Contract Schedule and the Submittals Schedule.
 - 1.3.1.2 Form: Tabulate information for each product under the following column headings:
 - 1.3.1.2.1 Specification Section number and title.
 - 1.3.1.2.2 Generic name used in the Contract Documents.
 - 1.3.1.2.3 Proprietary name, model number, and similar designations.
 - 1.3.1.2.4 Manufacturer's name and address.
 - 1.3.1.2.5 Supplier's name and address.
 - 1.3.1.2.6 Installer's name and address.
 - 1.3.1.2.7 Projected delivery date or time span of delivery period.
 - 1.3.1.2.8 Identification number on Contract Schedule network.
 - 1.3.1.2.9 Identification of items that require early submittal approval for scheduled delivery date.
 - 1.3.1.3 Product List: Within sixty (60) Days after acceptance of the Construction Documents, submit electronically in the County's Project Management System, Unifier. Include a written explanation for omissions of data and for variations from Contract requirements.
 - 1.3.1.4 County's Action: County will review in Unifier within fourteen (14) Days of receipt of each product list. County's response will include a

list of unacceptable product selections and a brief explanation of reasons for this action. County's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.

1.3.2 Substitution Requests: Submit electronically in Unifier each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1.3.2.1 Documentation: Show compliance with requirements for substitutions and the following, as applicable:

1.3.2.1.1 Statement indicating why specified material or product cannot be provided.

1.3.2.1.2 Coordination information, including a list of changes or modifications needed on other parts of the Work and to construction performed by County and separate contractors, which will be necessary to accommodate proposed substitution.

1.3.2.1.3 Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

1.3.2.1.4 Product Data, including drawings and descriptions of products and fabrication and installation procedures.

1.3.2.1.5 Samples, where applicable or requested.

1.3.2.1.6 List of similar installations on completed projects with project names and addresses and names and addresses of owners.

1.3.2.1.7 Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

1.3.2.1.8 Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to County's.

1.3.2.1.9 Detailed comparison of Design Builder's Contract Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time,

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Product Requirements

include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

1.3.2.1.10 Cost information, including a proposal of change, if any, in the Contract Price.

1.3.2.1.11 Design Builder's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

1.3.2.1.12 Design Builder's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.

1.3.2.2 County's Action: If necessary, County will request additional information or documentation for evaluation within seven (7) Days of receipt of a request for substitution. County will notify Design Builder of acceptance or rejection of proposed substitution within twenty-one (21) Days of receipt of request, or seven (7) Days of receipt of additional information or documentation, whichever is later.

1.3.2.3.1 Form of Acceptance: Electronically in Unifier from the County's Representative.

1.3.2.3.2 Use product specified if County cannot make a decision on use of a proposed substitution within time allocated.

1.3.2.3.3 If any proposed substitution is deemed by the County's Representative to be unacceptable, the specified material or equipment shall be provided.

1.3.2.3.4 The decision of the County's Representative shall be final.

1.4 QUALITY ASSURANCE

1.4.1 Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.

1.4.2 Compatibility of Options: If Design Builder is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.4.3 Underwriter's Laboratories, Inc. ("UL") Label: Where laboratory standards have been established and label service is available, materials and equipment for shall bear the appropriate UL, Warnock-Hersey, or Factory Mutual label.

1.4.4 Manufacturers' Trademarks and Names: County reserves the right to review and request the removal or redesign of manufacturers' trade marks and names

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on items of material and equipment that will be exposed to view in the completed Work. Such removal or redesign shall be completed with no adjustment of the Contract Price.

- 1.4.5 If a proposed substitution requires that portions of the Work be redesigned or removed to accommodate the substituted item, submit design and engineering calculations prepared by a State of Washington licensed design professional.
 - 1.4.6 Samples may be required for substitutions. Tests required by County for the determination of quality and utility shall be made by Design Builder's Testing Laboratory and at the expense of Design Builder, with acceptance of the test procedure first given by County's Representative.
 - 1.4.7 In reviewing the supporting data submitted for substitutions, County will use, for purposes of comparison, all the characteristics of the specified material or equipment as they appear in the manufacturer's published data, even though all the characteristics may not have been particularly mentioned in the Specifications.
- 1.5 **PRODUCT DELIVERY, STORAGE, AND HANDLING**
- 1.5.1 Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
 - 1.5.2 Delivery and Handling:
 - 1.5.2.1 Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 - 1.5.2.2 Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
 - 1.5.2.3 Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
 - 1.5.2.4 Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
 - 1.5.2.5 Reject delivery of damaged or defective items. Promptly remove damaged or defective products from the Project site and replace with new at no change in Contract Price.
 - 1.5.3 Storage
 - 1.5.3.1 Store products to allow for inspection and measurement of quantity

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Product Requirements

- counting of units.
- 1.5.3.2 Store materials in a manner that will not endanger Project structure.
 - 1.5.3.3 Store products that are subject to damage by the elements under cover in a weather tight enclosure above ground, with ventilation adequate to prevent condensation.
 - 1.5.3.4 Store cementitious products and materials on elevated platforms.
 - 1.5.3.5 Store sand, rock, or aggregate materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
 - 1.5.3.6 Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
 - 1.5.3.7 Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
 - 1.5.3.8 Protect stored products from damage.
 - 1.5.3.9 Periodically inspect stored products to assure that products are maintained under specified conditions and are free from damage and deterioration.
 - 1.5.3.10 The use of mechanical or electrical rooms for storage of materials is prohibited.
- 1.5.4 Imported Materials and Products:
- 1.5.4.1 Imported materials and products require special handling in shipping crates. Document and examine materials at the following points:
 - 1.5.4.1.1 At the origination point prior to crating.
 - 1.5.4.1.2 At the port of embarkation (for damage to crates).
 - 1.5.4.1.3 At the port of entry (for damage to crates).
 - 1.5.4.1.4 Immediately following delivery to the Site.
 - 1.5.4.2 If crates show signs of damage, open them and inspect materials and products.
 - 1.5.4.3 Reject damaged or defective products or materials, and replace promptly.
 - 1.5.4.4 Provide detailed Bill of Goods at each point listed above, indicating quantity and condition of each item. At port locations, Bill of Goods may be accepted unless damage is observed.

1.6 PRODUCT WARRANTIES

- 1.6.1 Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Design Builder of obligations under requirements of the Contract Documents.
- 1.6.1.1 Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to County.
- 1.6.1.2 Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for County.
- 1.6.2 Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
- 1.6.2.1 Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
- 1.6.2.2 Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
- 1.6.3 Submittal Time: Comply with requirements in Section 01 77 00 (Closeout Procedures).

PART 2 - PRODUCTS**2.1 PRODUCT SELECTION PROCEDURES**

- 2.1.1 General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
- 2.1.2.1 Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
- 2.1.2.2 Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
- 2.1.2.3 County reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

- 2.1.2.4 Where products are accompanied by the term “as selected,” County will make selection.
 - 2.1.2.5 Where products are accompanied by the term “match sample,” sample to be matched is County’s.
 - 2.1.2.6 Descriptive, performance, and reference standard requirements in the Specifications establish “salient characteristics” of products.
 - 2.1.2.7 Or Equal: Where products are specified by manufacturer’s name and accompanied by the term “or equal,” comply with provisions in Paragraph 2.2, Product Substitutions, to obtain approval for use of an unnamed product.
- 2.1.2 Product Selection Procedures:
- 2.1.3.1 Product: Where Specifications name a single product and manufacturer, and indicate “no known equal,” provide the named product that complies with requirements.
 - 2.1.3.2 Manufacturer/Source: Where Specifications name a single manufacturer or source, and indicates “no known equal,” provide a product by the named manufacturer or source that complies with requirements.
 - 2.1.3.3 Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 - 2.1.3.4 Manufacturers: Where Specifications include a list of manufacturers’ names, provide a product by one of the manufacturers listed that complies with requirements.
 - 2.1.3.5 Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches County’s sample. County’s decision on whether a proposed product matches will be final.
 - 2.1.3.5.1 When approval of a color, pattern or texture sample match by the County is required, provide the best match that complies with the specification and also provide the two nearest in the selection range to either direction from the same manufacturer/supplier. Application examples are:
 - a. *Color* – shall have two color hues or shades darker and two color hues or shades lighter. Total of five selections available.
 - b. *Pattern* – shall have two patterns that are less dense (or smaller) and two patterns that are more dense (or

- larger). Total of five selections available.
- c. *Texture* – shall have two textures that are less rough (or smaller) and two patterns that are more rough (or larger). Total of five selections available.

2.1.3.5.2 If no product available within specified category matches and complies with other specified requirements, comply with provisions in paragraph 2.2 (Product Substitutions) below for proposal of product.

2.1.3.6 Visual Selection Specification: Where Specifications include the phrase “as selected from manufacturer’s colors, patterns, textures” or a similar phrase, select a product that complies with other specified requirements.

2.1.3.6.1 Standard Range: Where Specifications include the phrase “standard range of colors, patterns, textures” or similar phrase, County will select color, pattern, density, or texture from manufacturer’s product line that does not include premium items.

2.1.3.6.2 Full Range: Where Specifications include the phrase “full range of colors, patterns, textures” or similar phrase, County will select color, pattern, density, or texture from manufacturer’s product line that includes both standard and premium items.

2.2 PRODUCT SUBSTITUTIONS

2.2.1 Timing: County will consider requests for substitution if received within sixty (60) Days after acceptance of the Construction Documents. Requests received after that time may be considered or rejected at discretion of County.

2.2.2 Approval of Product Substitutions: After acceptance of the Construction Documents, no substitutions shall be allowed except as may be deemed necessary by the County’s because:

2.2.2.1 Previously specified or approved manufactured products are no longer manufactured.

2.2.2.2 The substitution is required due to a County-initiated Change Order.

2.2.2.3 The substitution is in the best interests of the County.

2.2.3 Conditions: County will consider Design Builder’s request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, County will return requests without action, except to record noncompliance with these requirements:

2.2.3.1 Requested substitution offers County a substantial advantage in cost,

time, energy conservation, or other benefits.

- 2.2.3.2 Requested substitution is consistent with the Contract Documents and will produce required results.
- 2.2.3.3 Substitution request is fully documented and properly submitted.
- 2.2.3.4 If requested substitution involves more than one subcontractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.
- 2.2.3.5 One or more of the following conditions must be satisfied:
 - 2.2.3.5.1 The specified product or method of construction cannot be provided within the Contract Time. The request for substitution will not be considered if the product or method cannot be provided due to the Design Builder's failure to plan the Work, prosecute the Work promptly or coordinate activities properly.
 - 2.2.3.5.2 The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 - 2.2.3.5.3 The specified product or method of construction cannot be provided in a manner that is compatible with other materials, and where the Design Builder certifies that the substitution will overcome the incompatibility.
 - 2.2.3.5.4 The specified product or method of construction cannot be coordinated with other materials, and where the Design Builder certifies that the proposed substitution can be coordinated.
 - 2.2.3.5.5 The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Design Builder certifies that the proposed substitution can provide the required warranty.
 - 2.2.3.5.6 The specified product or material has been discontinued or is no longer available.
- 2.2.3.6 The County's acceptance of any substitution shall not relieve the Design Builder of the responsibility to comply with the requirements of the Contract Documents.
- 2.2.3.7 The Design Builder shall be responsible for all costs of any changes resulting from substitutions that affect other parts of the Work or the work of Separate Contractors.

PART 3 - EXECUTION

Not used.

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SECTION 01 71 23

FIELD ENGINEERING

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This section describes field engineering services to be performed by Design Builder, and procedures to accomplish these services.

1.1.2 Related Documents.

1.1.1.1 Reference Documents (Geotechnical Data and Existing Conditions)

1.1.3 Related Sections.

1.1.2.1 Section 01 11 00 (Summary of Work).

1.1.2.2 Section 01 11 20 (Design Services and Deliverables).

1.1.2.3 Section 01 31 19 (Project Meetings).

1.2 RESPONSIBILITIES

1.2.1 Design Builder shall provide field engineering services; establish grades, lines, and levels for Work by use of recognized engineering survey practices.

1.2.2 Design Builder shall employ a Washington licensed civil engineer or land surveyor for horizontal and vertical control.

1.2.3 Design Builder will provide reference points for horizontal and vertical control and shall provide starting points for the Work.

1.3 PROCEDURES

Design Builder shall notify the County no fewer than ten (10) Business Days prior to commencing work

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

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SECTION 01 73 00

EXECUTION**PART 1 - GENERAL**

- 1.1 This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
- 1.1.1 Construction layout.
 - 1.1.2 Field engineering and surveying.
 - 1.1.3 General installation of products.
 - 1.1.4 Coordination of County-installed products.
 - 1.1.5 Progress cleaning.
 - 1.1.6 Starting and adjusting.
 - 1.1.7 Protection of installed construction.
 - 1.1.8 Correction of the Work.
- 1.2 Related Sections include the following:
- 1.2.1 Reference Documents: -Geotechnical Data and Existing Conditions.
 - 1.2.2 Section 01 11 13 (Summary of Work)
 - 1.2.3 Section 01 26 00 (Contract Modification Procedures).
 - 1.2.4 Section 01 14 00 (Work Restrictions) regarding measures for noise and dust.
 - 1.2.5 Section 01 31 00 (Project Management and Coordination) for procedures for coordinating field engineering with other construction activities.
 - 1.2.6 Section 01 31 19 (Project Meetings).
 - 1.2.7 Section 01 33 00 (Submittal Procedures) for submitting surveys.
 - 1.2.8 Section 01 73 29 (Cutting and Patching) for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
 - 1.2.9 Section 01 73 32 (Selective Demolition) for requirements and performance of the Work for demolition, removal and salvage of existing utilities site and

structures.

- 1.2.10 Section 01 77 00 (Closeout Procedures) for submitting final property survey with Project Record Documents, recording of County-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

- 1.3.1 Qualification Data: For land surveyor or professional engineer.
- 1.3.2 Certificates: Submit certificate signed by land surveyor or professional engineer certifying that location and elevation of improvements comply with requirements.
- 1.3.3 Certified Surveys: Submit three copies signed by land surveyor or professional engineer and one AutoCad electronic file of survey complying with County CAD Standards on CD-R.
- 1.3.4 Final Property Survey: Submit three copies showing the Work performed and record survey data and one AutoCad electronic file of survey complying with County CAD Standards on CD-R.
- 1.3.5 Contingency Plan: Submit six copies within sixty (60) Days of Notice to Proceed for emergency plan(s) should an existing utility be damaged.

1.4 QUALITY ASSURANCE

- 1.4.1 Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in Washington and who is experienced in providing land-surveying services of the kind indicated.
- 1.4.2 Installer Qualifications.
- 1.4.2.1 Experienced Installers: Installers shall have a minimum of five (5) years successful experience installing items similar to those required for Project, except for individuals in training under the direct supervision of an experienced installer.
- 1.4.4 If cleaning and protection is not performed to the satisfaction of the County, the County reserves the right to have cleaning performed by others at the Design Builder's expense.

PART 2 - PRODUCTS

Not used.

PART 3 – EXECUTION**3.1 EXAMINATION**

- 3.1.1 Existing Utilities: The existence and location of Underground Facilities and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and locations of Underground Facilities and other construction affecting the Work.
- 3.1.1.1 Before construction, verify the locations and invert elevations at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
- 3.1.1.2 Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- 3.1.1.3 Locate all known existing utilities and shut-off devices before proceeding with construction operations that may cause damage to such installations. Existing utilities shall be kept in service where possible and damage to them shall be repaired with no adjustment of Contract Price.
- 3.1.1.4 If any other structures or utilities are encountered, notify County and request direction on how to proceed with the Work.
- 3.1.1.5 If any structure, utility or Underground Facility is damaged, take appropriate action to ensure the safety of persons and property, notify County and other affected parties.
- 3.1.1.6 Submit a contingency plan for emergency repair of all utilities to County for approval prior to commencing Work.
- 3.1.2 Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Document observations.
- 3.1.2.1 Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
- 3.1.2.1.1 Description of the affected Work.
- 3.1.2.1.2 List of detrimental conditions, including substrates.
- 3.1.2.1.3 List of unacceptable installation tolerances.
- 3.1.2.1.4 Recommended corrections.

- 3.1.2.2 Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- 3.1.2.3 Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
- 3.1.2.4 Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
- 3.1.2.5 Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 MANUFACTURERS' INSTRUCTIONS

- 3.2.1 Manufacturer's Recommendations: When work is specified to comply with manufacturers' recommendations or instructions, distribute copies to persons involved, and maintain one set in field office.
 - 3.2.1.1 Conform with requirements specified in Section 01 33 00 (Submittal Procedures) for submittal of recommendations or instructions to County; submit to County only where specified or where specifically requested.
- 3.2.2 Perform work in accordance with details of recommendations and instructions and specified requirements.
 - 3.2.2.3 Should a conflict exist between Contract Documents or accepted Construction Documents and recommendations or instructions consult with County.
- 3.2.3 Where manufacturer's information notes special recommendations in addition to installation instructions, comply with both recommendations and instructions.

3.3 PREPARATION

- 3.3.1 Existing Utility Information: Furnish public utilities with information that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with County.
- 3.3.2 Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

- 3.3.2.1 Where portions of Work are to fit to other construction, verify dimensions of other construction by field measurements before fabrication; allow for cutting and patching to avoid delaying Work.
- 3.3.3 Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- 3.3.4 Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to County. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.
- 3.4 CONSTRUCTION LAYOUT
- 3.4.1 Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify County promptly.
- 3.4.2 General: Engage a land surveyor or professional engineer to lay out the Work using accepted surveying practices.
- 3.4.2.1 Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of the Work.
- 3.4.2.2 Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
- 3.4.2.3 Inform installers of lines and levels to which they must comply.
- 3.4.2.4 Check the location, level, and plumb of every major element as the Work progresses.
- 3.4.2.5 Notify County when deviations from required lines and levels exceed allowable tolerances.
- 3.4.2.6 Close site surveys with an error of closure equal to or less than the standard established by County or Other Authorities Having Jurisdiction.
- 3.4.3 Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- 3.4.4 Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and

piers from two or more locations.

- 3.4.5 Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by County.

3.5 FIELD ENGINEERING

- 3.5.1 Identification: Design Builder to provide reference points for horizontal and vertical control and shall provide starting points for the Work.

- 3.5.2 Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

3.5.2.1 Do not change or relocate existing benchmarks or control points without prior written approval of County. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to County before proceeding.

3.5.2.2 Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

- 3.5.3 Benchmarks: Establish and maintain a minimum of two permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

3.5.3.1 Record benchmark locations, with horizontal and vertical data, on Project Record Documents.

3.5.3.2 Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.

3.5.3.3 Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

- 3.5.4 Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

- 3.5.5 Final Property Survey: Prepare a final property survey showing significant features (real property) for the Work. Include on the survey a certification, signed by land surveyor or professional engineer, that principal metes, bounds, lines,

and levels of the Work are accurately positioned as shown on the survey.

3.5.5.1 Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

3.5.5.2 At Substantial Completion, submit the final property survey to the County for review and acceptance before having the final property survey recorded by or with Authorities Having Jurisdiction as the official "property survey."

3.6 INSTALLATION

3.6.1 Pre-Installation Meetings: Installers and suppliers are to attend pre-installation meetings scheduled by Design Builder.

3.6.2 General: Locate the Work and components of the Work accurately, in correct alignment and elevation.

3.6.2.1 Make vertical work plumb and make horizontal work level.

3.6.2.2 Install components to maximize space available for maintenance and ease of removal for replacement.

3.6.2.3 Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.

3.6.2.4 Doors and access panels shall be kept clear.

3.6.2.5 Before beginning any installation, make provisions to avoid interference.

3.6.2.6 Relocate installed work that does not provide adequate accessibility.

3.6.2.7 Maintain minimum headroom clearance of eight (8) feet in spaces without a suspended ceiling.

3.6.2.8 Do not obstruct spaces and installations that are required to be clear by Building Code requirements.

3.6.3 Precedence of Installation Requirements:

3.6.3.1 Descriptive specification.

3.6.3.2 Product listing, classification or certification.

3.6.3.3 Manufacturer's installation instructions.

3.6.3.4 Trade association or referenced standards.

3.6.3.5 Most common trade practice.

- 3.6.4 Comply with manufacturer's written instructions and recommendations for installing products in applications indicated unless more explicit or stringent requirements are contained in Contract Documents or accepted Construction Documents.
- 3.6.5 Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Final Completion.
- 3.6.6 Allow for building movement including thermal expansion and contraction.
- 3.6.7 Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- 3.6.8 Tools and Equipment:
- 3.6.8.1 Comply with the City of Seattle noise ordinance for limitations on noise level for tools and equipment. Unless provided otherwise in the noise ordinance, the maximum noise level for trenchers, graders, and trucks shall not exceed ninety (90) dBA at fifty (50) feet as measured under the noisiest operating conditions;. for other equipment, noise levels shall not exceed eighty-five (85) dBA at fifty (50) feet
- 3.6.8.2 Jackhammers shall be equipped with exhaust mufflers and steel muffing sleeves. Air compressors should be of a quiet type such as a "whisperized" compressor.
- 3.6.8.3 Machines and equipment shall not be left idling.
- 3.6.8.4 Where commercially feasible, electric power shall be used in lieu of internal combustion engine power wherever possible.
- 3.6.8.5 Schedule noisy operations so as to minimize their duration at any given location.
- 3.6.8.6 Equipment shall be properly maintained to reduce noise from excessive vibration, faulty mufflers, or other sources.
- 3.6.8.7 Provide noise barriers to comply with above criteria.
- 3.6.8.8 Refer to Section 01 14 00 (Work Restrictions), for additional noise control requirements.
- 3.6.9 Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

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- 3.6.10 Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
- 3.6.10.1 Mounting Heights: Where mounting heights are not indicated, install individual components at standard mounting heights recognized within the industry for the particular application and as required by applicable Code requirements for accessibility. Refer questions about mounting height decisions to the County for final decision.
- 3.6.10.2 Allow for building movement, including thermal expansion and contraction.
- 3.6.10.3 Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- 3.6.10.4 Comply with the Seattle Building Code requirements for seismic.
- 3.6.11 Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, produce sketch to arrange joints for the best visual effect and submit to the County for review. Fit exposed connections together to form hairline joints.
- 3.6.12 Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- 3.6.13 Isolate each part of the completed construction from incompatible material to prevent deterioration.
- 3.7 COUNTY-INSTALLED PRODUCTS
- 3.7.1 Site Access: Provide access to Project Site for County's construction forces.
- 3.7.2 Coordination: Coordinate construction and operations of the Work with work performed by County, its Project Partners, and their separate contractors (collectively, "Separate Work").
- 3.7.2.1 Contract Schedule: County will inform Design Builder of its proposed schedule for Separate Work. Design Builder will adjust Contract Schedule based on a mutually agreeable timetable. Notify County if changes to schedule are required due to differences in actual construction progress.
- 3.7.2.2 Pre-installation Conferences: Include County at pre-installation conferences covering portions of the Work that are to receive Separate Work. Attend pre-installation conferences conducted by County if portions of the Work depend on Separate Work.

3.8 PROGRESS CLEANING

- 3.8.1 General: Clean Project site and work areas at frequent intervals, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
- 3.8.1.1 Comply with Authority Having Jurisdiction requirements for removal of combustible waste materials and debris.
- 3.8.1.2 Do not hold materials more than seven (7) Days during normal weather or three (3) Days if the temperature is expected to rise above eighty degrees Fahrenheit (80°F).
- 3.8.1.3 Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- 3.8.2 Site: Maintain Project site free of waste materials and debris.
- 3.8.3 Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
- 3.8.3.1 Remove liquid spills promptly.
- 3.8.3.2 Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate. Refer to Section 01 14 00 (Work Restrictions) regarding dust control requirements.
- 3.8.4 Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- 3.8.5 Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- 3.8.6 Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- 3.8.7 Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- 3.8.8 During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial

Completion.

- 3.8.9 Clean and provide maintenance on completed construction as frequently as necessary until Final Completion. Adjust and lubricate operable components to ensure operability without damaging effects.
- 3.8.10 Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:
- 3.8.10.1 Excessive static or dynamic loading.
 - 3.8.10.2 Excessive internal or external pressures.
 - 3.8.10.3 Excessively high or low temperatures.
 - 3.8.10.4 Thermal shock.
 - 3.8.10.5 Excessively high or low humidity.
 - 3.8.10.6 Air contamination or pollution.
 - 3.8.10.7 Water or ice.
 - 3.8.10.8 Solvents.
 - 3.8.10.9 Chemicals.
 - 3.8.10.10 Light.
 - 3.8.10.11 Puncture.
 - 3.8.10.12 Abrasion.
 - 3.8.10.13 Heavy traffic.
 - 3.8.10.14 Soiling, staining and corrosion.
 - 3.8.10.15 Bacteria.
 - 3.8.10.16 Rodent and insect infestation.
 - 3.8.10.17 Combustion.
 - 3.8.10.18 Electrical current.
 - 3.8.10.19 High speed operation.
 - 3.8.10.20 Improper lubrication.

- 3.8.10.21 Unusual wear or other misuse.
- 3.8.10.22 Contact between incompatible materials.
- 3.8.10.23 Destructive testing.
- 3.8.10.24 Misalignment.
- 3.8.10.25 Excessive weathering.
- 3.8.10.26 Unprotected storage.
- 3.8.10.27 Improper shipping or handling.
- 3.8.10.28 Theft.
- 3.8.10.29 Vandalism.

3.9 STARTING UP AND ADJUSTING

3.9.1 Following are minimum requirements for starting up and adjusting the Work. Design Builder is to perform starting and adjusting per manufacturer's recommendations. If more stringent requirements are described in the Contract Documents or accepted Construction Documents, the more stringent shall apply

- 3.9.1.1 Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- 3.9.1.2 Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- 3.9.1.3 Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- 3.9.1.4 Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Section 01 45 00 (Quality Control).

3.10 PROTECTION OF INSTALLED CONSTRUCTION

3.10.1 Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Final Completion.

- 3.10.1.1 Cover products subject to deterioration with impervious cover; provide ventilation to avoid condensation and trapping water.

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- 3.10.1.2 Take care to use protective covering and blocking materials that do not soil, stain, or damage materials being protected.
 - 3.10.1.3 After installation, provide coverings to protect products from damage from traffic and construction operations, remove when no longer needed.
 - 3.10.2 Comply with manufacturer's written instructions for temperature and relative humidity.
 - 3.10.3 Protect interior materials from water damage; immediately remove wet materials from Site to prevent growth of mold and mildew.
 - 3.10.4 Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.
- 3.11 CORRECTION OF THE WORK
- 3.11.1 Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Section 01 73 29 (Cutting and Patching).
 - 3.11.1.1 Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
 - 3.11.2 Restore permanent facilities used during construction to their specified condition.
 - 3.11.3 Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
 - 3.11.4 Repair Work that does not operate properly or meet the requirements of the Contract Documents or accepted Construction Documents. Remove and replace Work that cannot be repaired.
 - 3.11.5 Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION

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SECTION 01 73 29

CUTTING AND PATCHING**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes procedural requirements for cutting and patching. Design Builder shall be responsible for cutting, fitting and patching required to complete Work and to:

1.1.1.1 Make its parts fit together properly.

1.1.1.2 Uncover work to provide for installation of out of sequence work.

1.1.1.3 Remove and replace defective work.

1.1.1.4 Remove and replace work not conforming to Contract Documents.

1.1.1.5 Patch and repair visible finish surfaces or fire rated assemblies affected by installation of products or construction.

1.1.1.6 Remove samples of installed work as required for testing.

1.1.1.7 Provide routine penetrations of non-structural surfaces for installation of piping and electrical conduit.

1.1.2 Related Sections include the following:

1.1.2.1 General Conditions regarding integration of work and work by others.

1.1.2.2 Sections 01 11 00 (Summary of Work) and 01 14 00 (Work Restrictions) regarding the interruption of utility services.

1.1.2.3 Section 01 73 32 (Selective Demolition) for demolition of selected existing in-place site work or portions of in place construction.

1.1.2.4.1 Coordination with Work specified in other Sections for openings required to accommodate Work specified in those other Sections.

1.2 DEFINITIONS

1.2.1 Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.

1.2.2 Patching: Fitting and repair work required to restore surfaces to original

condition after installation of other Work.

1.3 SUBMITTALS

1.3.1 Cutting and Patching Proposal: Submit a proposal describing procedures at least twenty- one (21) Days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1.3.1.1 Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.

1.3.1.1.1 Location and description of affected Work. Include Shop Drawings as necessary to identify locations and communicate descriptions.

1.3.1.2 Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.

1.3.1.2.1 Describe extent and method of refinishing to be included.

1.3.1.3 Products: List products to be used and firms or entities that will perform the Work.

1.3.1.4 Dates: Indicate when cutting and patching will be performed.

1.3.1.5 Exterior Envelope or Moisture Barriers: Where the integrity of weather- exposed or moisture-resistant elements is involved, describe the temporary measures that are to be implemented to maintain a weather tight installation during the execution of the Work. Also, describe the permanent construction to be cut and how it shall be properly patched. Provide supporting documentation by manufacturer of products and/or trade association involved.

1.3.1.6 Utility Services and Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted. Comply with the requirements of Sections 01 11 00 (Summary of Work) and 01 14 00 (Work Restrictions).

1.3.1.7 Structural Elements: Where cutting and patching affect the integrity of, or involve adding reinforcement to structural elements, submit details and engineering calculations prepared and signed by the Structural Engineer of Record for the new buildings showing integration of reinforcement with original construction.

1.3.1.8 County's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later

require removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE

- 1.4.1 Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- 1.4.2 Operational Elements: Do not cut and patch operating elements and related components in a manner that results in a reduction of their capacity to perform as intended, increased maintenance, or decreased operational life or safety.
- 1.4.3 Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction in a manner that would reduce, in County Representative's opinion, the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.5 WARRANTY

- 1.5.1 Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void warranties of installed work.

PART 2 - PRODUCTS

2.1 MATERIALS

- 2.1.1 General: Comply with requirements specified in other Sections.
- 2.1.2 Primary Products: As required for original installation and to match surrounding construction.
 - 2.1.2.1 Where Specifications and standards have not been provided, provide materials and fabrication consistent with quality of Project.
 - 2.1.2.2 Provide new materials for cutting and patching unless otherwise indicated.
- 2.1.3 In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 2.1.3.1 If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- 3.1.1 Examine surfaces to be cut and patched and conditions under which cutting

and patching are to be performed.

- 3.1.1.1 Inspect existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.
- 3.1.1.2 After uncovering existing Work, inspect conditions affecting proper accomplishment of Work.
- 3.1.1.3 Report unsatisfactory or questionable conditions to County in writing; do not proceed with work until County has provided further instructions.
 - 3.1.1.3.1 Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
- 3.1.1.4 Identify hazardous substances or conditions exposed during the Work to County for decision or remedy.
- 3.1.1.5 Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
- 3.1.1.6 Beginning of cutting or patching shall be interpreted to mean that existing conditions were found by Design Builder to be acceptable.

3.2 PREPARATION

- 3.2.1 Temporary Support: Provide temporary support of Work to be cut. If structural elements are to be involved, comply with paragraph 1.3.1.7 above. Provide devices and methods to protect other portions of Project from damage.
 - 3.2.1.1 Provide services of Washington licensed engineer for designing temporary support where required by applicable authorities for temporary supports and for shoring; submit engineering calculations directly to applicable authorities and County upon request.
- 3.2.2 Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- 3.2.3 Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- 3.2.4 Existing Utility Services and Mechanical/Electrical Systems: Where existing services/ systems are required to be removed, relocated, or abandoned, bypass such services/ systems before cutting.

3.3 PERFORMANCE

- 3.3.1 General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 3.3.1.3 Cut in-place construction to provide for installation of other

components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

- 3.3.2 **Cutting:** Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
- 3.3.2.1 In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Pneumatic tools will not be allowed without prior approval. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Do not overcut corners. Temporarily cover openings when not in use.
- 3.3.2.2 **Finished Surfaces:** Cut or drill from the exposed or finished side into concealed surfaces.
- 3.3.2.3 **Concrete or Masonry:** Core drill holes through concrete and masonry. Cut using a cutting machine, such as an abrasive saw or a diamond-core drill. Cut masonry and concrete materials using masonry saw.
- 3.3.2.4 **Excavating and Backfilling:** Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
- 3.3.2.4.1 Execute excavating and backfilling by methods that will prevent settlement and damage to other work.
- 3.3.2.5 **Mechanical and Electrical Services:** Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
- 3.3.2.6 Proceed with patching after construction operations requiring cutting are complete.
- 3.3.3 **Patching:** Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
- 3.3.3.1 **Inspection:** Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
- 3.3.3.2 **Exposed Finishes:** Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

- 3.3.3.2.1 For continuous surfaces, refinish to nearest intersection or natural break.
- 3.3.3.2.2 For an assembly, refinish entire unit.
- 3.3.3.2.3 Clean piping, conduit, and similar features before applying paint or other finishing materials.
- 3.3.3.2.4 Restore damaged pipe covering to its original condition.
- 3.3.3.4 Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - 3.3.3.4.1 Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
- 3.3.3.5 Ceilings: Patch, repair, or re-hang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
- 3.3.3.6 Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- 3.3.4 Restoration:
 - 3.3.4.1 Restore work that has been cut or removed; install new products to provide completed Work in accordance with requirements of Contract Documents.
 - 3.3.4.2 Fit work neat and tight allowing for expansion and contraction. Butt new finished to existing exposed structure, pipes, ducts, conduit, and other penetrations through surfaces.
 - 3.3.4.3 Penetrations at Fire-Rated Construction: At penetrations of fire-rated walls, partitions, ceiling, or floor construction, completely seal voids or membrane with approved firestopping material in accordance with the manufacturers installation requirements.
- 3.3.5 Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION

SECTION 01 73 32

SELECTIVE DEMOLITION**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes the following:

1.1.1.1 Demolition and removal of selected portions of buildings or structures.

1.1.1.2 Demolition and removal of soil and selected site elements.

1.1.1.3 Salvage of existing items to be reused or recycled.

1.1.2 Related Sections include the following:

1.1.2.1 Reference Documents: (Hazardous Materials Surveys).

1.1.2.2 Reference documents: (Geotechnical Data and Existing Conditions).

1.1.2.3 Section 01 11 00 (Summary of Work) for use of premises, and phasing, and County's occupancy requirements.

1.1.2.4 Section 01 14 00 (Work Restrictions) for restrictions on use of the premises due to occupancies by adjacent neighbors.

1.1.2.5 Section 01 50 00 (Temporary Facilities and Controls) for temporary construction and environmental-protection measures for selective demolition operations.

1.1.2.6 Section 01 73 29 (Cutting and Patching) for cutting and patching procedures.

1.1.2.7 Section 01 74 19 (Construction Waste Management and Disposal).

1.1.2.8 Section 01 74 20 (Recycling and Waste Diversion).

1.1.2.9 Section 01 81 13 (Sustainable Design Requirements).

1.1.2.10 Sections 01 88 25 (Hazardous Materials Performance Requirements).

1.2 DEFINITIONS

- 1.2.1 Remove: Detach items from Site or existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- 1.2.2 Remove and Salvage: Detach items from existing construction and deliver them to County ready for reuse.
- 1.2.3 Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS OWNERSHIP

- 1.3.1 Historic items, artwork, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to County that may be encountered during selective demolition remain County's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to County.
 - 1.3.1.1 Coordinate with County's Representative, who will establish special procedures for removal and salvage.
- 1.3.2 Demolished material not claimed by the County shall be considered to be property of the Design Builder and shall be completely removed from the job site.
 - 1.3.2.1 Materials and equipment to be salvaged shall not be placed on view to prospective purchasers or sold on site.

1.4 SUBMITTALS

- 1.4.1 Schedule of Selective Demolition Activities: Indicate the following:
 - 1.4.1.1 Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure adjacent neighbors' operations are uninterrupted.
 - 1.4.1.2 Interruption of utility services. Indicate how long utility services will be interrupted. Comply with the requirements of Sections 01 11 13 (Work Covered by Contract Documents) and 01 14 00 (Work Restrictions).
 - 1.4.1.3 Coordination for shutoff, capping, and continuation of utility services.
 - 1.4.1.4 Locations of proposed dust- and noise-control temporary partitions

and means of egress, including for adjacent neighbors affected by selective demolition operations.

- 1.4.1.5 Means of protection for items to remain and items in path of waste removal.
- 1.4.2 Submit permits for transport and disposal of debris.
 - 1.3.2.1 Design Builder shall secure and pay for required hauling permits and pay dumping fees and charges.
- 1.4.3 Submit demolition procedures and operational sequence for review and acceptance by County.
 - 1.3.3.1 Demolition Plan: Prior to the commencement of the work of this Section, submit a plan for the organization of the demolition, including salvage, demolition, removal, and disposal procedures for acceptance by County. Indicate plans for the protection of portions of the existing structure to remain. Include locations of temporary barriers.
 - 1.3.3.2 Shop Drawings: Indicate demolition and removal sequence and location of salvageable items; location and construction of temporary work.
- 1.4.4 Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- 1.4.5 Predemolition Photographs and Video: Show existing conditions and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. Submit to County's Representative before Work begins.
- 1.4.6 Project Record Documents: Design Builder shall accurately record actual locations of capped utilities, subsurface construction and obstructions.
- 1.4.7 Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
- 1.4.8 Statement of Refrigerant Recovery: A statement signed by technician responsible for recovering refrigerant, that "All refrigerant that was present was recovered and the recovery was performed under EPA regulations." Include name and address of technician and refrigerant recovered.
- 1.5 QUALITY ASSURANCE
 - 1.5.1 Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.
 - 1.5.2 Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal

regulations of authorities having jurisdiction.

1.5.3 Standards: Comply with ANSI A10.6.

1.6 PROJECT CONDITIONS

1.6.1 Comply with requirements specified in Section 01 11 00 (Summary of Work).

1.6.2 Conditions existing at time of inspection for bidding purpose will be maintained by County as far as practical.

1.6.3 Notify County's Representative of discrepancies between existing conditions and Contract Documents and Reference Documents before proceeding with selective demolition.

1.6.4 Information shown on the Reference Documents is to show existing site conditions with information developed from field surveys and County's records, and to generally show the amount and type of demolition required to prepare existing site for new work. Design Builder shall make a detailed survey of existing site conditions pertaining to the work prior to commencing demolition.

1.6.5 Hazardous Materials: It is expected that hazardous materials will be encountered in the Work. Refer to 01 88 25 (Hazardous Materials Performance Requirements) for hazardous material removal requirements.

1.6.5.1 The Design Builder shall remove all hazardous materials and consequently decontaminate the affected work areas upon completion.

1.6.5.2 The Design Builder shall verify that the hazardous materials that will be impacted by this Project are identified and sampled prior to disturbing these materials.

1.6.5.3 If the Design Builder deems the procedures required for the removal of hazardous materials to be infeasible for any particular work area because of unusual conditions (e.g., inaccessibility, special equipment requirements), the Design Builder shall submit a written work plan for review and approval by the County's Representative.

1.6.6 Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 EXAMINATION

- 3.1.1 Verify that utilities have been disconnected and capped.
- 3.1.2 Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- 3.1.3 Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- 3.1.4 If unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to the County's Representative.
- 3.1.5 Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs and video.
- 3.1.6 Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- 3.2.1 Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.
 - 3.2.1.1 Comply with requirements for existing services/systems interruptions specified in Sections 01 11 00 (Summary of Work) and 01 14 00 (Work Restrictions).
- 3.2.2 Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished or connection point for new service.
 - 3.2.2.1 County's Representative will arrange to shut off County services/systems when requested by Design Builder.
 - 3.2.2.2 Arrange to shut off service utilities with utility companies.
 - 3.2.2.3 Do not schedule shut downs until materials, manpower, and equipment are available to complete the Work with a minimum of delay.
 - 3.2.2.4 The County's Representative may require system and utility shutdowns, power outages, and interruption of services to be performed on weekends or off- hours with no increase in Contract Sum. Shut downs, power outages, and interruptions of services must be requested in writing to the County's Representative in accordance with Section 01 14 00 (Work Restrictions). These shut downs, power outages, and interruption of services must be approved in advance by the County's Representative prior to scheduling.

- 3.2.2.5 If services/systems are required to be removed, relocated, or abandoned before proceeding with selective demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

3.3 PREPARATION

- 3.3.1 Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and adjacent neighbors.

- 3.3.1.1 Comply with requirements for access and protection specified in Section 01 50 00 (Temporary Facilities and Controls).

- 3.3.2 Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

- 3.3.2.1 Strengthen or add new supports when required during progress of selective demolition. Provide services of a Washington Licensed Engineer for designing temporary support where required by applicable authorities for temporary supports and for shoring; submit engineering calculations directly to applicable authorities upon request.

- 3.3.2.2 Prevent movement of adjacent construction, provide and place bracing and be responsible for safety and support of adjacent construction.

- 3.3.2.3 Assume liability for movement of adjacent construction, for damage, and for injury.

- 3.3.2.4 Cease operations and notify County's Representative immediately if safety of structure appears to be endangered; take precautions to properly support structure.

- a. Do not resume operations until safety is restored.

3.4 SELECTIVE DEMOLITION, GENERAL

- 3.4.1 General: Demolish and remove existing construction only to the extent required by new construction. Perform demolition work in accordance with the submitted plan as accepted. Use methods required to complete the Work within limitations of governing regulations and as follows:

- 3.4.1.1 Shut off, cap, and otherwise protect existing utility lines in accordance with the requirements of the County, public agencies or utilities having jurisdiction.

- a. Do not remove utilities discovered during demolition but not indicated without first determining purpose for utility; coordinate with County's Representative.
 - b. Do not disrupt services to adjacent neighbors not in Project.
 - c. Place markers to indicate location of disconnected services; identify service lines and capping locations on Project Record Documents.
- 3.4.1.2 Completely remove items scheduled to be demolished and removed.
- 3.4.1.3 The use of explosives is not permitted.
- 3.4.1.4 Proceed with selective demolition systematically.
- 3.4.1.5 Do not use cutting torches until work area is cleared of flammable materials. Establish and maintain fire watch and portable fire-suppression devices during flame-cutting operations.
- 3.4.1.6 Maintain adequate ventilation when using cutting torches.
- 3.4.1.7 Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site at Design Builder's expense.
- a. Immediately remove from site wet materials and materials with water stains, mold, and mildew.
- 3.4.1.8 Dispose of demolished items and materials promptly off-site at Design Builder's expense.
- 3.4.1.9 Spoil material that is excavated in excess of what is required for backfill, or excavated material that is unsuitable for backfill and rubbish, shall be removed from the Site and disposed of promptly off-site at Design Builder's expense.
- 3.4.2 Removed and Salvaged Items:
- 3.4.2.1 Carefully remove, store and protect materials indicated for reinstallation or retention by County. Where stored materials are damaged, repair to original condition or replace with new undamaged materials.
 - 3.4.2.2 Clean salvaged items.
 - 3.4.2.3 Pack or crate items after cleaning. Identify contents of containers.
 - 3.4.2.4 Store items in a secure area until delivery to County.
 - 3.4.2.5 Transport items to County's storage area on-site as designated by

County's Representative.

3.4.2.6 Protect items from damage during transport and storage.

3.4.2.7 County will remove the following material and equipment before start of demolition:

a. Other items as indicated.

3.4.3 Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the County's Representative, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

3.4.4 Remove temporary Work.

3.5 SELECTIVE DEMOLITION PROCEDURES FOR SPECIFIC MATERIALS

3.5.1 Concrete: Demolish in sections. Cut concrete to its full depth at junctures with construction to remain and at regular intervals using a power-driven saw, then remove concrete between saw cuts.

3.5.2 Masonry: Demolish in small sections. Cut masonry at junctures with construction to remain using a power-driven saw, then remove masonry between saw cuts.

3.5.3 Concrete Slabs-on-Grade: Saw-cut perimeter of area to be demolished, then break up and remove.

3.5.4 Piping: Remove buried asbestos-insulated piping, other piping, small concrete utility vaults, metallic and concrete debris and pieces of old building foundations.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

3.6.1 General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the County's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill at Design-Builder's expense.

3.6.1.1 Do not allow demolished materials to accumulate on-site.

3.6.1.2 Remove and transport debris in a manner that will prevent spillage on adjacent streets, surfaces, and areas.

3.6.1.3 Remove debris from elevated portions of building by chute, hoist or other device that will convey debris to grade level in a controlled manner.

3.6.2 Burning: Do not burn demolished materials.

3.6.3 Disposal: Transport demolished materials off County's property and legally dispose of them at Design-Builder's expense.

3.7 CLEANING

3.7.1 Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

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SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL**PART 1 – GENERAL**

1.1 SUMMARY

1.1.1 This section specifies the requirements for the diversion of demolition (non-hazardous) and construction debris from landfill and submittal of a Waste Diversion Plan and a Waste Diversion Report.

1.1.2 Performance Requirement: This Project has a C&D debris diversion goal of eighty-five percent (85%).

1.2 DEFINITIONS

1.2.1 Construction and Demolition, (C&D) Waste: Includes all non-hazardous solid wastes resulting from construction, remodeling, alterations, repair, and demolition. Includes material that is recycled, reused, salvaged or disposed as garbage.

1.2.2 Salvage: Recovery of materials for on-site reuse, or off-site sale or donation to a third party.

1.2.3 Reuse: Making use of a material without altering its form. Materials can be reused on-site or reused on other projects off-site. Examples include, but are not limited to the following: Grinding of concrete for use as sub-base material. Chipping of landclearing debris for use as mulch.

1.2.4 Recycling: The process of sorting, cleaning, treating, and reconstituting materials for the purpose of using the material in the manufacture of a new product.

1.2.5 Source-Separated C&D Recycling: The process of separating recyclable materials in separate containers as they are generated on the job-site. The separated materials are hauled directly to a recycling facility or transfer station.

1.2.6 Co-mingled C&D Recycling: The process of collecting mixed recyclable materials in one container on-site. The container is taken to a material recovery facility where materials are separated for recycling.

1.2.7 Approved Recycling Facility: Any of the following:

1.2.7.1 A facility that can legally accept C&D waste materials for the purpose of processing the materials into an altered form for the manufacture of a new product.

1.2.7.2 Material Recovery Facility: A general term used to describe a waste-sorting facility. Mechanical, hand-separation, or a combination of both procedures, are used to recover recyclable materials. Co-mingled

containers are to be taken to a material recovery facility with at least a 50% co-mingled recycling rate.

1.3 SUBMITTALS

- 1.3.1 Waste Management Plan: Submit plan within seven days of date established for the Notice to Proceed.
- 1.3.2 Waste Management Report: Submit report concurrent with the final Application for Payment.

1.4 PERFORMANCE REQUIREMENTS

- 1.4.1 WA State: Material from construction and demolition projects shall be recycled or reused whenever practicable (State of Washington RCW 39.04.135). Any jobsite with a container for diversion/recycling must also have a container for the collection of waste (destined for a landfill) (WAC 173-345-040).
- 1.4.2 Seattle: The following recyclable C&D materials are prohibited from disposal and must be recycled (Seattle Ordinance 124076)
 - 1.4.2.1 Concrete, bricks and asphalt paving (effective 2012)
 - 1.4.2.2 Metal (both ferrous and non-ferrous), cardboard, and new construction gypsum scrap (effective 2014)
 - 1.4.2.3 Unpainted and untreated wood, carpet, plastic film wrap and tear-off asphalt roofing shingles (effective 2015).
- 1.4.3 Project: Divert a minimum of 75% C&D waste, by weight, from the landfill by one, or a combination of the following activities:
 - 1.4.3.1 Salvage for off-site reuse
 - 1.4.3.2 Salvage for on-site reuse
 - 1.4.3.3 Source-separated C&D recycling
 - 1.4.3.4 Co-mingled C&D recycling

1.5 QUALITY ASSURANCE

- 1.5.1 Regulatory Requirements: Conduct construction waste management activities in accordance with State of Washington RCW 70.95.240, Seattle Municipal Code Chapter 21.36 and all other applicable laws and ordinances.
- 1.5.2 Preconstruction Conference: Review methods and procedures related to waste management including, but not limited to, the following:
 - 1.5.2.1 Review and discuss waste management plan including responsibilities of Waste Management Coordinator.

- 1.5.2.2 Review requirements for documenting quantities of each type of material that will be salvaged, recycled or disposed of as waste.
- 1.5.2.3 Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
- 1.5.2.4 Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
- 1.5.2.5 Review waste management requirements for each trade.
- 1.5.2.6 Review and distribution of the following publication (request copies by contacting the King County Solid Waste Division at (206)477-4466 or swd@kingcounty.gov. Publications may also be found on-line at www.greentools.us.
 - 1.5.2.6.1 Construction Recycling Directory for Seattle/King County

1.6 WASTE MANAGEMENT PLAN

- 1.6.1 General: Develop plan consisting of waste types, quantity by weight, methods of disposal, handling and transportation procedures. Include separate sections in plan for demolition and construction waste.
- 1.6.2 Organize the waste management plan in accordance with a template provided by the City of Seattle, or an electronic/on-line C&D diversion tracking system, including the following information:
 - 1.7.1.1 Types and estimated quantities, by weight, of C&D waste expected to be generated during demolition and construction.
 - 1.7.1.2 Proposed methods for C&D waste salvage, reuse, recycling and disposal during demolition including, but not limited to, one or more of the following:
 - 1.6.2.2.1 Contracting with a deconstruction specialist to salvage materials generated,
 - 1.6.2.2.2 Selective salvage as part of demolition contractor's work,
 - 1.6.2.2.3 Reuse of materials on-site or off-site sale or donation to a third party.
 - 1.7.1.3 Proposed methods for salvage, reuse, recycling and disposal during construction including, but not limited to, one or more of the following:
 - 1.6.3.3.1 Requiring subcontractors to take their C&D waste to a recycling facility,
 - 1.6.3.3.2 Contracting with a recycling hauler to haul recyclable C&D waste to an approved recycling or material recovery facility,

1.6.3.3.3 Processing and reusing materials on-site

1.6.3.3.4 Self-hauling to a recycling or material recovery facility.

1.7.1.4 Name of recycling or material recovery facility receiving each of the C&D wastes.

1.7.1.5 Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

1.7 WASTE MANAGEMENT REPORT

1.7.1 Waste Management Report: Submit a cumulative waste management report with the final Application for Payment with the following attachments:

1.7.1.1 A record of the type and quantity, by weight, of each material salvaged, reused, recycled or disposed.

1.7.1.2 Total quantity of waste recycled as a percentage of total waste.

1.7.1.3 Disposal Receipts: Copy of receipts issued by a disposal facility for C&D waste that is disposed in a landfill.

1.7.1.4 Recycling Receipts: Copy of receipts issued by approved recycling facilities for co-mingled materials. Include weight tickets from the recycling hauler or material recovery facility and verification of the recycling rate for co-mingled loads at the facility.

1.7.1.5 Salvaged Materials Documentation: Types and quantities, by weight, for materials salvaged for reuse on site, sold or donated to a third party.

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

3.1 CONSTRUCTION WASTE MANAGEMENT, GENERAL

3.1.1 Provide containers for C&D waste that is to be recycled clearly labeled as such with a list of acceptable and unacceptable materials. The list of acceptable materials must be the same as the materials recycled at the receiving material recovery facility or recycling processor. C&D recycling signage templates can be obtained by contacting the King County Solid Waste Division at (206)477-4466 or swd@kingcounty.gov.

3.1.2 Collection containers for recyclable C&D waste must contain no more than 10% non-recyclable material, by volume.

- 3.1.3 Provide separate, clearly labeled, containers for C&D waste that is disposed in a landfill.
 - 3.1.4 Use detailed material estimates to reduce risk of unplanned and potentially wasteful cuts.
 - 3.1.5 To the greatest extent possible, include in material purchasing agreements a waste reduction provision requesting that materials and equipment be delivered in packaging made of recyclable material, that they reduce the amount of packaging, that packaging be taken back for reuse or recycling, and/or to take back all unused product. Insure that subcontractors require the same provisions in their purchase agreements.
 - 3.1.6 Conduct regular visual inspections of dumpsters and recycling bins to remove contaminants.
- 3.2 SOURCE SEPARATION
- 3.2.1 General: Separate recyclable materials from C&D waste to the maximum extent possible. Separate recyclable materials by type.
 - 3.2.1.1 Provide containers, clearly labeled, by type of separated materials or provide other storage method for managing recyclable materials until they are removed from Project site.
 - 3.2.1.2 Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3.2.1.3 Stockpile materials away from demolition area. Do not store within drip line of remaining trees.
 - 3.2.1.4 Store components off the ground and protect from weather.
- 3.3 CO-MINGLED RECYCLING
- 3.3.1 General: Do not put C&D waste that will be disposed in a landfill into a co-mingled C&D waste recycling container.
- 3.4 REMOVAL OF CONSTRUCTION WASTE MATERIALS
- 3.4.1 Remove C&D waste materials from project site on a regular basis. Do not allow C&D waste to accumulate on-site.
 - 3.4.2 Transport C&D waste materials off Owner's property and legally dispose of them.
 - 3.4.3 Burning of C&D waste is not permitted.

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SECTION 01 77 00

CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

1.1.1 This section describes contract closeout procedures including:

1.1.1.1 Removal of temporary construction facilities

1.1.1.2 Substantial completion

1.1.1.3 Final completion

1.1.1.4 Final cleaning

1.1.1.5 Project record documents

1.1.1.6 Material, equipment and finish data

1.1.1.7 Project guarantee

1.1.1.8 Warranties

1.1.1.9 Turn-in

1.1.1.10 Release of claims

1.1.1.11 Guaranty and Maintenance Bonds

1.2 REMOVAL OF TEMPORARY CONSTRUCTION FACILITIES

1.2.1 Remove temporary materials, equipment, services, and construction prior to Substantial Completion inspection. Temporary construction facilities to be removed upon Final Completion.

1.2.2 Clean and repair damage caused by installation or use of temporary facilities.

1.2.3 Restore permanent facilities used during construction to specified condition.

1.3 SUBSTANTIAL COMPLETION

When Design Builder considers Work or designated portion thereof as substantially complete, submit written notice, with list of items to be completed or corrected. The term "Substantial Completion" is defined as follows:

SUBSTANTIAL COMPLETION: The Work (or a specified part thereof) has

progressed to the point where, in the opinion of the County as evidenced by a Certificate of Substantial Completion, the Work is sufficiently complete, in accordance with the Contract Documents, so that the Work (or specified part) can be utilized for the purposes for which it is intended. Substantial Completion shall be deemed to have occurred for the Court and Detention Facility only when certificates of occupancy (or equivalent approvals) have been issued by State or local authorities with jurisdiction, including but not limited to the State Fire Marshall. The issuance of certificates of occupancy will conclusively establish that the Court and Detention Facility may be occupied in its entirety for its intended purpose, completion of Punch List items notwithstanding. The terms "substantially complete" and "substantially completed" as applied to all or part of the Work refer to Substantial Completion thereof.

- 1.3.1 Within reasonable time, the Design Builder's Architect of Record and the County shall meet at the project and will inspect to determine status of completion.
 - 1.3.2 Should the Design Builder's Architect of Record and the County determine that Work is not substantially complete, the County will promptly notify Design Builder in writing, and will submit a list of all defects and omissions.
 - 1.3.3 Design Builder shall remedy deficiencies and send a second written notice of substantial completion. County will re-inspect the Work. If deficiencies previously noted are not corrected on re-inspection, then Design Builder shall pay the cost of the re-inspection.
 - 1.3.4 When the Design Builder's Architect of Record and County conclude that Work is substantially complete, the Design Builder's Architect of Record County will issue a Certificate of Substantial Completion, accompanied by Design Builder's list of items to be complete or corrected as verified by County.
 - 1.3.5 Manufactured units, equipment and systems that require startup must have been started up and run for periods prescribed by County before a Certificate of Substantial Completion will be issued.
- 1.4 FINAL ACCPETANCE
- 1.4.1 Final Acceptance is defined in the Contract Agreement. In addition to the requirements set forth in the Contract Agreement, FINAL ACCEPTANCE will require all of the following:
 - All systems having been tested and accepted as having met requirements of the Contract Documents.
 - All required instructions and training sessions having been given by the Design Builder.
 - All punch list work, as directed by the County, has been completed by the Design Builder.
 - The County has accepted the Work as satisfactorily completed in

accordance with the Contract Documents

- All Regulatory Approvals for the Children and Family Justice Center have been obtained and are final beyond all appeal periods, if any.
- All improvements and work comprising the Work are complete, including all Punch List Items.

1.4.2 Design Builder must meet all requirements set forth in the Contract Agreement and in this section for Final Acceptance in order to achieve Final Acceptance . When Design Builder considers Work is finally complete, it shall submit written certification that:

1.4.1.1 Design Builder has inspected Work for compliance with the Contract Documents, and all requirements for Final Acceptance have been met.

1.4.1.2 The Work, except for Design Builder maintenance after Final Acceptance, has been completed in accordance with the Contract Documents and deficiencies listed with the Certificate of Substantial Completion have been corrected. Equipment and systems have been tested in the presence of County's representative, and are operative.

1.4.3 In addition to submittals required by the Contract Documents, Design Builder shall provide submittals required by governing authorities and submit final statement of accounting giving total adjusted Contract Price, previous payments, and sum remaining due.

1.4.4 When County finds the Work is acceptable and final submittal is complete, County will issue final change order reflecting approved adjustments to Contract Price not previously made by Change Order.

1.4.3.1 Should County determine that the Work is incomplete or defective:

1.4.3.1.1 County promptly will so notify Design Builder, in writing, and will submit a list of the incomplete or defective items.

1.4.3.1.2 Design Builder shall promptly remedy the deficiencies and notify County when the Work is ready for reinspection.

1.4.3.1.3 When County determines that the Work is acceptable under the Contract Documents, County will request Design Builder to make closeout submittals.

1.5 FINAL CLEANING

1.5.1 Cleaning: Employ professional cleaners for final cleaning. Clean each surface or unit to condition expected in a Project cleaning and maintenance program. Comply with manufacturer's written instructions.

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- 1.5.2 Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for any phase of Project:
 - 1.5.2.1 Conduct cleaning operations to comply with environmental regulations.
 - 1.5.2.2 Use cleaning agents recommended by the manufacturer or fabricator of surface to be cleaned.
 - 1.5.2.3 Do not use cleaning agents that are potentially harmful to health or property or that might damage finished surfaces.
 - 1.5.2.4 Ensure compliance with applicable LEED requirements for final cleaning of the Site.
 - 1.5.2.5 Cleaning chemicals must be coordinated with Project maintenance staff and appropriate for use in an occupied facility
 - 1.5.2.6 Clean Project site, yard, and grounds in areas disturbed by construction activities including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - 1.5.2.7 Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - 1.5.2.8 Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - 1.5.2.9 Remove tools, construction equipment, machinery, and surplus material from Project site.
 - 1.5.2.10 Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
 - 1.5.2.11 Horizontal surfaces: All horizontal surfaces must be dusted and/or washed until free of dust and grime.
 - 1.5.2.12 Furnishings and equipment:
 - 1.5.2.12.1 Remove all gum and sticky substances from all surfaces. Wash all furniture and equipment with a neutral cleaner. Use specialized cleaner appropriate for wood and/or excessively dirty surfaces.
 - 1.5.2.12.2 Walls: Wash all wall surfaces with detergent and water.
 - 1.5.2.12.3 All restroom walls to be washed with a disinfectant cleaner.

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- 1.5.2.12.4 Doors: Wash all doors, frames and hardware.
- 1.5.2.13 Floors:
 - 1.5.2.13.1 Clean and finish flooring using appropriate procedures and finishes/sealers per manufacturers' recommendations. Newly installed resilient floors or linoleum must have seams welded all surface mastic removed, allowed to set for time recommended by manufacturer of mastic prior to final finish application.
 - 1.5.2.13.2 Concrete Floors - Scrub using water and detergent.
 - 1.5.2.13.3 Ceramic Floors – Clean and apply sealer per manufacturer's recommendations
- 1.5.2.14 RESTROOMS: Thoroughly clean and disinfect all surfaces and fixtures.
- 1.5.2.15 Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- 1.5.2.16 Sweep concrete floors broom clean in unoccupied spaces.
- 1.5.2.17 Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
- 1.5.2.18 Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- 1.5.2.19 Remove labels that are not permanent.
- 1.5.2.20 Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
- 1.5.2.21 Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
- 1.5.2.22 Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- 1.5.2.23 Replace parts subject to unusual operating conditions.
- 1.5.2.24 Clean plumbing fixtures to a sanitary condition, free of stains,

including stains resulting from water exposure.

- 1.5.2.25 Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- 1.5.2.26 Clean ducts, blowers, and coils if units were operated without filters during construction.
- 1.5.2.27 Clean all new and existing light fixtures, lamps, globes, and reflectors to function with full efficiency.
- 1.5.2.28 Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
- 1.5.2.29 Ensure that Project is clean and ready for occupancy.

1.6 MATERIAL, EQUIPMENT AND FINISH DATA

- 1.6.1 Submit two sets of data for primary materials, equipment and finishes as required under each specification section prior to final inspection, bound in 8-1/2 inches by 11 inches three-ring binders with durable plastic covers to County for its records and three electronic copies on CD.

1.7 MISCELLANEOUS PROJECT RECORD SUBMITTALS

- 1.7.1 Refer to other Specification Sections for miscellaneous record keeping requirements and submittals in connection with various construction activities. Immediately prior to Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for use and reference. Submit to County for its records.
- 1.7.2 At Substantial Completion, submit the final property survey to the County for review and acceptance before having it recorded by or with Authorities Having Jurisdiction as the official "property survey."

1.8 PROJECT GUARANTEE

- 1.8.1 Requirements for Design Builder's guarantee of completed Work are included in the General Terms and Conditions . Design Builder shall guarantee Work done under Contract against failures, leaks or breaks or other unsatisfactory conditions due to defective design, equipment, materials or workmanship, and perform repair work or replacement required, at Design Builder's sole expense, for period of one (1) year from date of Substantial Completion of the Courthouse, Detention Building and any other scope of work associated with this phase of the project. The Design Builder shall guarantee all other work in subsequent phases (e.g parking structure and remaining sitework either on or off site) of the project for one year from the date of substantial completion.
- 1.8.2 Neither Final Acceptance nor recording a Notice of Completion nor final certificate for payment nor provision of the Contract Documents nor partial or

entire use or occupancy of premises shall constitute Final Acceptance of Work not done in accordance with Contract Documents nor relieve Design Builder of liability in respect to express warranties or responsibility for faulty materials or workmanship.

- 1.8.3 County may make repairs to defective Work as set forth in the General Terms and Conditions if, within five (5) Business Days after mailing of written notice of defective work to Design Builder or authorized agent, Design Builder does not make or undertake repair with due diligence; provided, however, that in case of leak or emergency where, in opinion of County, delay would cause hazard to health or serious loss or damage, repairs may be made without notice being sent to Design Builder, and Design Builder shall pay the cost thereof.
- 1.8.4 If, after installation, operation or use of materials or equipment to be furnished under the Contract Documents proves to be unsatisfactory to County, County shall have right to operate and use materials or equipment until it can, without damage to County, be taken out of service for correction or replacement. Period of use of defective materials or equipment pending correction or replacement shall in no way decrease guarantee period required for acceptable corrected or replaced items of materials or equipment.
- 1.8.5 Nothing in this Section shall be construed to limit, relieve or release Design Builder's, Subcontractors' and equipment suppliers' liability to County for damages sustained as result of latent defects in the Work caused by negligence of suppliers' agents, employees or Subcontractors. Warranty contained in the Contract Documents shall not amount to, nor shall it be deemed to be, waiver by County of any rights or remedies (or time limits in which to enforce such rights or remedies) it may have for defective workmanship or defective materials under laws of this State.

1.9 WARRANTIES

- 1.9.1 Execute Design Builder's submittals and assemble warranty documents, and operations and maintenance manuals, executed or supplied by Subcontractors, suppliers, and manufacturers.
- 1.9.2 Provide table of contents and assemble in 8-1/2 inches by 11 inches three-ring binder with durable plastic cover, appropriately separated and organized.
 - 1.9.2.1 Assemble in Specification Section order.
 - 1.9.2.2 Provide two copies of completed warranty binders along with three electronic copies of the information provided in the binders on CD.
- 1.9.3 Submit material prior to final application for payment.
 - 1.9.3.1 For equipment put into use with County's permission during construction, submit within twenty (20) Business Days after first operation.

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- 1.9.3.2 For items of Work delayed materially beyond Date of Substantial Completion, provide updated submittal within ten (10) Business Days after acceptance, and list date of acceptance as start of warranty period.
- 1.9.4 Warranties are intended to protect County against failure of work and against deficient, defective and faulty materials and workmanship, regardless of sources.
- 1.9.5 Limitations: Warranties are not intended to cover failures that result from the following:
 - 1.9.5.1 Unusual or abnormal phenomena of the elements
 - 1.9.5.2 Vandalism after substantial completion
 - 1.9.5.3 Insurrection or acts of aggression including war
- 1.9.6 Related Damages and Losses: Remove and replace Work which is damaged as result of defective Work, or which must be removed and replaced to provide access for correction of warranted Work.
- 1.9.7 Warranty Reinstatement: After correction of warranted Work, where the correction requires replacement of a major component of equipment or more than ten percent (10%) of work area, reinstate warranty for corrected Work to date of original warranty expiration or to a date not less than three hundred sixty-five (365) Days after corrected Work was done, whichever is later for the affected equipment or area.
- 1.9.8 Replacement Cost: Replace or restore failing warranted items without regard to anticipated useful service lives.
- 1.9.9 Warranty Forms: Submit drafts to County for approval prior to execution. Forms shall not detract from or confuse requirements or interpretations of the Contract Documents.
 - 1.9.9.1 Warranty shall be countersigned by manufacturers.
 - 1.9.9.2 Where specified, warranty shall be countersigned by Subcontractors and installers.
- 1.9.10 Rejection of Warranties: County reserves right to reject unsolicited and coincidental product warranties which detract from or confuse requirements or interpretations of Contract Documents.
- 1.9.11 Term of Warranties: For materials, equipment, systems and workmanship warranty period shall be one (1) year minimum from date of Substantial Completion, as defined in within this section , except where:
 - 1.9.11.1 Detailed specifications for certain materials, equipment or systems

require longer warranty periods.

1.9.11.2 Materials, equipment or systems are put into beneficial use of County prior to Final Completion as agreed to in writing by County, in which case the warranty period shall be one (1) year.

1.9.12 Warranty of Title: No material, supplies, or equipment for Work under the Contract Documents shall be purchased subject to any chattel mortgage, security agreement, or under a conditional sale or other agreement by which an interest therein or any part thereof is retained by seller or supplier. Design Builder warrants good title to all material, supplies, and equipment installed or incorporated in Work and agrees upon completion of all work to deliver premises, together with improvements and appurtenances constructed or placed thereon by Design Builder, to County free from any claim, liens, security interest, or charges, and further agrees that neither Design Builder nor any person, firm, or corporation furnishing any materials or labor for any Work covered by the Contract Documents shall have right to lien upon premises or improvement or appurtenances thereon. Nothing contained in this Paragraph, however, shall defeat or impair right of persons furnishing materials or labor under bond given by Design Builder for their protection or any rights under law permitting persons to look to funds due Design Builder in hands of County.

1.9.13 TURN-IN

1.9.13.1 The Contract Documents will not be closed out and final payment will not be made until all personnel Identification Media, vehicle permits and keys issued to Design Builder during prosecution of Work are turned in to County.

1.9.14 RELEASE OF CLAIMS

1.9.14.1 The Contract Documents will not be closed out and final payment will not be made until final Agreements and Release of Any and All Claims is completed and executed by Design Builder.

1.9.15 FIRE INSPECTION COORDINATION

1.9.15.1 Design Builder shall coordinate fire inspection and secure sufficient notice to County to permit convenient scheduling, if necessary.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

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SECTION 01 78 23

OPERATION AND MAINTENANCE DATA**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1.1.1.1 Operation and maintenance documentation directory.

1.1.1.2 Emergency manuals.

1.1.1.3 Finishes maintenance manuals for the care and maintenance of products, materials, and finishes.

1.1.1.4 Operation and maintenance manuals for systems, subsystems, and equipment.

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 33 00 (Submittal Procedures) for submitting copies of submittals for operation and maintenance manuals.

1.1.2.2 Section 01 78 39 (Project Record Documents) for preparing Record Drawings for operation and maintenance manuals.

1.2 DEFINITIONS

1.2.1 System: An organized collection of parts, equipment, or subsystems united by regular interaction.

1.2.2 Subsystem: A portion of a system with characteristics similar to a system.

1.3 SUBMITTALS

1.3.1 Initial Submittal: Submit two draft copies of each manual at least forty-five (45) Days before requesting inspection for Substantial Completion. Submittal shall include a complete operation and maintenance directory. County will return one copy of draft and mark whether general scope and content of manual are acceptable.

1.3.1.1 Electronic Format: Submit one (1) draft copies of each manual in computerized compact disk (CD's) of material and finish data.

Final Submittal: Submit three copies of each manual in final form at least thirty (30) days before final inspection. County will return copy with comments within twenty-one (21) Days after final inspection.

- 1.3.2.1 Correct or modify each manual to comply with County's comments. Submit four copies of each corrected manual within ten (10) Days of receipt of County's comments.
- 1.3.2.2 Electronic Format: Submit two (2) final copies of each manual in computerized compact disk (CD's) of material and finish data.

1.4 COORDINATION

- 1.4.1 Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by all representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- 2.1.1 Organization: Include a section in the directory for each of the following:

- 2.1.1.2 List of systems and subsystems.

- 2.1.1.3 List of equipment.

- 2.1.1.4 Tables of contents.

- 2.1.2 List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

- 2.1.3 List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

- 2.1.4 Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

- 2.1.5 Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, *Preparation of Operating and Maintenance Documentation for Building Systems*.

2.2 MANUALS, GENERAL

- 2.2.1 Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

- 2.2.1.2 Title page.
- 2.2.1.3 Table of contents.
- 2.2.1.4 Manual contents.
- 2.2.2 **Title Page:** Enclose title page in transparent plastic sleeve. Include the following information:
 - 2.2.2.1 Subject matter included in manual.
 - 2.2.2.2 Name and address of Project.
 - 2.2.2.3 Date of submittal.
 - 2.2.2.4 Name, address, and telephone number of Design Builder.
 - 2.2.2.5 Name and address of responsible Design Professional.
 - 2.2.2.6 Cross-reference to related systems in other operation and maintenance manuals.
 - 2.2.2.7 Volume number (e.g. Volume 1 of 10)
- 2.2.3 **Table of Contents:** List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
 - 2.2.3.2 If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.
- 2.2.4 **Manual Contents:** Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
 - 2.2.4.1 **Binders:** Heavy-duty, 3-ring "D" ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - 2.2.4.1.1 If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - 2.2.4.1.2 Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project

title or name, and subject matter of contents. Indicate volume number for multiple-volume sets (e.g. Volume 1 of 10).

- 2.2.4.2 Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
- 2.2.4.3 Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
- 2.2.4.4 Supplementary Text: Prepared on 8-1/2-by-11-inch white bond paper.
- 2.2.4.5 Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - 2.2.4.5.1 If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - 2.2.4.5.2 If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.
 - 2.2.4.5.3 Use of photographs instead of drawings, to demonstrate unusual installations, is acceptable.

2.3 EMERGENCY MANUALS

- 2.3.1 Content: Organize manual into a separate section for each of the following:
 - 2.3.1.1 Type of emergency.
 - 2.3.1.2 Emergency instructions.
 - 2.3.1.3 Emergency procedures.
- 2.3.2 Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 - 2.3.2.1 Fire.
 - 2.3.2.2 Flood.
 - 2.3.2.3 Earthquake.
 - 2.3.2.4 Gas leak.

- 2.3.2.5 Water leak.
- 2.3.2.6 Power failure.
- 2.3.2.7 Water outage.
- 2.3.2.8 System, subsystem, or equipment failure.
- 2.3.2.9 Chemical release or spill.
- 2.3.2.10 Occupant stuck in elevator.
- 2.3.2.11 Security emergency.
- 2.3.3 Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of County's operating personnel for notification of installer, supplier, and manufacturer to maintain warranties.
- 2.3.4 Emergency Procedures: Include the following, as applicable:
 - 2.3.4.1 Instructions on stopping.
 - 2.3.4.2 Shutdown instructions for each type of emergency.
 - 2.3.4.3 Operating instructions for conditions outside normal operating limits.
 - 2.3.4.4 Required sequences for electric or electronic systems.
 - 2.3.4.5 Special operating instructions and procedures.
- 2.4 **PRODUCT FINISHES MAINTENANCE MANUAL**
 - 2.4.1 Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
 - 2.4.2 Source Information: List each product included in manual, identified by product name and arranged to match Project Manual (Specifications) table of contents. For each product, list name, address, and telephone number of installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
 - 2.4.3 Product Information: Include the following, as applicable:
 - 2.4.3.1 Product name and model number.
 - 2.4.3.2 Manufacturer's name.
 - 2.4.3.3 Color, pattern, and texture.

- 2.4.3.4 Material and chemical composition.
 - 2.4.3.5 Reordering information for specially manufactured products.
 - 2.4.4 Maintenance Procedures: Include manufacturer's written recommendations and the following:
 - 2.4.4.1 Inspection procedures.
 - 2.4.4.2 Types of cleaning agents to be used and methods of cleaning.
 - 2.4.4.3 List of cleaning agents and methods of cleaning detrimental to product.
 - 2.4.4.4 Schedule for routine cleaning and maintenance.
 - 2.4.4.5 Repair instructions.
 - 2.4.5 Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
 - 2.4.6 Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 2.4.1.1 Include procedures to follow and required notifications for warranty claims.
- 2.5 SYSTEMS AND EQUIPMENT OPERATION AND MAINTENANCE MANUAL
- 2.5.1 Manual shall be provided in the following volumes to match the department. Some information shall be provided in more than one volume. Final contents shall be as directed by the County's Representative. The following list may not include all equipment on the Project.
 - 2.5.1.1 Distribution shall be:
 - 2.5.1.1.1 One (1) hard copy and one scanned electronic copy on CD copy to the Director of the Engineering Department
 - 2.5.1.1.2 One (1) copy to the County's project record files
 - 2.5.1.1.3 One (1) hard copy and one scanned electronic copy on CD copy for the County's Project Partners.
 - 2.5.1.1.4 Two (2) copies to the Department listed below:

No.	Department	Description of contents
1	BUILDING ENGINEER	Air Handling Units Cooling Towers Chillers Computer Room Air Conditioners Fan Coil Units HVAC Water Treatment Hydronic Specialties Motors For HVAC Equipment Vibration And Seismic Control For HVAC Piping And Equipment Steam Specialties Pumps (Hydronic, Fire & Domestic Booster) Vacuum Pumps Air Compressors Soft Water, D.I., R.O. Systems Heat Exchanger DHW Generators Filters Emergency Generators Boilers Plumbing Specialties Gas Fired Water
2	BUILDING MAINTENANCE	Toilet Partition Toilet Accessories Finishes Manual
3	BUILDING SYSTEMS	Fire Alarm Security
4	EH&S	Hepa Filters

No.	Department	Description of contents
5	ELECTRIC Shop	Emergency Generators Switchgear Panel Boards Transformer s Light
6	ELEVATOR	Elevators
7	GROUNDS	Irrigation System Planting Materials
8	HVAC Shop	Exhaust Fans Controls Package Ac Units Refrigeration (Cold
9	LOCK Shop	Door Hardware
10	PLUMBING Shop	Water Heater Gas/Electric DHW Recirc – Pump Sewage Ejector Sump Pumps Plumbing Fixtures Electric Water Cooler And Drinking Fountains Safety Shower/Eye Wash Backflow Preventers Sterilizer Glass Washer Tunnel Washer Fire Suppression Sprinkler System Fire Hydrants

2.5.2 Content: For each system, subsystem, and piece of equipment not part of

a system, include operation data, source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below. In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

2.5.2.1 System, subsystem, and equipment descriptions.

2.5.2.2 Performance and design criteria.

2.5.2.3 Operating standards.

2.5.2.4 Operating procedures.

2.5.2.5 Operating logs.

2.5.2.6 Wiring diagrams.

2.5.2.7 Control diagrams.

2.5.2.8 Piped system diagrams.

2.5.2.9 Precautions against improper use.

2.5.2.10 License requirements including inspection and renewal dates.

2.5.3 Descriptions: Include the following:

2.5.3.1 Product name and model number.

2.5.3.2 Manufacturer's name.

2.5.3.3 Equipment identification with serial number of each component.

2.5.3.4 Equipment function.

2.5.3.5 Operating characteristics.

2.5.3.6 Limiting conditions.

2.5.3.7 Performance curves.

2.5.3.8 Engineering data and tests.

2.5.3.9 Complete nomenclature and number of replacement parts.

2.5.4 Operating Procedures: Include the following, as applicable:

2.5.4.1 Startup procedures.

2.5.4.2 Equipment or system break-in procedures.

- 2.5.4.3 Routine and normal operating instructions.
- 2.5.4.4 Regulation and control procedures.
- 2.5.4.5 Instructions on stopping.
- 2.5.4.6 Normal shutdown instructions.
- 2.5.4.7 Seasonal and weekend operating instructions.
- 2.5.4.8 Required sequences for electric or electronic systems.
- 2.5.4.9 Special operating instructions and procedures.
- 2.5.5 Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- 2.5.6 Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.
- 2.5.7 Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- 2.5.8 Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 - 2.5.8.1 Standard printed maintenance instructions and bulletins.
 - 2.5.8.2 Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 - 2.5.8.3 Identification and nomenclature of parts and components.
 - 2.5.8.4 List of items recommended to be stocked as spare parts.
- 2.5.9 Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 - 2.5.5.1 Test and inspection instructions.
 - 2.5.5.2 Troubleshooting guide.
 - 2.5.5.3 Precautions against improper maintenance.
 - 2.5.5.4 Disassembly; component removal, repair, and replacement; and reassembly instructions.

- 2.5.5.5 Aligning, adjusting, and checking instructions.
- 2.5.10 Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 - 2.5.10.1 Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 - 2.5.10.2 Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
- 2.5.11 Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- 2.5.12 Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- 2.5.13 Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 2.5.13.1 Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- 3.1.3 Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- 3.1.4 Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by County's operating personnel for types of emergencies indicated.
- 3.1.5 Product Finishes Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- 3.1.6 Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 3.1.6.1 Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.

- 3.1.6.2 Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by County's operating personnel.
- 3.1.7 Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
- 3.1.7.1 Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- 3.1.8 Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
- 3.1.8.1 Comply with requirements of Record Shop Drawings in Section 01 78 39 (Project Record Documents).

END OF SECTION

SECTION 01 78 39

PROJECT RECORD DOCUMENTS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes general, administrative and procedural requirements for Project Record Documents. Design Builder shall have complete responsibility for preparation of marked-up and final Record Documents, including the following:

1.1.1.1 Record Drawings.

1.1.1.2 Record Specifications.

1.1.1.3 Record Product Data.

1.1.1.4 Record Samples

1.1.1.5 Miscellaneous Record Submittals

1.1.1.6 Final updated and revised BIM Model

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 77 00 (Closeout Procedures) for general closeout procedures.

1.1.2.2 Section 01 78 23 (Operations and Maintenance Data) for operation and maintenance manual requirements.

1.2 SUBMITTALS

1.2.1 Record Drawings: Comply with the following:

1.2.1.1 Number of Copies: Submit copies of Record Drawings as follows:

a. *Initial Submittal*: Submit four sets of prints from corrected Record Electronic CAD Drawings and three sets of marked-up Record Prints. Design Builder will initial and date each print to confirm that general scope of changes, additional information recorded, and quality of information is accurate. County will return prints with any comments to be incorporated into Record Drawings.

b. *Final Submittal*: Design Builder will address all of County's comments on the initial submittal and deliver three sets of Record Electronic Drawing files, and three sets of prints. Print

each drawing, whether or not changes and additional information were applicable to the sheet.

- 1.2.1.2 Electronic Media: Revit, Version 2011 operating in Microsoft Windows operating system, CD-R/DVD, in compliance with Section 01 81 22 BIM Performance Requirements, two sets in portable document format (.pdf), and one AutoCAD Version 10.
- 1.2.2 Record Specifications: Submit three electronic file copies and three hard copies of Project Specifications, including addenda and contract modifications.
 - 1.2.2.1 Electronic Media: Microsoft Word, Version XP, 2002 or later operating in Microsoft Windows operating system, CD-R/DVD.
- 1.2.3 Record Product Data: Record Product Data shall be part of operation and maintenance manuals. Insert in operation and maintenance manuals instead of a Record Product Data submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- 2.1.1 Record Prints: Maintain one set of black-line white prints of the Construction Documents and Shop Drawings. Label each document (on first sheet or page) "PROJECT RECORD" in 2 in. high printed letters. Keep record documents current throughout construction. Note: A reference by number to a Change Order, RFI, RFQ, Field Order or other such document is not acceptable as sufficient record information on any record document. Do not permanently conceal any Work until required information has been recorded.
 - 2.1.1.1 Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is installer, Subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed work that would be difficult to identify or measure and record later. Record sufficient information such that Work concealed in the building may be located with ease and accuracy. County will determine what constitutes sufficient information.
 - b. Accurately record information in an industry-standard drawing technique.
 - c. Record data as soon as possible after work is performed. Record and check the markup before enclosing concealed installations.
 - d. Update Project Record Documents daily and allow for County

inspection per paragraph 3.1.1 below.

- 2.1.1.2 Content: Types of items requiring marking include, but are not limited to, the following:
- a. Dimensional changes
 - b. Revisions to details
 - c. Depths of various elements of foundation in relation to main floor level or survey datum.
 - d. Horizontal and vertical location of underground duct banks, utilities and appurtenances referenced to permanent surface improvements.
 - e. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - f. Establish locations of underground work, points of connection with existing utilities, changes in direction, valves, manholes, catch basins, capped stubouts, invert elevations, and similar items.
 - g. Provide actual numbering of each electrical circuit.
 - h. Field changes of dimension and detail.
 - i. Revisions to routing of piping and conduits
 - j. Revisions to electrical circuitry
 - k. Actual equipment locations
 - l. Duct size and routing
 - m. Changes made by Change Order
 - n. Details not on Contract Documents or accepted Construction Documents
- 2.1.1.3 Mark the Construction Documents or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Construction Documents.
- 2.1.1.4 Unless otherwise agreed by the County and Design Builder, mark record sets with erasable, red-colored pencil. Issue electronic record sets in .PDF format, with marks made in red utilizing the comment tools in Adobe Acrobat Writer. Use other colors to

- distinguish between changes for different categories of the Work at same location.
- 2.1.1.5 Mark important additional information that was either shown schematically or not included in the Contract Documents or accepted Construction Documents.
- 2.1.1.6 Note Alternate numbers, Change Order numbers, and similar identification, where applicable.
- 2.1.2 Record Electronic Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with County. Prepare a full set of corrected Record Electronic Drawings of the Construction Documents, as follows:
- 2.1.2.1 Format: Revit, Version 2011 operating in Microsoft Windows operating system, in compliance with Section 01 81 22 BIM Performance Requirements, two sets in portable document format (.pdf), and one AutoCAD Version 10.
- 2.1.2.2 Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
- 2.1.3 Record Shop Drawings: Prepare Shop Drawings instead of revising the Design Professional drawings as Record Drawings when Shop Drawings have been produced for the Work.
- 2.1.3.1 Revise Design Professional drawings to refer to Shop Drawing sheet for Record Drawing information for that particular product, material or equipment shown on the Shop Drawing.
- 2.1.3.2 Shop Drawings as Record Drawings shall detail and record the actual physical installation and its relation to other construction. Integrate Shop Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- 2.1.4 Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
- 2.1.4.1 Record Prints: Organize Record Prints and Record Shop Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.

2.1.4.2 Record Electronic Drawings: Organize Revit project files into separate electronic files that correspond to the system models used to develop the Project. Further organize these files into folders that correspond to the major phases of the Project. Each folder will contain a MS Word document explaining the organizational logic of the Revit files and the system used to produce the paper drawing sheets.

2.1.4.3 Identification: As follows:

- a. County's Project name and number.
- b. Date.
- c. Designation "PROJECT RECORD DRAWINGS."
- d. Name of Design Professionals.
- e. Name of Design Builder.
- f. Professional license, seal and signature.

2.2 RECORD SPECIFICATIONS

2.2.1 Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Contract Documents and accepted Construction Documents.

2.2.1.1 Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2.2.1.2 Note related Change Orders and Record Drawings where applicable.

2.2.1.3 Indicate actual products used, including manufacturer, model number and options.

2.2.1.4 Update Project Record Documents daily and allow for County inspection per paragraph 3.1.1 below.

2.2.2 Record Specifications: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Specifications with County. Prepare a full set of corrected Specifications of the Contract Documents and accepted Construction Documents, as follows:

2.2.2.1 Format: Microsoft Word, Version XP, 2002 or later, operating in Microsoft Windows operating system.

2.2.2.2 Incorporate changes and additional information previously marked on Record Prints. Delete, rewrite, and add details and notations where applicable.

2.3 RECORD PRODUCT DATA

2.3.1 Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

2.3.1.1 Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2.3.1.2 Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

2.3.1.3 Note related Change Orders, Record Specifications, and Record Drawings where applicable.

2.4 RECORD SAMPLES

2.4.1 Immediately before date of Substantial Completion, meet with County at Project site to determine which Samples maintained during the construction period shall be transmitted to County for record purposes.

2.4.2 Comply with County's instructions for packaging, identification, marking, and delivery to County's Sample storage space. Dispose of other Samples in the manner specified for disposing surplus and waste materials

2.5 MISCELLANEOUS RECORD SUBMITTALS

2.5.1 Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference. Miscellaneous records include, but are not limited to, the following:

2.5.1.1 Field records on excavations and foundations.

2.5.1.2 Field records on underground construction and similar work.

2.5.1.3 Surveys showing locations and elevations of underground lines.

2.5.1.4 Invert elevations of drainage piping.

2.5.1.5 Surveys establishing building lines and levels.

2.5.1.6 Authorized measurements using unit prices or allowances.

2.5.1.7 Records of plant treatment.

2.5.1.8 Ambient and substrate condition tests.

2.5.1.9 Certifications received in lieu of labels on bulk products.

- 2.5.1.10 Batch mixing and bulk delivery records.
- 2.5.1.11 Testing and qualification of trade persons.
- 2.5.1.12 Documented qualification of installation firms.
- 2.5.1.13 Load and performance testing.
- 2.5.1.14 Inspections and certifications by governing authorities.
- 2.5.1.15 Leakage and water-penetration tests.
- 2.5.1.16 Fire-resistance and flame-spread test results.
- 2.5.1.17 Final inspection and correction procedures.
- 2.5.1.18 Final updated and revised BIM Model

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- 3.1.1 Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur. County shall review Record Documents in concert with the monthly Application for Payment.
- 3.1.2 Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for County's reference during normal working hours.

END OF SECTION

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SECTION 01 79 00

DEMONSTRATION AND TRAINING**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 This Section includes administrative and procedural requirements for instructing County and Project Partner personnel, including the following:

1.1.1.1 Demonstration of operation of systems, subsystems, and equipment.

1.1.1.2 Training in operation and maintenance of systems, subsystems, and equipment.

1.1.1.3 Demonstration and training videotapes.

1.1.2 Related Sections include the following:

1.1.2.1 Section 01 31 00 (Project Management and Coordination) for requirements for pre-instruction conferences.

1.1.2.2 Section 01 78 39 (Operations and Maintenance Data) for reference materials.

1.2 SUBMITTALS

1.2.1 Instruction Program: Submit four copies of Basic System Training Schedule form with the outline of instructional program for demonstration and training, including a schedule of proposed dates, times, length of instruction time, intended audience, and instructors' names for each training module. Include learning objective and outline for each training module.

1.2.1.1 At completion of training, submit two complete training manual(s) for County's use.

1.2.1.2 Electronic Format: Submit copies of each manual in computerized compact disk (CD's).

1.2.2 Qualification Data: For instructors.

1.2.3 Attendance Record: For each training module, submit list of participants, date, location and length of instruction time.

1.3 QUALITY ASSURANCE

- 1.3.1 Instructor Qualifications: A factory-authorized service representative experienced in operation and maintenance procedures and training.
- 1.3.2 Pre-instruction Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 (Project Management and Coordination). Review methods and procedures related to demonstration and training including, but not limited to, the following:
- 1.3.2.1 Inspect and discuss locations and other facilities required for instruction.
 - 1.3.2.2 Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, and facilities needed to avoid delays.
 - 1.3.2.3 Identify personnel for whom training is recommended.
 - 1.3.2.4 Review required content of instruction.
 - 1.3.2.5 For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.

1.4 COORDINATION

- 1.4.1 Coordinate instruction schedule with County's operations. Adjust schedule as required to minimize disrupting County operations.
- 1.4.2 Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
- 1.4.3 Coordinate content of training modules with content of approved emergency, operation, and maintenance manuals. Do not submit instruction program until operation and maintenance data has been reviewed and approved by County.

PART 2 - PRODUCTS

2.1 INSTRUCTION PROGRAM

- 2.1.1 Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by Design Builders individual Specification Sections. Systems and equipment listed below are minimum examples that might apply. :
- 2.1.1.1 Motorized doors, such as overhead coiling doors, overhead coiling grilles and automatic entrance doors.
 - 2.1.1.2 Equipment, such as projection screens, loading dock equipment, waste compactors, and food-service equipment.

- 2.1.1.3 Fire-protection systems, such as fire alarm, fire pumps and fire-extinguishing systems.
 - 2.1.1.4 Conveying systems, such as elevators.
 - 2.1.1.5 Heat generation, such as boilers, feedwater equipment, pumps, steam distribution piping and water distribution piping.
 - 2.1.1.6 Refrigeration systems, such as chillers, cooling towers, condensers, pumps and distribution piping.
 - 2.1.1.7 HVAC systems, such as air-handling equipment, air distribution systems, and terminal equipment and devices.
 - 2.1.1.8 HVAC instrumentation and controls.
 - 2.1.1.9 Electrical service and distribution, such as transformers, switchboards, panel boards and motor controls.
 - 2.1.1.10 Packaged engine generators, such as transfer switches.
 - 2.1.1.11 Lighting equipment and controls.
 - 2.1.1.12 Communication systems, such as intercommunication, surveillance, clocks and programming, voice and data, and television equipment.
 - 2.1.1.13 Security Systems.
- 2.1.2 Training Modules: Develop a learning objective and teaching outline for each module. Include a description of specific skills and knowledge that participant is expected to master. For each module, include instruction for the following:
- 2.1.2.1 Basis of System Design, Operational Requirements, and Criteria: Include the following:
 - a. System, subsystem, and equipment descriptions.
 - b. Performance and design criteria.
 - c. Operating standards.
 - d. Regulatory requirements.
 - e. Equipment function.
 - f. Operating characteristics.

- g. Limiting conditions.
- h. Performance curves.
- i. Routine Maintenance

2.1.2.2 Documentation: Review the following items in detail:

- a. Emergency manuals.
- b. Operations manuals.
- c. Maintenance manuals.
- d. Project Record Documents.
- e. Identification systems.
- f. Warranties and bonds.
- g. Maintenance service agreements and similar continuing commitments.

2.1.2.3 Emergencies: Include the following, as applicable:

- a. Instructions on meaning of warnings, trouble indications, and error messages.
- b. Instructions on stopping.
- c. Shutdown instructions for each type of emergency.
- d. Operating instructions for conditions outside of normal operating limits.
- e. Sequences for electric or electronic systems.
- f. Special operating instructions and procedures.

2.1.2.4 Operations: Include the following, as applicable:

- a. Startup procedures.
- b. Equipment or system break-in procedures.
- c. Routine and normal operating instructions.
- d. Regulation and control procedures.
- e. Control sequences.

- f. Safety procedures.
 - g. Instructions on stopping.
 - h. Normal shutdown instructions.
 - i. Operating procedures for emergencies.
 - j. Operating procedures for system, subsystem, or equipment failure.
 - k. Seasonal and weekend operating instructions.
 - l. Required sequences for electric or electronic systems.
 - m. Special operating instructions and procedures.
- 2.1.2.5 Adjustments: Include the following:
- a. Alignments.
 - b. Checking adjustments.
 - c. Noise and vibration adjustments.
 - d. Economy and efficiency adjustments.
- 2.1.2.6 Troubleshooting: Include the following:
- a. Diagnostic instructions.
 - b. Test and inspection procedures.
- 2.1.2.7 Maintenance: Include the following:
- a. Inspection procedures.
 - b. Types of cleaning agents to be used and methods of cleaning.
 - c. List of cleaning agents and methods of cleaning detrimental to product.
 - d. Procedures for routine cleaning
 - e. Procedures for preventive maintenance.
 - f. Procedures for routine maintenance.
 - g. Instruction on use of special tools.

2.1.2.8 Repairs: Include the following:

- a. Diagnosis instructions.
- b. Repair instructions.
- c. Disassembly; component removal, repair, replacement and reassembly instructions.
- d. Instructions for identifying parts and components.
- e. Review of spare parts needed for operation and maintenance.

2.1.2.9 Contact information for technical support and service requests.

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a combined training manual.

3.1.2 Set up instructional equipment at instruction location.

3.2 INSTRUCTION

3.3.1 Engage qualified instructors to instruct County's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

3.3.2 Scheduling: Provide instruction at mutually agreed on times.

3.3.2.1 Schedule training with County at least fourteen (14) Days' advance notice.

3.3.2.2 Fill out and expand, if necessary, the schedule form attached at the end of this section to reflect equipment and systems on the Project.

3.3.2.3 Video record all training sessions, and provide the recordings to the County for use in training other personnel.

3.3.3 Cleanup: Collect used and leftover educational materials and remove from Project site. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

I. BASIC SYSTEMS TRAINING SCHEDULE

NOTE: Each system must be cross referenced to the Contract Documents and each component identified.

Spec. Section Number	System/Equipment Description	Plan/Schedule Identifier	Operations & Maintenance Manual	Training Required

END OF SECTION

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SECTION 01 81 12

ENERGY PERFORMANCE MODELING AND VERIFICATION REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 Section Includes:

- 1.1.1.1 Introduction.
- 1.1.1.2 General Modeling Guidelines.
- 1.1.1.3 Modeling of Energy Efficiency Measures.
- 1.1.1.4. Measurement and Verification Plan.
- 1.1.1.5 Performance.

1.1.2 Related Documents

- 1.1.2.1 The Contract Documents apply to the Work of this Section. Additional requirements and information necessary to complete the Work of this Section may be found in other documents.

1.1 INTRODUCTION

- 1.2.1 This section describes the submission requirements and modeling procedures related to the minimum building energy performance.

1.2 GENERAL MODELING GUIDELINES

1.3.1 Regulations

- 1.3.1.1 The Revised Code of Washington (RCW) 39.35 and the Washington Administrative Code (WAC) 180-27-075 with relevant sections in Appendix B of the code require the preparation of an Energy Life Cycle Cost Analysis for all publicly owned or leased facilities.
- 1.3.1.2 King County Statutes require that the project be designed to achieve energy savings of twenty percent (20%) over Seattle Energy Codes in effect at the time of project permitting.
- 1.3.1.3 The County requires this project to exceed the statute requirement above by requiring the Design Build entity to Obtain LEED v4 credit EAc2 earning 11points: Improve energy for new buildings by 26%.

1.3.1.4 The Design-Builder will be required to demonstrate a high degree of understanding of building energy performance modeling, and will apply that knowledge in modeling the proposed design. The Design-Builder will model the design based on ASHRE 90.1, employing one of the following energy modeling tools:

1.3.1.4.1 HAP

1.3.1.4.2 Trane Trace

1.3.1.4.3 Energy Plus

1.3.1.4.4 (IESVE) Integrated Environmental Solutions Virtual Environment

1.3.1.4.5 eQuest

1.3.2 Use of Energy Modeling Program

1.3.2.1 It is the responsibility of the Design-Builder to obtain a licensed copy of modeling software and to maintain the program and version through the duration of modeling activities during the development of the design and construction documents. The cost for obtaining a user's license, as well as the effort to competently operate and maintain the program, shall be solely at the Design-Builder's expense.

1.3.2.2 The Design-Builder shall be expected to use the modeling software in a manner consistent with user instructions and information updates offered by the program vendor. Superseding these are the specific modeling rules and restrictions specific to this project that are defined later in this document.

1.3.2.3 The Design-Builder is strongly encouraged to engage a specialist sufficiently experienced in modeling large complex buildings, including efficient mechanical and lighting systems and strategies, using the software for energy performance.

1.3.3 Submission Requirements

1.3.3.1 During the proposal stage, the Design-Builder is encouraged to seriously consider the capital cost implications of design decisions with respect to the minimum energy performance requirement and is strongly encouraged to prepare models that test the proposed design and design alternates against the requirement.

1.3.3.2 The ELCCA will include:

- 1.3.3.2.1 Development of an ELCCA Work Plan at the start of the schematic design phase complete with a list of alternatives for analysis of envelope, lighting, HVAC, domestic water heating savings and alternative energy system options developed in collaboration with the Design-Build entity and the County.
- 1.3.3.2.2 Provide multiple integrated design packages that each include envelope, lighting, and HVAC., designed to achieve LEED EAc2 earning 11 points, Improve energy for new buildings by 26% under LEED v4.
- 1.3.3.2.3 In addition to the total cost comparison between different integrated design packages, provide the cost breakdown for the different system components within the integrated packages, including but not limited to: lighting, controls, HVAC -plant side, HVAC, air side, envelope including walls, roof, glazing, etc.
- 1.3.3.2.4 Provide a project tracking log of project Energy Use Indices (EUI) evaluated during the course of the ELCCA. The tracking log shall include the energy consumption breakdown for each end use, and the energy model assumptions.
- 1.3.3.2.5 ELCCA Report and Updates: Submit an ELCCA Report describing the results of the analysis with the first design deliverable package to the County. With each subsequent milestone submittal in the design phase, include an updated ELCCA report inclusive of the tracking log noted above. The tracking log shall include a comparison with the previous log and an explanation of any changes in the results.
- 1.3.3.2.6 King County requires the following specific energy measures be evaluated as part of the ELCCA:
 - a. Continuous underslab insulation.
 - b. Alternative energy measures including solar domestic water heating and photovoltaic electrical systems.
- 1.3.3.2.7 King County requires the following discussion points be included in a narrative section of the ELCCA:
 - a. Options considered for heating and cooling the building.
 - b. A discussion of the operating, maintenance and equipment replacement costs for the various options.
 - c. A discussion of the greenhouse gas contributes of the various options.

- d. A discussion of how each option achieves the goals established by the Seattle 2030 district, of which King County is a participating member.
 - e. A discussion of any approved city of Seattle district energy project that might encompass the children and family justice center.
- 1.3.3.3 The Design-Builder will be required to model the project initially during the Schematic Design phase and will be required to update the model for energy performance verification during the design and construction phases. Initial model and updates shall be submitted for review by the County with the Review packages specified in Part G. General Conditions, Section 01 11 20 Design Services and Deliverables.
- 1.3.3.4 The Design-Builder will be required to document project energy use during the Design Development, Construction Document, and construction phases and warranty period by modeling building performance using the approved computer program. Along with the required model, the Design-Builder will submit all backup calculations; equipment cut sheets, design data, and other pertinent information documenting key inputs in the model, in a manner consistent with the approval process as determined by the County. This information will be assembled in a three-ring binder, organized by section and with a table of contents. The binder shall contain a CD with the most current model in the modeling software format.
- 1.3.3.5 The following schedule of deliverables will be part of the requirements of the contract. At a minimum, eight (8) iterations of the energy model(s) will be submitted.
- 1.3.3.6 Required Milestone Submissions: the ELCCA shall be submitted as noted below
- 1.3.3.6.1 Proposal Submittal: optional submittal of a preliminary ELCCA report as part of the Proposal: See Part A Request for Proposal, 3.0 Delivery, 3.3.3 Design
 - 1.3.3.6.2 100% Percent Schematic Design Submittal
 - 1.3.3.6.3 50% Design Development Submittal
 - 1.3.3.6.4 100% Design Development Submittal
 - 1.3.3.6.5 90% Construction Document Submittal

- 1.3.3.6.6 100% Construction Document Submittal
- 1.3.3.6.7 Construction Phase Verification model, to be submitted within 10 days of being requested by the County, but no more than 2 will be requested.
- 1.3.3.6.8 Final Record Model: At Substantial Completion. The record model shall be used as the basis of LEED™ v4 Energy and Atmosphere Credit 2: Optimize Energy Performance. The Final Record Model shall indisputably demonstrate modeled building energy performance that is equal to or superior to the requirement stated in the Introduction to this section, which is improve by 26% for new buildings.

1.3.4 County Review of Required Model Submissions

- 1.3.4.1 The County will review the model submitted by the Design Builder at each milestone. Written review comments, along with any request for clarifications or additional information, will be prepared by the County within 30 days from the receipt of the Design Builder's milestone submissions. The Design Builder will have 10 days to fully respond to requests for additional information.
- 1.3.4.2 Once the review and response period has been completed, the County will issue a brief report, accepting or rejecting the model, with specific reason(s) if the model is found non-compliant. If the County rejects a model, the Design Builder will have the opportunity to provide additional data and/or to submit a revised model within 10 days of notification by the County that the model is rejected.

1.3 MODELING OF ENERGY EFFICIENCY BUILDING FEATURES

- 1.4.1 Construction Assemblies: Construction assemblies, particularly with respect to proposed insulation materials, shall accurately reflect the entire proposed assembly, provided that all other requirements of the Contract Documents are met.
- 1.4.2 Glazing: Proposed glazing shall accurately reflect the proposed assembly, provided that all other requirements of the Contract Documents are met. Overall window assembly U- Factor and Solar Heat Gain Coefficient (SHGC) shall be input per proposed design. (Note that manufacturer's published U-Factors and SHGCs may require adjustments for frame effects as these are often listed as center of glass values.)
- 1.4.3 Interior Shading: Fixed interior shading elements shall accurately reflect the proposed assembly, provided that all other requirements of the Contract Documents are met.

- 1.4.4 Exterior Shading: Exterior shading, including overhangs, fins and other self-shading elements shall accurately reflect the proposed assemblies, provided that all other requirements of the Contract Documents are met.
- 1.4.5 Lighting Power Density (LPD): The Area Category approach to modeling of interior lighting; i.e., “Installed LPD”, may be used along with lighting fixtures applied on a room-by-room basis to reflect the proposed detailed lighting design. Alternatively, lighting may be modeled using “Override with Modeled LPD”; i.e., representing the installed power for all of the fixtures in the zone combined. In either case, the LPD should reflect lamp and ballast wattage per manufacturer’s specifications.
- 1.4.6 Lighting Control Credits: Lighting control credits for occupancy sensors and dimming systems may be used per the proposed design but only for the ambient lighting component. Daylighting control credits may be used in perimeter daylit zones only.
- 1.4.7 HVAC Air Systems: Modeling of air systems must be consistent with the overall integrated design of fans, motors, controls, ductwork, and terminal units, as appropriate for the design solution. Modeled inputs of system and individual equipment efficiencies used in the models must be adequately documented by technical submittals and shall represent the installed equipment as shown on the Construction Documents and schedules. Modeled supply and return air minimum volumes, volume controls, along with outside air ventilation, shall represent the installed equipment as shown on the Construction Documents and schedules and must be consistent with the other requirements of the Contract Documents.
- 1.4.8 HVAC Water/Fluid Systems for Heating/Cooling: Modeling of water/fluid systems must be consistent with the overall integrated design of pumps, motors, controls, pipe-work, and coils, as appropriate for the design solution. Modeled inputs of system and individual equipment efficiencies used in the models must be adequately documented by technical submittals and shall represent the installed equipment as shown on the construction documents and schedules. Modeled fluid flows, system minimum capacities, temperatures and ranges must be consistent with the other requirements of the contract documents.
- 1.4 MEASUREMENT AND VERIFICATION PLAN
- 1.5.1 The Design Build entity shall provide a Measurement and Verification Plan (MV) to quantify and compare the anticipated savings to the actual savings achieved.
- 1.5.2 The measurement and verification plan (M&V) shall be consistent with option D calibrated simulation as specific in the International Performance Measurement and Verification Protocol Volume III.
- 1.5.3 The M&V period must cover the performance guarantee period post construction.

- 1.5.4 The measurement and verification plan shall detail the data required for the verification as well as the responsible parties.
- 1.5.5 The equipment including meters, sub meters, and data acquisition system shall be incorporated into the Work by the Design Build entity so that the County can access the data remotely to verify energy consumption, and as a tool to achieve future energy savings.
- 1.5.6 The data acquisition system shall used by the Design Build entity to compare projected and actual energy usage to determine consistency or in-consistency between the estimated and actual savings for different end uses. The Design Build entity is to provide, in addition to the M&V plan, a report on the completion of the measurement and verification process that highlights the results, including but not limited to the estimated, calibrated as well as actual monthly energy consumption and energy by end use, and corrective action recommended. The data acquisition system shall be a tool to identify any corrective action that may be required

PART 2 - PRODUCTS

Not used.

PART 3 – EXECUTION

3.1 PERFORMANCE

- 3.1.1 The Design-Builder shall verify and demonstrate that the systems actually perform at the energy performance levels as modeled.
- 3.1.2 To ensure energy and water efficiency projections in final design as stated by Design Build Team are achieved, the County will withhold \$500,000 until the end of the performance guarantee period.
- 3.1.3 Any necessary facility modifications that are needed to remedy facility shortcomings or failures will be the responsibility of the Design Build Team. Any financial burden the County incurs during the warranty phase to achieve energy and water efficiency goals as stated in final design will be reimbursed by the Design Build Team.

END OF SECTION

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SECTION 01 81 13

SUSTAINABLE DESIGN REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 Section Includes:

- 1.1.1.1 U.S. Green Building Council LEED Green Building Rating System Version 3
- 1.1.1.2 Design Builder's Responsibilities
- 1.1.1.3 Sustainable Design Rating Requirements
- 1.1.1.4 County's Responsibilities
- 1.1.1.5 County Objectives and Principles

1.2 REFERENCES

- 1.2.1 U. S. Green Building Council (USGBC), at: www.usgbc.org, LEED Green Building Rating System, Version 3.
- 1.2.2 U.S. Department of Energy Sustainable Design Website: http://www1.eere.energy.gov/femp/program/sustainable_guidance.html
- 1.2.3 U.S. Department of Energy, Roadmap for Integrating Sustainable Design into Site-Level Operations: <http://www1.eere.energy.gov/sustainability/>
<http://www.pnl.gov/doesustainabledesign> found under the Tools & Resources tab.
- 1.2.4 Sustainable Building Technical Manual: <http://www.freshstart.ncat.org/articles/ptipub.htm>
- 1.2.5 Whole Building Design Guide, federal sustainable design and development principles, which are consistent with the LEED™ rating system: <http://wbdg.org>.
- 1.2.6 Federal Energy Management Program, for energy efficient products: <http://www1.eere.energy.gov/femp/procurement>.
- 1.2.7 Comprehensive Procurement Guidelines, for products designated by the U.S. Environmental Protection Agency for purchase with recovered materials: <http://www.epa.gov/cpg/>.
- 1.2.8 Affirmative Procurement Exemption Justification Form, to report products over the micro purchase level of \$2500 which could not be purchased with the specified recycled content: <http://www.hss.doe.gov/sesa/environment/reports/>

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- 1.2.9 Building for Environmental and Economic Sustainability (BEES), tool to weigh the environmental and economic performance of building products and materials: <http://www.bfrl.nist.gov/oea/bees.html>.
- 1.2.10 Green Spec, directory of environmentally preferable construction products and materials organized by the CSI MasterFormat: <http://www.greenspec.com>.
- 1.3 U. S. GREEN BUILDING COUNCIL LEED RATING SYSTEM
- 1.3.1 Sustainable Design Certification: The U.S. Green Building Council (USGBC) certifies projects for sustainable design, based upon certain specific requirements and criteria. This program is called Leadership in Energy and Environmental Design (LEED™). The County requires that the Project qualify and obtain a LEED™ Gold rating based on the LEED-NC™ Rating System For New Construction and Major Renovation, Version 4, or any newer versions approved by the USGBC and the County.
- 1.4 DESIGN BUILDER'S RESPONSIBILITIES
- 1.4.1 Building Rating: Obtain a minimum of a LEED-NC™ Gold certification from USGBC for the project on behalf of the County.
- 1.4.2 LEED™ Accredited Professional: Design Builder shall retain the services of a LEED™ Accredited Professional for the duration of the Project as an integral part of Design Builder's project team and coordinator of the LEED certification process. This person shall:
- 1.4.2.1 Have successfully passed USGBC's accredited professional exam.
- 1.4.2.2 Complete Work to receive the LEED-NC™ Gold rating from USGBC.
- 1.4.2.3 Provide management, coordination, and record keeping as required by USGBC. Prepare and submit all documents and affidavits on behalf of the County to USGBC in format acceptable to USGBC.
- 1.4.2.4 Successfully respond to any USGBC comments and requests for information to qualify for the minimum award level of LEED-NC Gold.
- 1.4.2.5 Be responsible for registering the Project with USGBC and paying all fees for registration and certification of the Work. Design Builder shall be responsible for all coordination and submittals with USGBC. Design Builder shall keep County apprised of all submittals and USGBC review status of the certification filing for the Work. Design Builder shall provide County with a scanned electronic copy on a USB flash drive of each Application for LEED Certification submitted to USGBC
- 1.4.3 Job Site Recycling: Comply with Section 01 74 19 (Construction Waste Management and Disposal) and implement the accepted Waste Management Plan in Section 01 74 19.01.

- 1.4.4 Storm Water: Comply with storm water management regulations and performance requirements as specified in Part B Facility Performance Standards, and City of Seattle Standard Specifications.

1.5 SUSTAINABLE DESIGN – LEED-NC BUILDING RATING REQUIREMENTS

- 1.5.1 Credit System: The Design Builder shall use the USGBC LEED-NC™ Rating System Version 4, or later version as approved by USGBC and the County. A minimum building certification level of LEED Gold shall be obtained by the Design Builder for the Work. In Version 4, this requires a minimum of 60 points and compliance with all LEED-NC prerequisites.
- 1.5.2 Required Credits: As part of achieving a minimum certification level of LEED-NC Gold, the Design Builder must achieve the following rating system credits as defined in LEED-NC, Version 4. The work required for these credits is also required elsewhere in these contract documents, as an environmental mitigation or other requirement.
- 1.5.2.1 Integrative Process Credit 1, Integrative Process
- 1.5.2.2 Energy and Atmosphere Credit 2, Optimize Energy Performance (Obtain a minimum of 11 points)
- 1.5.2.3 Material and Resources prerequisite 2, Construction and Demolition Waste Management Planning
- 1.5.2.4 Material and Resources Credit 5, option 1, path 2, Construction and Demolition Waste Management – divert 75% and four material streams
- 1.5.2.5 Innovation and Design Process Credit 2. LEED Accredited Professional
- 1.5.3 Other LEED-NC Credits: The Design Builder must fulfill additional other credits as selected by the Design Builder, in order to obtain a sufficient number of total credits for a minimum LEED-NC™ Gold certification from USGBC.
- 1.5.4 Submittal to County: At or before 30% Design Development, Design Builder shall submit an updated LEED NC v4 checklist to the County to fulfill County Green Building Ordinance reporting requirements. With each milestone submittal listed in Part G, General Conditions Section 01 11 20 Design Services and Deliverables, the Design Builder shall update Design Builder's Plan to Achieve Green Building Criteria/LEED-NC Gold including, updated LEED™ Project Checklists identifying which credits will be achieved. Design Builder shall keep County apprised of the anticipated number of LEED points within each credit category and compliance with all prerequisites for the Work by submitting a copy of the LEED Project Checklist showing the number of points in each LEED subcategory.
- 1.5.5 Design Builder shall submit to the County a draft copy of the certification application to USGBC for review and approval prior to submission. Design Builder shall submit a final copy of the certification application upon submission to USGBC.

1.6 COUNTY OBJECTIVES AND PRINCIPLES

- 1.6.1 **Intent:** It is the County's intent to design, construct, commission, operate, and maintain the Project with the latest green building and sustainable development practices, using Integrative Process principles. The benefits are a healthy, resource-efficient, sustainable and productive work environment, along with meeting the requirements and interests of King County, state and federal government, our surrounding community, and future generations.
- 1.6.1.1 The County has revised its building design standards, specifications and Design Builder procurement methods and contracts to reflect industry best practices for sustainable design. The purpose of this Section is to require the Design Builder to follow principles of sustainable design in the Work for the Project. The County expects that each architectural, engineering, and construction firm comprising the Design Builder's team will effectively demonstrate its expertise in the Project's sustainable design, construction, commissioning and operational efforts to produce a functional, efficient, healthy and compliant infrastructure and facilities at a minimum of LEED- NC Gold certification level.
- 1.6.2 **Energy Efficient Products:** The Design Builder shall purchase energy efficient products and equipment, including those labeled "Energy Star" by the U.S. Environmental Protection Agency and/or those designated by the U.S. Department of Energy's Federal Energy Management Program (FEMP). This requirement applies to the Work, including products purchased by the Design Builder for the Project.
- 1.6.3 **Water Efficient Products:** The Design Builder shall purchase water efficient products and equipment, including those labeled "Water Sense" by the U.S. Environmental Protection Agency. This requirement applies to the Work, including products purchased by the Design Builder for the Project.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

Not used.

END OF SECTION

SECTION 01 81 22

BIM PERFORMANCE REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 The Design Builder shall utilize a Building Information Modeling (BIM) system to submit Design Development and Construction Documents in the form of a BIM Model of the Project buildings and Site in a parametric 3D format in order to maximize design and construction coordination of the facility through interference checking (clash detection) and code compliance studies within that electronic format. As is technically feasible, the Design Builder shall also test and modify the proposed construction schedule and the project cost model to optimize the project delivery options for the best overall value and performance by coordinating the BIM Model with the schedule (4D) and using the BIM Model to support cost (5D).

1.1.1.1 The BIM Model and individual system models are the property of the County. The Design Builder shall provide the County with access to the models at anytime throughout the project. Submittals are outlined in Section 01 11 20 Design Services and Submittals.

1.1.1.2 Design Builder shall:

1.1.1.2.1 Use the BIM Model and associated model aggregation platform to facilitate the construction methods and means.

1.1.1.2.2 Update the BIM Model and associated model aggregation platform progressively throughout the design and construction period to incorporate all Subcontractor information and approved changes.

1.1.1.2.3 Provide a final "as-built" BIM Model to the County for the County's unrestricted use in operating and managing the facility.

1.1.1.2.4 Engage in regular BIM management meetings with the County and Design Build team participants to discuss and evolve the scope of work described through this section. Discussion topics will include element modeling responsibilities, software interoperability, 2.5d modeling scope, best practices and technical feasibility in the context of rapidly evolving BIM technology.

1.2 USE OF THE BIM/VIRTUAL CONSTRUCTION MODEL

- 1.2.1 Intent of the BIM Model and Aggregate Platform: The BIM Model and aggregate platform shall be developed for coordination, communication and collaboration purposes during design and construction. At the completion of the Work, the BIM Model shall be turned over to the County. The County shall have exclusive rights to the model for its use in operating and managing the facility.
- 1.2.2 Basis of Information for Modeling: The Contract Documents and Reference Documents shall be the basis of information for the BIM Model described herein.
- 1.2.3 Relation of BIM to other Contract Documents: The BIM may be used by the Design Builder as a tool to plan the Work and produce Construction Documents. Hardcopy documentation shall be used as the basis of construction. Not all building components required by the contract documents will be included in the BIM.

1.3 DEFINITIONS

- 1.3.1 BIM: Building Information Modeling, a process of constructing electronic models of facility's buildings and site.
- 1.3.2 BIM or Virtual Construction (VC) Model: A Virtual Construction Model using 3-D Building Information Modeling (BIM) technologies to convey the design and construction elements of the Work. The Virtual Model will consist of a minimum of seven system models: Civil, Architectural, Structural, Mechanical, Electrical, Fire Protection and Equipment.
- 1.3.3 Model Aggregation Platform: The VC system models shall be aggregated into two separate building information models (the Courthouse Building and the County Administration Building) via Autodesk® Navisworks 2011 software or later.

1.4 MINIMUM REQUIREMENTS

- 1.4.1 General: The BIM Model shall be developed to include parametric components of major building and site elements as defined by Part 2 of this section.
- 1.4.2 Accuracy of the Models: The BIM Model and each of its system models shall be developed to within a tolerance of ¼" plus or minus.
- 1.4.3 Parametric Data: The BIM Model may vary in level of detail for individual elements, but at a minimum shall include sufficient parametric data to support use and analysis of:
- 1.4.3.1 Functional and visual representation of all spaces.
 - 1.4.3.2 Review of Design Builder's Construction Documents at all times during the Design and Construction phases.

- 1.4.3.3 Clash detection and correction of all major systems.
 - 1.4.3.4 Construction methods and means.
 - 1.4.3.5 Construction scheduling.
 - 1.4.3.6 Cost estimating.
 - 1.4.3.7 As-built documentation and modeling.
- 1.4.4 File Format: Preferred native model software is Autodesk Revit version 2013 or newer. Autodesk Revit or any file format (BIM application(s) or software(s)) approved by the County's Project Manager may be used for development of the BIM Model providing that it is a true parametric, data-based application. The County will give preference to a file format that allows direct linking and interoperability. The Design Builder shall maintain a matrix that summarizes BIM software tools used on the project by all participants.
- 1.4.5 Level of Detail: The BIM Model shall be developed and detailed sufficiently to meet the requirements of the Request for Proposal and the Contract Documents. The two levels of detail are Generic-model(ed) and Project-model(ed), as defined below. All elements listed under Part 2 Products shall be Project-model(ed). All other elements may be Generic-model(ed). The level of detail described by Part 2: Products shall be subject to further discussion, clarification, and evolution through BIM management meetings. The Design Builder will maintain a building component matrix that documents the BIM scope and clarifies responsibilities and level of detail. This matrix shall be subject to County approval.
- 1.4.5.1 "Generic-model(ed)": This is a planning level model. Buildings and/or structures including major architecture, structural, mechanical, electrical and plumbing objects must be modeled as generalized systems or assemblies with approximate quantities, approximate configurations, spatial location, and orientation. Each enclosed space must be identified as a unique Room with associated parameters.
 - 1.4.5.2 "Project-model(ed)": This is a design/construction level model. Buildings and/or structures including major objects must be modeled as specific systems or assemblies with accurate quantities, recognizable configuration, spatial location, and orientation. In construction model must also be with complete fabrication, assembly and detail information. Each enclosed space must be identified as a unique Room with associated parameters.
 - 1.4.5.3 "2.5D Elements": Model management may require use of 2.5D components.
This type of component includes parametric, plan and elevation

information but does not include 3D data. The scope of use for 2.5D elements shall be determined through discussions held at BIM management meetings.

- 1.4.6 OmniClass: The OmniClass Construction Classification System (known as OmniClass or OCCS) is a new classification system for the construction industry developed by the Construction Specification Institute (CSI). It builds upon MasterFormat for work results, UniFormat for elements and EPCI (Electronic Product Information Cooperation) for structuring products. OmniClass is a reference library that will serve as the foundation upon which information is transferred between the construction and operations phases via the BIM Model. The Design Builder shall include the appropriate OmniClass classification in the list of attributes that is assigned to the building elements that will be Project-model(ed).

PART 2 - PRODUCTS

2.1 SYSTEM MODELS

- 2.1.1 Civil Systems: The Civil Systems Model shall be a sub-system model linked to the architectural system model. The Civil Systems model shall serve as the basis for project shared coordinates through which the position of building elements on the site will be coordinated. Except as noted, provide project-model(ed) elements of:

- 2.1.1.1 Topography: 1) existing natural and/or graded contours, and 2) new grades and finish contours.
- 2.1.1.2 Planting: 1) existing major landscaped areas, 2) existing trees to remain, 3) new landscaped areas, 4) new trees, and 5) irrigation lines over 2" diameter. Planting may be generic-model(ed).
- 2.1.1.3 Surface Improvements: 1) pavements, 2) curbs and gutters, 3) retaining walls, and 4) exterior non-building structures such as pools, shade structures etc.
- 2.1.1.4 Existing Structures: 1) all buildings within the project area intended to remain, 2) buildings intended to be demolished. All existing structures may be generic-model(ed) exterior surface only; interior elements are not required.
- 2.1.1.5 Storm Water and Sanitary Sewers: 1) existing lines (over 3" diameter), boxes and structures within project area, 2) all new lines, boxes and structures, and 3) existing public lines, boxes and structures beyond the project area but serving as points of connection for the project. Storm Water and Sanitary Sewers outside the buildings may be generic-model(ed).
- 2.1.1.6 Utilities: 1) existing domestic and fire water main and branch lines (2" and larger diameter) within project area, 2) all new

domestic and fire water lines,

3) existing electrical overhead and underground lines within project area, all new electrical lines outside buildings, 4) existing telephone and data lines within project area, 5) all new telephone and data lines outside buildings, 6) existing gas lines within project area, and 7) all new gas lines outside buildings. Utilities outside buildings may be generic-model(ed).

2.1.1.7 Other requirements:

2.1.1.7.1 Quantities: data to reflect accurate quantities of the above elements.

2.1.1.7.2 Schedules: data for installation of the above elements.

2.1.2 Architectural Systems: The Architectural Systems Model shall be the primary model to which others are linked. Except as noted, provide project-model(ed) elements of:

2.1.2.1 Spaces: 1) net square footage of all occupied spaces, 2) gross constructed floor area, 3) room names and numbers, and 4) floor, base, wall, and ceiling finishes.

2.1.2.2 Exterior Walls and Curtain Walls: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.

2.1.2.3 Partitions: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.

2.1.2.4 Floors: 1) type and material, 2) thickness, and 3) finishes with manufacturer's name and product numbers. Link floor structure to the Structural Systems Model.

2.1.2.5 Ceilings: 1) type and composition, 2) height, length, and width, and 3) thermal, acoustic, fire, and security ratings.

2.1.2.6 Roof Coverings and Openings: 1) configuration, 2) drainage system, and 3) penetrations for modeled building components.

2.1.2.7 Exterior Doors, Windows, and Louvers: 1) type and material, 2) height, width, and thickness, 3) thermal, acoustic, fire, and security rating, 4) location, and 5) hardware elements or group.

2.1.2.8 Interior Doors, Windows, and Louvers: 1) type and material, 2) height, width, and thickness, 3) thermal, acoustic, fire, and security rating, 4) location, and 5) hardware elements or group.

- 2.1.2.9 Stairs and Ramps: 1) stairs and railings, 2) ramps and railings, and 3) handrails and guardrails.
- 2.1.2.10 Elevators and Escalators: 1) elevator cabs and doors, 2) elevator hoist-way doors and trim, 3) elevator machinery and equipment, 4) escalator belts and railings, and 5) escalator machinery and equipment.
- 2.1.2.11 Casework and Counters: 1) type and material, 2) height, width, and depth, 3) location, and 4) hardware.
- 2.1.2.12 Plumbing Fixtures: 1) type and material, 2) location, 3) trim, and 4) finishes.
Link fixtures and trim to the Mechanical Systems Model.
- 2.1.2.13 HVAC Grills and Registers: 1) type and material, 2) location, 3) trim, and 4) finishes. Link fixtures and trim to the Mechanical Systems Model.
- 2.1.2.14 Electrical Fixtures: 1) type and material, 2) bulb type and wattage, 3) location, 4) trim, and 5) finishes. Link fixtures and trim to the Electrical Systems Model.
- 2.1.2.15 Miscellaneous Fittings: 1) toilet partitions, 2) toilet room accessories, 3) grab bars, 4) personal storage lockers, 5) display cases, and 6) other surface applied quasi-permanent items such as mirrors etc.
- 2.1.2.16 Other requirements:
 - 2.1.2.16.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.2.16.2 Schedules: data for installation of the above elements.
- 2.1.3 Structural Systems: The Structural Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide project-model(ed) elements of:
 - 2.1.3.1 Foundations and footings: 1) type and configuration, and 2) depth, length, and width.
 - 2.1.3.2 Slab(s) on-grade: 1) type and configuration, 2) under-slab base and waterproofing, 3) recesses, curbs, pads, closure pours, and 4) major penetrations.
 - 2.1.3.3 Basement Walls: 1) type and composition, 2) height, length, and width, and
3) thermal, acoustic, fire, and security ratings.

- 2.1.3.4 Elevated Floors: 1) columns and beams, 2) primary and secondary framing members, 3) bracing, 4) connections, and 5) framed, composite, and/or slab decks.
- 2.1.3.5 Roofs: 1) columns and beams, 2) primary and secondary framing members, 3) bracing, 4) connections, and 5) framed, composite, and/or slab decks.
- 2.1.3.6 Joints: 1) expansion and/or contraction, and 2) seismic.
- 2.1.3.7 Stairs and Ramps: 1) openings and framing, and 2) railing supports.
- 2.1.3.8 Shafts and Pits: 1) openings and framing, and 2) railing supports.
- 2.1.3.9 Other requirements:
 - 2.1.3.9.1 Quantities: include data to reflect accurate quantities of the above elements.
 - 2.1.3.9.2 Schedules: data for installation of the above elements.
 - 2.1.3.9.3 Fireproofing: Fireproofing is not to be included in the BIM but clash detection studies shall include definition of tolerances for conflict detection.
 - 2.1.3.9.4 Color Code: color code structural steel from other elements.
- 2.1.4 Mechanical: The Mechanical Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide project-model(ed) elements of:
 - 2.1.4.1 Heating, Ventilating, and Air Conditioning: 1) all heating, ventilating, air- conditioning, exhaust fans, and specialty equipment, 2) air supply, return, ventilation and exhaust ducts, including space-consuming elbows and transitions, 3) fire dampers with ratings, 4) mechanical piping, and 5) registers, diffusers, grills and hydronic baseboards. Coordinate and link fixtures and trim to the Architectural Systems Model.
 - 2.1.4.2 Plumbing: 1) all domestic plumbing piping and fixtures, 2) floor and area drains, and 3) related equipment.
 - 2.1.4.2.1 Piping larger than 1 .5" diameter shall be modeled.
 - 2.1.4.3 Roof Drainage: 1) all piping and fixtures, and 2) related equipment.
 - 2.1.4.3.1 Piping larger than 1 .5" diameter shall be modeled.

- 2.1.4.4 Other requirements:
 - 2.1.4.4.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.4.4.2 Schedules: schedule data for installation of the above elements.
 - 2.1.4.4.3 Equipment Clearances: Clearances for major equipment and all M/E/P Equipment and Architecturally Significant Equipment, as model objects for conflict detection and maintenance access requirements.
 - 2.1.4.4.4 Color Code: separate color code for each type element.
- 2.1.5 Electrical: The Electrical Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide project-model(ed) elements of:
 - 2.1.5.1 Interior Electrical Power and Lighting: 1) all interior electrical components,
 - 2) lighting, receptacles, special and general purpose power receptacles, 3) lighting fixtures, 4) panel-boards and control systems, and 5) conduit and cable trays.
 - 2.1.5.1.1 Individual conduit larger than 1 .5" diameter shall be modeled.
 - 2.1.5.1.2 Groups or clusters runs of conduit of all sizes shall be modeled.
 - 2.1.5.2 Exterior Building Lighting: 1) all exterior electrical components, 2) lighting, receptacles, special and general purpose power receptacles, 3) lighting fixtures, 4) panel-boards and control systems, and transformers, and 5) utility connection and equipment.
 - 2.1.5.2.1 Individual conduit larger than 1 .5" diameter shall be modeled.
 - 2.1.5.2.2 Grouped or clustered runs of conduit of all sizes shall be modeled.
 - 2.1.5.3 Telephone, Data, Television, and Other Low Voltage: 1) all interior low voltage components, 2) outlets, receptacles, special and controls, 3) fixtures,
 - 4) panel-boards, equipment racks, and control systems, and 5) conduit and cable trays.

- 2.1.5.3.1 Individual conduit larger than 1 .5" diameter shall be modeled.
- 2.1.5.3.2 Groups or clusters runs of conduit of all sizes shall be modeled.
- 2.1.5.4 Other requirements:
 - 2.1.5.4.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.5.4.2 Schedules: schedule data for installation of the above elements.
 - 2.1.5.4.3 Equipment Clearances: Clearances for major as model objects for conflict detection and maintenance access requirements.
 - 2.1.5.4.4 Color Code: separate color code for each type element.
- 2.1.6 Fire Suppression: The Fire Suppression Systems Model shall be a sub-system model linked to the architectural system model. Except as noted provide Project-model(ed) elements of:
 - 2.1.6.1 Fire Suppression System: 1) valves and risers, 2) all main, branch, and drains lines, 3) sprinkler heads, and fittings, 4) pumps.
 - 2.1.6.2 Fire Alarms: 1) alarm and notification devices, and 2) detection systems.
 - 2.1.6.3 Other requirements:
 - 2.1.6.3.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.6.3.2 Schedules: schedule data for installation of the above elements.
 - 2.1.6.3.3 Equipment Clearances: Clearances for major equipment as model objects for conflict detection and maintenance access requirements.
 - 2.1.6.3.4 Color Code: separate color code for each type element.
- 2.1.7 Equipment: The Equipment Model shall be a sub-system model linked to the architectural model. Except as noted provide Project-model(ed) elements of:

- 2.1.7.1 Equipment: related security, mechanical, plumbing, and electrical requirements.
 - 2.1.7.1.1 Quantities: data to reflect accurate quantities of the above elements.
 - 2.1.7.1.2 Schedules: schedule data for installation of the above elements.
 - 2.1.7.1.3 Equipment Clearances: equipment clearances as model objects for conflict detection and maintenance access requirements.

2.2 COST AND SCHEDULE INFORMATION

2.2.1 Schedule Data (4D):

- 2.2.1.1 Use 4D where practically possible to optimize the construction schedule and validate sequencing.
- 2.2.1.2 Provide construction activity sequences, including rough-in, finish, and phasing schedules for major elements of all models.
- 2.2.1.3 Breakdown the schedule of elements by individual sub-contractors.

2.2.2 Cost Data (5D):

- 2.2.2.1 Provide quantity-based, installed cost breakdown of labor and material for major elements of all models.
- 2.2.2.2 Leverage the model where practically possible to assure that the budget is being met.

2.3 MODEL SOFTWARE REQUIREMENTS

- 2.3.1 The Design Builder's selected BIM application(s) and software(s) for the BIM Model shall:
 - 2.3.1.1 Have maximum interoperability between systems models, and shall be fully compatible with Autodesk® Navisworks 2011 software and later.
 - 2.3.1.2 Be provided in a format that is compatible with a free software download for viewing the Design Builder's models with the ability to save and track user annotations and notes.
 - 2.3.1.3 Contain reports/logs of:
 - 2.3.1.3.1 Discrepancies and/or clarifications in the Contract Documents or Construction Documents identified

during the modeling process.

2.3.1.3.2 Conflicts between location and alignment of model elements with resolutions developed by the Design Builder.

2.3.1.3.3 Quantities of modeled building element.

2.3.1.3.4 Schedule for each building element.

2.3.1.4 For any additional electronic model information that is not supported by the Revit or the primary software solution approved by Program manager, and for constructing 4D models, the Design Builder shall utilize AutoDesk® Navisworks software (Manage, Review, Simulate and Freedom) to create and utilize .nwd files.

2.3.1.5 Be provided in a format that links with cost and scheduling software utilities.

PART 3 - EXECUTION

3.1 DEVELOPMENT AND SUBMITTAL OF THE MODELS

3.1.1 The Design Builder shall develop the BIM Model and its systems models in compliance with the Contract Documents and the following:

3.1.1.1 Develop and submit all of the systems models concurrently. Note: if any of the systems models qualify as deferred approvals, they may be submitted separately.

3.1.1.2 Submit models with generic-model(ed) information as required to satisfy the requirements of the Request for Proposal as outlined in Document 00 11 19 (Request for Proposals from Design Builders).

3.1.1.3 Submit partially completed project models during the Design Development and Construction Documents Phase submittals outlined in Section 01 11 20 (Design Services and Submittals), for review and coordination.

3.1.1.4 Submit partially complete project models at any time when the County requests changes and/or clarifications or Design Builder proposes changes.

3.1.1.5 Submit fully completed BIM Project Model and its systems models, prior to construction.

3.1.1.6 Submit updated systems models complying with final approved shop drawing submittals.

3.1.1.7 Submit the “as-built” BIM Model and its systems models as part of the close-out process.

3.2 UPDATING THE MODELS DURING CONSTRUCTION

3.2.1 The BIM Model shall be updated/revised to keep it current with construction activity as follows:

3.2.1.1 Updating: issue the BIM Model and its systems models one week before each regularly scheduled Construction Phase Coordination meeting as defined in Section 01 31 19 (Project Meetings).

3.2.1.2 Revising: issue the revised BIM Model and/or its systems models immediately after each meeting or other activity where revisions have been made. Include a report that indicates every change.

3.2.2 Submit the updates and revisions to the County.

3.3 DELIVERY OF FINAL AS-BUILT MODELS

3.3.1 The final updated and revised BIM Model and all its systems models shall be submitted to the County as part of the close-out submittals.

3.3.2 The BIM Model and all its systems models will be:

3.3.2.1 Editable for future expansion or remodel projects.

3.3.2.2 Functioning for use with 3-D Facilities Management Software.

END OF SECTION

SECTION 01 88 25

HAZARDOUS MATERIALS PERFORMANCE REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

1.1.1 Application of Section. Provisions of Section 01 88 25 (Hazardous Materials Performance Requirements) shall apply to all building demolition and site work involving hazardous material.

1.1.1.1 Scope of Work: Except as otherwise expressly specified herein, Design Builder will supply, through duly licensed and certified contractors and consultants as appropriate, all labor, supervision, materials, equipment, tools, services, training, work plans, documents, manifest, facilities, insurance and each and every item of expense necessary for the testing, removal, handling, management, packaging, transportation and disposal of Hazardous Materials and other material found at the Site..

1.1.2 Site Investigations.

Multiple assessments of hazardous building materials and subsurface environmental conditions have been performed at the YSC site. Hazardous materials identified in site buildings have included but are not limited to asbestos, lead, mercury, and polychlorinated biphenyls (PCBs). Tetrachloroethylene and related substances have been identified in groundwater beneath the site, and petroleum hydrocarbons and other contaminants are present in soil at certain locations. Findings and observations were documented in various reports herein referred to as "Reference Documents", copies of which are included in Part E of this RFP.

Special mention is made herein to the report "Removal Action Completion Report" (Herrera, 2012), which documents removal of PCB containing caulk from window frames at the Alder Tower in 2011 and 2012, and the associated abatement of effected building materials. While the County removed PCB containing caulk from the tower's approximately 300 windows to the extent practicable, PCBs were detected and remain in the concrete adjacent to the window frames to an unknown depth. Test results from destructive concrete samples collected at five window jamb locations indicated PCBs at levels ranging from 700 parts per million (ppm) to 22,000 ppm in the concrete dust collected from 1/8" holes, and from 740 to 12,000 ppm in the concrete dust collected from 1/4 " depth holes. PCB-containing concrete surrounding the Alder tower windows will need to be removed and disposed on in accordance with applicable sections of Title 40, Code of Federal Regulations, Parts 761 and 762.

- 1.1.3 Miscellaneous Hazardous Materials: In addition to the materials identified in the Reference Documents (e.g. Geotechnical Data and Existing Conditions, Site Assessment Reports and Hazardous Materials Surveys), additional Hazardous Materials may be present at the Site.
- 1.1.4 Disclaimer. The County makes no representation or warranty as to the accuracy, adequacy, applicability, or completeness of the Reference Documents. Reliance upon the Reference Documents shall be at the Proposer's risk, and the County shall have no liability or obligation as a result of the inaccuracy, inadequacy, inapplicability, or incompleteness of the Reference Documents, regardless of the contents thereof. Each Proposer is responsible for reviewing the Owner's Project Criteria in advance of submitting its Proposal, for purposes of assessing their adequacy for meeting the Contract requirements, and determining whether any changes are necessary or advisable. The Design-Builder shall be solely responsible for Project design and construction in accordance with the Contract.
- 1.2 Design Builder's Environmental Consultant.
- 1.2.1 The Design Builder shall retain one or more Environmental Consultant(s) (hereinafter referred to as the "Environmental Consultant") to observe performance of the Work when Hazardous Materials are present or suspected to be present.
- 1.2.2 The role of the Environmental Consultant is to provide on-site work observations, material or environmental testing, verify site conditions, prepare work plans, and consult with the Design Builder and County as needed. The County, through either its own staff and/or qualified consultant, will review work plans, reports, and other work of the Environmental Consultant.
- 1.2.3 At all times, the Design Builder is solely responsible for the quality and execution of all phases and aspects of the Hazardous Materials removal work.
- 1.3 SUBMITTALS
- 1.3.1 General:
- 1.3.1.1 In addition to any other contractual submittals required of the Design Builder, the Design Builder will provide the submittals described in this Section. Submittals will be reviewed by the County (or the County's consultant), who will return the submittals as 1) reviewed, no comments, 2) reviewed, see notations, or 3) deficient, with notations for correction and re-submission. The County's review does not constitute "approval" of the submittals; the Design Builder retains full responsibility for the adequacy all submittals.
- 1.3.1.2 The Design Builder shall prepare a Hazardous Materials Work Plan (Work Plan) detailing all work practices, procedures and protocols for performance of the work, including but not limited to identification, remediation, waste management and disposal of any and all

hazardous materials from the Site.

- 1.3.1.3 The Hazardous Materials Work Plan shall include Worker Qualifications: Name and qualifications of each employee to be engaged in handling or removal of materials specified in the Work Plan. Worker Training: The Contractor shall provide current (within previous 12 months) valid documentation of worker training in accordance with WISH/OSHA Hazardous Waste Operations and Emergency Response for any workers or subcontractors engaged in work specified in this Section
- 1.3.1.4 The Work Plan shall include all Permits/Licenses required to be obtained and for making any regulatory notifications required to perform the work of this Section.
- 1.3.1.5 The Work Plan shall include Waste Hauling Qualifications: Submit proof of hazardous waste transporter's registration and the vehicle operator training. Submittals shall include, but not necessarily be limited to: business name, address (mailing address and physical location), and business telephone number of the company; primary contact name and emergency contact (24-hour) telephone number; documentation of current State and/or EPA authorization to operate; and insurance coverage.
- 1.3.1.6 The Work Plan shall include Waste Disposal Facility Qualifications: Submit documentation of the Washington State and/or EPA-approved waste recycling, disposal, and/or treatment facilities designated to receive shipments of hazardous and universal wastes generated during this project.
- 1.3.1.7 The Work Plan shall include Post- Removal Work Submittals: The Design-Builder will, within twenty (20) Business Days of Contractor's demobilization from the Project Site, submit two (2) copies of all waste disposal documentation (waste manifests, recycler's or reclaimer's receipts, or other applicable documentation) to demonstrate appropriate material management and disposal.
- 1.3.1.8 If the County determines that the Post-work Submittals are inadequate and/or require additional unanticipated review time, the Design Builder will be required to correct the deficiencies and re-submit them for additional review. Any additional cost for the County's Environmental Consultant's time to perform a subsequent review(s) of Post- work Submittals will be borne by the Design-Builder.

1.4 QUALITY REQUIREMENTS

1.4.1 Reference Standards:

- 1.4.1.1 Regulations: Applicable regulations pertaining to this work include, but are not limited to, the following:

King County
Children and Family Justice Center

Section 01 88 25
Hazardous Materials
Performance Requirements

- 1.4.1.1.1 American National Standards Institute (ANSI):
 ANSI.Z89.1 Personal protective equipment
 ANSI.Z87 Eye protection
- 1.4.1.1.2 Code of Federal Regulations (CFR):
- 29 CFR Subpart D Walking-Working Surfaces
 - 29 CFR 1910.120 Hazardous Waste Operations and
Emergency Response
 - 29 CFR 1910.134 Respiratory Protection Standard
 - 29 CFR 1910.146 Permit-Required Confined Spaces
 - 29 CFR 1910.1200 Hazard Communication
 - 29 CFR 1926.20 General Health and Safety
Provisions
 - 29 CFR 1926.57 Ventilation
 - 29 CFR 1926.59 Hazard Communication Program
 - 29 CFR 1926.65 Hazardous Waste Operations and
Emergency Response
 - 29 CFR 1926.95 Criteria for Personal Protective
Equipment
 - 29 CFR 1926.1101 Asbestos
 - 29 CFR 1926, Subpart H
Materials Handling, Storage, Use
and Disposal
 - 29 CFR 1926, Subpart L
Scaffolding
 - 29 CFR 1926, Subpart M
Fall Protection
 - 29 CFR 1926, Subpart X
Ladders
 - 29 CFR 1926, Subpart Z
Toxic and Hazardous Substances
 - 40 CFR 50.6 National Primary and Secondary Ambient
Air Quality Standards for Particulate
Matter
 - 40 CFR 264 Standards for Owners and Operators
of Hazardous Waste Treatment, Storage,
and Disposal Facilities
 - 40 CFR 268 Land Disposal Restrictions

King County
Children and Family Justice Center

Section 01 88 25
Hazardous Materials
Performance Requirements

- 40 CFR 700 Toxic Substances Control Act (TSCA)
- 40 CFR 761 PCBs Manufacturing, Processing, Distribution in Commerce, and Use Prohibitions
- 49 CFR 105 Hazardous Materials Program Definitions and General Procedures
- 49 CFR 171 General Information, Regulations and Definitions
- 49 CFR 172 Hazardous Material Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- 49 CFR 173 Shippers-General Requirements for Shipments and Packaging
- 49 CFR 177 Carriage by Public Highway
- 49 CFR 178 Specifications for Packagings
- 1.4.1.1.3 NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH (NIOSH):
 Publication Number 87-108
 Respiratory Decision Logic
 Publication 85-115 Occupational Safety and Health Guidance Manual for Hazardous Waste Site Activities
- 1.4.1.1.4 U.S. DEPARTMENT OF LABOR, OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)
 29 CFR 1910, Subpart I, Appendix B
 Non-Mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection
- 1.4.1.1.5 WASHINGTON ADMINISTRATIVE CODE (WAC)
 Chapter 296-24 WAC
 General Safety and Health Standards
 Chapter 296-45 WAC
 Electrical Workers Safety Rules
 Chapter 296-62 WAC
 General Occupational Health Standards
 Chapter 296-65 WAC
 WISHA Asbestos Standards
 Chapter 296-67 WAC
 Process Safety Management Standards

Chapter 296-155 WAC
Construction Safety

Chapter 296-800 WAC
Safety and Health Core Rules

Chapter 296-824 WAC
Emergency Response

1.4.1.1.6 PUGET SOUND CLEAN AIR AGENCY
Regulation III

1.4.1.2 Applicability. The most current version of each document shall apply. Where conflicts among these specifications exist, the more strict or stringent requirement or interpretation shall apply.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

3.1 PREPARATION

3.1.1 Examination of Conditions: The Design Builder must carefully examine the Site before beginning work.

3.1.2 Responsibility for Work: By commencing the Work or the Removal Work, the Design Builder acknowledges and agrees that it has sole and primary responsibility and obligation to the County to make inspections of its own work at all stages of the Work. This includes acknowledging and accepting sole responsibility to supervise or superintend the performance of the Removal Work, and that the Removal Work will be in strict adherence to, and in compliance with, all Applicable Laws and required standards whether or not specified herein. Where conflicts arise between standards or regulations, the more stringent will apply.

3.1.3 Coordination of Work: The Design-Builder is responsible to coordinate all scheduling, phasing, and completion of the Removal Work with the County and all other employers working on the job site. This includes the responsibility to make notifications or communications of hazards to other trades, as required by regulation.

END OF SECTION

SECTION 01 91 00

GENERAL COMMISSIONING REQUIREMENTS**PART 1 - GENERAL**

1.1 SUMMARY

- 1.1.1 This Section describes the scope of the formal commissioning process and the general requirements for the building systems outlined herein.

1.2 REFERENCES

1.2.1 USGBC:

- 1.2.1.1 LEED – NC 3.0: EA Prerequisite 1, Fundamental Commissioning.
1.2.1.2 LEED – NC 3.0: Credit 3, Enhanced Commissioning.

1.3 DEFINITIONS

- 1.3.1 Basis of Design (BoD): The documentation of design criteria and assumptions for systems, components, and methods chosen to meet the Owner's Project Criteria and applicable regulatory requirements, standards, and guidelines. The document includes narrative descriptions of the systems to be commissioned.
- 1.3.2 Building Control System (BCS): The automated building system providing control and user interaction with select building systems, such as the HVAC, DHW, and lighting systems.
- 1.3.3 Commissioning Authority (CxA): An independent agent hired directly by the owner and not otherwise associated with the Design Professionals or the Design Builder. The CxA assists the Design Builder with developing and coordinating commissioning activities, and witnesses the activities on behalf of the Owner.
- 1.3.4 Commissioning Issue (Cx Issues): A condition that affects, prevents or inhibits commissioning, and must be resolved to complete the commissioning process.
- 1.3.5 Commissioning Issues List (Cx Issues List): A log maintained by the CxA listing all Deficiencies and Cx Issues documented during the commissioning process. All issues require action, correction, and closure.
- 1.3.6 Commissioning Plan (Cx Plan): A document that outlines the organization, coordination, and requirements of the commissioning process in more detail.
- 1.3.7 Design Builder or Design Build Entity (DBE): The contractor directly contracted to the Owner with overall responsibility for the design and construction of the Project.
- 1.3.8 Commissioning Coordinator (CxC): Individual within the Design Builder who plans, schedules, directs and coordinates all the Trade Sub-Contractors' commissioning activities, and serves as the CxA's single point of contact for all administrative, documentation and coordination functions.

- 1.3.9 Deferred Testing: Testing performed at a later time, due to partial occupancy, equipment, load, seasonal requirements, design, or other site conditions that disallow the test from being performed.
- 1.3.10 Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents. A Deficiency is considered a Cx Issue and will be documented on the Cx Issues List.
- 1.3.11 Functional Performance Test (FPT): A test of the dynamic function, operation, and control sequences of equipment and systems to verify system performance to the fullest extent. Systems are tested under various operating modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, alarm, power failure, etc. The FPTs are performed using manual (direct observation) or monitoring methods.
- 1.3.12 Installation Verification (IV): Field verification and documentation of proper installation of system equipment, assemblies, and components prior to Startup. Process is complete when systems are ready for Startup. Installation Verifications are organized under the System Readiness Checklist (SRC) forms.
- 1.3.13 Monitoring: Recording of parameters (flow, current, status, pressure, etc) of equipment operation using data-loggers or the Trending capabilities of BAS or other control systems.
- 1.3.14 Owner's Project Criteria (OPCC): A document describing the operational and functional requirements of a project, the expectations of how the facility will be used and operated, and the equipment and system expectations and requirements, as defined by the owner. This document provides an explanation of the ideas, concepts, goals, criteria, and supporting information for the Project. For sake of clarity, the Owner is the County.
- 1.3.15 Percent Sampling: Witnessing the startup or testing of only a fraction of the total number of identical or near-identical pieces of equipment such as VAV boxes.
- 1.3.16 Pre-Functional Checks & Tests (PFC): These are various checks and tests performed on a piece of equipment or system just before, during, or after the initial Startup and operation. They are performed to confirm that the equipment and individual components were installed correctly and are working properly. Examples include checking fan rotation, sensor calibration, actuator testing, and spot temperature, pressure and electrical measurements. They also include system specific tests such as pipe system pressure tests, duct leakage tests, mechanical system test and balance (TAB) and electrical equipment NETA testing. They are organized under the System Readiness Checklist (SRC) forms and must be completed prior to FPTs.
- 1.3.17 Startup: Initial starting or activating of equipment usually performed by the Trade Sub-Contractor or the Manufacturer's authorized representative.
- 1.3.18 System Readiness Checklist (SRC): A summary checklist, typically one page per equipment, covering the necessary commissioning tasks to verify that a system is ready for FPTs or system operation if no FPTs are

performed. The tasks covered in the SRC include Installation Verification, Startup and Pre-functional Checks & Tests, and the Trade Sub-Contractor completed forms for these tasks are attached to the equipment specific SRC. The SRC must be completed prior to conducting FPTs.

- 1.3.19 TAB: Testing, Adjusting, and Balancing work on the air and water systems to ensure design flow conditions are met. Performed by the Design Builder TAB Trade Sub-Contractor.
- 1.3.20 Trade Sub-Contractor: Typically a subcontractor to the Design Builder who provides and installs specific building components and systems and/or provides certain services.
- 1.3.21 Trending: Monitoring using the Building Automation System (BAS) or a control system, to aid in functional testing and verify system operation and performance under actual operating conditions.

1.4 SYSTEMS TO BE COMMISSIONED

- 1.4.1 This specification Section is applicable to the following systems and equipment to be commissioned in this Project:
 - 1.4.1.1 Chilled water systems, pumps, cooling towers
 - 1.4.1.2 Heating hot water boilers, pumps, heat exchangers
 - 1.4.1.3 Air Handlers Systems including supply, return and exhaust fans and associated heating/cooling equipment
 - 1.4.1.4 Fan coils units and associated heating/cooling equipment
 - 1.4.1.5 Computer Room Air Conditioners (CRAC)
 - 1.4.1.6 VAV terminal units
 - 1.4.1.7 Building automation system for HVAC systems (DDC controllers, electronic valves, graphical user interface)
 - 1.4.1.8 Domestic hot water heating system
 - 1.4.1.9 Electrical distribution system - Switchgear, Switchboards, panelboards, transformers, motor controller.
 - 1.4.1.10 Emergency generator systems
 - 1.4.1.11 Transfer switches
 - 1.4.1.12 Electrical equipment, thermal scanning, polarity testing, circuit confirmation, load balancing verification.
 - 1.4.1.13 Lighting and daylighting controls
 - 1.4.1.14 Fire alarm system
 - 1.4.1.15 Access control and alarm monitoring
 - 1.4.1.16 Video Surveillance system
 - 1.4.1.17 Electronic Safety and Security

- 1.4.1.18 Detention Security Electronic systems
- 1.4.1.19 Integrated Audio-Video systems
- 1.4.1.20 Integrated projection screens
- 1.4.1.21 Intercommunications and programming systems
- 1.4.1.22 Assistive listening system
- 1.4.1.23 Irrigation

1.5 SUMMARY DESCRIPTION OF COMMISSIONING

- 1.5.1 Commissioning is a quality assurance process for achieving, verifying and documenting that building systems are installed and perform functionally as intended according to the OPC, BoD, and the requirements of the contract documents.
- 1.5.2 Commissioning during the design phase is intended to achieve the following specific objectives:
 - 1.5.2.1 Develop the Owner's Project Criteria (OPCOPC) and the Basis of Design (BoD). The Owner will develop the Owner's Project Criteria (OPC) and the Design Team shall develop the Basis of Design (BoD).
 - 1.5.2.2 Commissioning Review of the OPCOPC, BoD, and design documents prior to mid-construction phase, with back-check review in the subsequent design submission.
- 1.5.3 Commissioning during the construction phase is intended to achieve the following specific objectives:
 - 1.5.3.1 Commissioning review of the Trade Sub-Contractor submittals for systems to be commissioned; concurrent with the Design Professional's review.
 - 1.5.3.2 Finalize the commissioning specific details within the Commissioning Plan.
 - 1.5.3.3 Verify that applicable equipment and systems are installed according to the manufacturer's recommendations and to industry-accepted minimum standards and that they receive the required operational checkout and testing by the Trade Sub-Contractors.
 - 1.5.3.4 Verify and document proper performance of equipment and systems.
 - 1.5.3.5 Verify that operation and maintenance documentation is provided by the Trade Sub-Contractors and is complete.
 - 1.5.3.6 Develop a systems manual for energy-related systems (per LEED) that provides future operating staff the information necessary to optimally operate the commissioned systems.
 - 1.5.3.7 Verify that the owner's facilities and operations personnel are trained per the contract document requirements.
- 1.5.4 The commissioning process does not take away from or reduce the responsibility of the Design Builder to provide a finished and fully functioning

building. The Design Builder has overall responsible to assure that all systems are properly tested and commissioned, and that all required commissioning documents are completed and provided to the owner.

- 1.5.5 The Project will meet the Commissioning Requirements of LEED-NC v4.0, Energy & Atmosphere, Prerequisite 1 (Fundamental Commissioning) and Credit 1 (Enhanced Commissioning). The Design Builder, Trade Sub-Contractors, and suppliers are responsible to ensure all requirements for commissioning are met in their respective work.

1.6 GENERAL COMMISSIONING PROCESS

- 1.6.1 Unless otherwise noted, the general commissioning process is as follows. See the trade specific commissioning specifications for additional details.

1.6.2 OPCOPC and BoD Development

1.6.2.1 The Owner will develop the OPC to outline the functional requirements of the Project and expectations of the building's use and operations as it relates to the systems to be commissioned. The CxA and the Design Team shall review the OPC for clarify and completeness. The Owner is responsible for updates to the OPC.

1.6.2.2 The Design Builder's Design Professionals shall develop a BoD for the systems to be commissioned to meet the requirements described in the OPC and to provide a narrative description of the system design, the design intent, and the design assumptions. The CxA and the Owner will review the BoD for clarity, completeness, and adherence to the OPC. The Design Professionals are responsible for updates to the BoD.

1.6.3 Design Reviews

1.6.3.1. Design Documents shall be issued by the Design Builder for review and comment by the CxA according to the Cx Plan. The CxA will issue design review comments to the Design Builder. The Design Builder's Design Professionals shall provide written responses to the CxA's review comments within two weeks.

1.6.4 Submittal Review by the CxA

1.6.4.1. The Design Builder shall include the CxA on the distribution of the Trade Sub- Contractor issued submittals to the Design Professionals for the systems to be commissioned. LEED requires that the CxA review and provide review comments to the Design Professionals.

1.6.5 Cx Plan and Form Development

1.6.5.1 The Commissioning Authority (CxA) prepares a Cx Plan that provides guidance in the execution of the commissioning process during construction.

1.6.5.2 The CxA develops the SRC and FPT forms and are provided to the Design Builder and Trade Sub-Contractors for review and comment.

1.6.6 System Readiness Activities

- 1.6.6.1 The Trade Sub-Contractors shall perform Installation Verification, Startup, and Pre-Functional Check & Test activities. The Trade Sub-Contractors and the CxC shall document completion of these activities on the SRC forms and attach their completed Installation Verification, Startup, and Pre-Functional Checks and other Tests forms to the SRC.
- 1.6.6.2 The CxA will perform various observation inspections during the installation phase and back-checks of the completed Installation Verification. The CxA will also witness a percent sampling of the Startups and Pre-Functional Checks & Tests, including TAB procedures.
- 1.6.7 Functional Testing
 - 1.6.7.1 Once the SRC forms are completed, the FPTs are executed by the Trade Sub- Contractors and a sample is witnessed by the CxA. The FPTs may be achieved by any combination of Manual Testing or Trending.
 - 1.6.7.2 Any deferred FPTs will be defined in the Cx Plan.
- 1.6.8 Deficiencies and Commissioning Issues
 - 1.6.8.1. Throughout the commissioning process, Commissioning Issues are recorded by the CxA on the Commissioning Issues List. The Design Builder and the Trade Sub-Contractors shall correct Commissioning Issues and retest the system(s) without delay at no additional cost to the Owner. The CxA will verify the completion of the issues and make all amendments to the issues list.
- 1.6.9 O&M Manuals, Training Verification and Final Documentation
 - 1.6.9.1 The CxA will verify that complete operation and maintenance (O&M) manual documentation is provided by the Trade Sub-Contractors to the Owner.
 - 1.6.9.2 The Design Builder shall submit to the CxA and Owner, a training schedule and specific training agendas (for each training class) for review prior to conducting any training. The CxA will also verify completion of the training by receiving a copy of the training class sign-in sheets and any training materials / handouts provided by the Design Builder.
 - 1.6.9.3 The CxA will develop the Systems Manual (per LEED requirements) with assistance from the Design Builder and Trade Sub-Contractors. The systems to be included are the HVAC systems and controls, lighting controls, domestic hot water systems and controls, and any renewable energy systems.
 - 1.6.9.4 The CxA will complete the Final Construction Phase Commissioning Report and documentation for the Owner with assistance from the Design Builder and Trade Sub-Contractors.
- 1.6.10 Post-Occupancy Warranty Phase Commissioning
 - 1.6.10.1 No later than 90 days prior to the expiration of the first 12-month warranty period of building occupancy, the CxA will return to the

facility to interview facility O&M staff, walk the facility and review systems operation and trend data where applicable. Key representatives from the Design Builder and Trade Sub-Contractors shall attend a site walk-through and meeting, as determined by the CxA.

- 1.6.10.2 Any performance issues, warranty items, or problems identified will be reported by the CxA to the CxC via a Warranty Phase Commissioning Issues List for correction by the Design Builder and Trade Sub-Contractors prior to the end of the warranty period.

1.7 COMMISSIONING TEAM

1.7.1 The Commissioning Team is responsible for performing the process and achieving successful commissioning results. The Commissioning Team is comprised of the following:

- 1.7.1.1 Owner's Representatives
- 1.7.1.2 Commissioning Authority (CxA)
- 1.7.1.3 Design Builder including their Design Professionals
- 1.7.1.4 Design Builder's Commissioning Coordinator (CxC)
- 1.7.1.5 Trade Sub-Contractors responsible for specific types of systems being commissioned:
 - a. Electrical Contractor
 - b. AV Systems Contractor
 - c. Security Systems Integrator/Contractor
 - d. Fire Alarm Contractor
 - e. Mechanical Contractor
 - f. HVAC Controls Contractor
 - g. Testing and Balance (TAB) Contractor
 - h. Plumbing Contractor

1.8 RESPONSIBILITIES

1.8.1 General:

1.8.1.1 The Commissioning Team and all others involved in the commissioning process shall follow the Cx Plan, attend commissioning kickoff meeting, and additional commissioning meetings as necessary.

1.8.2 Commissioning Authority (CxA)

- 1.8.2.1 The commissioning authority (CxA) will be contracted directly with the Owner for this project. The CxA has overall responsibility for planning and coordinating the commissioning process. However, commissioning involves all parties to the design and construction process.
- 1.8.2.2 The primary role of the CxA is to oversee, organize and lead the

- commissioning team and assist the Design Builder and Trade Sub-Contractors in executing the commissioning process.
- 1.8.2.3 Prepare the Cx Plan and develop the SRC and FPT forms.
 - 1.8.2.4 Work with the Design Builder to schedule commissioning activities.
 - 1.8.2.5 Leads commissioning team meetings; prepares meeting agendas, and distributes meeting minutes.
 - 1.8.2.6 Observe on a sampling basis the system and equipment installation, start-up, checkout, and testing for compliance with the OPC, BoD, and Contract Documents; review completion of commissioning documentation.
 - 1.8.2.7 The CxA will sample witness the execution of the FPTs by the Trade Sub- Contractors. The CxA will witness re-test of any commissioned equipment or system.
 - 1.8.2.8 Is the authority on commissioning test results and other commissioning program elements completion. Prepares, maintains, and distributes the Cx Issues List.
 - 1.8.2.9 Review and comment on training agendas and verify that training is completed and O&M manuals are delivered.
 - 1.8.2.10 Lead the effort in developing the Systems Manual for energy-related systems per LEED.
 - 1.8.2.11 Assemble the commissioning documents and prepare the Commissioning Report.
 - 1.8.2.12 The CxA is not responsible for:
 - a. Design concept or design criteria
 - b. Review for code compliance
 - c. Inspector of record services
 - d. Design and construction scheduling
 - e. Cost estimating
 - f. Construction management
 - g. Providing tools and test equipment used for commissioning.
 - h. Scheduling startup and testing
 - i. Coordinating the work of Trade Sub-Contractors and any special testing agents
 - j. Performing startup and testing
- 1.8.3 Design Builder:
- 1.8.3.1 The Design Builder is responsible for all commissioning tasks to be performed, including tasks assigned to Trade Sub-Contractors, and ensures that all Trade Sub-Contractors execute their commissioning responsibilities according to the Contract

- Documents, Cx Plan, and schedule.
- 1.8.3.2 Include the cost for commissioning in the Project cost. Cost of the County's CxA shall be paid for separately by the County.
 - 1.8.3.3 The Design Builder is responsible for reviewing the OPC document and developing a BoD that provides a narrative description of the system design, the design intent, and major design assumptions, consistent with the OPC.
 - 1.8.3.4 The Design Builder is responsible for generating design drawings and Project specifications per the program documents and the requirements of the OPC and BoD. The Design Builder is responsible for issuing design documents for review and comment by the CxA and having the Design Professionals respond to the CxA's written comments for both submissions as indicated in the Cx Plan.
 - 1.8.3.5 Assign a CxC for the duration of the Project with responsibilities outlined herein.
 - a. The CxC shall have at least five year's experience within the disciplines of construction.
 - b. The Design Builder shall submit the name of the person(s) assigned as the CxC to the CxA within a month of contract award.
 - 1.8.3.6 Schedule and coordinate the commissioning meetings with the CxA.
 - 1.8.3.7 Plan, schedule, coordinate, and facilitate the commissioning work performed by the Trade Sub-Contractors. Provide sufficient lead-time of at least 10 days to notify the CxA in advance of commissioning activities. Update the master construction schedule periodically with commissioning progress and activities.
 - 1.8.3.8 Review, comment, and accept the Cx Plan prepared by the CxA.
 - 1.8.3.9 Furnish continual updates of any construction related documents such as change orders, submittals, shop drawings, ASIs and RFIs to the CxA. Electronic files are acceptable.
 - a. The CxC shall ensure that the requested submittals for review by the CxA are also issued to the CxA when issued to the Design Team.
 - 1.8.3.10 Obtain and review the Trade Sub-Contractor IV, Startup, and PFC forms prior to use.
 - 1.8.3.11 Using IV, Startup, PFC, SRC, and FPT forms, document and certify that all work is complete and systems are installed, operational and functionally tested.
 - 1.8.3.12 The Design Builder is responsible for organizing all Trade Sub-Contractor completed Cx forms to be submitted to the CxA for review.
 - 1.8.3.13 Evaluate deficiencies identified on the Cx Issues List. Issues will

be tracked according to the responsible entity. Collaborate with Trade Sub-Contractors and recommend corrective action. Assure all Cx Issues are resolved.

1.8.3.14 Prepare a training schedule along with the Trade Sub-Contractor training agendas and submit to CxA and Owner for review. Execute training of Owner's personnel per approved training schedule and agendas.

1.8.3.15 Prepare O&M Manuals in accordance with the Contract Documents.

1.8.3.16 Assist the CxA in developing the Systems Manual.

1.8.4 Trade Sub-Contractors:

1.8.4.1 See the trade specific commissioning specification sections for the Trade Sub- Contractor responsibilities.

PART 2 - PRODUCTS

2.1 TEST EQUIPMENT

2.1.2 All standard testing equipment required to perform Startup, Pre-Functional Checks & Tests and FPTs shall be furnished by the Trade Sub-Contractor responsible for the systems.

2.1.3 All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerance specified in the Contract Documents. If not otherwise specified, the following minimum requirements apply:

2.1.1.2 All equipment shall be calibrated according to the manufacturer's recommended intervals (or within one year if not otherwise specified) and recalibrated when dropped or damaged.

2.1.1.3 Calibration tags shall be affixed or certificates readily available for all test equipment.

PART 3 - EXECUTION

3.1 SCHEDULING AND COORDINATION

3.1.1 The CxA will provide an initial list of commissioning events to the CxC for scheduling purposes.

3.1.2 The Design Builder shall develop a detailed commissioning schedule for all systems to be commissioned and coordinate with CxA to include commissioning milestones. The Design Builder shall integrate all commissioning activities and milestones into the master construction schedule with assistance from the CxA.

3.1.3 The CxC shall provide sufficient notice to the CxA and Owner for scheduling and coordinating commissioning activities. A minimum 10-day's notice shall be provided to the CxA for witnessing equipment Start-ups, Pre-Functional Checks & Tests, and Functional Performance Testing.

3.1.4 The Commissioning Team shall address scheduling problems and make necessary notification in a timely manner in order to expedite the commissioning process.

3.2 MEETINGS

3.2.1 When commissioning team member attendance is required, as determined by the CxA and CxC, be punctual and attentive during the meeting.

3.2.1.1 The CxA will conduct a commissioning kick-off meeting, usually within 60 days of the commencement of construction. All team members involved in the commissioning process and the Design Builder shall attend the kick-off meeting.

3.2.1.2 The CxA will plan other commissioning meetings as deemed necessary as construction progresses. These meetings will cover planning and coordination, and Commissioning Issues resolution.

3.2.1.3 The frequency of meetings will vary through construction, but generally increase during start-up and commissioning activities.

3.2.2 The CxA will write and distribute meeting minutes documenting the meeting discussion, conclusions, and actions for each team member.

3.3 COMMISSIONING ISSUES, BACK-CHECKS AND RE-TESTING

3.3.1 All Deficiencies and Commissioning Issues shall be corrected promptly. The responsible party shall correct the issue and inform the CxC and CxA of the resolution and completion date. The CxA will record completion on the Commissioning Issues List once the issue is successfully back-checked or verified.

3.3.1.1 For all Commissioning Issues identified during the pre-functional system readiness activities, the CxA will back-check and verify the completion of the issues where appropriate.

3.3.1.2 For all Commissioning Issues identified during FPT, retesting is required to verify the resolution of the issue and to complete the FPT.

3.3.1.3 The CxA will witness re-test for each equipment and will perform back-check verification of any completed system readiness issue. The Owner may back-charge the Design Builder for any additional fees from the CxA, resulting from any re-testing or repeated system readiness issues list back-checks beyond the first re-test or back-check.

3.4 COMMISSIONING ACCEPTANCE AND PROJECT CLOSEOUT

3.4.1 Completion of the main commissioning activities (system readiness checks, functional testing, training, and delivery of O&M manuals) shall be accomplished as a prerequisite for substantial completion. Completion of all commissioning issues and functional re-testing shall be completed prior to final acceptance of commissioning by the Owner.

3.4.2 After completion of the commissioning activities and following review of the completed commissioning documents that includes the draft Cx Report executive summary, all test results, and the latest Cx Issues List with all remaining commissioning issues and deficiencies; the Owner will provide a formal written acceptance of the Project construction phase commissioning. At that point, any remaining construction phase

commissioning issues or seasonal/deferred testing will be transferred to the warranty phase and tracked by the CxA if requested by the Owner for completion as warranty items.

- 3.4.3 Upon completion of all commissioning activities, the CxA will prepare and submit to the Owner a Final Commissioning Report detailing all completed commissioning activities and documentation. The CxC shall support this effort by providing all Design Builder and Trade Sub-Contractor commissioning documentation.
- 3.4.4 The Owner's written acceptance of construction phase commissioning will be included in the Final Commissioning Report.

END OF SECTION