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Sleepy Hollow

Lobby and Conference Center

MASTER SPECIFICATIONS

Division 01 – GENERAL REQUIREMENTS

01 JUNE 2021

Released by:

Regeneron Pharmaceuticals Inc.

Real Estate and Facilities Management

777 Saw Mill River Road

Tarrytown, NY 10591

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MASTER SPECIFICATIONS: DIVISION 01 – GENERAL REQUIREMENTS

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Exhibit H-Armstrong National Account Pricing

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Exhibit J-AV Set (For Reference Only)

Exhibit K-Security Set (For Reference Only)

*\*\* End of List \*\**

# SECTION 01 10 00 - SUMMARY

# PART 1 GENERAL

## GENERAL REQUIREMENTS

##### Work of this section, as shown or specified, shall be in accordance with the requirements of the Contract Documents, General Conditions and other Division 01 Specification Sections.

## SUMMARY

##### Section Includes:

###### Project Information

###### Work covered by Contract Documents

###### Work by Owner

###### Work under separate contracts

###### Future work

###### Purchase contracts

###### Owner-furnished products

###### Contractor furnished, Owner installed products

###### Access to Site

###### Coordination with Occupants

###### Work restrictions

###### Specification and drawing conventions

###### Miscellaneous provisions

##### Related Requirements:

###### All other sections of the Division 1 specifications.

###### Exhibit A-Issue for bid set

###### Exhibit B-Omega ACM Drawings

###### Exhibit C-Divison 1 Specification: Owners Rules and Regulations

###### Exhibit D- Project Closeout Turnover Checklist

###### Exhibit E–Method of Procedure and Notice of Work

###### Exhibit F- JLL/Regeneron Standard Operating Procedure Fire Alarm Work OnSite

###### Exhibit G- Covid Questionnaire and Site Access Log

###### Exhibit H-Armstrong National Account Pricing

###### Exhibit I-Muraflex Quote S-8303-18

###### Exhibit J- AV Set for reference only

###### Exhibit K-Security Set for reference only

## PROJECT INFORMATION

##### Project Identification: Sleepy Hollow Site Renovation, Sleepy Hollow Phase 3 – Interior Fit Out

###### Project Location: 1 Rockwood Road, Sleepy Hollow, NY 01591

## WORK COVERED BY CONTRACT DOCUMENTS

##### The Work of the Project is defined by the Contract Documents

##### The Work qualifies as tax exempt per Regeneron’s IDA sales tax exemption.

###### Contractor will need to track sales tax savings to be reported back to Regeneron. Regeneron is required to report IDA savings annually to the County and the State on NYS Form ST-340.

###### Contracts and all invoices must indicate the IDA exempt status.

###### Work should exclude NY sales tax on labor, material, rentals and construction consumables/supplies.

## WORK BY OWNER

##### General: Cooperate fully with Owner so work may be carried out smoothly, without interfering or delaying work under this Contract, or other Contracts on the Project site (See 1.7).

##### Concurrent Work: Owner will perform at a minimum, the following construction operations at Project site. Those operations will be conducted simultaneously with Work under this Contract. Work to be excluded are as follows unless otherwise specified on the drawings:

###### Sound Masking equipment and installation, DOT-Enhanced Cellular equipment and installation, Furniture delivery and installation, AV decommissioning, equipment and installation, IT equipment and installation except as indicated on Construction Documents.

## WORK UNDER SEPARATE CONTRACTS

##### General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts, including spatial coordination and coordination of sequence of installation.

##### Concurrent Work: Owner has awarded and has assigned to Contractor separate contracts for the following construction operations at Project site. Those operations will be conducted simultaneously with Work under this Contract:

###### Exterior Glazing and Panels, Fit Out Project, Switchgear Replacement (to be awarded).

##### Contractor shall be solely responsible for damages to work of other Contracts as a result of execution of this work by the Contractor and it’s subcontractors and suppliers, specifically work by owner, plaza concrete, amenities, plaza lights, entrance doorways, View glass and exterior panels and any other areas the Owner deems necessary.

##### Work involving roof penetrations shall be coordinated with roofing contractor whom previously completed work and holds the existing warranty. The contact is: Kraft Roofing, 14 Higgins Drive, Vernon NJ 07462 Tim Kraft: (973) 636-6500.

## FUTURE WORK

##### Other projects within the premises may occur and Contractor is expected to work in harmony with any other contractors with projects on the premises.

## PURCHASE CONTRACTS

##### General: Owner has negotiated purchase prices with suppliers of material and equipment to be incorporated into the Work. Owner will transfer these purchase prices to the Contractor including but not limited to costs for purchasing. These costs plus receiving, handling, storage if required, and installation of material and equipment shall be included in the Contract Sum, unless otherwise indicated.

###### Contractor’s responsibilities are same as if Contractor has negotiated pricing, including responsibility to renegotiate pricing and to execute final purchasing agreements.

###### Instructions for obtaining and breakdown of pricing are included in the following exhibits:

##### Purchase Contracts include but may not be limited to:

###### Acoustical Panel Ceilings – Section 09 51 13

**Armstrong (See Exhibit A-Armstrong National Account Pricing)**

Contact/Rep: 1-800-442-4212

Purchase Contract Scope: Furnishing material at established price per attached pricing sheet.

Purchase Status: Price negotiated by Owner, to be incorporated in the Contract Sum by Contractor

###### Office Fronts - Section 10 22 19

**Muraflex (See Exhibit B-Muraflex Quote Number S-8303-18)**

Contact/Rep: Pauline Kaufman/ 646-872-9262

Purchase Contract Scope: Furnishing material and installation at established price per attached pricing sheet. Quote should be updated to reflect current documents.

Purchase Status: Price negotiated by Owner, to be incorporated in the Contract Sum by Contractor

###### Quantity: Per Contract Documents and verified by Contractor

###### Warranty: Contractor shall provide warranties as per the MSA and SOW.

###### Owner reserves the right to renegotiate final pricing.

## OWNER FURNISHED PRODUCTS

##### Owner will furnish products indicated. The Work includes receiving, handling, storing, protecting, and installing Owner-furnished products, and making building service connections.

##### Owner-Furnished Products: As indicated on the Contract Documents

## CONTRACTOR FURNISHED, OWNER-INSTALLED PRODUCTS

##### None

## ACCESS TO SITE

##### General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

##### Use of Site: Limit use of Project site to work areas as indicated. Do not disturb portions of Project site beyond areas in which Work is indicated and authorized by Owner.

###### Limits: Confine construction operations to Work area only.

###### Contractor shall comply where applicable with *Exhibit A-Owner’s Rules and Regulations*

###### Lay down and staging shall be outside of project area needs to be approved via a logistics plan. Restricted use of immediate areas around the building, including entrances, shared employee corridors, elevators, loading dock, etc will be by Owner approval only.

###### Use of Building Facilities:

Contractors employees will not have access to use work area bathrooms. These areas are also not to be used as tool clean-up areas. Port-o-san facilities shall be provided by the Contractor and located per the approval of the Owner.

Contractor employees are prohibited from using the cafeteria.

Exclusive use of the elevators will be as approved by the Owner. Contractor assumes responsibility for any maintenance and service calls as required as a result of over loading and breakdown.

###### Common Areas: Keep entrances serving premises clear and available to Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials. Contactor may not block or otherwise hinder the lobby entrances in any way.

###### Materials: Schedule deliveries to minimize use of driveways and entrances by construction operations, and to minimize space and time requirements for storage of materials and equipment of site.

###### Dumpsters: Prior to setting any container used to dispose of construction debris, approval must be given by the Owner. Steps must be taken to not all any container to damage parking, pathway to, or any area it might occupy. Should such damage occur, it shall be repaired at the sole cost of the Contractor in a timely manner or Owner will repair such damage and charge back to the Contractor.

###### Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair and damage caused by construction operations.

## COORDINATION WITH OCCUPANTS

##### Owner Occupancy: Owner will occupy the site during construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner’s day-to-day operations. Maintain existing entrances and exits unless otherwise indicated and approved by the authorities having jurisdiction.

###### Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without permission form owner and approval of authorities having jurisdiction.

## WORK RESTRICTIONS

##### General: Comply with restrictions on construction operations

##### On-Site Work Hours: Work hours as defined by the Town of Mt. Pleasant Building Department Code Chapter 139-18 “Construction Activities” and extension granted by the Town to Regeneron: 7am-6pm, Monday through Friday, unless approved by Owner.

##### Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility service according to the requirements indicated.

###### Notify the Owner not less than five (5) days in advance of proposed utility interruptions in accordance with *Exhibit E-JLL Method of Procedure*.

###### Obtain Owner’s written permission before proceeding with utility interruptions

###### Work shall conform to *Exhibit F-JLL/Regeneron Standard Operating Procedure* *Fire Alarm Work Onsite*.

##### Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

###### Notify the Owner not less than five (5) days in advance of proposed work of this section in accordance with JLL Method of Procedure

###### Obtain Owner’s written permission before proceeding with disruptive operations.

##### Controlled Substances: Use of tobacco, vaping, and alcohol products and other controlled substances on Project site is not permitted.

##### Employee Identification: Contractor personnel working on Project site shall wear identification tags provided by Regeneron in accordance with Regeneron security personnel. Coordinate with Regeneron security to establish badging in/out system. Require personnel to use identification tags at all times.

##### Firearms and Weapons: Contractors or their employees are prohibited from possessing on their persons or within their vehicles any firearm or weapon, or a reasonable facsimile thereof, while on the Project site.

## UTILITY SHUTDOWN PROCEDURE

##### All utility shutdowns shall be scheduled with the Owner in accordance with the following:

###### Minimum 5 days notice required for all utility shutdowns. Utility shutdowns shall be performed outside normal working hours. Emergency shutdowns will be managed by the Owner on an individual basis.

###### Utility shutdown request shall be filled out per the JLL Method of Procedure and sent to the Project Manager or Owner for approval prior to the start of Work.

###### Signage is required to be posted at a minimum at the following locations in the building where the shutdown will occur

All building entrances and lobby

At elevators

At locations of interruptions or work area

## SPECIFICATIONS AND DRAWING CONVENTIONS (Not used)

##### Part 2 – PRODUCTS (NOT USED)

##### Part 3 – EXECUTION (NOT USED)

# END OF SECTION 01 10 00

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# SECTION 01 2100 - ALLOWANCES

PART 1 - GENERAL

|  |  |  |
| --- | --- | --- |
| 1.1 |  | RELATED DOCUMENTS |
|  | A. | Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section. |
| 1.2 |  | SUMMARY |
|  | A. | Section includes administrative and procedural requirements governing allowances. |
|  |  | 1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of materials, equipment, and overtime work to a later date when direction will be provided to Contractor. |
|  | B. | Types of allowances include the following: |
|  |  | 1. Lump-sum allowances. 2. Unit-cost allowances. 3. Quantity allowances. 4. Contingency allowances (NOT USED). 5. Testing and inspecting allowances. |
|  | C. | Related Requirements: |
|  |  | 1. Section 01 2200 "Unit Prices" for procedures for using unit prices. 2. Section 01 4000 "Quality Requirements" for procedures governing the use of allowances for testing and inspecting. |
| 1.3 |  | SELECTION AND PURCHASE |
|  | A. | At the earliest practical date after award of the Contract, advise Owner of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work. |
|  | B. | At Owner's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work. |
|  | C. | Purchase products and systems selected by Owner from the designated supplier. |
| 1.4 |  | ACTION SUBMITTALS |
|  | A. | Submit proposals for labor, overtime and/or purchase of products or systems included in allowances in the form of an Allowance Request. Include all backup material including a detailed breakdown of material and labor costs, quantities and markups. |

|  |  |  |
| --- | --- | --- |
| 1.5 |  | INFORMATIONAL SUBMITTALS |
|  | A. | Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance. |
|  | B. | Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance. |
|  | C. | Coordinate and process submittals for allowance items in same manner as for other portions of the Work. |
| 1.6 |  | COORDINATION |
|  | A. | Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation. |
| 1.7 |  | LUMP-SUM, UNIT-COST, AND QUANTITY ALLOWANCES |
|  | A. | Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Design Professional(s) under allowance and shall exclude taxes but include delivery to Project site. |
|  | B. | Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted. |
|  |  | 1. If requested by Owner, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed. |
| 1.8 |  | TESTING AND INSPECTING ALLOWANCES |
|  | A. | Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results. |
|  | B. | The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum. |
|  |  |  |

* + 1. Costs of services not required by the Contract Documents are not included in the allowance.
    2. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.
  1. APPROVAL OF ALLOWANCES
     1. The use of Allowances requires written approval from the Owner.
        1. The Contractor shall prepare an Allowance Request indicating the original allowance, the actual cost, and the difference between the actual cost and the allowance, multiplied by final measurement of work-in-place where applicable.
        2. When approval of an Allowance Request is required and the final cost cannot be determined at the time of the Allowance Request, the Allowance Request shall include the unit costs for labor and material. The allowance value in the SOW shall be used as a Not to Exceed amount for the work. The Contractor shall notify the Owner when it becomes apparent that the Not to Exceed value for the Allowance will not be adequate for completion of the work.
        3. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
        4. Include installation costs in purchase amount only where indicated as part of the allowance.
        5. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
        6. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
     2. Submit a Change Order Proposal for increased costs if there is a change in scope or the nature of the allowance described in the Contract Documents, whether for the purchase amount or Contractor's handling, labor, installation, overhead, and profit.
     3. If the actual cost exceeds the original Allowance, the difference in cost shall be covered by a line item transfer or a Change Order at the discretion of the Owner, with the Owner’s written authorization.
     4. If the actual cost is less than the original Allowance, the difference in cost shall be retained on the Allowance line item, transferred using a line item transfer, or refunded to the Owner by Change Order at the discretion of the Owner, with the Owner’s written authorization.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

* 1. EXAMINATION
     1. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.
  2. PREPARATION
     1. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.
  3. SCHEDULE OF ALLOWANCES
     1. Lump sum allowances are as approved by the Owner and defined within the Contract document.
        1. Coordinate quantity allowance adjustment with corresponding unit-price requirements in Section 012200 "Unit Prices."

## END OF SECTION 01 2100

# SECTION 01 2200 - UNIT PRICES

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for unit prices.
     2. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor.
     3. Related Requirements:
        1. Section 012600 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
        2. Section 014000 "Quality Requirements" for general testing and inspecting requirements.
  3. DEFINITIONS
     1. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.
  4. PROCEDURES
     1. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, and subcontractor’s overhead and profit. They do not include the Contractor’s markups.
     2. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.
     3. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
     4. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

* 1. SCHEDULE OF UNIT PRICES
     1. Unit Price No.:
        1. Description: Unit Prices shall be in accordance with Contract Documents.
        2. Quantity Allowance: Coordinate unit price with allowance adjustment requirements in Section 012100 "Allowances."

## END OF SECTION 01 2200

# SECTION 01 2300 - ALTERNATES

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for alternates.
     2. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor.
  3. DEFINITIONS
     1. Alternate: An amount proposed by Subcontractor and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
        1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
        2. The cost or credit for each alternate is the net addition to or deduction from the base bid subContract Sum to incorporate alternate into the Work. No other adjustments are made to the subContract Sum.
  4. PROCEDURES
     1. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
        1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether indicated as part of alternate.
     2. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.
     3. Execute accepted alternates under the same conditions as other work of the Contract.
     4. Schedule: A schedule of alternates is included in the Contract Documents and below. Specifications herein apply to the requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

* 1. SCHEDULE OF ALTERNATES
     1. Alternates as indicated on drawing Sheet A900.A0 “Alternate List”

**END OF SECTION 01 2300**

# SECTION 01 2500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for substitutions.
     2. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor.
     3. Related Requirements:
        1. Section 012100 "Allowances" for products selected under an allowance.
        2. Section 012300 "Alternates" for products selected under an alternate.
        3. Section 016000 "Product Requirements" for requirements for submitting comparable product submittals for products by listed manufacturers.
  3. DEFINITIONS
     1. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
        1. Substitutions for Cause: Changes proposed by Contractor that are required due to changed Project conditions, such as unavailability of product, regulatory changes, or unavailability of required warranty terms.
        2. Substitutions for Convenience: Changes proposed by Contractor or Owner that are not required in order to meet other Project requirements but may offer advantage to Contractor or Owner.
  4. ACTION SUBMITTALS
     1. Substitution Requests: Submit three copies of 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. Substitution Request: Indicate substitution requests in Submittals
        2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
           1. Statement indicating why specified product or fabrication, or installation cannot be provided, if applicable.
           2. Coordination information, including a list of changes or revisions needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution
           3. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Include annotated copy of applicable Specification Section. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, sustainable design characteristics, warranties, and specific features and requirements indicated. Indicate deviations, if any, from the Work specified.
           4. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
           5. Samples, where applicable or requested.
           6. Certificates and qualification data, where applicable or requested.
           7. List of similar installations for completed projects with project names and addresses and names and addresses of design professional(s)s and owners.
           8. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
           9. Research reports evidencing compliance with building code in effect for Project.
           10. Detailed comparison of Contractor's construction schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating date of receipt of purchase order, lack of availability, or delays in delivery.
           11. Cost information, including a proposal of change, if any, in the Contract Sum.
           12. Contractor's certification that proposed substitution complies with requirements in the Contract Documents except as indicated in substitution request, is compatible with related materials, and is appropriate for applications indicated.
           13. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results unless the substitution is for cause.
        3. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within seven days of receipt of a request for substitution. Design Professional will notify Contractor of acceptance or rejection of proposed substitution within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
           1. Forms of Acceptance: Change Order, Interim Directed Change, or Design Professional's Supplemental Instructions for minor changes in the Work.
           2. Use product specified if Design Professional does not issue a decision on use of a proposed substitution within time allocated unless the substitution is for cause.
  5. QUALITY ASSURANCE
     1. Compatibility of Substitutions: Investigate and document compatibility of proposed substitution with related products and materials. Engage a qualified testing agency to perform compatibility tests recommended by manufacturers.
  6. PROCEDURES
     + 1. Coordination: Revise or adjust affected work as necessary to integrate work of the approved substitutions.

PART 2 - PRODUCTS

* 1. SUBSTITUTIONS
     1. Substitutions for Cause: Submit requests for substitution immediately on discovery of need for change, but not later than 15 days prior to time required for preparation and review of related submittals.
        1. Conditions: Design Professional(s) will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional(s) will return requests without action, except to record noncompliance with these requirements:
           1. Requested substitution is consistent with the Contract Documents and will produce indicated results.
           2. Requested substitution provides sustainable design characteristics that specified product.
           3. Substitution request is fully documented and properly submitted.
           4. Requested substitution will not adversely affect Contractor's construction schedule.
           5. Requested substitution has received necessary approvals of authorities having jurisdiction.
           6. Requested substitution is compatible with other portions of the Work.
           7. Requested substitution has been coordinated with other portions of the Work.
           8. Requested substitution provides specified warranty.
           9. If requested substitution involves more than one contractor, 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. Substitutions for Convenience: Not allowed.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 2500

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# SECTION 01 2600 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for handling and processing Contract modifications.
     2. Related Requirements:
        1. Section 012500 "Substitution Procedures" for administrative procedures for handling requests for substitutions made after the Contract award.
  3. MINOR CHANGES IN THE WORK
     1. Design Professional(s) may issue supplemental instructions authorizing minor changes in the Work. Supplemental instructions shall not be interpreted as an instruction to execute the proposed change if the work involves adjustment to the Contract Sum and/or the Contract Time.
  4. PROPOSAL REQUESTS
     1. Owner-Initiated Proposal Requests: Owner or Design Professional will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time in a Cost Event authorization. If necessary, the description will include supplemental or revised Drawings and Specifications.
        1. Work Change Proposal Requests issued by the Owner or Design Professional are not instructions either to stop work in progress or to execute the proposed change.
        2. Within 14 days, after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
           1. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
           2. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
           3. Include costs of labor and supervision directly attributable to the change.
           4. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
     2. Contractor-Initiated Proposals: If latent or changed conditions require modifications to the Contract, Contractor may initiate a claim by submitting a request for a change.
        1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
        2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
        3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
        4. Include costs of labor and supervision directly attributable to the change.
        5. Include an updated Contractor's construction schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
        6. Comply with requirements in Section 012500 "Substitution Procedures" if the proposed change requires substitution of one product or system for product or system specified.
        7. Proposal Request Form: Use Change Order form in the Master Services Agreement and the Statement of Work
  5. ADMINISTRATIVE CHANGE ORDERS
     1. Allowance Adjustment: See Section 012100 "Allowances" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect actual costs of allowances.
     2. Unit-Price Adjustment: See Section 012200 "Unit Prices" for administrative procedures for preparation of Change Order Proposal for adjusting the Contract Sum to reflect measured scope of unit-price work.
  6. CHANGE ORDER PROCEDURES
     1. On Owner's approval of a Work Changes Proposal Request, Contractor will issue a Change Order for signatures of Owner.
  7. INTERIM DIRECTED CHANGE
     1. Interim Directed Change: The Owner may issue an Interim Directed Change. An Interim Directed Change instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
        1. Interim Directed Change contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
     2. Documentation: Maintain detailed records on a time and material basis of work required by the Interim Directed Change.
        1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

## END OF SECTION 01 2600

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# SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

|  |  |  |
| --- | --- | --- |
| 1.1 |  | RELATED DOCUMENTS |
|  | A. | Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section. |
| 1.2 |  | SUMMARY |
|  | A. | Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following: |

1. General coordination procedures.
2. Coordination drawings.
3. Requests for Information (RFIs).
4. Project meetings.
5. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.
6. Related Requirements:
   1. Section 013200 "Construction Progress Documentation" for preparing and submitting Contractor's construction schedule.
   2. Section 017300 "Execution" for procedures for coordinating general installation and field- engineering services, including establishment of benchmarks and control points.
   3. Section 017700 "Closeout Procedures" for coordinating closeout of the Contract.
   4. DEFINITIONS
      1. RFI: Request from Owner, Design Professional, or Contractor seeking information required by or clarifications of the Contract Documents.
   5. INFORMATIONAL SUBMITTALS
      1. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
         1. Name, address, and telephone number of entities performing subcontract or supplying products.
         2. Number and title of related Specification Section(s) covered by subcontract.
         3. Drawing number and detail references, as appropriate, covered by subcontract.
      2. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.
         1. Post copies of list in project meeting room, in temporary field office, on Project Web site,and by each temporary telephone. Keep list current at all times.
   6. GENERAL COORDINATION PROCEDURES
      1. Coordination: Coordinate construction operations included in different Sections of the Specifications. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
         1. Schedule construction operations in sequence where installation of one part of the Work depends on installation of other components, before or after its own installation.
         2. Coordinate installation of different components to ensure correct performance of those components and accessibility for required maintenance, service, and repair.
         3. Make adequate provisions to accommodate items scheduled for later installation.
      2. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities. Each contractor shall coordinate its operations with operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
         1. Schedule construction operations in sequence where installation of one part of the Work depends on installation of other components, before or after its own installation.
         2. Coordinate installation of different components with other contractors to ensure correct performance and accessibility for required maintenance, service, and repair.
         3. Make adequate provisions to accommodate items scheduled for later installation.
      3. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
         1. Preparation of Contractor's construction schedule.
         2. Preparation of the schedule of values.
         3. Installation and removal of temporary facilities and controls.
         4. Delivery and processing of submittals.
         5. Progress meetings.
         6. Preinstallation conferences.
         7. Project closeout activities.
         8. Startup and adjustment of systems.
      4. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
         1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.
   7. COORDINATION DRAWINGS
      1. Prepare coordination drawings for Mechanical sheet metal and Fire Protection at a minimum.
   8. REQUESTS FOR INFORMATION (RFIs)
      1. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
         1. Design Professional will return RFIs submitted to Design Professional by other entities controlled by Contractor with no response.
         2. Coordinate and submit RFIs in a prompt manner to avoid delays in Contractor's work or work of subcontractors.
      2. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
         1. Project name.
         2. Project number.
         3. Date.
         4. Name of Contractor.
         5. Name of Design Professional(s).
         6. RFI number, numbered sequentially.
         7. RFI subject.
         8. Specification Section number and title and related paragraphs, as appropriate.
         9. Drawing number and detail references, as appropriate.
         10. Field dimensions and conditions, as appropriate.
         11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
         12. Contractor's signature.
         13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
             1. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.
      3. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Owner.
         1. Attachments shall be electronic files in Adobe Acrobat PDF format.
      4. Design Professional's Action: Design Professional will review each RFI, determine action required, and respond. Allow seven working days for Design Professional's response for each RFI. RFIs received by Design Professional after 1:00 p.m. will be considered as received the following working day.
         1. The following Contractor-generated RFIs will be returned without action:
            1. Requests for approval of submittals.
            2. Requests for approval of substitutions.
            3. Requests for approval of Contractor's means and methods.
            4. Requests for coordination information already indicated in the Contract Documents.
            5. Requests for adjustments in the Contract Time or the Contract Sum.
            6. Requests for interpretation of Design Professional's actions on submittals.
            7. Incomplete RFIs or inaccurately prepared RFIs.
         2. Design Professional's action may include a request for additional information, in which case Design Professional's time for response will date from time of receipt of additional information.
         3. Design Professional's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
            1. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Design Professional and Owner in writing within 5 working days of receipt of the RFI response.
      5. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Include the following:
         1. Project name.
         2. Name and address of Contractor.
         3. Name and address of Design Professional(s)
         4. RFI number including RFIs that were returned without action or withdrawn.
         5. RFI description.
         6. Date the RFI was submitted.
         7. Date Design Professional's response was received.
      6. On receipt of Design Professional's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Design Professional within seven days if Contractor disagrees with response.
         1. Identification of related Minor Change in the Work, Interim Directed Change, and Proposal Request, as appropriate.
   9. PROJECT WEB SITE
      1. Use Owner’s SharePoint 365 site for final handover of required documentation. Owner’s SharePoint 365 site shall include the following at handover:
         1. Project directory.
         2. Meeting minutes.
         3. RFI forms and logs.
         4. Field Reports
         5. Punch Lists
         6. Daily Contractor Reports
         7. Testing Reports
         8. Permits
         9. Methods of Procedure and Notices of Work
         10. Photo documentation.
         11. Submittals forms and logs.
         12. Drawing and specification document hosting, viewing, and updating.
         13. Archiving functions.
         14. As-Built Documentation.
         15. Other Handover Documentation as required in Exhibit G “Project Turnover Checklist,” and other sections of the specification.
   10. PROJECT MEETINGS
       1. General: Contractor will schedule and conduct meetings and conferences at Project site unless otherwise indicated.
          1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Design Professional(s) of scheduled meeting dates and times.
          2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
          3. Minutes: Contractor will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Design Professional(s), within three days of the meeting.
       2. Preconstruction Conference: Contractor will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Design Professional(s), but no later than 15 days after execution of the Agreement.
          1. Conduct the conference to review responsibilities and personnel assignments.
          2. Attendees: Authorized representatives of Owner, Contractor, Architect, and their consultants; Contractor’s superintendent; major subcontractors; suppliers; Town Officials as necessary, and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
          3. Agenda: Discuss items of significance that could affect progress, including the following:
             1. Tentative construction schedule.
             2. Phasing.
             3. Critical work sequencing and long-lead items.
             4. Designation of key personnel and their duties.
             5. Lines of communications.
             6. Procedures for processing field decisions and Change Orders.
             7. Procedures for RFIs.
             8. Procedures for testing and inspecting.
             9. Procedures for processing Applications for Payment.
             10. Distribution of the Contract Documents.
             11. Submittal procedures.
             12. Preparation of As-built documents.
             13. Use of the premises and existing building.
             14. Work restrictions.
             15. Working hours.
             16. Owner's occupancy requirements.
             17. Responsibility for temporary facilities and controls.
             18. Procedures for moisture and mold control.
             19. Procedures for disruptions and shutdowns.
             20. Construction waste management and recycling.
             21. Parking availability.
             22. Office, work, and storage areas.
             23. Equipment deliveries and priorities.
             24. First aid.
             25. Security.

aa. Progress cleaning.

* + - 1. Minutes: Contractor will record and distribute meeting minutes.
    1. Preinstallation Conferences: Conduct a preinstallation conference at Project site as requested by Owner.
       1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Design Professional(s) and Owner of scheduled meeting dates.
       2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
          1. Contract Documents.
          2. Options.
          3. Related RFIs.
          4. Related Change Orders.
          5. Purchases.
          6. Deliveries.
          7. Submittals.
          8. Review of mockups.
          9. Possible conflicts.
          10. Compatibility requirements.
          11. Time schedules.
          12. Weather limitations.
          13. Manufacturer's written instructions.
          14. Warranty requirements.
          15. Compatibility of materials.
          16. Acceptability of substrates.
          17. Temporary facilities and controls.
          18. Space and access limitations.
          19. Regulations of authorities having jurisdiction.
          20. Testing and inspecting requirements.
          21. Installation procedures.
          22. Coordination with other work.
          23. Required performance results.
          24. Protection of adjacent work.
          25. Protection of construction and personnel.
       3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
       4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
       5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
    2. Project Closeout Conference: Schedule and conduct a project closeout conference, at a time convenient to Owner and Design Professional(s), but no later than 60 days prior to the scheduled date of Substantial Completion.
       1. Conduct the conference to review requirements and responsibilities related to Project closeout.
       2. Attendees: Authorized representatives of Owner, Contractor**,** Design Professional(s), and their consultants; Contractor’s superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
       3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
          1. Preparation of As-built documents.
          2. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
          3. Submittal of written warranties.
          4. Requirements for preparing operations and maintenance data.
          5. Requirements for delivery of material samples, attic stock, and spare parts.
          6. Requirements for demonstration and training.
          7. Preparation of Contractor's punch list.
          8. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
          9. Submittal procedures.
          10. Coordination of separate contracts.
          11. Owner's partial occupancy requirements.
          12. Installation of Owner's furniture, fixtures, and equipment.
          13. Responsibility for removing temporary facilities and controls.
       4. Minutes: Contractor will record and distribute meeting minutes.
    3. Progress Meetings: Conduct progress meetings at weekly intervals.
       1. Coordinate dates of meetings with preparation of payment requests.
       2. Attendees: In addition to representatives of Owner and Design Professional(s), each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
       3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
          1. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's weekly updated construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

Review schedule for next period.

* + - * 1. Review present and future needs of each entity present, including the following:

Interface requirements.

Sequence of operations.

Resolution of coordination conflicts.

Status of submittals.

Deliveries.

Off-site fabrication.

Access.

Site utilization.

Temporary facilities and controls.

Progress cleaning.

Quality and work standards.

Status of correction of deficient items.

Field observations.

Status of RFIs.

Status of proposal requests.

Pending changes.

Status of Change Orders.

Pending claims and disputes.

Documentation of information for payment requests.

* + - 1. Minutes: Contractor will record and distribute the meeting minutes to each party present and to parties requiring information.
         1. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.
    1. Coordination Meetings: Contractor will conduct Project coordination meetings at weekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
       1. Attendees: In addition to representatives of Owner**,** and Design Professional(s), each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.
       2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
          1. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
          2. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
          3. Review present and future needs of each contractor present, including the following:

Interface requirements.

Sequence of operations.

Resolution of BIM component conflicts.

Status of submittals.

Deliveries.

Off-site fabrication.

Access.

Site utilization.

Temporary facilities and controls.

Work hours.

Hazards and risks.

Progress cleaning.

Quality and work standards.

Change Orders.

* + - 1. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

## END OF SECTION 01 3100

# SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
        1. Startup construction schedule.
        2. Contractor's construction schedule.
        3. Construction schedule updating reports.
        4. Daily construction reports.
        5. Anticipated Cost Reports
        6. Monthly Project Status Reports
        7. Material location reports.
        8. Site condition reports.
        9. Special reports.
     2. Related Requirements:
        1. Section 013300 "Submittal Procedures" for submitting schedules and reports.
        2. Section 014000 "Quality Requirements" for submitting a schedule of tests and inspections.
  3. DEFINITIONS
     1. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
        1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
        2. Predecessor Activity: An activity that precedes another activity in the network.
        3. Successor Activity: An activity that follows another activity in the network.
     2. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
     3. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
     4. Event: The starting or ending point of an activity.
     5. Float: The measure of leeway in starting and completing an activity.
        1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
        2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
        3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
  4. INFORMATIONAL SUBMITTALS
     1. Format for Submittals: Submit required submittals in the following format:
        1. Working electronic copy of schedule file, where indicated.
        2. PDF electronic file.
     2. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.
     3. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
        1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
        2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
        3. Total Float Report: List of all activities sorted in ascending order of total float.
        4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
     4. Construction Schedule Updating Reports: Submit weekly.
     5. Daily Construction Reports: Submit at weekly intervals.
     6. Anticipate Cost Reports: Submit Biweekly.
     7. Monthly Project Status Reports: Submit with Applications for Payment.
     8. Material Location Reports: Submit at weekly intervals.
     9. Site Condition Reports: Submit at time of discovery of differing conditions.
     10. Special Reports: Submit at time of unusual event.
     11. Qualification Data: For scheduling consultant.
  5. QUALITY ASSURANCE
     1. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Owner's request.
     2. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:
        1. Review software limitations and content and format for reports.
        2. Verify availability of qualified personnel needed to develop and update schedule.
        3. Discuss constraints, including phasing, area separations and partial Owner occupancy.
        4. Review delivery dates for Owner-furnished products.
        5. Review schedule for work of Owner's separate contracts.
        6. Review submittal requirements and procedures.
        7. Review time required for review of submittals and resubmittals.
        8. Review requirements for tests and inspections by independent testing and inspecting agencies.
        9. Review time required for Project closeout and Owner startup procedures**,** including commissioning activities.
        10. Review and finalize list of construction activities to be included in schedule.
        11. Review procedures for updating schedule.
  6. COORDINATION
     1. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.
        1. Secure time commitments for performing critical elements of the Work from entities involved.
        2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

* 1. CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL
     1. Time Frame: Extend schedule from date established for the Notice of Award to date of final completion.
        1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
     2. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:
        1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by Owner.
        2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
        3. Submittal Review Time: Include review and resubmittal times indicated in Section 013300 "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
        4. Startup and Testing Time: Include no fewer than 15 days for startup and testing.
        5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Design Professional's administrative procedures necessary for certification of Substantial Completion.
        6. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.
     3. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule and show how the sequence of the Work is affected.
        1. Phasing: Arrange list of activities on schedule by phase.
        2. Work under More Than One Contract: Include a separate activity for each contract.
        3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
        4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
        5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Section 011000 "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
        6. Work Restrictions: Show the effect of the following items on the schedule:
           1. Coordination with existing construction.
           2. Limitations of continued occupancies.
           3. Uninterruptible services.
           4. Partial occupancy before Substantial Completion.
           5. Use of premises restrictions.
           6. Provisions for future construction.
           7. Seasonal variations.
           8. Environmental control.
        7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
           1. Subcontract awards.
           2. Submittals.
           3. Purchases.
           4. Mockups.
           5. Fabrication.
           6. Sample testing.
           7. Deliveries.
           8. Installation.
           9. Tests and inspections.
           10. Adjusting.
           11. Curing.
           12. Building flush-out.
           13. Startup and placement into final use and operation.
        8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
           1. Structural completion.
           2. Temporary enclosure and space conditioning.
           3. Permanent space enclosure.
           4. Completion of mechanical installation.
           5. Completion of electrical installation.
           6. Substantial Completion.
     4. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
     5. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:
        1. Unresolved issues.
        2. Unanswered Requests for Information.
        3. Rejected or unreturned submittals.
        4. Notations on returned submittals.
        5. Pending modifications affecting the Work and Contract Time.
     6. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.
  2. STARTUP CONSTRUCTION SCHEDULE
     1. Bar-Chart Schedule: Submit startup, horizontal, bar-chart-type construction schedule within ten days of date established for the Notice of Award.
     2. Preparation: Indicate each significant construction activity separately. Identify first workday of each week with a continuous vertical line. Outline significant construction activities for first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities
     3. Provide weekly- 2 week look ahead of construction activities to be coordinated with Owner notification process to building occupants.
  3. CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)
     1. General: Prepare network diagrams using AON (activity-on-node) format.
     2. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.
        1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.
           1. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner's approval of the schedule.
        2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
        3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
        4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.
     3. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.
        1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
           1. Preparation and processing of submittals.
           2. Mobilization and demobilization.
           3. Purchase of materials.
           4. Delivery.
           5. Fabrication.
           6. Utility interruptions.
           7. Installation.
           8. Work by Owner that may affect or be affected by Contractor's activities.
           9. Testing and commissioning.
           10. Punch list and final completion.
           11. Activities occurring following final completion.
        2. 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.
        3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
        4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
           1. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
     4. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.
     5. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:
        1. Contractor or subcontractor and the Work or activity.
        2. Description of activity.
        3. Main events of activity.
        4. Immediate preceding and succeeding activities.
        5. Early and late start dates.
        6. Early and late finish dates.
        7. Activity duration in workdays.
        8. Total float or slack time.
        9. Average size of workforce.
     6. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
        1. Identification of activities that have changed.
        2. Changes in early and late start dates.
        3. Changes in early and late finish dates.
        4. Changes in activity durations in workdays.
        5. Changes in the critical path.
        6. Changes in total float or slack time.
        7. Changes in the Contract Time.
  4. REPORTS
     1. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
        1. List of subcontractors at Project site.
        2. List of separate contractors at Project site.
        3. Approximate count of personnel at Project site.
        4. Equipment at Project site.
        5. Material deliveries.
        6. High and low temperatures and general weather conditions, including presence of rain or snow.
        7. Accidents.
        8. Meetings and significant decisions.
        9. Unusual events (see special reports).
        10. Stoppages, delays, shortages, and losses.
        11. Meter readings and similar recordings.
        12. Emergency procedures.
        13. Orders and requests of authorities having jurisdiction.
        14. Change Orders received and implemented.
        15. Interim Directed Changes received and implemented.
        16. Services connected and disconnected.
        17. Equipment or system tests and startups.
        18. Partial completions and occupancies.
        19. Substantial Completions authorized.
     2. Anticipated Cost Report (ACR): Prepare a bi-weekly anticipated cost report including the following information:
        1. Project budget, projected, pending and authorized cost events, cost to date, projected cost to complete, allowances and contingency remaining
     3. Monthly Project Status Reports: Prepare a monthly project status report with the following sections that summarize information pertaining to each topic:
        1. Critical Issues and Concerns
        2. Executive Summary
        3. Procurement Status
        4. Project Schedule
        5. Project Financial Status
           1. Critical Financial Issues
           2. Financial Summary (ACR)
           3. Projected Quarterly cost to complete
        6. Open RFIs/Submittals/Design Issues
        7. Safety Issues
        8. Project Closeout Status
        9. Project Photographs
     4. 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. Indicate the following categories for stored materials:
        1. Material stored prior to previous report and remaining in storage.
        2. Material stored prior to previous report and since removed from storage and installed.
        3. Material stored following previous report and remaining in storage.
     5. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.
  5. SPECIAL REPORTS
     1. General: Submit special reports directly to Owner within Five day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.
     2. 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 Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

* 1. CONTRACTOR'S CONSTRUCTION SCHEDULE
     1. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
        1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
        2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.
     2. Contractor's Construction Schedule Updating: At weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.
        1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
        2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
        3. As the Work progresses, indicate final completion percentage for each activity.
     3. Distribution: Distribute copies of approved schedule to Design Professional(s) and Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
        1. Post copies in Project meeting rooms and temporary field offices.
        2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

## END OF SECTION 01 3200

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# SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 – GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for the following:
        1. Preconstruction photographs.
        2. Periodic construction photographs.
        3. Final completion construction photographs.
     2. Related Requirements:
        1. Section 012200 "Unit Prices" for procedures for unit prices for extra photographs.
        2. Section 013300 "Submittal Procedures" for submitting photographic documentation.
        3. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.
        4. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
  3. INFORMATIONAL SUBMITTALS
     1. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
     2. Digital Photographs: Submit image files within three days of taking photographs.
        1. Digital Camera: Minimum sensor resolution of 8 megapixels.
        2. Format: Minimum 3200 by 2400 pixels, in unaltered original files, with same aspect ratio as the sensor, uncropped, date and time stamped, in folder named by date of photograph, accompanied by key plan file.
        3. Identification: Name each image with an abbreviation of the project name, a unique sequential identifier keyed to an accompanying key plan and a date and time stamp.
     3. Construction Photographs: Submit digital files of each photographic view within seven days of taking photographs to the Project Website.

PART 2 - PRODUCTS

* 1. PHOTOGRAPHIC MEDIA
     1. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

* 1. CONSTRUCTION PHOTOGRAPHS
     1. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
        1. Maintain key plan with each set of construction photographs that identifies each photographic location.
     2. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
        1. Date and Time: Include date and time in file name for each image.
        2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Design Professional(s).
     3. Preconstruction Photographs: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Design Professional.
        1. Take a minimum of 20 photographs of existing building either to accurately record physical conditions at start of construction.
        2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.
     4. Periodic Construction Photographs: Take a minimum of 20 photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
     5. Design Professional or Owner Directed Construction Photographs: From time to time, Design Professional or Owner will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.
     6. Final Completion Construction Photographs: Take a minimum of 20 color photographs after date of Substantial Completion for submission as project record documents. Design Professional or Owner will inform photographer of desired vantage points.
        1. Do not include date stamp.
     7. Additional Photographs: Design Professional or Owner may request photographs in addition to periodic photographs specified.
        1. Three days' notice will be given, where feasible.
        2. In emergency situations, take additional photographs within 24 hours of request.
        3. Circumstances that could require additional photographs include, but are not limited to, the following:
           1. Immediate follow-up when on-site events result in construction damage or losses.
           2. Photographs to be taken at fabrication locations away from Project site. These photographs are not subject to unit prices or unit-cost allowances.
           3. Substantial Completion of a major phase or component of the Work.
           4. Extra record photographs at time of final acceptance.

## END OF SECTION 01 3233

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# SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
     2. Related Requirements:
        1. Section 013200 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.
        2. Section 017700 “Closeout Procedures” for submitting required warranties and documents for Substantial Completion and Final Completion
        3. Section 017823 "Operation and Maintenance Data" for submitting operation and maintenance manuals.
        4. Section 017839 "Project As-built and Record Documents" for submitting As-built red-lined Contract Documents, As-built red-lined Specifications, Trade As-builts and Record Product Data.
        5. Section 017900 "Demonstration and Training" for submitting video recordings of demonstration of equipment and training of Owner's personnel.
  3. DEFINITIONS
     1. Action Submittals: Written and graphic information and physical samples that require Design Professional's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
     2. Informational Submittals: Written and graphic information and physical samples that do not require Design Professional's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."
     3. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.
  4. SUBMITTAL SCHEDULE
     1. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Design Professional(s) and additional time for handling and reviewing submittals required by those corrections. Include all required documents listed in Section 017839 "Project Record As-built and Record Documents," Section 017700 “Closeout Procedures,” and the Project Handover Matrix in the Submittal Schedule.
        1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
        2. Initial Submittal: Submit concurrently with startup construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
        3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
           1. Submit revised submittal schedule to reflect changes in current status and timing for submittals.
        4. Format: Arrange the following information in a tabular format:
           1. Scheduled date for first submittal.
           2. Specification Section number and title.
           3. Submittal category: Action; informational.
           4. Name of subcontractor.
           5. Description of the Work covered.
           6. Scheduled date for Design Professional's final release or approval.
           7. Scheduled date of fabrication.
           8. Scheduled dates for purchasing.
           9. Scheduled dates for installation.
           10. Activity or event number.
  5. SUBMITTAL ADMINISTRATIVE REQUIREMENTS
     1. Design Professional's Digital Data Files: Electronic digital data files of the Contract Drawings will be provided by Design Professional(s) for Contractor's use in preparing submittals.
        1. Design Professional(s) will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings.
           1. Design Professional(s) makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.
           2. Digital Drawing Software Program: The Contract Drawings are available in AutoCAD format.
           3. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Design Professional(s).
           4. The following digital data files will by furnished for each appropriate discipline:

Floor plans.

Reflected ceiling plans.

* + 1. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
       1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
       2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
       3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
       4. 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. Design Professional(s) reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
    2. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Design Professional's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
       1. Initial Review: Allow 10 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Design Professional will advise Contractor when a submittal being processed must be delayed for coordination.
       2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
       3. Resubmittal Review: Allow 10 days for review of each resubmittal.
       4. Sequential Review: Where sequential review of submittals by Design Professional's consultants, Owner, or other parties is indicated, allow 15 days for initial review of each submittal.
       5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Design Professional and to Design Professional's consultants, allow 10 days for review of each submittal. Submittal will be returned to Contractor, through Design Professional.
    3. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
       1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form.
       2. Name file with submittal number or other unique identifier, including revision identifier.
          1. File name shall use Specification Section number followed by a decimal point and then a sequential number and a brief indication of the contents of the submittal (e.g., 061000.01-Wood Framing). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A-Wood Framing).
       3. Include an electronic stamp indicating that the Contractor has reviewed the submittal for completeness and general compliance with the Contract Documents.
       4. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Design Professional.
       5. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner**,** containing the following information:
          1. Project name.
          2. Date.
          3. Name and address of Design Professional(s).
          4. Name of Contractor.
          5. Name of firm or entity that prepared submittal.
          6. Names of subcontractor, manufacturer, and supplier.
          7. Category and type of submittal.
          8. Submittal purpose and description.
          9. Specification Section number and title.
          10. Specification paragraph number or drawing designation and generic name for each of multiple items.
          11. Drawing number and detail references, as appropriate.
          12. Location(s) where product is to be installed, as appropriate.
          13. Related physical samples submitted directly.
          14. Indication of full or partial submittal.
          15. Transmittal number, numbered consecutively.
          16. Submittal and transmittal distribution record.
          17. Other necessary identification.
          18. Remarks.
    4. Options: Identify options requiring selection by Design Professional(s).
    5. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Design Professional(s) on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same identification information as related submittal.
    6. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
       1. Note date and content of previous submittal.
       2. Note date and content of revision in label or title block and clearly indicate extent of revision.
       3. Resubmit submittals until they are marked with approval notation from Design Professional's action stamp.
       4. Do not add additional scope to a resubmittal. Resubmittals shall only contain revisions to drawings previously submitted unless additional information is requested in the Design Professional’s review of the submittal.
    7. 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.
    8. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Design Professional's action stamp.

PART 2 - PRODUCTS

* 1. SUBMITTAL PROCEDURES
     1. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
        1. Post electronic submittals as PDF electronic files directly to Project Web site specifically established for Project.
           1. Design Professional, will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
        2. Submit electronic submittals via email as PDF electronic files.
           1. Design Professional, will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
           2. Provide a digital signature with digital certificate on electronically submitted certificates and certifications where indicated.
     2. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
        1. If information must be specially prepared for submittal because standard published data are not suitable for use, submit as Shop Drawings, not as Product Data.
        2. Mark each copy of each submittal to show which products and options are applicable.
        3. Include the following information, as applicable:
           1. Manufacturer's catalog cuts.
           2. Manufacturer's product specifications.
           3. Standard color charts.
           4. Statement of compliance with specified referenced standards.
           5. Testing by recognized testing agency.
           6. Application of testing agency labels and seals.
           7. Notation of coordination requirements.
           8. Availability and delivery time information.
        4. For equipment, include the following in addition to the above, as applicable:
           1. Wiring diagrams showing factory-installed wiring.
           2. Printed performance curves.
           3. Operational range diagrams.
           4. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
        5. Submit Product Data before or concurrent with Samples.
        6. Submit Product Data in the following format:
           1. PDF electronic file.
     3. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal based on Design Professional's digital data drawing files is otherwise permitted.
        1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
           1. Identification of products.
           2. Schedules.
           3. Compliance with specified standards.
           4. Notation of coordination requirements.
           5. Notation of dimensions established by field measurement.
           6. Relationship and attachment to adjoining construction clearly indicated.
           7. Seal and signature of professional engineer if specified.
        2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm), but no larger than 30 by 42 inches (750 by 1067 mm).
        3. Submit Shop Drawings in the following format:
           1. PDF electronic file.
        4. BIM & CAD File Incorporation When BIM or 3D CAD are used to generate submittals or for coordination they shall follow the requirements in Regeneron’s Digital Deliverable Requirements, including the requirement that the 3D file follow Regeneron’s standards for the origin point for the files. See Section 017839 “Project As-built and Record Documents” and Exhibit G: “Project Turnover Checklist” for additional requirements regarding Trade As-builts.
     4. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
        1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
        2. Identification: Attach label on unexposed side of Samples that includes the following:
           1. Generic description of Sample.
           2. Product name and name of manufacturer.
           3. Sample source.
           4. Number and title of applicable Specification Section.
           5. Specification paragraph number and generic name of each item.
        3. For projects where electronic submittals are required, provide corresponding electronic submittal of Sample transmittal, digital image file illustrating Sample characteristics, and identification information for record.
        4. Disposition: Maintain sets of approved Samples at Project site, available for quality- control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
           1. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
           2. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
        5. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
           1. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Design Professional will return submittal with options selected.
        6. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
           1. Number of Samples: Submit three sets of Samples. Design Professional will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a project record sample.

Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.

If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

* + 1. Product Schedule: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
       1. Type of product. Include unique identifier for each product indicated in the Contract Documents or assigned by Contractor if none is indicated.
       2. Manufacturer and product name, and model number if applicable.
       3. Number and name of room or space.
       4. Location within room or space.
       5. Submit product schedule in the following format:
          1. PDF electronic file.
    2. Coordination Drawing Submittals: Comply with requirements specified in Section 013100 "Project Management and Coordination."
    3. Contractor's Construction Schedule: Comply with requirements specified in Section 013200 "Construction Progress Documentation."
    4. Test and Inspection Reports and Schedule of Tests and Inspections Submittals: Comply with requirements specified in Section 014000 "Quality Requirements."
    5. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Section 017700 "Closeout Procedures."
    6. Maintenance Data: Comply with requirements specified in Section 017823 "Operation and Maintenance Data."
    7. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Design Professionals and owners, and other information specified.
    8. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
    9. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
    10. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
    11. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
    12. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
    13. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
    14. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
    15. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
        1. Name of evaluation organization.
        2. Date of evaluation.
        3. Time period when report is in effect.
        4. Product and manufacturers' names.
        5. Description of product.
        6. Test procedures and results.
        7. Limitations of use.
    16. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
    17. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
    18. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
    19. Design Data: Prepare and submit written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
  1. DELEGATED-DESIGN SERVICES
     1. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
        1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Design Professional(s).
     2. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF electronic file paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
        1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.
     3. BIM File Incorporation: (Not Used)

PART 3 - EXECUTION

* 1. CONTRACTOR'S REVIEW
     1. Action and Informational Submittals: Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Design Professional(s).
     2. Project Closeout and Maintenance Material Submittals: See requirements in Section 017700 "Closeout Procedures."
     3. 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 Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  2. DESIGN PROFESSIONAL'S ACTION
     1. Action Submittals: Design Professional will review each submittal, make marks to indicate corrections or revisions required, and return it. Design Professional will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action.
     2. Informational Submittals: Design Professional will review each submittal and will not return it, or will return it if it does not comply with requirements. Design Professional will forward each submittal to appropriate party.
     3. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Design Professional.
     4. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
     5. Submittals not required by the Contract Documents may be returned by the Design Professional without action.

## END OF SECTION 01 3300

# SECTION 01 4000 - QUALITY REQUIREMENTS

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for quality assurance and quality control.
     2. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
        1. Specific quality-assurance and -control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
        2. Specified tests, inspections, and related actions do not limit Contractor's other quality- assurance and -control procedures that facilitate compliance with the Contract Document requirements.
        3. Requirements for Contractor to provide quality-assurance and -control services required by Design Professional(s), Owner, Commissioning Authority, or authorities having jurisdiction are not limited by provisions of this Section.
        4. Specific test and inspection requirements are not specified in this Section.
     3. Related Requirements:
        1. Section 012100 "Allowances" for testing and inspecting allowances.
  3. DEFINITIONS
     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.
     2. Quality-Control Services: 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 Design Professional(s).
     3. Mockups: Full-size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance with specified

installation tolerances. Mockups are not Samples. Unless otherwise indicated, approved mockups establish the standard by which the Work will be judged.

* + 1. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
    2. 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 authorities having jurisdiction, to establish product performance and compliance with specified requirements.
    3. Source Quality-Control Testing: Tests and inspections that are performed at the source, e.g., plant, mill, factory, or shop.
    4. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
    5. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
    6. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.
       1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).
    7. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
  1. CONFLICTING REQUIREMENTS
     1. Referenced Standards: 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 conflicting requirements that are different, but apparently equal, to Design Professional for a decision before proceeding.
     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 Design Professional for a decision before proceeding.

* 1. ACTION SUBMITTALS
     1. Shop Drawings: For mockups, provide plans, sections, and elevations, indicating materials and size of mockup construction.
        1. Indicate manufacturer and model number of individual components.
        2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.
  2. INFORMATIONAL SUBMITTALS
     1. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
     2. Qualification Data : For Contractor's quality-control personnel.
     3. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article 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.
     4. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
        1. Specification Section number and title.
        2. Entity responsible for performing tests and inspections.
        3. Description of test and inspection.
        4. Identification of applicable standards.
        5. Identification of test and inspection methods.
        6. Number of tests and inspections required.
        7. Time schedule or time span for tests and inspections.
        8. Requirements for obtaining samples.
        9. Unique characteristics of each quality-control service.
  3. CONTRACTOR'S QUALITY-CONTROL PLAN
     1. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice of Award, and not less than five days prior to preconstruction conference. Submit in format acceptable to Owner and Design Professional. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's construction schedule.
     2. Quality-Control Personnel Qualifications: Engage qualified full-time personnel experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
     3. Project quality-control manager may also serve as Project Superintendent. Project Superintendent is responsible for quality control. Contractor is responsible to submit a request in writing if they would like to provide alternate personnel to provide full time quality services
     4. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
     5. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
        1. Contractor-performed tests and inspections including subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections.
        2. Special inspections required by authorities having jurisdiction and indicated on the "Statement of Special Inspections."
        3. Owner-performed tests and inspections indicated in the Contract Documents, including tests and inspections indicated to be performed by the Commissioning Authority.
     6. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
     7. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Design Professional has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.
  4. REPORTS AND DOCUMENTS
     1. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
        1. Date of issue.
        2. Project title and number.
        3. Name, address, and telephone number of testing agency.
        4. Dates and locations of samples and tests or inspections.
        5. Names of individuals making tests and inspections.
        6. Description of the Work and test and inspection method.
        7. Identification of product and Specification Section.
        8. Complete test or inspection data.
        9. Test and inspection results and an interpretation of test results.
        10. Record of temperature and weather conditions at time of sample taking and testing and inspecting.
        11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
        12. Name and signature of laboratory inspector.
        13. Recommendations on retesting and reinspecting.
     2. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
        1. Name, address, and telephone number of technical representative making report.
        2. Statement on condition of substrates and their acceptability for installation of product.
        3. Statement that products at Project site comply with requirements.
        4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
        5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
        6. Statement whether conditions, products, and installation will affect warranty.
        7. Other required items indicated in individual Specification Sections.
     3. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
        1. Name, address, and telephone number of factory-authorized service representative making report.
        2. Statement that equipment complies with requirements.
        3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
        4. Statement whether conditions, products, and installation will affect warranty.
        5. Other required items indicated in individual Specification Sections.
     4. Permits, Licenses, and Certificates: For Owner'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.
  5. QUALITY ASSURANCE
     1. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
     2. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
     3. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
     4. 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.
     5. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
     6. Specialists: Certain Specification Sections 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. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
     7. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
        1. NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
        2. NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
     8. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
     9. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
     10. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements for performance and test methods, comply with the following:
         1. Contractor responsibilities include the following:
            1. Provide test specimens representative of proposed products and construction.
            2. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
            3. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
            4. Build site-assembled test assemblies and mockups using installers who will perform same tasks for Project.
            5. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
            6. When testing is complete, remove test specimens, assemblies, and mockups, and laboratory mockups; do not reuse products on Project.
         2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Design Professional(s) with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
     11. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:
         1. Build mockups in location and of size indicated or, if not indicated, as directed by Design Professional(s).
         2. Notify Design Professional(s) seven days in advance of dates and times when mockups will be constructed.
         3. Employ supervisory personnel who will oversee mockup construction. Employ workers that will be employed during the construction at Project.
         4. Demonstrate the proposed range of aesthetic effects and workmanship.
         5. Obtain Design Professional's approval of mockups before starting work, fabrication, or construction.
            1. Allow seven days for initial review and each re-review of each mockup.
         6. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
         7. Demolish and remove mockups when directed unless otherwise indicated.
     12. Integrated Exterior Mockups: Construct integrated exterior mockup as indicated on Drawings. Coordinate installation of exterior envelope materials and products for which mockups are required in individual Specification Sections, along with supporting materials.
  6. QUALITY CONTROL
     1. Owner Responsibilities: Where quality-control services are indicated as Owner's responsibility, Owner will engage a qualified testing agency to perform these services.
        1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of types of testing and inspecting they are engaged to perform.
        2. Payment for these services will be made from testing and inspecting allowances, as authorized by Change Orders.
        3. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.
     2. Contractor Responsibilities: Tests and inspections listed in other Sections that are not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities required to verify that the Work complies with requirements, whether specified or not.
        1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
        2. GC/Contractor will have a quality control program in place to review the installation and serviceability of all field devices and valves.
        3. Documentation will be submitted throughout the project as devices and valves are installed that certifies these devices and valves are serviceable.
        4. As indicated in specification sections, a 24 inch service corridor will be coordinated with all trades to allow this access.
        5. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
           1. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.
        6. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
        7. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
        8. Testing and inspecting requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
        9. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
     3. 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 013300 "Submittal Procedures."
     4. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
     5. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
     6. Testing Agency Responsibilities: Cooperate with Design Professional(s), Commissioning Authority and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
        1. Notify Design Professional(s), Commissioning Authority, and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
        2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
        3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
        4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality- control service through Contractor.
        5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
        6. Do not perform any duties of Contractor.
     7. Associated Services: 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. Access to the Work.
        2. Incidental labor and facilities necessary to facilitate tests and inspections.
        3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
        4. Facilities for storage and field curing of test samples.
        5. Delivery of samples to testing agencies.
        6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
        7. Security and protection for samples and for testing and inspecting equipment at Project site.
     8. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
        1. Schedule times for tests, inspections, obtaining samples, and similar activities.
     9. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality- control services required by the Contract Documents as a component of Contractor's quality- control plan. Coordinate and submit concurrently with Contractor's construction schedule. Update as the Work progresses.
        1. Distribution: Distribute schedule to Owner, Design Professional(s), Commissioning Authority testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.
  7. SPECIAL TESTS AND INSPECTIONS
     1. Special Tests and Inspections: Owner will engage a qualified testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

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| --- | --- | --- |
| 3.1 |  | ACCEPTABLE TESTING AGENCIES (Not used) |
| 3.2 | A. | TEST AND INSPECTION LOG  Test and Inspection Log: Prepare a record of tests and inspections. Include the following: |

* + - 1. Date test or inspection was conducted.
      2. Description of the Work tested or inspected.
      3. Date test or inspection results were transmitted to Design Professional(s).
      4. Identification of testing agency or special inspector conducting test or inspection.
    1. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Design Professional's reference during normal working hours.
  1. REPAIR AND PROTECTION
     1. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
        1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
     2. Protect construction exposed by or for quality-control service activities.
     3. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

## END OF SECTION 01 4000

# SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
     2. Related Requirements:
        1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.
  3. USE CHARGES
     1. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Design Professional(s), occupants of Project, testing agencies, and authorities having jurisdiction.
     2. Sewer Service: Owner will pay sewer-service use charges for sewer usage by all entities for construction operations.
     3. Water Service: Owner will pay water-service use charges for water used by all entities for construction operations.
     4. Electric Power Service: Owner will pay electric-power-service use charges for electricity used by all entities for construction operations.
     5. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
     6. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
     7. Sewer, Water, and Electric Power Service: Use charges are specified in Section 011200 "Multiple Contract Summary."
     8. Internet Service: Contractor shall provide Internet service as outlined in General Conditions which shall be fully independent of all Regeneron networks.
  4. INFORMATIONAL SUBMITTALS
     1. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
     2. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program. Owner will provide Fire Watch for the Work of this Contract.
     3. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.
        1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
        2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
        3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
     4. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Identify further options if proposed measures are later determined to be inadequate. Include the following:
        1. Locations of dust-control partitions at each phase of work.
        2. HVAC system isolation schematic drawing.
        3. Location of proposed air-filtration system discharge.
        4. Waste handling procedures.
        5. Other dust-control measures.
  5. QUALITY ASSURANCE
     1. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
     2. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.
     3. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.
  6. PROJECT CONDITIONS
     1. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

* 1. MATERIALS
     1. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.8-mm-) thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized-steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts , with galvanized barbed-wire top strand.
     2. Polyethylene Sheet: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84 and passing NFPA 701 Test Method 2.
     3. Dust-Control Adhesive-Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 mm).
     4. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.
  2. TEMPORARY FACILITIES
     1. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.
     2. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Design Professional(s), and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:
        1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
        2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- (1.2-m-) square tack and marker boards.
        3. Drinking water and private toilet.
        4. Coffee machine and supplies.
        5. Lighting fixtures capable of maintaining average illumination of 20 fc (215 lx) at desk height.
     3. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.
        1. Store combustible materials apart from building.
  3. EQUIPMENT
     1. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
     2. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
        1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
        2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
        3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction and clean HVAC system as required in Section 017700 "Closeout Procedures".
     3. Air-Filtration Units: Primary and secondary HEPA-filter-equipped portable units with four-stage filtration. Provide single switch for emergency shutoff. Configure to run continuously.

PART 3 - EXECUTION

* 1. INSTALLATION, GENERAL
     1. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
        1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."
     2. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.
  2. TEMPORARY UTILITY INSTALLATION
     1. General: Install temporary service or connect to existing service.
        1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
     2. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
     3. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
     4. Water Service: Connect to Owner's existing water service facilities. Clean and maintain water service facilities in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
     5. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
        1. Toilets: Use of Owner's existing toilet facilities will not be permitted.
     6. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
     7. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
        1. Prior to commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
           1. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
           2. Provide balancing for existing HVAC systems, if necessary, to ensure proper functioning of the HVAC systems serving areas in the building outside of the Work Area during construction.
           3. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
           4. Provide drawings, and a sequence of operations describing the strategy for isolating the Work Area from the remainder of the facility for review by the Design Professionals and the owner 21 days prior to any construction activities that will cause dust, fumes and odors.
           5. Provide calculations demonstrating that the HEPA-equipped air-filtrations units will be adequate to maintain negative air pressure to prevent dust, other airborne particles, fumes and odors from leaving the work area.
        2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust- producing equipment. Isolate limited work within occupied areas using portable dust- containment devices.
        3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter- equipped vacuum equipment.
     8. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
        1. Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.
     9. Electric Power Service: Connect to Owner's existing electric power service. Maintain equipment in a condition acceptable to Owner.
     10. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
         1. Install electric power service overhead unless otherwise indicated.
         2. Connect temporary service to Owner's existing power source, as directed by Owner.
     11. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
         1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
         2. Install lighting for Project identification sign.
     12. Telephone Service: Provide temporary telephone service in common-use facilities for use by all construction personnel. Install one telephone line(s) for each field office.
         1. Provide additional telephone lines for the following:
            1. Provide a dedicated telephone line in each field office.
         2. At each telephone, post a list of important telephone numbers.
            1. Police and fire departments.
            2. Ambulance service.
            3. Contractor's home office.
            4. Contractor's emergency after-hours telephone number.
            5. Architect's office.
            6. Engineers' offices.
            7. Owner's office.
            8. Principal subcontractors' field and home offices.
         3. Provide superintendent with cellular telephone or portable two-way radio for use when away from field office.
  3. SUPPORT FACILITIES INSTALLATION
     1. General: Comply with the following:
        1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet (9 m) of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
        2. Maintain support facilities until Owner schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
     2. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings.
        1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
     3. Temporary Use of Permanent Roads and Paved Areas: Not Used
     4. Traffic Controls: Comply with requirements of authorities having jurisdiction.
        1. Protect existing site improvements to remain including curbs, pavement, and utilities.
        2. Maintain access for fire-fighting equipment and access to fire hydrants.
     5. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
        1. Parking will not be permitted on Drive(s) surrounding, or adjacent to new construction. Do not block or use building trash dumpsters.
        2. Brief and temporary stopping will be permitted to load or unload equipment or materials used in the construction process. Do Not under any circumstances, leave any vehicle unattended with motor running, or with ignition key in-place.
        3. Parking of vehicles on lawns, parkways, walks, etc. outside of construction area will not be permitted.
        4. All traffic control subject to approval by the Owner’s Security personnel.
     6. Dewatering Facilities and Drains: Not Used.
     7. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
        1. Identification Signs: Provide Project identification signs as indicated on Drawings.
        2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
           1. Provide temporary, directional signs for construction personnel and visitors.
        3. Maintain and touchup signs so they are legible at all times.
     8. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Demolition and Construction Waste Management and Disposal”
     9. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."
     10. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
         1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
     11. Existing Elevator Use: Use of Owner's existing elevators will be permitted per Section 011000 "Summary."
     12. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.
  4. SECURITY AND PROTECTION FACILITIES INSTALLATION
     1. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
     2. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
        1. Comply with work restrictions specified in Section 011000 "Summary."
     3. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
        1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
        2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
        3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
        4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
     4. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around staging areas to prevent flooding by runoff of stormwater from heavy rains.
     5. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
     6. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.
     7. Site Enclosure Fence: See Section 01 0550 for requirements.
     8. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.
     9. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
     10. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
     11. Covered Walkway: Erect protective, covered walkway for passage of individuals through or adjacent to Project site. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction and requirements indicated on Drawings.
         1. Construct covered walkways using scaffold or shoring framing.
         2. Provide overhead decking, protective enclosure walls, handrails, barricades, warning signs, exit signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage.
         3. Paint and maintain appearance of walkway for duration of the Work.
     12. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
         1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.
     13. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner and tenants from fumes and noise.
         1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
            1. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
         2. Where fire-resistance-rated temporary partitions are indicated or are required by authorities having jurisdiction, construct partitions according to the rated assemblies.
         3. Insulate partitions to control noise transmission to occupied areas.
         4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
         5. Protect air-handling equipment.
         6. Provide walk-off mats at each entrance through temporary partition.
     14. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire-prevention program.
         1. Prohibit smoking in construction areas.
         2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
         3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
         4. Provide temporary standpipes and hoses for fire protection if required. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.
  5. MOISTURE AND MOLD CONTROL
     1. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.
     2. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
        1. Protect porous materials from water damage.
        2. Protect stored and installed material from flowing or standing water.
        3. Keep porous and organic materials from coming into prolonged contact with concrete.
        4. Remove standing water from decks.
        5. Keep deck openings covered or dammed.
     3. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
        1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
        2. Keep interior spaces reasonably clean and protected from water damage.
        3. Periodically collect and remove waste containing cellulose or other organic matter.
        4. Discard or replace water-damaged material.
        5. Do not install material that is wet.
        6. Discard, replace, or clean stored or installed material that begins to grow mold.
        7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.
     4. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
        1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
        2. Use permanent HVAC system to control humidity.
        3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
           1. Hygroscopic materials that may support mold growth, including wood and gypsum- based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
           2. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Design Professional and Owner.
           3. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.
  6. OPERATION, TERMINATION, AND REMOVAL
     1. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
     2. Maintenance: Maintain facilities in good operating condition until removal.
        1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
     3. Operate Project-identification-sign lighting daily from dusk until 12:00 midnight.
     4. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
     5. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
        1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
        2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
        3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

## END OF SECTION 01 5000

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# SECTION 01 5050 - CONSTRUCTION FENCING / COVERED WALKWAYS

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes requirements for construction fencing and related requirements.
     2. Fencing Design Requirements:
        1. Construction fencing in and around staging areas and entrances must be erected before any construction work, excavation or other site preparation begins, including repair to existing infrastructure. Design of all construction fencing must meet current OSHA standards. Two weeks minimum notice is to be provided to Facilities Management before any construction fencing erected.
        2. Fencing needs to be installed to prevent access from the general public to any construction sites/areas.
        3. Placement of any fencing needs to respect the surrounding area and acknowledge the presence of: local environmental conditions – access or pathways, stairs, trees or vegetation, weather, equipment, working inside or outside etc. Placement also needs to recognize the difficulties that individuals with sight impairment face and not place them in danger through unexpected changes in travel routes or placement of obstacles. Placement of any construction fencing is to be reviewed by the Owner to ensure compliance with “Interim Life Safety Measures” protocols.
        4. The duration of project length will also determine the type of protective barrier to be put in place. When fencing is required, it will surround the entire construction activity and be kept in place throughout the construction activity and not removed until the need has ceased and the area made safe.
        5. Under special circumstances custom designed fencing, graphics may be installed around a major construction project. This may include temporary walkways. Any graphics material will be at the expense of the Contractor and be coordinated through the Owner should the need occur.
        6. Where required, warning lights (i.e. orange flashing lights) may be required for safety reasons. Placement to be in accordance with OSHA standards.
  3. INFORMATIONAL SUBMITTALS
     1. Site Plan: The location of any construction fencing or temporary walkways needs to be reviewed with the Owner a minimum of three weeks prior to its installation. Provide site logistic plans

For each phase of construction showing the extent of fencing and any access points within the fencing, including hydrant and fire command points.

PART 2 - PRODUCTS

* 1. MATERIALS
     1. Construction Fencing may be one of two type of fencing, a) Solid construction fencing and b) Chain link fencing backed by wind screens.
        1. Temporary Fence Panels (installed for up to 5 days).
           1. Dependent upon the need for protection, construction fencing can be 48” or 60” high. It is to be constructed of knitted polyethylene barrier fencing in green. The fence posts need to be suitable for carrying an impact load and each fence post is to be capped for safety purposes. This is only acceptable for short/temporary periods not exceeding five working days duration. Adjacent temporary panels to be secured with hardwire or zip ties located at the inner face of the fencing.
           2. It is not acceptable to place “construction tape” or hazard cones around excavations, construction areas etc., a more rigid method of protection is required. For minor construction, maintenance or repair jobs that pose low risk not exceeding four hour’s in duration, mobile barricades etc. may be used as long as they are removed at the end of the shift. Beyond this duration, suitable construction fencing must be used.
        2. Permanent Fence Panels (installed 5 days or more).
           1. Chain linked fencing, must be a minimum 72” high unless otherwise approved and be in accordance with OSHA requirements and the relevant local codes. Fencing will include a top and bottom rail. The chain link fence is to be made of galvanized steel and suitable for its intended purpose. The wind screen is to be constructed of knitted polyethylene barrier fencing in green securely fixed to the inside face of the fencing. No twisted wire is to protrude on the exterior side of the fence. Any screening that is torn or ripped will be replaced at the contractor’s expense. No tears or rips greater than 2” in any dimension will be allowed. No visible gaps in the fencing are allowed, including between panels or under them. Gates must close tightly with no gaps in or around them.
     2. The following materials are not acceptable as fencing material: chicken wire, barbwire, razor, single strand wire, snow fencing or welded fabric.
     3. For site access control, openings in the fence will be secured with a gate(s) and chain with a series of padlocks to allow contractor access.
     4. Where covered walkways are required for pedestrian safety, these will be designed to OSHA standards. The location is to be reviewed with the Owner a minimum of three weeks prior to placement.
     5. Where moveable fencing used, this will be secured by sandbagged stands. Sandbags will be maintained intact without tears or holes and positioned on the interior side of construction fence.
     6. Where dumpsters are free standing and not within a construction site they will be surrounded by screened temporary construction fencing 72” high, meeting all of the requirements listed in this document.
     7. Each side of fenced area to be signed “Authorized Personnel Only”. Signage to be in keeping with OSHA standards. For long runs of fencing, multiple signs may be installed at not less than 24’ on centers.
     8. Tree Protection.

a. Tree protection can be as under Temporary Fence Panels or wood studs 6”x2”x6’ high wired together with no protruding wire twists and removed at the end of activity and landscape repaired.

PART 3 - EXECUTION

* 1. INSTALLATION, GENERAL
     1. The Contractor is to apply for any relevant permit required for the placement of any protective fencing.
     2. The Contractor is responsible for the removal and site cleanup or repair from any protective fencing once the need has ceased.
     3. The Contractor is responsible for hiring a suitably qualified Sub Contractor experienced in the installation of construction fencing and related materials and aware of the field conditions for each installation.
     4. The Contractor is to ensure that all construction fencing and screening is correctly anchored in place, with a special review procedure in place when excessive/high winds are anticipated. Any corrective measures are to be made at the Contractor’s expense. The contractor is to inform Owner in a timely manner that this action has taken place.
     5. The Owner, at its discretion, may place informative signage on a construction fence. This will be coordinated through the Owner. If a Contractor wishes to place signage on the construction fencing, it has to be reviewed by the Owner.

## END OF SECTION 01 5050

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# SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor.
     2. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.
     3. Related Requirements:
        1. Section 012100 "Allowances" for products selected under an allowance.
        2. Section 012300 "Alternates" for products selected under an alternate.
        3. Section 012500 "Substitution Procedures" for requests for substitutions.
  3. DEFINITIONS
     1. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
        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.
        2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
        3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
     2. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.
  4. ACTION SUBMITTALS
     1. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
        1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
        2. Design Professional's Action: If necessary, Design Professional will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Design Professional will notify Contractor of approval or rejection of proposed comparable product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
           1. Form of Approval: As specified in Section 013300 "Submittal Procedures."
           2. Use product specified if Design Professional does not issue a decision on use of a comparable product request within time allocated.
     2. Basis-of-Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures." Show compliance with requirements.
  5. QUALITY ASSURANCE
     1. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
        1. Each contractor shall be responsible for ensuring that all products are compatible with each other.
        2. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
        3. If a dispute arises between contractors over concurrently selectable but incompatible products, Design Professional will determine which products shall be used.
  6. PRODUCT DELIVERY, STORAGE, AND HANDLING
     1. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.
     2. Delivery and Handling:
        1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
        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.
        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.
        4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.
     3. Storage:
        1. Store products to allow for inspection and measurement of quantity or counting of units.
        2. Store materials in a manner that will not endanger Project structure.
        3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
        4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
        5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
        6. Protect stored products from damage and liquids from freezing.
        7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.
  7. PRODUCT WARRANTIES
     1. Contractor is responsible to coordinate with all trades to confirm and provide a list of warranties required per the contract documents.
        1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
        2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.
     2. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.
        1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
        2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
        3. See other Sections for specific content requirements and particular requirements for submitting special warranties.
     3. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures."

PART 2 - PRODUCTS

* 1. PRODUCT SELECTION PROCEDURES
     1. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
        1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
        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.
        3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
        4. Where products are accompanied by the term "as selected," Design Professional will make selection.
        5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
        6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
     2. Product Selection Procedures:
        1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
        2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
        3. Products:
           1. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
           2. Nonrestricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
        4. Manufacturers:
           1. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will not be considered.
           2. Nonrestricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
        5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.
     3. Visual Matching Specification: Where Specifications require "match Architect's sample", provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
        1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.
     4. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.
  2. COMPARABLE PRODUCTS
     1. Conditions for Consideration: Design Professional(s) will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Design Professional(s) may return requests without action, except to record noncompliance with these requirements:
        1. Evidence that the proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
        2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
        3. Evidence that proposed product provides specified warranty.
        4. List of similar installations for completed projects with project names and addresses and names and addresses of design professionals and owners, if requested.
        5. Samples, if requested.

PART 3 - EXECUTION (Not Used)

## END OF SECTION 01 6000

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# SECTION 01 7300 - EXECUTION

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor.
     2. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
        1. Construction layout.
        2. Field engineering and surveying.
        3. Installation of the Work.
        4. Cutting and patching.
        5. Coordination of Owner-installed products.
        6. Progress cleaning.
        7. Starting and adjusting.
        8. Protection of installed construction.
     3. Related Requirements:
        1. Section 011000 "Summary" for limits on use of Project site.
        2. Section 013300 "Submittal Procedures" for submitting surveys.
        3. Section 017700 "Closeout Procedures" for submitting final property survey with Project As-built Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
        4. Section 02 4119 “Selective Demolition and Alteration Work”
        5. Section 07 0150 “Existing Roof Work”
        6. Section 09 5113 “Acoustic Panel Ceilings”
  3. DEFINITIONS
     1. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.
     2. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.
  4. INFORMATIONAL SUBMITTALS
     1. Qualification Data: For professional engineer.
     2. Certificates: Submit certificate signed by professional engineer certifying that location and elevation of improvements comply with requirements.
     3. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:
        1. Extent: Describe reason for and extent of each occurrence of cutting and patching.
        2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
        3. Products: List products to be used for patching and firms or entities that will perform patching work.
        4. Dates: Indicate when cutting and patching will be performed.
        5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
           1. Include description of provisions for temporary services and systems during interruption of permanent services and systems.
     4. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.
     5. Certified Surveys: Submit two copies signed by land surveyor.
     6. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.
  5. QUALITY ASSURANCE
     1. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.
     2. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
        1. Structural Elements: When cutting and patching structural elements, notify Design Professional(s) of locations and details of cutting and await directions from Design Professional(s) before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
        2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
           1. Primary operational systems and equipment.
           2. Fire separation assemblies.
           3. Air or smoke barriers.
           4. Fire-suppression systems.
           5. Mechanical systems piping and ducts.
           6. Control systems.
           7. Communication systems.
           8. Fire-detection and -alarm systems.
           9. Conveying systems.
           10. Electrical wiring systems.
           11. Operating systems of special construction.
        3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:
           1. Water, moisture, or vapor barriers.
           2. Membranes and flashings.
           3. Exterior curtain-wall construction.
           4. Sprayed fire-resistive material.
           5. Equipment supports.
           6. Piping, ductwork, vessels, and equipment.
           7. Noise- and vibration-control elements and systems.
        4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
     3. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

* 1. MATERIALS
     1. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
        1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials. Provide samples for approval and complete a mock-up on-site as directed by the Architect before proceeding with the patching work.

PART 3 - EXECUTION

* 1. EXAMINATION
     1. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.
        1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.
        2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
     2. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
        1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
        2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
        3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
     3. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
        1. Description of the Work.
        2. List of detrimental conditions, including substrates.
        3. List of unacceptable installation tolerances.
        4. Recommended corrections.
     4. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.
  2. PREPARATION
     1. Existing Utility Information: Furnish information to Design Professional(s) and Owner 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 authorities having jurisdiction.
     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. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
     4. Review of Contract Documents and Field Conditions: on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Design Professional(s) according to requirements in Section 013100 "Project Management and Coordination."
  3. CONSTRUCTION LAYOUT
     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 Design Professional(s) promptly.
     2. General: Engage a land surveyor to lay out the Work using accepted surveying practices.
        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 Project.
        2. Establish limits on use of Project site.
        3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
        4. Inform installers of lines and levels to which they must comply.
        5. Check the location, level and plumb, of every major element as the Work progresses.
        6. Notify Design Professional(s) when deviations from required lines and levels exceed allowable tolerances.
        7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
     3. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
     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.
     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 Owner and Design Professionals.
  4. FIELD ENGINEERING
     1. Identification: Owner will identify existing benchmarks, control points, and property corners.
     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.
        1. Do not change or relocate existing benchmarks or control points without prior written approval of Design Professional(s). Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Design Professional(s) before proceeding.
        2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
     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.
        1. Record benchmark locations, with horizontal and vertical data, on Project Record Documents.
        2. Where the actual location or elevation of layout points cannot be marked, provide temporary reference points sufficient to locate the Work.
        3. Remove temporary reference points when no longer needed. Restore marked construction to its original condition.
     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.
     5. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.
        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.
        2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

* 1. INSTALLATION
     1. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
        1. Make vertical work plumb and make horizontal work level.
        2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
        3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
        4. Maintain minimum headroom clearance of 96 inches (2440 mm) in occupied spaces and 90 inches (2300 mm) in unoccupied spaces.
     2. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
     3. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
     4. 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.
     5. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
     6. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
     7. 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.
     8. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
        1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Design Professional(s).
        2. Allow for building movement, including thermal expansion and contraction.
        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.
     9. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
     10. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
  2. CUTTING AND PATCHING
     1. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
        1. 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.
     2. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
     3. Temporary Support: Provide temporary support of work to be cut.
     4. 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.
     5. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
     6. 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 to prevent interruption to occupied areas.

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.

* + - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
      2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
      3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
      4. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.
      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.
      6. Proceed with patching after construction operations requiring cutting are complete.
    1. 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 practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
       1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
       2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
          1. Clean piping, conduit, and similar features before applying paint or other finishing materials.
          2. Restore damaged pipe covering to its original condition.
       3. 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.
          1. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
       4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
       5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
    2. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.
  1. OWNER-INSTALLED PRODUCTS
     1. Site Access: Provide access to Project site for Owner's construction personnel.
     2. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
        1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
        2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.
  2. PROGRESS CLEANING
     1. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
        1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
        2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F (27 deg C).
        3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
           1. Use containers intended for holding waste materials of type to be stored.
        4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
     2. Site: Maintain Project site free of waste materials and debris.
     3. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
        1. Remove liquid spills promptly.
        2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
     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.
     5. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
     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.
     7. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 017419 "Demolition and Construction Waste Management and Disposal."
     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.
     9. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
     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.
  3. STARTING AND ADJUSTING
     1. Coordinate startup and adjusting of equipment and operating components with requirements in Division 2
     2. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
     3. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
     4. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
     5. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."
  4. PROTECTION OF INSTALLED CONSTRUCTION
     1. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
     2. Comply with manufacturer's written instructions for temperature and relative humidity.

## END OF SECTION 01 7300

# SECTION 01 7419 – DEMOLITION AND CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY

## The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor.

## This Section includes:

* + - 1. Administrative and procedural requirements for the following:
         1. Salvaging nonhazardous demolition and construction materials.
         2. Recycling nonhazardous demolition and construction materials.
         3. Disposing of nonhazardous demolition and construction materials.
         4. Requirements for the development of a project specific Demolition Waste Management Plan.

## Sustainability Requirements Summary:

* + - 1. Divert demolition and construction debris from landfills and incineration facilities. At a minimum, achieve a Diversion Rate of 75% percent by weight.

## Where the soft demolition scope and the structural demolition scope are executed by two or more Demolition Management companies, each individual scope shall be required to independently satisfy the above requirement.

* + - * 1. Where the soft demolition scope and the structural demolition scope are executed by a single Demolition Management company, the above requirement may be satisfied on a whole building basis inclusive of all demolition activities.
      1. As part of the 75% diversion rate requirement, separately track a minimum of four (4) Diversion Streams of non-hazardous solid waste generated by the Work.
  1. REFERENCES
     1. Abbreviations and Acronyms:
        1. DWMP: Demolition Waste Management Plan
        2. ADC: Alternative Daily Cover

## Definitions:

* + - 1. Alternative Daily Cover: Cover material other than earthen cover placed on the surface of an active face of a municipal solid waste landfill at the end of each operating day to control odors, fires, blowing litter and scavenging. For the purposes of this Project, ADC cannot be considered part of any Diversion Stream.
      2. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
      3. Commingled Waste: Waste Streams that are combined on the project site and hauled way for sorting into Diversion Streams and Landfill Streams. Commingled waste streams must be reported by measured weight. Approximations of weights based on visual inspection are not acceptable.
         1. Commingled Waste Method 1: Diversion Rate derived from the weight of the diverted component material divided by the weight of the total commingled waste. Diverted material types handled through this sorting method are each counted as an individual Diversion Stream.

## Commingled Waste Method 2: Diversion Rate derived from the waste sorting facility average Diversion Rate for the component material, multiplied by the weight of the commingled waste. All diverted materials handled through this sorting method are counted as a single Diversion Stream.

* + - 1. Demolition Waste: Building and site materials resulting from demolition or selective demolition

operations.

## Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit

in landfill or incinerator acceptable to authorities having jurisdiction.

* + - 1. Diversion Rate: The percentage of material by weight that is diverted from landfill or incineration by Recycling, Salvage, or Reuse. The total weight of Recycled, Salvaged, and Reused material is the numerator; the total weight of Demolition and Construction Waste is the denominator.

## Include in the numerator of the Diversion Rate calculation:

Diversion Streams.

* + - * 1. Include in the denominator of the Diversion Rate calculation:

Diversion Streams.

Landfill Streams.

Alternate Daily Cover (ADC).

* + - * 1. Exclude from both the numerator and the denominator of the Diversion Rate calculation:

Land Clearing Debris and Soil.

Landscaping materials.

Hazardous waste.

Waste not generated by the Project.

## Diversion Stream: Major material category (e.g. metal, glass, plastic, wood, masonry, and cardboard/paper.) that is diverted from landfill. Comingled waste can also be considered a single diversion stream if it is processed using Commingled Waste Method 2.

* + - 1. High Use Recycling: A recycling process where a material is recycled into a new version of the same product type or another product type where nearly 100% of the waste material is reused.
      2. Hazardous Waste: Waste with properties capable of having harmful effects on human health or the environment, as defined in 40 CFR parts 260 through 273 of the U. S. Code of Federal Regulations.
      3. Land Clearing Debris and Soil: Natural materials such as rock, soil, stone, and vegetation. Excludes man-made materials even if found on-site pre-demolition.
      4. Landfill Streams: Materials disposed of via landfills or incinerators.
      5. On-site Separation Method: Diversion Rate derived from the weight of the diverted material. Materials diverted through this sorting method are each counted as an individual Diversion Stream.
      6. On-site Separated Waste: Materials which have been sorted in segregated containers or project areas for removal as a segregated Diversion Stream. Separated waste streams must be reported by measured weight. Approximations of weights based on visual inspection are not acceptable.
      7. Packaging: Materials used for the protection or handling of products removed from the site. Examples: Wood reels, pallets, blankets.
      8. Recycling: Recovery of demolition and construction waste for subsequent processing in preparation for reuse.
      9. Salvage: Recovery of demolition and construction waste and subsequent sale or reuse in another facility.
      10. Salvage and Reuse: Recovery of demolition and construction waste and subsequent incorporation into the Work.
      11. Soft Demolition: Demolition activities which involve removing all materials inside and/or outside a building that are not structure, envelope, or other major base building systems. For example, removing furniture, partitions, ceiling tiles, floor coverings, gypsum, lighting, ductwork, plumbing, wiring etc.
      12. Sorting Method: Method used to separate Diversion Streams from Landfill Streams. Examples of sorting methods include Commingled Waste Method 1, Commingled Waste Method 2, and On-Site Separation.
      13. Structural Demolition: Demolition activities typically executed after soft demolition which involve removing structure, envelope, and major base building systems. For example, removing structural steel, metal deck, concrete flooring, masonry walls, curtainwall assemblies, chiller and boiler plants, elevators, etc.
      14. Waste-to-Energy: Conversion of non-recyclable waste materials into useable heat, electricity or fuel. Example include: combustion; gasification; pyrolization; anaerobic digestion; and landfill gas.
      15. Waste Stream: Comprised of two major sub-streams — 1) waste disposed of via landfills or incinerators (Landfill Streams); and 2) waste diverted from disposal through recycling, reuse, or composting (Diversion Streams).
  1. HAZARDOUS MATERIALS AND UNIVERSAL WASTE

1. It is not expected that hazardous materials requiring remediation, such as asbestos-containing materials or lead-based paint, will be encountered in the Work.
2. If suspected hazardous materials are encountered, do not disturb; immediately notify Design Professional and Owner. Hazardous materials will be addressed by Owner under a separate contract.

## Universal Waste — Products defined as Universal Waste by federal, state, or local authorities (including batteries, lamps, and mercury-containing equipment) are to be handled and disposed of following all federal, state, and local requirements.

* 1. INFORMATIONAL SUBMITTALS

Demolition Waste Management Plan (DWMP): Issue a Draft DWMP within 14 days of demolition contract being awarded and prior to any waste removal. A separate DWMP must be issued for each scope of demolition executed by a separate Demolition Management company. Each DWMP must include, but not be limited to, the following:

1. A comprehensive list of all material types being removed from the Project and sorting method employed for each (on-site separation versus comingled).
2. Explanation of methods proposed to achieve the Minimum Diversion Rate of 75% by weight for the demolition work.
   1. Identify a minimum of five (5) Diversion Streams of non-hazardous solid waste generated by the Work that can potentially be separately tracked and recycled (examples: metals, ceiling tiles, stone flooring, miscellaneous wood, HVAC equipment).
   2. Identify a minimum of four (4) Diversion Streams of non-hazardous solid waste generated by the Work that will be separately tracked and recycled as part of the Project.
      1. Comingled waste processed using Commingled Waste Method 2 can be considered one of the diversion streams.
   3. Identify the sorting method for each Diversion Stream that will be recycled.
3. Preferred Vendors: General Contractor shall coordinate with the following preferred vendors:
4. Acoustic Ceiling Tiles
   1. Carpet Cycle

## Account for all waste materials, including those that will not contribute to diversion from landfill. Non-recyclable waste should be distinguished from non-diverted waste that cannot be included in Diversion Rate calculation (e.g. Hazardous waste, land-clearing debris, soil and landscaping materials).

1. Provide a description of disposal method, but do not include as Project waste:
   1. Hazardous Materials (provide summary of materials)
   2. Non-wood waste used as incinerator fuel.
2. Provide description of kick-off meeting and additional meetings as required informing contractors of requirements and monitoring their progress towards the Project goals.
3. Project Hauler’s DWMP Report:

## Submit to the Demolition Manager on a monthly basis.

* 1. Include the following information for the time period covered:
     1. The names of Waste Streams per the DWMP. Include Diversion Streams and Landfill Streams.
     2. The name of the sorting or disposal facility accepting each Waste Stream.
     3. Tonnage for each Waste Stream.
     4. Total quantity of waste in tons.

1. Demolition Manager DWMP Report:
   1. Compile information from multiple Waste Streams and multiple Haulers into a single report.
   2. Submit to the Owner on a monthly basis.
2. Sorting Facility Reports:

## Haulers: For each waste receiving facility, provide Sorting Facility Data to the Demolition Manager for each calendar year.

* 1. Sorting Facility Data:
     1. Provided on the letterhead of the sorting facility.
     2. Name and address of sorting facility.
     3. State regulation, license, and license number under which the facility operates.
     4. ADC listed as a separate line item under the category of non-diverted waste.
     5. End-use information for each Diversion Stream. Provide the following:
        1. Receiver Information: Facility/Party receiving material from the Sorting Facility
        2. End Product Information: How material is used by the Receiver (e.g. manufactured into water bottles, used as feedstock for new steel products).
     6. When Diversion Rates are derived by weight (Commingled Waste Method 1 and Onsite Separation Method): A statement that visual inspection was not used to estimate weights or volumes of Diversion Streams.
     7. When Diversion Rates are derived from average Diversion Rates (Commingled Waste Method 2):
        1. Average Annual Diversion Rate for the facility for each year hauling took place. Diversion rates must be regulated by the local or state authority and must exclude alternative daily cover (ADC).
        2. Average annual Diversion Rates for each Diversion Stream which the facility accepts.

## Statement that Diversion Rates have not been derived from sending the waste to

another sorting facility.

* 1. CLOSEOUT SUBMITTALS
     1. Project Hauler(s) Final DWMP Report:

## Submit to Demolition Manger prior to request for Substantial Completion.

* + - 1. Provide a copy of the final DWMP.
      2. Include the following information covering the entire time period for Hauler’s scope of work:
         1. The names of the Waste Streams per the DWMP
         2. Identification of sorting method of each Diversion Stream and Landfill Stream.
         3. The name of the sorting or disposal facility for each Diversion Stream and Landfill Stream.
         4. Sorting Facility Report for each disposal facility.
         5. Tonnage for each Diversion Stream and Landfill Stream.
         6. Total quantity of waste in tons.
         7. Final Diversion (Recycling) Rate
      3. Provide backup documentation concurrent with the Hauler's Final DWMP Report:
         1. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
         2. Landfill Records: Indicate receipt and acceptance of waste by landfill facilities licensed to

## accept them. Include manifests, weight tickets, receipts, and invoices.

* + 1. Demolition Manager Final DWMP Report:

## Compile Hauler(s) Final DWMP Reports for each scope into a single Final Project DWMP Report.

* + - 1. Submit following Substantial Completion of demolition scope. The final date of submission will be set by the Owner.
      2. Copies of annual Hauler’s Sorting Facility Reports, covering the entire time period of the Project.
      3. Comprehensive list of material types removed from the project and indication of sorting method employed.

Refrigerant Recovery:

1. Qualification Data for refrigerant recovery technician.
2. Statement of Refrigerant Recovery:
   1. Name, address and telephone number of refrigerant technicians.
   2. Signature of refrigerant recovery technician.
   3. Assertion that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations.
   4. QUALITY ASSURANCE
      1. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
      2. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:

* + - 1. Review and identify strategies for reducing demolition waste.
      2. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
      3. Review requirements for documenting quantities of each type of waste and its disposal.
      4. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

## Review and finalize procedures for identifying waste that be directly reused without going through a recycling center; for example, by the original vendor or a related supplier.

* + - 1. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
      2. Review waste management requirements for each trade.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOTUSED)

**END OF SECTION 01 7419**

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# SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor
     2. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
        1. Substantial Completion procedures.
        2. Final completion procedures.
        3. Warranties.
        4. Cleaning prior to Substantial Completion
        5. Repair of the Work.
     3. Related Requirements:
        1. Section 01 3233 "Photographic Documentation" for submitting final completion construction photographic documentation.
        2. Section 01 7300 "Execution" for progress cleaning of Project site.
        3. Section 01 7823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
        4. Section 01 7839 "Project As-built and Record Documents" for submitting As-built red-lined Contract Documents, As-built red-lined Specifications, Trade As-builts and record Product Data.
        5. Section 01 7900 "Demonstration and Training" for requirements for instructing Owner's personnel.
        6. Exhibit G: “Project Turnover Checklist”
  3. ACTION SUBMITTALS
     1. Product Data: For cleaning agents.
     2. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
     3. Certified List of Incomplete Items: Final submittal at Final Completion.
  4. CLOSEOUT SUBMITTALS
     1. Certificates of Release: From authorities having jurisdiction.
     2. Certificate of Insurance: For continuing coverage.
     3. Field Report: For pest control inspection.
  5. MAINTENANCE MATERIAL SUBMITTALS
     1. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.
  6. SUBSTANTIAL COMPLETION PROCEDURES
     1. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.
     2. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
        1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
        2. Submit closeout submittals specified in other Division 01 Sections and Exhibit G: “Project Turnover Checklist,” including project As-built documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
        3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
        4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Owner. Label with manufacturer's name and model number where applicable.
           1. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Owner's signature for receipt of submittals.
        5. Submit test/adjust/balance records.
        6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
     3. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
        1. Advise Owner of pending insurance changeover requirements.
        2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
        3. Complete startup and testing of systems and equipment.
        4. Perform preventive maintenance on equipment used prior to Substantial Completion.
        5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
        6. Advise Owner of changeover in heat and other utilities.
        7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
        8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
        9. Complete final cleaning requirements, including touchup painting.
        10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
     4. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Design Professional and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Design Professional, that must be completed or corrected before certificate will be issued.
        1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
        2. Results of completed inspection will form the basis of requirements for final completion.
  7. FINAL COMPLETION PROCEDURES
     1. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
        1. Submit a final Application for Payment according to Section 012900 "Payment Procedures."
        2. Certified List of Incomplete Items: Submit certified copy of Design Professional's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Design Professional. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
        3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
        4. Submit pest-control final inspection report.
     2. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Design Professional will either proceed with inspection or notify Contractor of unfulfilled requirements. Design Professional will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
        1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  8. LIST OF INCOMPLETE ITEMS (PUNCH LIST)
     1. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
        1. Organize list of spaces in sequential order, starting with exterior areas first and proceeding from lowest floor to highest floor.
        2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
        3. Include the following information at the top of each page:
           1. Project name.
           2. Date.
           3. Name of Design Professional(s).
           4. Name of Contractor.
           5. Page number.
        4. Submit list of incomplete items in the following format:
           1. MS Excel electronic file. Design Professional, will return annotated file.
           2. PDF electronic file. Design Professional, will return annotated file.
  9. SUBMITTAL OF PROJECT WARRANTIES
     1. Time of Submittal: Submit written warranties on request of Design Professional for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.
     2. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
     3. Organize warranty documents into an orderly sequence.
        1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
        2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
        3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
        4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.

PART 2 - PRODUCTS

* 1. MATERIALS
     1. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
        1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

* 1. CLEANING PRIOR TO SUBSTANTIAL COMPLETION
     1. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
     2. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
        1. 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.
        2. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
        3. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
        4. Remove tools, construction equipment, machinery, and surplus material from Project site.
        5. Remove snow and ice to provide safe access to building.
        6. 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.
        7. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
        8. Sweep concrete floors broom clean in unoccupied spaces.
        9. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
        10. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
        11. Remove labels that are not permanent.
        12. Wipe surfaces of mechanical and electrical equipment, elevator equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
        13. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
        14. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
        15. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
            1. Clean HVAC system in compliance with NADCA Standard 1992-01. Provide written report on completion of cleaning.
        16. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
     3. Pest Control: Comply with pest control requirements in Section 015000 "Temporary Facilities and Controls." Prepare written report.

Demolition and Construction Waste Disposal: Comply with waste disposal requirements in Section 017419 "Demolition and Construction Waste Management and Disposal."

* 1. REPAIR OF THE WORK
     1. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
     2. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
        1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
        2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
           1. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
        3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
        4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

## END OF SECTION 01 7700

# SECTION 01 7823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
        1. Operation and maintenance documentation directory.
        2. Emergency manuals.
        3. Operation manuals for systems, subsystems, and equipment.
        4. Product maintenance manuals.
        5. Systems and equipment maintenance manuals.
     2. Related Requirements:
        1. Section 01 1200 "Multiple Contract Summary" for coordinating operation and maintenance manuals covering the Work of multiple contracts.
        2. Section 01 3300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
  3. DEFINITIONS
     1. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
     2. Subsystem: A portion of a system with characteristics similar to a system.
  4. CLOSEOUT SUBMITTALS
     1. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
        1. Owner, Design Professional and Commissioning Authority will comment on whether content of operations and maintenance submittals are acceptable.
        2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
     2. Format: Submit operations and maintenance manuals in the following format:
        1. PDF electronic file. Assemble each manual into a composite electronically indexed file. Submit on digital media acceptable to Owner.
           1. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.
           2. Enable inserted reviewer comments on draft submittals.
     3. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Design Professional and Commissioning Authority will comment on whether general scope and content of manual are acceptable.
     4. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Design Professional and Commissioning Authority will return copy with comments.
        1. Correct or revise each manual to comply with Design Professional's and Commissioning Authority's comments. Submit copies of each corrected manual within 15 days of receipt of Design Professional's and Commissioning Authority's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

* 1. OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY
     1. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:
        1. List of documents.
        2. List of systems.
        3. List of equipment.
        4. Table of contents.
     2. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
     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.
     4. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
     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."

* 1. REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS
     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:
        1. Title page.
        2. Table of contents.
        3. Manual contents.
     2. Title Page: Include the following information:
        1. Subject matter included in manual.
        2. Name and address of Project.
        3. Name and address of Owner.
        4. Date of submittal.
        5. Name and contact information for Contractor.
        6. Name and contact information for Architect.
        7. Name and contact information for Commissioning Authority.
        8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
        9. Cross-reference to related systems in other operation and maintenance manuals.
     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.
        1. 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.
     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.
     5. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.
        1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
        2. File Names and Bookmarks: Enable bookmarking of individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in manual directory and table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
  2. EMERGENCY MANUALS
     1. Content: Organize manual into a separate section for each of the following:
        1. Type of emergency.
        2. Emergency instructions.
        3. Emergency procedures.
     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:
        1. Fire.
        2. Flood.
        3. Gas leak.
        4. Water leak.
        5. Power failure.
        6. Water outage.
        7. System, subsystem, or equipment failure.
        8. Chemical release or spill.
     3. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.
     4. Emergency Procedures: Include the following, as applicable:
        1. Instructions on stopping.
        2. Shutdown instructions for each type of emergency.
        3. Operating instructions for conditions outside normal operating limits.
        4. Required sequences for electric or electronic systems.
        5. Special operating instructions and procedures.
  3. OPERATION MANUALS
     1. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
        1. System, subsystem, and equipment descriptions. Use designations for systems and equipment indicated on Contract Documents.
        2. Performance and design criteria if Contractor has delegated design responsibility.
        3. Operating standards.
        4. Operating procedures.
        5. Operating logs.
        6. Wiring diagrams.
        7. Control diagrams.
        8. Piped system diagrams.
        9. Precautions against improper use.
        10. License requirements including inspection and renewal dates.
     2. Descriptions: Include the following:
        1. Product name and model number. Use designations for products indicated on Contract Documents.
        2. Manufacturer's name.
        3. Equipment identification with serial number of each component.
        4. Equipment function.
        5. Operating characteristics.
        6. Limiting conditions.
        7. Performance curves.
        8. Engineering data and tests.
        9. Complete nomenclature and number of replacement parts.
     3. Operating Procedures: Include the following, as applicable:
        1. Startup procedures.
        2. Equipment or system break-in procedures.
        3. Routine and normal operating instructions.
        4. Regulation and control procedures.
        5. Instructions on stopping.
        6. Normal shutdown instructions.
        7. Seasonal and weekend operating instructions.
        8. Required sequences for electric or electronic systems.
        9. Special operating instructions and procedures.
     4. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
     5. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.
  4. PRODUCT MAINTENANCE MANUALS
     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. Source Information: List each product 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 and drawing or schedule designation or identifier where applicable.
     3. Product Information: Include the following, as applicable:
        1. Product name and model number.
        2. Manufacturer's name.
        3. Color, pattern, and texture.
        4. Material and chemical composition.
        5. Reordering information for specially manufactured products.
     4. Maintenance Procedures: Include manufacturer's written recommendations and the following:
        1. Inspection procedures.
        2. Types of cleaning agents to be used and methods of cleaning.
        3. List of cleaning agents and methods of cleaning detrimental to product.
        4. Schedule for routine cleaning and maintenance.
        5. Repair instructions.
     5. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
     6. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
        1. Include procedures to follow and required notifications for warranty claims.
  5. SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS
     1. Content: For each system, subsystem, and piece of equipment not part of a system, include 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.
     2. 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 and drawing or schedule designation or identifier where applicable.

* + 1. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
       1. Standard maintenance instructions and bulletins.
       2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
       3. Identification and nomenclature of parts and components.
       4. List of items recommended to be stocked as spare parts.
    2. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
       1. Test and inspection instructions.
       2. Troubleshooting guide.
       3. Precautions against improper maintenance.
       4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
       5. Aligning, adjusting, and checking instructions.
       6. Demonstration and training video recording, if available.
    3. 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.
       1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
       2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.
    4. 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.
    5. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
    6. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
       1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

* 1. MANUAL PREPARATION
     1. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
     2. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
     3. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
     4. 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.
        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.
        2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
     5. 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.
        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.
     6. 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 As-built Drawings to ensure correct illustration of completed installation.
        1. Do not use original project As-built documents as part of operation and maintenance manuals.
        2. Comply with requirements of newly prepared As-built Drawings in Section 017839 "Project As-built and Record Documents."
     7. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

## END OF SECTION 01 7823

# SECTION 01 7839 - PROJECT AS-BUILT AND RECORD DOCUMENTS

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. Section includes administrative and procedural requirements for project record documents, including the following:
        1. As-built Red-lined Drawings.
        2. As-built Red-lined Specifications.
        3. Trade As-built Drawings and Files.
        4. Record Product Data.
        5. Miscellaneous record submittals.
     2. Related Requirements:
        1. Section 01 1200 "Multiple Contract Summary" for coordinating project record documents covering the Work of multiple contracts.
        2. Section 01 3300 “Submittal Requirements” for inclusion of project as-built and record documents in the Submittal Schedule.
        3. Section 01 7300 "Execution" for final property survey.
        4. Section 01 7700 "Closeout Procedures" for general closeout procedures.
        5. Section 01 7823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
        6. Exhibit G “Project Turnover Checklist”
  3. CLOSEOUT SUBMITTALS
     1. As-built Red-lined Drawings: Comply with the following and in accordance with Exhibit G: “Project Turnover Checklist”:
        1. Number of Copies: Submit PDFs of As-built Red-lined Drawings as follows:
           1. Initial Submittal:

Submit record digital data files

Design Professional will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

* + - * 1. Final Submittal:

Submit record digital data files

Include each sheet from the Contract Documents and the submittals, whether or not changes and additional information were recorded.

* + 1. As-built Red-lined Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
    2. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
       1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.
    3. Trade As-built Drawings and Files: Submit PDFs of subcontractor submittals and files used to generoate those submittals updated to match the installed conditions for each trade indicated in the Project Handover Checklist.
    4. Miscellaneous Record Submittals: See other Specification Sections and Exhibit G: Project Turnover Checklist for miscellaneous record- keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.
    5. Reports: Submit written report indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

* 1. AS-BUILT RED-LINED DRAWINGS
     1. As-built Red-lined Drawings: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
        1. Preparation: Mark as-built 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 provide information for preparation of corresponding marked-up as-built prints.
           1. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
           2. Accurately record information in an acceptable drawing technique.
           3. Record data as soon as possible after obtaining it.
           4. Record and check the markup before enclosing concealed installations.
           5. Cross-reference as-built prints to corresponding archive photographic documentation.
        2. Content: Types of items requiring marking include, but are not limited to, the following:
           1. Dimensional changes to Drawings.
           2. Revisions to details shown on Drawings.
           3. Depths of foundations below first floor.
           4. Locations and depths of underground utilities.
           5. Revisions to routing of piping and conduits.
           6. Revisions to electrical circuitry.
           7. Actual equipment locations.
           8. Duct size and routing.
           9. Locations of concealed internal utilities.
           10. Changes made by Change Order or Interim Directed Change.
           11. Changes made following Design Professional's written orders.
           12. Details not on the original Contract Drawings.
           13. Field records for variable and concealed conditions.
           14. Record information on the Work that is shown only schematically.
        3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
        4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
        5. Mark important additional information that was either shown schematically or omitted from original Drawings.
        6. Note Interim Directed Change numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
     2. Format: Identify and date each As-built Drawing; include the designation "PROJECT AS-BUILT DRAWING" in a prominent location.
        1. As-built Prints: Organize as-built prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
        2. Format: Annotated PDF electronic file.
        3. As-built Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
        4. Identification: As follows:
           1. Project name.
           2. Date.
           3. Designation "PROJECT AS-BUILT DRAWINGS."
           4. Name of Design Professional(s).
           5. Name of Contractor.
  2. AS-BUILT SPECIFICATIONS
     1. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
        1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
        2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
        3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
        4. For each principal product, indicate whether record Product Data has been submitted in operation and maintenance manuals instead of submitted as record Product Data.
        5. Note related Change Orders, record Product Data, and record Drawings where applicable.
     2. Format: Submit record Specifications as annotated PDF electronic file.
  3. RECORD PRODUCT DATA
     1. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
        1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
        2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
        3. Note related Change Orders, record Specifications, and record Drawings where applicable.
     2. Format: Submit record Product Data as annotated PDF electronic file.
        1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.
  4. TRADE AS-BUILT DRAWINGS AND FILES
     1. Trade As-built Drawings and Files: Submit subcontractor submittals updated to match the installed conditions for each trade indicated in the Project Handover Checklist.
        1. Trade As-built Drawings and Files shall be submitted within 30 days of the trade completing their work apart from commissioning and punch list items. Include submission dates of the Trade As-built Drawings and Files on the Submittal Schedule.
        2. As-built Drawings and Files shall include PDFs with all annotation from the approved submittal updated to match the installed conditions and the original source file (AutoCAD, BIM or other electronic authoring software file format) used to generate that submittal.
        3. When software other than 2D AutoCAD (including BIM and 3D CAD) is used to generate the As-builts, 2D exports in AutoCAD DWG or DWF format are required as well.
        4. DWFs are only required when it is not possible to create usable 2D AutoCAD DWGs from the original authoring software.
        5. Both the original source file and the 2D export shall contain all annotation shown on the As-built PDF.
  5. MISCELLANEOUS RECORD SUBMITTALS
     1. Assemble miscellaneous records required by other Specification Sections and Exhibit G: “Project Turnover Checklist” 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.
     2. Format: Submit miscellaneous record submittals as PDF electronic file.
        1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

* 1. RECORDING AND MAINTENANCE
     1. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.
     2. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract 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 Design Professional(s)'s reference during normal working hours.

## END OF SECTION 01 7839

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# SECTION 01 7900 - DEMONSTRATION AND TRAINING

PART 1 - GENERAL

* 1. RELATED DOCUMENTS
     1. Drawings and general provisions of the Contract and other Division 01 Specification Sections, apply to this Section.
  2. SUMMARY
     1. The Contractor shall be responsible for enforcing all components of this section with all subcontractors contracted to the Contractor
        1. Section includes administrative and procedural requirements for instructing Owner's personnel, including the following:Demonstration of operation of systems, subsystems, and equipment.
        2. Training in operation and maintenance of systems, subsystems, and equipment.
  3. INFORMATIONAL SUBMITTALS
     1. Instruction Program: Submit outline of instructional program for demonstration and training, including a list of training modules and a schedule of proposed dates, times, length of instruction time, and instructors' names for each training module. Include learning objective and outline for each training module.
        1. Indicate proposed training modules using manufacturer-produced demonstration and training video recordings for systems, equipment, and products in lieu of video recording of live instructional module.
     2. Qualification Data: For instructor.
     3. Attendance Record: For each training module, submit list of participants and length of instruction time.
     4. Evaluations: For each participant and for each training module, submit results and documentation of performance-based test.
  4. CLOSEOUT SUBMITTALS
     1. Demonstration and Training Video Recordings: Submit two copies within seven days of end of each training module.
        1. Identification: On each copy, provide an applied label with the following information:
           1. Name of Project.
           2. Name and address of videographer.
           3. Name of Design Professional(s).
           4. Name of Contractor.
           5. Date of video recording.
        2. Transcript: Prepared in PDF electronic format. Include a cover sheet with same label information as the corresponding video recording and a table of contents with links to corresponding training components. Include name of Project and date of video recording on each page.
        3. At completion of training, submit complete training manual(s) for Owner's use in PDF electronic file format on compact disc.
  5. QUALITY ASSURANCE
     1. Facilitator Qualifications: A firm or individual experienced in training or educating maintenance personnel in a training program similar in content and extent to that indicated for this Project, and whose work has resulted in training or education with a record of successful learning performance.
     2. Instructor Qualifications: A factory-authorized service representative, complying with requirements in Section 014000 "Quality Requirements," experienced in operation and maintenance procedures and training.
     3. Videographer Qualifications: A professional videographer who is experienced photographing demonstration and training events similar to those required.
     4. Preinstruction Conference: Conduct conference at Project site to comply with requirements in Section 013100 "Project Management and Coordination." Review methods and procedures related to demonstration and training including, but not limited to, the following:
        1. Inspect and discuss locations and other facilities required for instruction.
        2. Review and finalize instruction schedule and verify availability of educational materials, instructors' personnel, audiovisual equipment, and facilities needed to avoid delays.
        3. Review required content of instruction.
        4. For instruction that must occur outside, review weather and forecasted weather conditions and procedures to follow if conditions are unfavorable.
  6. COORDINATION
     1. Coordinate instruction schedule with Owner's operations. Adjust schedule as required to minimize disrupting Owner's operations and to ensure availability of Owner's personnel.
     2. Coordinate instructors, including providing notification of dates, times, length of instruction time, and course content.
     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 Design Professional(s).

PART 2 - PRODUCTS

* 1. INSTRUCTION PROGRAM
     1. Program Structure: Develop an instruction program that includes individual training modules for each system and for equipment not part of a system, as required by individual Specification Sections.
     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 as applicable to the system, equipment, or component:
        1. Basis of System Design, Operational Requirements, and Criteria: Include the following:
           1. System, subsystem, and equipment descriptions.
           2. Performance and design criteria if Contractor is delegated design responsibility.
           3. Operating standards.
           4. Regulatory requirements.
           5. Equipment function.
           6. Operating characteristics.
           7. Limiting conditions.
           8. Performance curves.
        2. Documentation: Review the following items in detail:
           1. Emergency manuals.
           2. Operations manuals.
           3. Maintenance manuals.
           4. Project record documents.
           5. Identification systems.
           6. Warranties and bonds.
           7. Maintenance service agreements and similar continuing commitments.
        3. Emergencies: Include the following, as applicable:
           1. Instructions on meaning of warnings, trouble indications, and error messages.
           2. Instructions on stopping.
           3. Shutdown instructions for each type of emergency.
           4. Operating instructions for conditions outside of normal operating limits.
           5. Sequences for electric or electronic systems.
           6. Special operating instructions and procedures.
        4. Operations: Include the following, as applicable:
           1. Startup procedures.
           2. Equipment or system break-in procedures.
           3. Routine and normal operating instructions.
           4. Regulation and control procedures.
           5. Control sequences.
           6. Safety procedures.
           7. Instructions on stopping.
           8. Normal shutdown instructions.
           9. Operating procedures for emergencies.
           10. Operating procedures for system, subsystem, or equipment failure.
           11. Seasonal and weekend operating instructions.
           12. Required sequences for electric or electronic systems.
           13. Special operating instructions and procedures.
        5. Adjustments: Include the following:
           1. Alignments.
           2. Checking adjustments.
           3. Noise and vibration adjustments.
           4. Economy and efficiency adjustments.
        6. Troubleshooting: Include the following:
           1. Diagnostic instructions.
           2. Test and inspection procedures.
        7. Maintenance: Include the following:
           1. Inspection procedures.
           2. Types of cleaning agents to be used and methods of cleaning.
           3. List of cleaning agents and methods of cleaning detrimental to product.
           4. Procedures for routine cleaning
           5. Procedures for preventive maintenance.
           6. Procedures for routine maintenance.
           7. Instruction on use of special tools.
        8. Repairs: Include the following:
           1. Diagnosis instructions.
           2. Repair instructions.
           3. Disassembly; component removal, repair, and replacement; and reassembly instructions.
           4. Instructions for identifying parts and components.
           5. Review of spare parts needed for operation and maintenance.

PART 3 - EXECUTION

* 1. PREPARATION
     1. Assemble educational materials necessary for instruction, including documentation and training module. Assemble training modules into a training manual organized in coordination with requirements in Section 017823 "Operation and Maintenance Data."
     2. Set up instructional equipment at instruction location.
  2. INSTRUCTION
     1. Facilitator: Engage a qualified facilitator to prepare instruction program and training modules, to coordinate instructors, and to coordinate between Contractor and Owner for number of participants, instruction times, and location.
     2. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.
        1. Design Professional(s) will furnish an instructor to describe basis of system design, operational requirements, criteria, and regulatory requirements.
        2. Owner will furnish an instructor to describe Owner's operational philosophy.
        3. Owner will furnish Contractor with names and positions of participants.
     3. Scheduling: Provide instruction at mutually agreed on times. For equipment that requires seasonal operation, provide similar instruction at start of each season.
        1. Schedule training with Owner at least seven days' advance notice.
     4. Training Location and Reference Material: Conduct training on-site in the completed and fully operational facility using the actual equipment in-place. Conduct training using final operation and maintenance data submittals.
     5. Evaluation: At conclusion of each training module, assess and document each participant's mastery of module by use of a written and demonstration performance-based test.
     6. Cleanup: Collect used and leftover educational materials and give to Owner. Remove instructional equipment. Restore systems and equipment to condition existing before initial training use.

## END OF SECTION 01 7900

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**Exhibit F – Armstrong National Account Pricing**

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**Exhibit G – Muraflex Quote S-8303-18**

**Exhibit – Chelsea Lighting Quote-CHEL 19-19753A**

**Exhibit D – Owners Rules and Regulations**

**OWNER’S RULES AND REGULATIONS**

Any Service Contractor or employee of same shall abide by the following guidelines. In the event these guidelines are not followed, it shall be deemed a breach of the terms and conditions of the Contract Agreement by and between Regeneron Pharmaceuticals, Inc. “Owner” and through “Service Contractor” meaning Construction Manager or Contractor for this Work.

1. THE WORK SITE:

Shall be kept clean and limited to the area in which the work is being done unless otherwise agreed by Owner. Service Contractor is restricted from holding or otherwise impeding the function of any elevator. If available, the Service Contractor shall use only freight elevators. If freight elevator is not available, or is not convenient, Service Contractor can contact Agent for permission to use the passenger elevator. Appropriate protection of the passenger elevator must be provided by Service Contractor.

1. COMMON AREAS:

Shall be kept clean at all times, and no material shall be left in a common area for more than 30 minutes. Service Contractor may not block or otherwise hinder the Lobby entrances in any way whatsoever. Any damage to any common area will be immediately repaired by Service Contractor at Service Contractor’s sole expense. Should these repairs not be made, Owner and/or Agent for Owner will have the area repaired and seek reparations from Service Contractor and/or the Service Contractor’s insurance carrier.

1. USE OF BUILDING FACILITIES:

Service Contractor’s employees will have use of work area restrooms. These areas are not to be used as a tool clean-up area; they are to be left in a clean and orderly condition. Certain projects of longer duration may require a port-o-san facility, the location of which will be at Owner’s discretion, which would be at the expense of the Service Contractor. NOTE: No chemicals or construction/finishing materials of whatsoever nature may be disposed of through or by any facility within this building.

1. ACCESS:

Should special access to the building be needed, the Service Contractor shall give the Property Manager at least 48 hours written notice. Any cost(s) associated with the request shall be borne by the Service Contractor.

1. UTILITY INTERRUPTION:

Should there be a required utility interruption, the Service Contractor shall give the Property Manager at minimum 5 days written notice and coordinate with Owner/Agent as requested by Owner/Agent. Owner/Agent reserve the right to deny any request that would require utility interruption. Should there be an accidental interruption, the Service Contractor will immediately repair the interruption. Should these repairs not be made in an expeditious manner, Owner and/or Agent for Owner will make needed repairs and/or seek reparations from Service Contractor and/or Service Contractor insurance carrier.

1. WORKERS ON SITE:

Service Contractor’s employees and their sub-Contractors shall confine their activities to the work area. There will be no loitering in the common areas or other areas of the

buildings. No smoking is permitted except in Owner-designated smoking areas. No disruptive noise is permitted in any part of the building (see section 10. TENANT DISRUPTIONS as there may be exceptions to noise due to the nature of the work). Inappropriate behavior will not be tolerated onsite.

1. TELEPHONE:

Service Contactor is responsible for its own telephone connectivity and any charges arising from such. The Agent’s telephone will not be made available for your use.

1. MATERIALS:

Any materials taken in and out of the space (whether new materials or during demolition) shall be transported in a manner that will not in any way cause damage to the building, including the building mechanical systems (including elevator machinery), nor shall it pose a safety hazard to occupants of the campus.

1. VACANT SPACE:

There will be no removal of material of any kind, without prior consent from Owner/Agent, from any vacant space in the building for use somewhere in another area of the building or taken off campus.

1. TENANT DISRUPTIONS:

Service Contractor shall coordinate any work that generates disruptive noise with Owner/Agent prior to commencing work. There is a potential that any activity that is excessively noisy (ram-set, hammer drills, saws, concrete cutting, screw guns, coring etc.) may necessitate scheduling outside of normal business hours.

1. CHANGES IN THE WORK:

No change in the work will be accepted without a signed change order that has been acknowledged by Owner/Agent.

1. DUMPSTERS:

Prior to setting any container used to dispose of construction debris, approval must be given by the Owner/Agent. Steps must be taken by the Service Contractor not to allow any container to damage parking areas or any area it might occupy. Should such damage occur, it shall be repaired at the sole cost of the Service Contractor in a timely manner or Owner and/or Owners Agent will repair such damage and charge back to the Service Contractor.

1. QUALITY OF WORK:

Owner and/or Owners Agent will not accept any work that is not of the highest quality. All materials will be new and meet all local code and other Governmental Agency code, including for fire protection. Craftsmanship will also be of the highest quality. Any work not meeting Owner and/or Owner’s Agent quality standard will not be accepted and will be re-done at the Service Contractor’s sole expense.

1. ENVIRONMENTAL HEALTH AND SAFETY COMPLIANCE AND WRITTEN PROGRAMS:

The Service Contractor is responsible for all issues related to the health and safety of his/her employees and their sub-Contractors and agrees to comply with all applicable in- house, local, state and federal environmental, health and safety regulations and agrees to

be monitored by Agent. Owner/Agent reserves the right to stop work at any time at no cost to Owner/Agent. It is the Service Contractor’s responsibility to obtain all necessary permits, certificates, licenses, etc. and make timely notifications prior to the commencement of work as required by law. Any Service Contractor performing work that is covered by the scope and application of OSHA regulations must comply with those regulations, Agent’s Program(s) or use their own program as long as Agent is notified and a copy of the written program is provided to EHS. Additionally, in order to be used onsite, the Contractor’s program requirements must be OSHA compliant and as stringent as Agent’s program requirements. Copies of Agent’s EHS programs can be requested through your designated Agent Contact. Service Contractor also agrees to train its employees in all proper procedures required by these programs and retain records of such training which must be made available to Owner/Agent upon request.

Service Contractor is fully responsible for the safety and health of all persons engaged by Service Contractor and acknowledges that Owner and/or Owner’s Agent, with respect to such persons, shall not be construed as, nor be held liable for, any obligation as an employer within the meaning of the OSHA Act. Should Service Contractor observe an unsafe condition on the premises relative to the work hereunder, or if any of the Service Contractor's employees working on the premises files a charge of non-compliance with the Act, Service Contractor shall notify Owner and/or Owner’s Agent promptly upon receiving notice of such charge.

The Service Contractor must immediately inform the Agent of any injuries, incidents and near misses involving the Service Contractor’s employees onsite and provide a detailed, written report of the incident.

All Service Contractors working onsite will be vetted and accepted by a Service Contractor management system, such as ISN, prior to them coming onsite.

The Contractor will bring all the necessary tools, equipment and materials to perform the job safely. If Owner’s tools or equipment must be used by the Service Contractor, there shall be a hold harmless agreement.

The Service Contractor must inform the Owner/Agent of any hazardous materials brought onsite, provide Safety Data Sheets, and have them available onsite for inspection.

The Service Contractor must proactively inform Agent of the generation of any type of hazardous waste. The Service Contractor will be responsible for the proper storage and disposal of any hazardous waste generated onsite.

The Service Contractor must follow the Agent’s Hot Work Policy.

The Service Contractor must maintain the work area in a safe, clean and orderly manner and not create additional hazards in the course of or as a result of their work.

1. PERSONNEL

Service Contractor shall not directly or indirectly use labor and/or materials in performing any work on the premises if, in the reasonable judgment of the Owner and/or

its Owner’s Agent, such labor and/or materials create any disharmony or conflict resulting in interference with the performance or service of others in the premises or building.

The Service Contractor shall establish appropriate procedures and controls so that services under this Contract will not be performed by using any person who is not legally eligible for employment under the United States Immigration Laws.

1. PARKING

Owner reserves the right to dictate where Contractor will park.

1. CODE:

All work must comply with all the construction, fire and other governmental agency rules and regulations, and be compliant with all current codes.

END

**Exhibit E – JLL Method of Procedure**

**Exhibit F – Standard Operating Procedure Fire Alarm Work OnSite**

**Exhibit G – Project Turnover Checklist**