Fairfax Water

8570 EXECUTIVE PARK AVENUE
FAIRFAX, VIRGINIA 22031

Invitation for Bids NO. 24-156

PROJECT MANUAL FOR
Project 0579, Division 480
CTP Solids Building Elevator Modernization

AUGUST 2024

Jacobs

SECTION 00010

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SECTION 01110

SUMMARY OF WORK

AND MISCELLANOUS REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Description of Work

B. Contractor Use of Site and Premises

C. Intent of Contract Documents

D. Copies of Contract Documents Furnished to Contractor

E. Supplemental Drawings

F. Coordination

1.02 DESCRIPTION OF WORK

A. Work is generally described as the modernization of the freight elevator and all associated work as described in the contract documents, specifications and drawings.

1.03 CONTRACTOR'S USE OF SITE AND PREMISES

A. Unfavorable Construction Conditions: During unfavorable weather, wet ground, or other unsuitable construction conditions, the Contractor shall confine his operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would adversely affect the quality or efficiency thereof, unless special means or precautions are taken by the Contractor to perform the Work in a proper and satisfactory manner. The Contractor shall, however, maintain suitable all-weather access to all portions of the Work Site.

B. Site Administration: The Contractor shall be responsible for all areas of the Site used by him and all subcontractors in the performance of the Work. He shall exert full control over the actions of all employees and other persons in the use and preservation of property and existing facilities except such controls as may be specifically reserved for the Owner or others. The Contractor may require all persons on the Site to observe the same regulations as he requires of his employees and representatives. Owner’s employees, Authorized Representatives, Consultants, the Engineer and the Engineer's employees will not be subject to the provisions of this paragraph.

1.04 INTENT OF CONTRACT DOCUMENTS

A. Contract Documents Complementary: All Work called for in the Contract Documents applicable to this Contract, but not shown in the Drawings in their present form, or shown in the Drawings and not specifically called for in the Specifications, shall be of like effect as if shown or mentioned in both. Work not specified in either the Drawings or in the Specifications, but involved in carrying out their intent or in the complete and proper execution of the Work, is required, and shall be performed by the Contractor as though it were specifically delineated or described.

B. Omission or Silence of Contract Documents: The apparent silence of the Contract Documents as to any detail, or the apparent omission from them of a detailed description concerning any Work to be performed or materials to be furnished, shall be regarded as meaning that only the best general practice is to prevail and that only materials and Workmanship of the best quality are to be used and interpretation of these Specifications shall be made upon that basis.

1.05 DOCUMENTS FURNISHED TO CONTRACTOR

A. The Contractor will be furnished, at no cost, with a CD containing Contract Documents if required at the Preconstruction Conference. All electronic files will be provided in PDF format.

B. Copies of Contract Documents for Subcontractors: The Contractor shall, without expense to the Owner, furnish each of the subcontractors, manufacturers, and materialmen such copies of the Contract Documents as may be required for his Work.

C. Record Copy of Contract Documents: The Contractor shall keep one record copy of all Specifications, Drawings, Addenda, Change Orders, Supplemental Drawings, and Shop Drawings at the Contractor's office at the Site, if applicable, in good order and annotated to show all changes made during the construction process in accordance with Section 01780. The Engineer will inspect the record set of drawings and specifications on a monthly basis prior to preparation of the monthly progress payment; and in the event said drawings and specifications are not up-to-date, the monthly progress payment may be withheld until the record set of drawings and specifications are brought up-to-date. Such Documents shall be made available to the Engineer at all times and shall be delivered to the Owner upon completion of the Work.

1.06 SUPPLEMENTAL DRAWINGS

A. Supplemental Drawings: When, in the opinion of the Engineer, it becomes necessary to explain more fully the Work to be done, or to illustrate the Work further, or to show any changes which may be required, Drawings known as Supplemental Drawings with specifications pertaining thereto will be prepared by the Engineer and 10 copies thereof will be given to the Contractor.

B. Clarification Procedure: The Contractor may request a clarification of the Drawings or Specifications from the Engineer through the following procedure:

1. Forms: The standard clarification form shall be used. The upper portion of this form shall be completed and signed by the Contractor. The completed form shall be forwarded to the Engineer for a response. The Contractor should indicate a preferred reply date. The Engineer’s clarification review period shall be 14 consecutive calendar days in length and shall commence on the first calendar day immediately following the date of arrival of the clarification at the Engineer’s office. In no cases shall the Contractor’s preferred reply date be less than the 14 day review period.

    a. The Contractor will assign the clarification a sequential number.

    b. The Engineer will review the clarification with the appropriate parties and the Owner.

    c. The Engineer will complete and sign the lower portion of the clarification.

    d. A copy of the completed clarification will be returned to the Contractor.

    e. The completed clarification distribution will be noted on the clarification form.

    f. A copy of the completed clarification will be sent to the Owner.

2. Clarification Log: A clarification log will be maintained by the Engineer and will be used to review the status of outstanding clarifications during each progress meeting.

1.07 COORDINATION

A. The Contractor shall verify all dimensions, quantities and details shown on the Drawings and Supplemental Drawings, equipment, material, finishes, and other such listings or other data received from the Engineer, and shall notify him of all errors, omissions, conflicts and discrepancies. This shall not relieve the Contractor of full responsibility for unsatisfactory Work, faulty construction, or improper operation resulting therefrom, or from rectifying such conditions at his own expense. He shall not be allowed to take advantage of any errors or omissions. All equipment, materials, finishes, and other such listings are given for the convenience of the Engineer and Contractor and are not guaranteed to be complete. The Contractor shall assume all responsibility for the making of estimates of the size, kind, and quality of materials and equipment included in Work to be done under the Contract.

1.08 CLARIFICATION REQUEST FORM

A. Clarification request form found in Section 01260 shall be used for clarification.

1.09 PIPING ALIGNMENT AND EQUIPMENT LOCATION VERIFICATIONS

A. The Contractor shall field verify the suitability of pipe alignments and equipment locations with respect to the location of existing facilities. These verifications shall be made on the submitted layout and shop drawings and before pipe and fittings are ordered from suppliers.

B. The Contractor shall be responsible to make minor adjustments of lengths or elevations in new construction necessary to suit existing facilities at no additional cost to the Owner.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01110

NO TEXT THIS PAGE

SECTION 01140

LIMITATIONS ON SEQUENCE OF CONSTRUCTION

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Operation of Existing Facilities

B. Limitation of Sequence of Construction

1.02 RELATED SECTIONS

A. Section 01320 - Construction Schedule

1.03 OPERATION OF EXISTING FACILITIES

A. The work under this project shall be so conducted that the Owner's existing facilities will be maintained in full operation at all times.

B. The Contractor shall keep the Engineer and the Owner fully advised by prior written documentation as to his proposed plans for carrying out the work and obtain the Owner's and Engineer's prior approval for all phases of his operations as hereinafter specified.

C. Any temporary structures, connections, piping, and other work necessary to maintain service during the construction period shall be made as a part of the work.

D. All work shall be performed with care to avoid damage to existing structures and equipment. Before starting work on any modifications to existing facilities, the Contractor shall submit a plan to the Engineer for approval, comprising a detailed sequence of operations for these modifications and complete details of temporary facilities which demonstrates that operation of these existing facilities will be maintained. All construction shall be in accordance with the schedule accepted per Section 01320. At no time shall the service performed by any operating pipeline, equipment or structures be interrupted without specific prior approval of the Owner and Engineer.

E. Temporary facilities and equipment shall be provided as required and directed to maintain pipelines, equipment, systems, processes, auxiliaries, appurtenances and structures in service. Any temporary work not required after completion of the final work shall be promptly removed.

F. All costs associated with maintaining the existing facilities in operation shall be included in Contract Item No. 1 and no separate payment will be made therefor.

G. The Contractor shall not operate or adjust the operation of any existing facility except under the specific direction of the Owner or Engineer.

H. The Contractor shall at all times maintain Owner access to sample stations and areas that must be accessed for facility operations.

1.04 LIMITATIONS ON SEQUENCE OF CONSTRUCTION

A. In accordance with the requirements of Section 01320 – Construction Schedule, the Contractor shall prepare and submit a comprehensive schedule of his proposed sequence of construction of the various parts of the project for review by the Engineer.

B. At all times during the Contract Period, the Contractor will, as part of the Work and at no additional cost to the Owner, coordinate its performance of the Work with the activities and operations of the Owner and with those of any separate contractors who are engaged by the Owner to perform construction or construction-related services at the site of the Project (the "Separate Contractors"). The Contractor will coordinate its construction and related operations with the Owner's operations and with the construction and related operations of any Separate Contractors, in each case to the extent necessary to achieve the timely and satisfactory completion of the Work in accordance with the Contract Documents, and in such a manner as to avoid delaying, interfering with, or otherwise placing undue burden upon the activities and operations of the Owner or any Separate Contractor. At all times during performance of the Work, the Contractor will afford the Owner and each Separate Contractor reasonable access to the existing facilities for performance of their respective activities. Except as expressly authorized in advance by the Owner, the Contractor will not take any action, or omit to take any action, that will: (i) delay, interfere with, or otherwise unduly burden the activities of the Owner or of any Separate Contractor; (ii) obstruct reasonable access by Owner and any Separate Contractor to or from the site of the Owner's or any Separate Contractor's activities and operations.

C. The schedule shall identify and allow for all necessary coordination with such other contracts, including but not limited to, the following:

- Regular maintenance work and repairs as needed on the belt presses.
- Replacement of the belts on the belt presses.
- Trucks transporting solids to the solids pad (twice/day).

D. Belt press 2 is near the elevator room. When in operation, there is potential for the floor near the elevator room to be wet and increased humidity in the room.

E. The work under this contract shall also be accomplished while the existing facility is maintained in operation. Any work which affects the existing facility must be carried out so that operation of the existing facility will not be jeopardized or materially reduced in efficiency as a result of the work.

F. The Contractor shall submit, for approval by owner, a detailed plan for all facility shutdowns and tie-ins of new work. Contractor shall notify the Owner and Engineer at least 10 days in advance of an approved shutdown and/or tie-in.

G. Any temporary structures, connections, piping and other work necessary to maintain service during the construction period shall be provided and made as part of the work and no separate payment will be made therefor.

H. Work on this Contract shall be coordinated with the operation of the facility. The Contractor shall notify the Engineer of the Contractor's planned procedures for each specific alteration of existing facilities before the alteration begins. The Contractor shall not begin any alteration until specific permission has been granted by the Owner in each case and shall provide the Engineer and the Owner with sufficient advance notice as not to impact the Contractor's schedule. The making of connections to existing facilities or other operations that interfere with the operation of the existing equipment shall be completed within the time frames specified herein.

I. Authorized Owner personnel will perform all operations for the operational functions of the existing facilities identified as necessary to facilitate the Work of the Contractor and approved by the Owner, upon recommendation of the Engineer.

J. If it is necessary for proper operation or maintenance of the existing facilities, the Contractor shall reschedule his operations, at no additional cost, so that his work will not conflict with necessary operation or maintenance of the facility. Such rescheduling shall not be cause for a time extension except as provided for in Article 8 of the General Conditions.

K. The Contractor shall maintain safe passage through all access roads to existing facilities and to all parts of existing facilities.

L. The Engineer shall be the sole judge of when the Contractor's operations are causing interference with existing facility operations, and his orders and instructions shall be carried out without delay.

M. The Contractor is required to perform certain functions in an order which will allow the existing facilities to remain in operation and to allow other facilities to be completed on schedule. The requirements specified herein shall be incorporated into the Contractor's sequence of construction and shall apply at all times, except as may be modified in writing by the Engineer.

END OF SECTION

NO TEXT THIS PAGE

SECTION 01200

MEASUREMENT AND PAYMENT

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Measurement Authority

B. Unit Quantities Specified

C. Schedule of Contract Items

D. Payment

E. Defect Assessment

F. Non-Payment for Rejected Work

1.02 MEASUREMENT AUTHORITY

A. Measurement: The Owner will take all measurements and compute quantities accordingly.

B. Assistance: Assistance to the Owner in the form of necessary equipment, and qualified personnel shall be provided by the Contractor as required for taking measurements.

1.03 UNIT QUANTITIES SPECIFIED

A. Quantities: Quantities and measurements indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work and verified by the Engineer and recorded in his daily report shall determine the payment.

B. Actual Work: If the actual Work requires more or fewer quantities than those quantities indicated, the required quantities shall be provided at the unit prices contracted.

C. Units of Work: The intention of the unit prices is to provide a complete, functioning unit which may include Work from several Specification Sections. All the Work which is required or which can reasonably be inferred to be required in a unit price item to deliver a complete, functioning unit shall be included.

1.04 DEFINITION OF BID ITEMS

A. “Lump Sum”: The price bid for each Lump Sum Contract Item shall include all costs in connection with the proper and successful completion of the Work, including furnishing all materials, equipment, supplies and appurtenances; providing all construction plant equipment and tools; and performing all necessary labor and supervision and training to fully complete the Work. All Work not specifically set forth as a Contract item in the Bid Form shall be considered a subsidiary obligation of the Contractor and all costs in connection therewith shall be included in the prices bid.

B. “Bid Allowance”: Contract Items in the Bid Form that are designated “Bid Allowance” cover certain items of work that will be paid for separately from other Contract items. Payment will be made to the Contractor by the Owner for actual costs invoiced to the Contractor for services plus allowable contract mark-ups, and other items selected by the Owner as

defined herein and under each Bid Allowance item. A change order may be issued for the work associated with each Bid Allowance item to adjust the contract amount based on the difference between the actual costs and the Bid Allowance amount. Contractor shall submit original invoices from suppliers to support requests for payment for all bid allowance items.

C. "Contingent Contract Item": The purpose of Contract Items in the Bid Form that are designated "Contingent Contract Item" is to establish unit prices for work not included in other bid items that is (a) ordered by the Engineer beyond the lines and grades shown on the Drawings or (b) indicated for payment on a unit price basis. No payment shall be made under any Contingent Contract Item for work performed by the Contractor for his own convenience or due to his negligence in executing the Work. Work under Contingent Contract Items shall be performed only as and when ordered by the Engineer. The Engineer has the right to order that contingent work be provided in smaller or larger quantities than the estimated quantity indicated in the Bid Form. The Contractor shall not have any right to demand payment for, and will not be paid for, any costs associated with the item, including but not limited to overhead and profit, due to the fact that the item was not used in the Work or was used in smaller or larger quantities than those indicated in the Bid Form. The Contract Sum will be subject to adjustment according to final measured quantities and the unit prices in the Bid will apply to such final quantities.

1.05 ALLOWANCE REQUIREMENTS

A. At the earliest feasible date after Contract Award, advise the Owner of the date when the final selection and purchase of each product or system described by an allowance must be completed in order to avoid delay in performance of the Work.

1. When requested by the Owner, obtain a minimum of three proposals for each allowance for use in making final selections; include recommendations that are relevant to performance of the Work.

2. Purchase products and systems as selected by the Owner from the designated supplier.

B. Submit proposals for purchase of products or systems included in allowances in the form specified for Change Order.

C. Submit invoices or delivery slips to indicate actual quantities of materials delivered to the site for use in fulfillment of each allowance.

D. Inspect products covered by an allowance promptly upon delivery for damage or defects.

E. Coordinate materials and their installation for each allowance with related materials and installation to ensure that each allowance item is completely integrated and interfaced with related construction activities.

1.06 SCHEDULE OF CONTRACT ITEMS

A. Base Bid

1. Contract Item 1 (Lump Sum): All Work to Complete Project 0579 Division 480, Except that included in Other Contract Items.

a. Under this Contract Item, the Contractor shall furnish all labor, materials, equipment and services, and do all work for the construction, maintenance,

maintaining plant operations, testing and placing in trouble-free operation all structures and appurtenances. The work includes , furnishing and installing all equipment, and all general, structural, architectural, mechanical, plumbing, fire protection, instrumentation, heating, ventilating, and electrical and instrumentation work complete and in place, together with all appurtenant work as shown on the Drawings, specified and directed by the Engineer. Work shall also include preparation of Record Drawings in accordance with Section 01780.

b. Lump sum unit of measure and payment.

2. Contract Item 2 (Lump Sum): Extended Warranty and Preventive Maintenance Contract for Year 2 and 3:

   a. Under this Contract Item, the Contractor shall provide preventive maintenance and 24'hour emergency callback service for year 2 and 3.

   b. Lump sum unit of measure and payment.

3. Contract Item 3 (Lump Sum): Contingent Contract Item. Replacement of existing conduit, wiring, power supply breaker, and related appurtenances:

   a. If during the work, it is found that the existing electrical provisions for the new elevator control panel and the work is authorized in writing by the Owner.36, the Contractor shall replace existing conduit, wiring, power supply breaker, and related appurtenances for installation of new elevator control cabinet.

   b. Lump sum unit of measure and payment.

4. Contract Item 4 (Lump Sum): Contingent Contract Item. Replacement of existing conduit, wiring, power supply breaker, and related appurtenances:

   a. If during the work, it is found that the existing Simplex fire alarm does not have adequate I/O and the work is authorized in writing by the Owner.36, the Contractor shall provide additional I/O in the existing Simplex fire alarm panel for new elevator interfaces.

   b. Lump sum unit of measure and payment.

5. Contract Item 5 (Bid Allowance), for Structural Repairs:

   a. Allowance of $50,000. It is believed that these Specifications adequately describe the Work to be performed. If during the Work, it is found that additional work is required and it is authorized in writing by the OWNER, this work shall be paid for under the contingency allowance including all equipment, rigging, labor, supplies, overhead, insurance and profit.

6. Contract Item 6 (Bid Allowance), for Electrical/Mechanical Repairs:

   a. Allowance of $50,000. It is believed that these Specifications adequately describe the Work to be performed. If during the Work, it is found that additional work is required and it is authorized in writing by the OWNER, this work shall be paid for under the contingency allowance including all equipment, rigging, labor, supplies, overhead, insurance and profit.

1.07 PAYMENT

A. Payment Includes: Full compensation for all required labor, products tools, equipment, plant, transportation, services and incidentals; erection or application of an Item of the Works, overhead and profit.

B. Final Payment: Final Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the Engineer multiplied by the unit price for the Work which is incorporated in or made necessary by the Work.

1.08 DEFECT ASSESSMENT

A. Replace the Work, or portions of the Work, not conforming to the specified requirements.

B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct that the defective Work may remain or be partially replaced and the price will be adjusted to a new price at the discretion of the Owner.

1.09 NON-PAYMENT FOR REJECTED PRODUCTS

A. Payment will not be made for any of the following:

1. Products wasted or disposed of in a manner that is not acceptable.

2. Products determined as unacceptable before or after placement.

3. Products not completely unloaded from the vehicle.

4. Products placed beyond the lines and grades of the required Work.

5. Contractor supplied products remaining on hand after completion of the Work.

6. Loading, hauling and disposing of rejected Products.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01250

CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Change Orders

B. Work Orders

1.02 DEFINITIONS

A. Change Order: Refer to the definition in the General Conditions.

B. Work Order: Refer to the definition in the General Conditions.

C. Overhead: Refer to the definition in the General Conditions.

D. Extra Work: Refer to the definition in the General Conditions.

1.03 SUBMITTALS

A. Labor Rates: Submit a listing of employees, in accordance with Section 01330, providing the employee's name, job title or description and the hourly rate of pay including straight and overtime rates.

1. Provide submittal within 14 days after the issuance of the Notice to Proceed for review and acceptance. Annual updates of labor rates may be submitted for review and acceptance if necessary.

2. Payment for Extra Work will be based on the rates given in this submittal.

1.04 CHANGE ORDERS

A. Initiation: Change Order Proposal

1. Initiated by Engineer or Owner. The Owner or the Engineer may issue a Request for Change Order Proposal. The request will contain a description of the intended change with supplementary or revised Drawings and Specifications as applicable and the projected time for accomplishing the change.

2. Initiated by Contractor: The Contractor may propose a change in the Work by submittal of a Change Order Proposal to the Engineer, with a copy to the Owner. The Change Order Proposal will include:

a. a detailed description of the Contractor's proposed change to the Work, including supplementary or revised Drawings and Specifications, as applicable;

b. a statement of the reason for the proposed change and an explanation as to why implementation of such a change would benefit the Project;

c. a statement of the impact of the proposed change, if any, on the Contract Period and/or the Contract Sum; and

d. such other supporting documentation as may be necessary under the circumstances to permit the Owner to fully evaluate the information set forth in (a) through (c) above.

3. By submittal of a Change Order Proposal hereunder, the Contractor certifies and agrees as follows:

a. He has carefully reviewed and evaluated the proposed change to the Work and determined that implementation of such a change is in the best interests of the Project; and

b. The information set forth in the Change Order Proposal (including the statement of impact set forth in Item 2c above is accurate and complete, to the best of his knowledge and belief.

B. Execution of Change Order Proposal:

1. When a Proposal is requested for a change in the Work, the Contractor shall submit his proposal within 14 days following receipt of the Request for Change Order Proposal. The Proposal shall state the increase or decrease, if any, in Contract Period and Contract Sum.

2. The Contractor shall explain the proposal in as much detail as requested by the Owner.

3. Any decrease in price for omitted Work shall include appropriate amounts for profit and overhead.

4. The Owner and Engineer will review the Proposal and may request additional information and documentation which the Contractor shall provide promptly.

5. If the Owner decides to proceed with the change, it will issue a change order for signature first by the Contractor and then by the Owner.

6. The Contractor shall promptly complete the approved change in the Work on receipt of the executed Change Order.

   a. Failure to sign the Change Order by the Contractor shall not relieve him from performing the Work if the Change Order is signed by the Owner.

C. Costs: The cost of both additive and deductive changes in the Work shall be determined as follows:

1. Labor: Applied labor cost of laborers, crew foreman and general foreman performing or directly supervising the Work on the Site. Also included are reasonable travel and subsistence, but only to the extent incurred.

2. Insurance and Taxes: Net premium for Workman's Compensation Insurance, taxes pursuant to the Federal Social Security Act.

3. Additional Materials: Necessary extra materials, delivered at the site.

4. Plant and Equipment: Rent for plant and equipment shall be at the cost for rentals from an independent firm (i.e. a firm which is not owned in whole or in part by the Contractor). If the equipment is owned by the Contractor or rented from a firm in which the Contractor has an interest, the rent shall be calculated in accordance with the applicable provisions and terms of the current "Cost Reference Guide for Construction Equipment" published by Dataquest.

5. Subcontractor Costs: Subcontractor's direct costs, determined by items 1 through 4 in the immediately preceding subparagraphs, plus maximum profit and overhead of 20 percent.

6. Overhead and Profit:

   a. For items 1 through 4 above: plus 20 percent

   b. For item 5 above: plus 10 percent

   c. Overhead shall also include compensation to the Contractor, and all of its subcontractors, for all indirect costs associated with or relating to the Change in the Work including, but not limited to: labor and/or equipment inefficiency, changes in sequence, delays, interferences, disruptions, impact on the unchanged Work, usage taxes, additional premiums for increases in all bonds, additional insurance premiums, supervision, field engineering and coordination, superintendence, small tools, reproduction, change order cost preparation, administration, schedule adjustments and updates, as-built documentation and updates, safety requirements, temporary structure and offices, and all other general and administrative, home office and field office expenses.

7. During periods of downtime, the following conditions shall also apply:
    a. Payment for equipment will be on the basis of an 8-hour day.
    b. No overtime will be included.
    c. No compensation for subsistence will be included.
    d. The rates for overhead and profit will be 10 percent.
    e. No compensation for equipment overhaul, field repair and fuel expenses shall be included.

1.05 WORK ORDERS

A. Initiation: The Owner may issue a Work Order with a Notice to Proceed without a prior Request for a Change Order Proposal or the Contractor's signature.

B. Method of Compensation: The Owner will designate the method of determining the amount of compensation or credit, if any, based on one of the methods contained in this Section and the General Conditions.

C. Timing of the Work: The Contractor shall proceed with the change in the Work immediately upon receipt of the Work Order.

D. Incorporation in Contract Documents: The Work Order will be incorporated into the Contract Documents via a Change Order at a later date.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01250

SECTION 01260

STANDARD PROJECT FORMS

PART 1 – GENERAL

1.01 SCOPE OF WORK

A. The standard forms listed in this Section shall be utilized by all parties in the administration of this Contract. In an effort to promote more efficient communications between the Contractor and the Owner, the forms identified in paragraphs 3.01 and 3.02 shall be used as applicable for this Contract. Additional standard forms to be used for this project can be found in other Specification Sections. Electronic versions are available upon request but are not to be changed unless authorized in writing by the Owner.

PART 2 – PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 OWNER TO CONTRACTOR

A. Request for Change Proposal

B. Work Order

C. Record of Minor Change

D. Change Order

E. Certificate of Beneficial Use

F. Certificate of Final Completion

3.02 CONTRACTOR TO OWNER

A. Payment Breakdown

B. Application and Certification for Payment

C. Request for Clarification

D. Proposed Change Order

E. Subcontractor Qualification Form

F. Electronic Access Request and Authorization Form

1. This form is to be filled out by the Contractor and submitted to the Owner for processing.

G. Contractor’s Electronic Access and Cyber Key Log

1. This form is to be filled out by the Contractor and submitted to the Owner for processing.

H. Plant Impact Request

I. Maintenance Summary Form

J. Spare Parts and Maintenance Material Transmittal

K. Equipment and Systems Owner Instruction Form

L. Contractor’s Notice of Beneficial Use

M. Contractor’s Certificate of Final Completion

N. Consent of Surety to Final Payment

O. Final Payment Affidavit and Release of Claims

END OF SECTION

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

REQUEST FOR CHANGE PROPOSAL (RCP)

TO: RCP No.:

ATTN:

TO CONTRACTOR: You are hereby directed, pursuant to the Contract Documents, to submit a complete proposal that includes:

(1) Your estimated cost, with applicable markups, for the performance of the proposed change or deletion of a part of the work described below; and

(2) If applicable, an increase in the Contract Time or extensions of Milestone Dates supported by scheduling analysis required by the Contract Documents for such requested time extensions.

DESCRIPTION OF CHANGE:

Sketch Attached:
☐ yes ☐ no

_____
Fairfax Water Representative (Printed Name and Signature)

_____
DATE

DISTRIBUTION: (Please check)

____ Construction Department
____ [Contractor] **____Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT #__0579___ DIVISION _480_ CONTRACT NO. _____
PROJECT NAME:____CTP Solids Building Elevator Modernization_____

WORK ORDER NO.

TO: Contractor

ATTN: REFERENCE:

YOU ARE DIRECTED TO PERFORM/OMIT THE FOLLOWING WORK IN ACCORDNACE WITH THE CONTRACT DOCUMENT:

Sketch Attached:
☐ yes ☐ no

Proposed Adjustments:

1. The proposed basis of adjustments to the Contract Sum is:
   ☐ Lump Sum ☐ Increase ☐ Decrease $_____
   ☐ Unit Price of $_____ per _____
   ☐ Time and Material basis per the Contract Documents, Not to Exceed $_____
   ☐ As Follow: _____
2. The Contract Time is Proposed to be ☐ Adjusted ☐ Remains Unchanged
   The proposed adjustment, if any, is ☐ Increase ☐ Decrease of _____ calendar days
   When signed by the Owner and received by the Contractor, this document becomes effective immediately as a Construction Work Order and the Contractor shall proceed immediately with the work promptly.
3. Preparation and execution of an appropriate Change Order will follow
4.

This Work is recommended by: _____ _____ Date:_____
Consultant Signature

This Work is accepted by: _____ _____ Date:_____
[Contractor] Signature

This Work is authorized by: _____ _____ Date: _____
Manager, Construction Signature

DISTRIBUTION: (Please check)

____ Construction Department
____ [Contractor] **___Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

RECORD OF MINOR CHANGE No._

FORM E

Contractor:

Plan Sheet No.:
Description of Minor Change:

Reason:

Requested By:

The above change is for record purposes only and does not alter the Contract requirements, Period or Sum. You are hereby directed to execute this minor change(s) in the work promptly.

CONTRACTOR:

By:_____ Date:_____
(Printed Name and Signature)

FAIRFAX WATER PROJECT ENGINEER

By:_____ Date:_____
(Printed Name and Signature)

Sketch Attached:
☐ yes ☐ no

DISTRIBUTION: (Please check)

____ Construction Department
____ [Contractor] **____Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT #__0579___ DIVISION _480_ CONTRACT NO. _____
PROJECT NAME:____CTP Solids Building Elevator Modernization_____

CONTRACT CHANGE ORDER NO. __

TO:

ATTN:

DESCRIPTION OF CHANGE ORDER:

The following changes to the Contract Documents were agreed upon in accordance with Section 01250 Contract Modification Procedures.

_____
_____
_____
_____
_____
_____
_____
_____

ADJUSTMENT OF CONTRACT SUM:

The net change in the Contract Sum by this Change Order is summarized as follows:

Contract Sum as Awarded	$_____
Adjustment by Previous Change Orders	$_____
Adjusted Contract Sum	$_____
Addition by this Change Order No._____	$_____
Total Adjusted Contract Sum	$_____

DISTRIBUTION: **(Please check)**

FORM CM/7

____ Construction Department
____ [Contractor] **____Consultant**

REV.01/16

Contract No. _____
Project __0579____ Division _480_

ADJUSTMENT OF CONTRACT PERIOD:

Commencing _____

Original Contract Period _____
Previous Change Orders _____
Change Order No. _____
Total Days _____

Original Beneficial Use Date _____
Original Final Completion Date _____

Revised completion dates are as follows:

Beneficial Use _____
Final Completion _____

This Change order constitutes full and final compensation for all matters directly or indirectly related to or arising from the changes to the Work ordered hereby (the "Changed Work"), including but not limited to, all direct and indirect costs associated with the Changed Work and any and all adjustments (of whatever nature) to the Contract Sum or to the Contract Period attributable to the Changed Work.

RECOMMENDED:
CONSULTANT

DATE: _____ BY: _____

ACCEPTED:
[CONTRACTOR]

DATE: _____ BY: _____

APPROVED:
FAIRFAX WATER

DATE: _____ BY: _____
Charles M. Murray, General Manager

DISTRIBUTION: (Please check)

FORM CM/7

____ Construction Department
____ [Contractor] **____Consultant**

REV.01/16

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

CERTIFICATE OF BENEFICIAL USE

FORM F

CONTRACTOR: CONTRACT DATE:

THE WORK SHALL INCLUDE:
The designated Work described above has been reviewed and found to be sufficiently complete for beneficial use. The date of Beneficial Use for the designated Work is hereby established as_____.

DEFINITION OF DATE OF BENEFICIAL USE FOR THE WORK

Date of Beneficial Use shall be the date as certified by the Engineer when the construction of the Work or a specified part thereof is sufficiently completed, in accordance with the Contract Documents, so that the Work or specified part can be utilized for the purpose for which it was intended.

A list of items to be completed or corrected by the Contractor is attached hereto. The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

CONSULTANT _____ BY (Printed Name and Signature) _____ DATE

The Contractor accepts the Beneficial Use Date and agrees to complete the work on the List of items attached hereto as promptly as practical.

_____ CONTRACTOR _____ BY (Printed Name and Signature) _____ DATE

Fairfax Water accepts the Work or designated portion thereof for beneficial use.

FAIRFAX WATER _____ BY (Printed Name and Signature) _____ DATE

The responsibilities of Fairfax Water and the Contractor for security, maintenance, heat utilities, damage to the designated portion of the Work and insurance shall be as attached.

DISTRIBUTION: (Please check)
____ FW Construction
____ FW Director, P&E
____ Consultant
____ FW End User *(Director, T&D – water mains, Manager, Security – security, etc)*
____ Contractor

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

CERTIFICATE OF FINAL COMPLETION

FORM G

CONTRACTOR: CONTRACT DATE:

ENGINEER: CONSULTANT

Fairfax Water has inspected the Work and determined that the Work has been satisfactorily completed in accordance with the intent of the Contract Documents and that all deficient Work (if any) has been completed to the satisfaction of Fairfax Water.

The date of the final Completion of the project is established as_____, which date also identifies the commencement of the warranty period.

Nothing contained herein shall operate to release the Contractor or its sureties from any obligations under the Contract Documents or the Performance and Payment Bonds.

Agreed to by: *(The undersigned certify that they are duly authorized representatives as defined in the Contract Document)*

_____ _____
Contractor (Printed Name and Signature) Notary

Date:_____

_____
CONSULTANT (Printed Name and Signature)

Date:_____

_____
Fairfax Water, Manager of Construction

Date:_____

DISTRIBUTION: (Please check)
____ FW Construction
____ CONSULTANT ____ OTHER
____ CONTRACTOR

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

PAYMENT BREAKDOWN

Item No.	Description	Quantity	Unit of Measure	Cost Per Unit	Scheduled Value A	Work Completed				Stored Materials D	Total Completed & Stored to Date		Balance to Finish F = (A-E)
						Prior Application B		Present Application C					
						Unit	Value	Unit	Value		E = (B+C+D)	%	

DISTRIBUTION: **(Please check)**

____ Manager, Construction
____ [Contractor] **____ Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT #__0579___ DIVISION __480__ CONTRACT NO. _____
PROJECT NAME:____CTP Solids Building Elevator Modernization_____

APPLICATION AND CERTIFICATE FOR PAYMENT No.

TO: **Fairfax Water**
8570 Executive Park Avenue
Post Office Box 1500
Merrifield, Virginia 22116-0815

ARCHITECT/ENGINEER:

CONTRACTOR:

APPLICATION DATE: _____

EXPENSE CODE: ____ **RESPONSIBILITY CENTER:** ___

PERIOD FROM: _____ **TO:** _____

Application is made for Payment, as shown below, in connection with the Contract.
The present status of the account for this Contract is as follows:

ORIGINAL CONTRACT SUM..…….... $_____
Net Change by Change Order……...…… $_____
CONTRACT SUM TO DATE.....…..... $_____

TOTAL COMPLETED & STORED TO DATE (see attached breakdown) ..... $_____
RETAINAGE____%..... $_____
TOTAL EARNED LESS RETAINAGE…….…… $_____

LESS PREVIOUS CERTIFICATES FOR PAYMENT……..…. $_____
PAYMENT DUE……...…..…. $_____
BALANCE TO FINISH……...……..…. $_____

State of: _____County of: _____

The undersigned Contractor certifies that the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by him for Work for which previous Certificates for Payment were issued and payments received from the Owner, no employee of the Authority has received any financial benefit related to this Contract, and that the current payment shown herein is now due.

Contractor:
By: _____ Date: _____

Subscribed and sworn to before me this ____day of_____, 20__
Notary Public:

My Commission Expires: _____

CERTIFICATION BY CONSULTING ENGINEERS AND AUTHORITY

I certify that all items and amounts shown on this request are correct and that payment of the above amount is due.

Date:_____, 20____ By:_____ Title: _____

Date:_____, 20____ By:_____ Title: Manager, Construction

This Certificate is not negotiable. It is payable only to the payee named herein and its issuance, payment and acceptance are without prejudice to any right of the Owner or Contractor under their Contract.

DISTRIBUTION: **(Please check)**

____ Manager, Construction
____ [Contractor] **____ Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

CONTRACTOR'S CERTIFICATION STATEMENT

CONTRACTOR:_____ PAYMENT APPLICATION NO.: _____

The undersigned Contractor represents and certifies that to the best of his knowledge, information and belief that:

(1) All Work for which this Application for Payment is submitted has been completed in full and in accordance with the Contract Documents;

(2) The only outstanding and due items for payment (by the Owner) with respect to the Contract are those to be paid from the funds for which Application is being made;

(3) Title to all Work, stored materials and equipment covered by this Application for Payment will pass to the Owner either upon incorporation in the construction or upon receipt of payment by the Contractor, whichever occurs first, free and clear of all liens, claims, security interests or encumbrances; and no Work, materials or equipment covered by this Application for Payment will have been acquired by the Contractor or by any other person performing the Work at the site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or an encumbrance thereon is retained by the seller or otherwise imposed by the Contractor or such other person;

(4) All materials stored on-site or at any other location, for which payment is requested by this Application, have been properly stored and protected as required by the Contract Documents;

(5) No employee of the Authority has received any financial benefit related to this Contract;

(6) That the current payment shown herein is now due; and

(7) Due and payable amounts and bills have been paid by the Contractor for work for which previous Certificates of Payment were issued and payments received from the Owner; and all Subcontractors or suppliers have been fully and timely paid, except for retainage per the subcontract, for all work performed prior to the time encompassed within this Application for Payment, except for the following (please state Subcontractor name, amount outstanding and reason for nonpayment; *if there is no exception, please write none in the following blank*): _____

_____

By:_____ Date: _____

State of_____) County of_____) to wit: On the _____ day of _____, 20_____ before me personally came and appeared to me known, who by me duly sworn, did depose and say that he is the_____of the _____ that he has the authority to bind the above named firm; and he represents and certifies the foregoing statements are true and complete to the best of his knowledge, information and belief.

My Commission Expires:_____ By:_____ (Seal)

DISTRIBUTION: (Please check)

____ Manager, Construction
____ [Contractor] **____ Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT #__0579___ DIVISION _480_ CONTRACT NO. _____
PROJECT NAME:____CTP Solids Building Elevator Modernization_____

REQUEST FOR CLARIFICATION NO. ____

Transmitted To:_____ Date:_____

Requested By:_____

Drawings No:_____ Spec Section:_____

Questions: (Provide complete description of request with sketches or photos if necessary. Present status of work and suggest a solution, if any)

Response:

By:_____
(Printed Name and Signature)

Date:_____

DISTRIBUTION: **(Please check)**

____ Manager, Construction
____ [Contractor] **____ Consultant**

FORM CM/4

REV. 02/17

Fairfax Water

Planning and Engineering Division

PROPOSED CHANGE ORDER

PROJECT: **CTP Solids Building Elevator Modernization**

PCO NO.: _____ **DATE:**_____

FROM: _____ **CONTRACT NO.:** ____

PROJECT NO.: **0579 , Division 480**

TO: FAIRFAX WATER **REFERENCES:**

CONTRACTOR hereby submits this request for a change in the Contract Sum and/or the Contract Period to perform all Work associated with the above-referenced Work Order or to perform or delete Work in response to the above-referenced Request for Change Order Proposal as follows:

(1) The total direct and indirect costs, with applicable mark-ups for the performance of the proposed change in the work is as follows:

$_____ (Detailed Breakdown Attached)

(2) The increase in the Contract period or extensions of Contract Milestone Dates requested for this proposed Change, supported by the scheduling analysis required by the Contract Documents for such requested time extensions, is as follows:

____ Calendar Days - Contract Period (Details Attached)

____ Calendar Days - Milestone: _____

The Contractor understands and certifies that the proposal stated herein represents all estimated direct and indirect costs and applicable mark-ups allowed by the Contract Documents and/or additional time of performance of the Work associated with this proposed Change. The Contractor further certifies that to the best of his knowledge and belief the cost and pricing data and scheduling analysis submitted herein regarding the performance of the proposed Change in the Work or the deletion of a part of the Work is complete, accurate and current. The Contractor will perform the proposed Change in the Work as directed by the Owner or Engineer.

CONTRACTOR: _____

BY: _____

DATE: _____

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

SUBCONTRACTOR QUALIFICATION FORM

The Contractor must provide all information requested herein with respect to each proposed subcontractor. Duplicates of this form may be used in order to supply the requested information with respect to each such proposed subcontractor. Any doubt on the part of the Contractor with respect to the necessity of disclosing information shall be resolved in favor of disclosure.

Please type or print clearly in black ink. The Contractor may attach additional pages if necessary, and should number any such additional pages consecutively, referencing applicable sections of this form.

PROPRIETARY INFORMATION

The Contractor, at the request of the Proposed Subcontractor, may elect to designate all information contained in this Subcontractor Qualification Form as proprietary by checking the appropriate box.

☐ The information contained in this Subcontractor Qualification Form is submitted voluntarily and deemed a trade secret or proprietary information pursuant to §11-52 of the Code of Virginia, as amended.

☐ The information contained in this Subcontractor Qualification Form is submitted voluntarily and is not considered a trade secret or proprietary information.

Subcontractor Name:_____

Subcontractor's Trade or Specialty:_____

Street Address:_____

City, State, Zip Code:_____

Telephone No._____ Fax No._____ E-Mail:_____

Primary contact with the firm:

Name:_____ Title:_____

Telephone: _____

Type of Firm:

☐ Corporation (if a corporation, provide date and state of incorporation in space below)

☐ Partnership (if a partnership, provide names of all partners, general and limited, and state of organization, as well as date of formation of partnership in space below)

☐ Individual Owner (if individual owner, provide name of owner and date of commencement of business in space below)

☐ Joint Venture (if joint venture, provide information for each party to venture and date of formation of joint venture in space below)

☐ Limited Liability Company (if limited liability company, provide names for all members as well as state of organization in space below)

Federal Employer Identification Number:_____

Virginia Contractor's License Number_____dated_____.
(If the Subcontractor does not currently hold a Virginia Contractor's License, provide a detailed description of how the Subcontractor will obtain a license prior to its commencement of any Work ((as such term is defined in the Contract Documents.))

In the spaces set forth below, please provide the information requested with regard to three contracts performed by the Subcontractor within the past 4 months which were similar in nature and scope to that proposed to be performed on behalf of the Contractor for the above-referenced Project.

1. (a) Project identification and location:_____

_____

(b) Names, title, addresses and phone numbers of the owner and the general contractor:

Owner:_____

Address:_____

Telephone:_____

Individual to Contact and Title:_____

General Contractor:_____

Address:_____

Telephone:_____

Individual to Contact and Title:_____

(c) Description of specific work performed:_____

_____

_____

(d) Subcontract price:

Original subcontract value:_____

Final subcontract value:_____

2. (a) Project identification and location:_____

_____

(b) Names, titles, addresses and phone numbers of owner and general contractor:

Owner:_____

Address:_____

Telephone:_____

Individual to contact and title:_____

General Contractor:_____

Address:_____

Telephone:_____

Individual to contact and title:_____

(c) Description of specific work performed: _____

_____

_____

(d) Subcontract price:

Original subcontract value:_____

Final subcontract value:_____

3. (a) Project identification and location: _____

_____

_____

(b) Names, titles, addresses and phone numbers of owner and general contractor:

Owner:_____

Address:_____

Telephone:_____

Individual to contact and title:_____

General Contractor:_____

Address:_____

Telephone:_____

Individual to contact and title:_____

(c) Description of specific work performed: _____

_____

(d) Subcontract price:

Original subcontract value:

Final subcontract value:

Electronic Access Request and Authorization Form

To be completed by the Department requesting Access Badges or Cyber Keys for Visitors and/or Contractors

Name of Fairfax Water Employee Making This Request	**Department**	**Job Title**

Name to Appear on Cyber Key/Badge Account	
Driver's License Number **DO NOT PROVIDE SSN #**	
Home Address	
Home Telephone Number	
Responsible Division	
Name of Company	
Location of Work	
Description of Work	

Badge Type (check one)

☐ **Contractor/ Consultant (Photo Required)**
Required for all guests on-site more than 30 consecutive days
Photo can be emailed to Security Officer or can be taken in the Personnel Office at Merrifield

☐ **Visitor (No Photo Required)**
Required for all guests on-site less than 30 consecutive days
Visitor badge will be a generic badge without a photo or name of holder

☐ **Cyber Key** **Number of Keys Required** _____

List Area(s) of Required Access (Where does this person need to go?)	**Dates of Access (provide dates)**
	From: / / To: / /

Hours of Access to be Assigned (check those that apply)	**Days of Week Access is Needed (check all that apply)**
☐ Always - 24 hours/day/ 7days/week ☐ Business Hours - Mon. – Fri. 6:00 AM – 5:30 PM ☐ Special (list hours needed include AM and PM) From:_____To:_____	☐ Monday ☐ Tuesday ☐ Wednesday ☐ Thursday ☐ Friday ☐ Saturday ☐ Sunday ☐ Holidays

I/we recommend the listed individual be issued the prescribed access:

Department Name _____

Requested by: _____
(Name of Manager)

PLEASE RETURN FORM TO
SECURITY & SAFETY OFFICE

Recommended by: _____
(Division Director)

Approved by: _____
(Security Officer)

Fairfax Water

PLANNING AND ENGINEERING DIVISION

FCWA PROJECT #__0579___ DIVISION _480_ CONTRACT NO. _____

PROJECT NAME:____CTP Solids Building Elevator Modernization_____

Contractor's Electronic Access and Cyber Key Log

Prepared By: _____ Date Submitted: _____

Name	Company	Telephone	Badge Type			Dates of Access		Days of Week of Access								Hours of Access		
			Contractor	Visitor	Cyber Key	From	To	M	TUE	W	TH	F	SAT	SUN	Holiday	27/7	Business, M-F, 6am to 5:30pm	Special, List Day & Time
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Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

MAINTENANCE SUMMARY FORM

1. EQUIPMENT ITEM: _____

2. LOCATION: _____

3. MANUFACTURER: _____

4. EQUIPMENT/TAG NUMBER(S): _____

5. WEIGHT OF INDIVIDUAL COMPONENTS (OVER 100 POUNDS): _____

6. NAMEPLATE DATA (hp, voltage, speed, etc.): _____

7. MANUFACTURER'S LOCAL REPRESENTATIVE

   a. Name: _____ Telephone No.: _____

   b. Address: _____

8. MAINTENANCE REQUIREMENTS

Maintenance Operation Comments	**Frequency**	**Lubricant (If Applicable)**
List briefly each maintenance operation required and refer to specific information in manufacturer's standard maintenance manual, if applicable. (Reference to manufacturer's catalog or sales literature is not acceptable.)	List required frequency of each maintenance operation.	Refer by symbol to lubricant required.

9. LUBRICANT LIST

Reference Symbol	Shell	Exxon Mobile	Chevron Texaco	BP Amoco	Or Equal
List symbols used in No. 7 above.	List equivalent lubricants, as distributed by each manufacturer for the specific use recommended.				

10. RECOMMENDED SPARE PARTS FOR OWNER'S INVENTORY

Part No.	Description	Unit	Quantity	Unit Cost
Note: Identify parts provided by this Contract with two asterisks.				

11. QUALITY CONTROL: _____

12. PRICE/COST OF ASSET: _____

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT #__0579___ DIVISION _480_ CONTRACT NO. _____
PROJECT NAME:____CTP Solids Building Elevator Modernization_____

SPARE PARTS AND MAINTENANCE MATERIAL TRANSMITTAL

To Owner: _____ Date: _____

From Contractor: _____

Contractor shall package extra material, maintenance materials, spare parts, and tools in clearly identified boxes; indicate manufacturer's name, trade name, part name, stock number, size, color, etc. Indicate which item maintenance material is to be used with, piece of equipment part or tool is for, or where extra material is to be used. Indicate name, address, and phone of closest supplier.

SECTION	DESCRIPTION	QUANTITY

OWNER'S VERIFICATION & ACCEPTANCE:

Accepted by: _____ Date: _____

Contractor shall forward copy of this transmittal to the Engineer.

DISTRIBUTION: ☐ OWNER ☐ CONTRACTOR ☐ ENGINEER

END OF TRANSMITTAL

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

EQUIPMENT AND SYSTEMS OWNER INSTRUCTION REPORT

Contractor: _____

System or equipment: _____

Specification Section: _____

NOTE: Contractor's Representative shall maintain and complete this report during course of instruction.

PRELIMINARY INFORMATION

To be completed by Contractor:

Proposed dates for instruction period: _____to _____.

Contractor Representative conducting instruction: _____.

Number of hours of instruction required by Contract Documents: _____.

To be completed by Owner:
Owner's personnel to be instructed (Designate supervisor if required.)

_____
_____
_____
_____
_____

INSTRUCTION LOG						
Date	**No. Hours**	**Material Covered**	**Instr. Init.**	**Owner's Personnel Receiving Instruction**	**Init.**	**Comments**

Total Hours Completed: _____ Instructor's Signature: _____

Date Instruction Completed: _____ Owner's Signature: _____

Distribution: ☐ Owner ☐ Engineer ☐ Contractor

END INSTRUCTION REPORT

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT #__0579___ DIVISION _480_ CONTRACT NO. _____
PROJECT NAME:____CTP Solids Building Elevator Modernization_____

CONTRACTOR'S NOTICE OF BENEFICIAL USE

DATE OF ISSUANCE: _____ CONTRACT DATE: _____

WORK OR DESIGNATED PORTION OF WORK SHALL INCLUDE: _____
_____

Work performed under this Contract has been thoroughly inspected and is considered to be sufficiently complete, in accordance with Contract Documents, so Owner can occupy or utilize Work or designated portion thereof for its intended use.

☐ Certificates of inspections indicating compliance with requirements of governing authorities are attached hereto.

☐ Certificate of Occupancy have been obtained from governing authorities, are attached hereto.

☐ A comprehensive list of items to be completed or corrected, prepared by Contractor is attached, hereto. Failure to include any items on such list does not alter responsibility of Contractor to complete all Work in accordance with Contract Documents.

Contractor will complete or correct Work by: _____

_____	_____	_____
CONTRACTOR	BY	DATE

OWNER (agrees) (does not agree) to accept portions designated above separately from the rest of the Project.

Owner intends to utilize, occupy or take use on: _____

_____	_____	_____
FAIRFAX WATER	MANAGER, CONSTRUCTION	DATE

The Work designated above, has been determined to be:

☐ Sufficiently complete and a Certificate of Beneficial Use will be issued.

☐ Not complete for the following reasons: _____
_____
_____

_____	_____	_____
CONSULTANT	BY	DATE

DISTRIBUTION: (Please check)

____ Manager, Construction

____ [Contractor] **____ Consultant**

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

CONTRACTOR'S CERTIFICATE OF FINAL COMPLETION

CONTRACT DATE: _____

This is to certify that I am an authorized official of, and have been properly authorized by said firm or corporation to certify following: I know of my own personal knowledge, and do hereby certify on behalf of Contractor, that Work has been reviewed and thoroughly inspected for compliance with Contract Documents, that Work has been completed, in accordance with Contract Documents and Contract is fully performed, that all equipment and systems have been tested and are operating satisfactorily, that all Contract closeout requirements have been completed satisfactorily and submitted, know of no substantial reason that insurance will not be renewable to cover period required by Contract Documents, and Work is ready for final inspection and acceptance.

Attached are three (3) copies of following documents, which are required prior to final payment:

- ☐ Final Application for Payment.
- ☐ Contractor's Affidavit of Payments of Debts and Claims: AIA Document G706.
- ☐ Contractor's Affidavit of Release of Liens: AIA Document G706A.
- ☐ Consent of Surety (if any) to Final Payment: AIA Document G707.
- ☐ Certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least forty five (45) days' prior written notice has been given to Owner.
- ☐ The list(s) of punch items which were to be completed and corrected, with each item initialed to indicate Contractor has verified completion or correction of each.
- ☐ List of Subcontractors and equipment suppliers.
- ☐ Letter of site as-built approval from Fairfax County LDS.
- ☐ If required by Owner, other data establishing payment or satisfaction of obligations arising out of Contract.
- ☐ Maintenance Bond satisfactory to Owner.
- ☐ Transmittal indicating Owner has received approved Project Record Documents.

I understand that acceptance of final payment by Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at time of final Application for Payment.

CONTRACTOR: _____ BY: _____

TITLE: _____ DATE: _____

Subscribed and sworn to me this _____ day of _____

NOTARY PUBLIC: _____

My commission expires: _____

DISTRIBUTION: ☐ MANAGER, CONSTRUCTION ☐ ENGINEER

END OF CONTRACTOR'S CERTIFICATE OF COMPLETION

DATE:

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

CONSENT OF SURETY COMPANY TO FINAL PAYMENT

TO:
Fairfax County Water Authority (d/b/a: Fairfax Water)
8560 Arlington Blvd.
Fairfax, Virginia 22031

CONTRACTOR: _____

CONTRACT DATE: _____

In accordance with Article 10.5 of the General Conditions of the Contract between Fairfax Water and the Contractor referenced above, the

_____ SURETY COMPANY,

On bond of

_____, CONTRACTOR,

hereby approves of the final payment to the Contractor, and agrees that no payment, however, final or otherwise, shall operate to release the Contractor or the SURETY COMPANY from any obligations to Fairfax Water under this Contract or the Performance and Payment Bonds.

(SIGNATURES ON FOLLOWING PAGE)

IN WITNESS WHEREOF,
The Surety Company has hereunto set its hand this_____ day of _____, _____

_____
Surety Company

_____
Signature of Authorized Representative

Attest:
(Seal)

_____
Title

Fairfax Water

PLANNING AND ENGINEERING DIVISION
FCWA PROJECT # 0579 DIVISION 480 CONTRACT NO. _____
PROJECT NAME: CTP Solids Building Elevator Modernization

FINAL PAYMENT AFFIDAVIT AND RELEASE OF CLAIMS

TO: Fairfax County Water Authority (d/b/a: Fairfax Water)
8560 Arlington Blvd.
Fairfax, Virginia 22031

FROM: _____ (the "Contractor")

Contract Between Fairfax Water and the Contractor dated _____ (the "Contract") for the aforementioned project (the Project and real property upon which it is situated are collectively referred to herein as the "Property")

The Contractor hereby (1) acknowledges receipt of all but $___, monies being withheld pending release of claims for all labor, materials, services and benefits (collectively, the "Work") provided pursuant to, and any other amounts due under, the Contract; (2) waives and releases any and all mechanics', materialman's and like liens, and all rights to file any such liens, against the Property for any or all of the Work provided by the Contractor pursuant to the Contract (regardless of whether any such lien properly may be filed against Fairfax Water's Property); (3) agrees to pay and release of record promptly all mechanics', materialman's and like liens filed by itself or others in connection with the Work provided under the Contract which may now or in the future affect the Property; (4) represents and warrants that the Contractor has fully paid all laborers, materialmen and subcontractors of the Contractor for all Work provided by them in connection with the Contract; (5) represents that neither the Contractor nor any other person with whom the Contractor has dealt has any right to file a mechanic's, materialman's or like lien against the Property or has any other claims of any nature (whether pending or threatened) on account of any Work provided by or through the Contractor; (6) waives and releases any and all actions, debts, claims and demands against Fairfax Water arising from or in connection with the Work provided by or through the Contractor pursuant to the Contract Documents; and (7) agrees to defend, indemnify and hold harmless Fairfax Water from any and all loss, cost, liability or claim (including, without limitation, court costs and attorneys' fees) arising out of: (a) any misrepresentation or breach of any of the foregoing representations, covenants and warranties, or (b) the filing or enforcement of any lien or claim of lien or any other claim by the Contractor or by any laborer, materialman or subcontractor of the Contractor or in connection with the Work covered by the Contract.

Dated:_____

_____
[Insert name of Contractor as it appears on the Contract]

By:_____
[Signature of officer or authorized agent signing for Contractor]

Name:_____
[Print name of person signing]

Title:_____
[Print title of person signing]

STATE OF_____)
CITY/COUNTY OF_____)

SUBSCRIBED AND SWORN TO before me in the above jurisdiction this _____ day of _____, _____, by the person whose name appears above.

My commission expires:_____.

[Notarial Seal]

_____
Notary Public

_____

SECTION 01290

APPLICATIONS FOR PAYMENT

PART 1 GENERAL

1.01 SCOPE OF WORK

A. Submit Applications for Payment to the Engineer and Owner in accordance with the terms and schedule established by the General Conditions of the Contract and Agreement between Owner and Contractor.

B. The accepted Schedule of Values (defined under Section 01330) shall be used as the basis for the Contractor's Application for Payment.

1.02 RELATED WORK

A. Section 00500: Agreement between Owner and Contractor.

B. Section 00700: General Conditions.

C. Section 00800: Supplementary Conditions.

D. Section 01250: Contract Modification Procedures.

E. Section 01320: Construction Schedule.

F. Section 01770: Contract Closeout.

G. Section 01780: Project Record Documents

1.03 FORMAT AND DATA REQUIRED

A. Submit applications in automated format using the Application for Payment form provided by the Owner (under Exhibits to the General Conditions). Each submittal shall be accompanied by a Compact Disk containing a spreadsheet set up in the same format as the Schedule of Values (Section 01330) providing complete documentation of all items for which payment is requested. Text and tabular data shall be in Microsoft Excel latest version for Windows format. No payment will be made until the Schedule of Values is approved.

B. Monthly updated progress schedule and submittal of required O&M manuals will be a prerequisite to payment.

1.04 PREPARATION OF APPLICATION FOR PROGRESS PAYMENT

A. Application Form:

1. Fill in required information, including that for Change Orders executed prior to date of submittal of application.

2. Fill in summary of dollar values to agree with respective totals indicated on continuation sheets.

3. Execute certification with signature of a responsible officer of Contract firm. An original notarized signature shall appear on each copy submitted.

B. Continuation Sheets:

1. Fill in total list of all scheduled component items of Work with item number and scheduled dollar value for each item.

2. Fill in dollar value in each column for each scheduled line item when work has been performed or products stored.

   a. Round off values to nearest dollar, or as specified for Schedule of Values.

3. List each Change Order executed prior to date of submission at the end of the continuation sheets. List by Change Order Number, and description, as for an original component item of work.

4. To receive approval for payment on component material stored on site, submit certified true copies of the original paid invoices with the application for payment first made for these materials. Refer to Article 10, Section 00700 for payment on stored materials.

1.05 SUBSTANTIATING DATA FOR PROGRESS PAYMENTS

A. When requested, submit substantiating information with a cover letter identifying:

1. Project.

2. Application number and date.

3. Detailed list of enclosures.

4. For stored products:

   a. Item number and identification as shown on application.

   b. Description of specific material.

B. Submit one copy of data and cover letter for each copy of application.

C. Maintain an updated set of drawings to be used as record drawings in accordance with Section 01780. As a prerequisite for monthly progress payments, exhibit the updated record drawings for review by Owner and Engineer.

D. The Contractor shall maintain an updated construction schedule in accordance with Section 01320. As a prerequisite for monthly progress payments, contractor shall submit the updated construction schedule with the application for progress payments. If the Contractor fails to submit the required updated schedule within the time prescribed, the Engineer may withhold approval of progress payment estimates until such time as the Contractor submits the required updated schedule. Submit as required under Section 01320.

E. The Contractor shall provide, as a prerequisite for monthly progress payments, an accumulating cost curve (tabular and diagram), indicating schedule, forecast and actual progress.

1.06 PREPARATION OF APPLICATION FOR FINAL PAYMENT

A. Fill in Application form as specified for progress payments.

B. Use continuation sheet for presenting the final statement of accounting as specified in Section 01770 – Contract Closeout.

C. Submit all Project Records Documents in accordance with Sections 01770 and 01780.

D. Submit required O&M manuals per Section 01782.

E. Satisfy all other final completion and contract close-out requirements.

1.07 SUBMITTAL PROCEDURES

A. Submit Applications for Payment to the Engineer or Owner at the times stipulated in the Agreement.

B. Number: Three copies of each Application

C. When Application is found to be properly completed and corrected, three originals will be transmitted to Owner and one copy will be returned to Contractor.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

NO TEXT ON THIS PAGE

SECTION 01310

PROJECT MEETINGS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Preconstruction Conference

B. Progress Meetings

C. Pre-Installation and Pre-Demolition Conferences

1.02 REFERENCES

Not Used

1.03 PRECONSTRUCTION MEETINGS

A. General: Prior to the commencement of Work at the Site, a minimum of two preconstruction meeting(s) will be required.

1. Preconstruction Conference: Prior to the commencement of Work at the Site, a preconstruction conference will be held at a predetermined time and place.

B. Preconstruction Conference:

1. Attendance: The conference shall be attended by the following:

a. The Contractor and his Superintendent

b. The principal Subcontractors

c. The representatives of principal suppliers and manufacturers as appropriate

d. The Engineer and his resident project representative(s)

e. The Authorized Representatives of the Owner

f. Governmental representatives as appropriate

g. Others, as requested by the Contractor, the Owner, or the Engineer

2. Purpose: The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed, and procedures for handling such matters, established. The agenda will include the following items:

a. Transmittal, review, and distribution of Contractor's submittals

b. Processing applications for payment

c. Maintaining record documents

d. Critical work sequencing

e. Field decisions, Change Orders and Work Orders

f. Use of premises, office and storage areas, security, housekeeping, and the Owner's needs

g. Major equipment deliveries and priorities

h. Contractor's assignments for safety and first aid

3. Meeting Chairman: The Engineer will preside at the conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

C. Preconstruction Survey: Before any Work is performed at the site by the Contractor, a joint preconstruction survey will be performed by the Contractor, Engineer, and Owner to review the existing conditions and record via video or digital photographs. When the survey is completed, the Owner shall be provided with a video and photographs. Following completion of the Work, the video and photographs may be used to compare conditions prior to construction to those conditions following construction to ascertain that the Site has been properly restored.

1.04 PROGRESS MEETINGS

A. Purpose: The purpose of the meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, review safety and quality control activities, and resolve other potential problems.

B. Scheduling: The Owner and the Contractor will schedule and hold regular progress meetings at least monthly and at other times as requested by the Engineer or required by progress of the Work. The Contractor, the Engineer, and all subcontractors active on the site shall be represented at each meeting. The Contractor may, at his discretion, request attendance by representatives of his suppliers, manufacturers, and other subcontractors.

C. Meeting Chairman: The Engineer shall preside at the meetings and provide for keeping and distributing the minutes.

1.05 PRE-INSTALLATION AND PRE-DEMOLITION CONFERENCES

A. Conduct conferences at the Project site before the start of each construction activity as specified in the Specifications or otherwise directed by the Owner.

B. Attendees: Subcontractors, installers and representatives of manufacturers involved with or affected by the installations shall attend the meeting. The Contractor shall advise the Owner/Engineer of scheduled meeting dates.

C. Agenda: Review progress of construction activities and preparations for the particular activity, including requirements for the following:

1. The applicable contract document requirements.
2. Related RFCs / Change Orders
3. Purchases / Deliveries
4. Submittals / Review of mockups
5. Possible conflicts (space, access, compatibility issues)
6. Time schedules
7. Temporary facilities and controls
8. Inspections/Quality control

9. Safety (Protection of construction, equipment, and personnel)
10. Installation procedure(s)
11. Coordination with other work

D. The Contractor is to keep a written record of each meeting and produce/distribute minutes recording discussions and agreements for items above to all attendees.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01310

NO TEXT ON THIS PAGE

SECTION 01320

CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. This Section specifies the general methods and requirements of submissions applicable to the Construction Progress Schedule. Detailed submittal requirements are specified in the technical sections.

1.02 CONSTRUCTION PROGRESS SCHEDULE

A. Submit the baseline schedule, reflecting major tasks and subtasks, within 20 calendar days of Notice to Proceed.

B. Work shall be scheduled using the Critical Path Method (CPM) type of network analysis. The schedule should be developed and maintained using MS Project, latest Windows version or an approved equal.

C. The Critical Path Method type construction schedule will be used to monitor job progress. The Contractor shall be responsible for providing all information concerning the sequencing, logic and duration of all activities as well as providing the initial CPM logic network (in electronic and paper form) diagram Gantt Chart and tabular report data. Once the baseline schedule is accepted by the Engineer and the Owner, the Contractor shall be responsible for providing monthly updates of the CPM schedule showing actual progress. The Contractor shall submit the computerized printout of the schedule and highlight major changes, if any, on a monthly basis. Within the first week of each month, three (3) copies of the updated schedules shall be submitted to the Owner. If requested by Owner, within the first week of each month, one CD with the electronic file of the updated schedules shall be submitted to the Owner.

D. The contractor shall provide 3-week look-ahead reports at each Monthly Progress meeting as specified in Section 01310.

E. The schedule shall show fabrication and delivery times for all major equipment items.

F. The schedule must include all required start-up and commissioning activities.

G. The Contractor shall submit a complete separate and independent schedule and detailed listing of anticipated submittals during the Contract Period. The submittal schedule shall be submitted within 30 days after Notice to Proceed. The submittal schedule shall then be accepted or revised as required by the Engineer and the Owner within 14 days after receipt, and the Contractor shall incorporate the dates and review durations into his complete CPM schedule.

H. A CPM schedule which shows a completion of any milestone or completion dates prior to the contractual completion date for that milestone or completion date may be accepted, but in no event shall be acceptable as a basis for a claim for additional cost, delay or acceleration against the Owner and Engineer and any of their authorized representatives if the early completion date is not met by the Contractor.

I. Schedule Revisions. The Contractor shall submit any proposed revisions to the accepted baseline CPM schedule to the Owner for review and acceptance. CPM revisions shall be submitted as a computerized printout of the schedule, three (3) copies, and if requested

one CD with the electronic file. All proposed revisions to activities, logic, activity durations, and critical path shall be justified in written tabular form and shall include the impact of the proposed schedule revisions on the project. The Contractor shall not make any changes in the accepted baseline CPM schedule without the prior written acceptance of the Owner and Engineer.

I. Float

1. Definition of Float. As employed in the Contract Documents, the terms “float” and “float time” shall be used interchangeably to mean the period of time between the early start date and the late start date, or the early finish date and the late finish date of any activities set forth on the Construction Schedule.

2. Ownership of Float. The Owner shall have and retain exclusive ownership of the float.

3. Float Time. The Contractor shall not be entitled to any adjustment in the Contract Period, the Construction Schedule, or the Contract Sum, or to any additional payment of any sort by reason of the loss or use of any float time. The Owner may initiate changes to the Work that absorb float time without obligation to adjust or extend the overall completion date or any intermediate completion dates set forth in the CPM network. Owner-initiated changes that affect the critical path on the CPM network shall be the sole grounds for extending (or shortening) the Contract Period. Contractor-initiated changes that encroach on the float time identified in the CPM network may be accomplished with the Owner’s prior approval. Such changes, however, shall give way to Owner-initiated changes competing for the same float time. Delays in the critical path that are not associated with proper requests for time extensions in accordance with Article 8 of the General Conditions shall be deemed to be the responsibility of the Contractor.

J. Delays to Critical Path

1. Whenever it becomes apparent from the current monthly CPM schedule update that delays to the critical path have resulted and these delays are through no fault of the Owner or Engineer and hence, that the Contract completion date will not be met, or when so directed by the Engineer, the Contractor shall take some or all of the following actions at no additional cost to the Owner.

    a. Increase construction manpower in such quantities and crafts as will substantially eliminate the backlog of Work.

    b. Increase the number of working hours per shift, shifts per day, or working days per week; the amount of construction equipment; the forms for concrete work; etc., or any combination of the foregoing to substantially eliminate the backlog of Work.

    c. Reschedule activities to achieve maximum practical concurrence of accomplishment of activities, and comply with the revised schedule.

    d. The Contractor shall submit to the Owner and Engineer for review a written statement of the steps he intends to take to remove or arrest the delay to the schedule. The Contractor shall promptly provide such level of effort to bring the Work back on schedule. Should schedule delays persist, the Contractor's Surety may be asked to attend schedule update meetings.

2. Failure of the Contractor to comply with the requirements herein shall subject him to, at the Owner's sole discretion, withholding, in partial or in total, payments otherwise due the Contractor for work performed under the Contract. Any withholding of monies is not a penalty for noncompliance, but is an assurance for the Owner that funds will be available to implement these requirements should the Contractor fail to do so, since failure of the Contractor to comply with these requirements shall mean that the Contractor failed to prosecute the Work with such diligence as to ensure its completion within the contractual dates.

K. The Contractor will not be entitled to any extension of time for the completion of the Project, nor to recover any damages for any delay attributed to the Owner, the Engineer, or their agents, with respect to any delay that is alleged to have occurred during a period of time in which the Contractor has failed to provide or to maintain an approved accepted schedule that meets all requirements of the Contract Documents.

PART 2 - PRODUCTS

(NOT USED)

PART 3 - EXECUTION

(NOT USED)

- END OF SECTION –

NO TEXT ON THIS PAGE

SECTION 01330

SUBMITTALS

PART 1 GENERAL

1.01 DESCRIPTION OF REQUIREMENTS

A. This Section specifies the general methods and requirements of submissions applicable to Shop Drawings, Product Data, Samples, Mock Ups, Construction Photographs, and Submittal Schedules. Detailed submittal requirements are specified in the technical sections.

B. All submittals shall be clearly identified by reference to Section Number, Paragraph, Drawing Number or Detail as applicable. Submittals shall be clear and legible and of sufficient size for presentation of data.

1.02 CONSTRUCTION PROGRESS SCHEDULE

A. Contractor shall submit to Engineer for review a schedule of the proposed construction operations in accordance with Section 01320.

B. At least monthly the schedule shall be revised and resubmitted as necessary to reflect changes in the progress of the Work.

C. Owner may require Contractor, at Contractor's expense, to add to its plant, equipment, or construction forces, as well as increase the working hours, if operations fall behind schedule at any time during the construction period.

D. If the initial progress schedule or any subsequent revision is not acceptable to Engineer, the schedule shall be revised and resubmitted as many times as necessary until the schedule is acceptable.

1.03 SHOP DRAWING SUBMITTAL SCHEDULE

A. Contractor shall submit to Engineer a schedule of submittals for the Shop Drawings and Engineering Data that are required by the specifications in accordance with Section 01320.

1.04 PROGRESS REPORTS

A. A progress report shall be submitted to Engineer each month with the application for partial payment. If the Work falls behind schedule, Contractor shall submit additional progress reports at such intervals as Engineer may request.

B. Each progress report shall include sufficient narrative to describe current and anticipated delaying factors, their effect on the progress schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to Engineer, must be substantiated with satisfactory evidence.

C. Each progress report shall also include three copies of the accepted graphic schedule updated to indicate actual progress.

1.05 SCHEDULE OF VALUES

A. Schedule of Values shall be submitted to Owner and Engineer for review within 20 days of the Notice To Proceed.

B. The Contractor shall prepare a bid breakdown for the Lump Sum Contract Items in accordance with Article 10B of the General Conditions. The bid breakdown shall be prepared in such manner as approved by the Engineer to permit apportionment of construction cost to the various facilities, equipment, and structures included in this Contract.

C. The lump sum bid shall be broken down by reference to the applicable Specification Sections.

D. In addition to the dollar amount for each item, the bid breakdown shall include the physical quantities of the Work required for each item. Quantities listed shall be in units of number, size, length, area, volume or weight which are customarily used and can be readily verified.

E. Equipment items requiring appreciable amounts of installation effort shall be broken down into delivery and installation costs. Process systems made up of several items of equipment shall be subdivided into their component parts.

F. The cost of preparing a bid breakdown to conform to requirements for apportioning construction costs to facilities and structures shall be included in Contract Item 1 and no additional payment will be made therefore.

G. If, in the opinion of the Owner, the cost data does not meet the requirements for a balanced bid breakdown, the Contractor shall present documentation to the Owner substantiating any cost allocation on the cost data.

1.06 SCHEDULE OF PAYMENT

A. At the time the schedule of values is submitted, Contractor shall submit to Engineer a schedule of estimated monthly payments. The schedule shall be revised and resubmitted each time an application for partial payment varies more than 10 percent from the estimated payment schedule.

1.07 SHOP DRAWINGS AND ENGINEERING DATA.

A. General

1. Shop Drawings and engineering data (submittals) covering all equipment and fabricated and building materials which will become a permanent part of the Work under this Contract shall be submitted to Engineer for review. Submittals shall verify compliance with the Contract Documents, and shall include drawings and descriptive information in sufficient detail to show the kind, size, arrangement, and operation of component materials and devices; the external connections, anchorages, and supports required; performance characteristics; and dimensions needed for installation and correlation with other materials and equipment. When an item consists of components from several sources, Contractor shall submit a complete initial submittal including all components.

2. The Contractor may request access to electronic media files of the Contract Drawings to assist submittal preparation. The Contractor shall enter into an agreement with the Owner and Engineer to use these electronic files, and be subject to constraints under the agreement. The Contractor will be required to sign the Engineers disclaimer if electronic files are requested.

3. Where required, Shop Drawings shall be sealed by a professional engineer registered in the Commonwealth of Virginia including, but not limited to, submittals required by the Fairfax County Special Inspections Program, Fairfax County building permit approvals and VDOT standards and specifications, and where indicated in the specifications.

4. All submittals, regardless of origin, shall be stamped with the approval of Contractor and identified with the name and number of this Contract, Contractor's name, and references to applicable specification paragraphs and Contract Drawings. Each submittal shall indicate the intended use of the item in the Work. When catalog pages are submitted, applicable items shall be clearly identified and inapplicable data crossed out. The current revision, issue number, and date shall be indicated on all drawings and other descriptive data.

5. Contractor shall be solely responsible for the completeness of each submission. Contractor's stamp of approval is a representation to Owner and Engineer that Contractor accepts sole responsibility for determining and verifying all quantities, dimensions, field construction criteria, materials, catalog numbers, and similar data, and that Contractor has reviewed and coordinated each submittal with the requirements of the Work and the Contract Documents.

6. All deviations from the Contract Documents shall be identified as deviations on each submittal and shall be tabulated in Contractor's letter of transmittal. Such submittals shall, as pertinent to the deviation, indicate essential details of all changes proposed by Contractor (including modifications to other facilities that may be a result of the deviation) and all required piping and wiring diagrams.

7. Eight copies of each shop drawing and necessary data shall be submitted to Engineer and two copies submitted to the Owner. Engineer will return two marked copies (or one marked reproducible copy) to Contractor. Contractor shall submit to Engineer three additional copies of all drawings and data necessary to meet the requirements of the Fairfax County Special Inspections Program, as described herein. When requested by the Engineer, the Contractor shall submit 3 additional copies of an approved submittal with all markups and comments incorporated as a record set submittal. Additional review time for a record set submittal shall be for the Owner (unless it is rejected as non-compliance.)

8. Facsimile (fax) copies will not be acceptable. Engineer will not accept submittals from anyone but Contractor. Submittals shall be consecutively numbered in direct sequence of submittal and without division by subcontracts or trades.

9. Electronic Submittals: The Contractor may request approval to transmit submittals electronically in pdf or other acceptable formats. If electronic submittal is approved by the Engineer or Owner, it must contain all information required of hard copy submittals. All the electronic documents shall be searchable. Scanned or photocopied files/pages are not acceptable. Reviews will be completed and returned electronically to the website. Once the submittal has been approved by the Engineer and returned electronically to the website, the Contractor shall submit three (3) hard copies to the Owner for their records with all mark-ups and comments incorporated. Resubmission of submittals transmitted electronically shall conform to the requirements of paragraph 1.07.E of this Section. Where submittals are required by the Fairfax County Special Inspections Program; 3 additional hard copies may be required of the approved submittals in accordance with paragraph 1.07.D.

10. Electronic Correspondence: The Contractor may submit electronic pdf format copies of project correspondence via email, followed up with the original copy via US Mail or hand delivery.

11. Submittals shall contain:

    a. The date of submission and the dates of any previous submissions.

    b. The Project title and number.

    c. Contractor identification.

    d. The names of:

        1) Contractor

        2) Supplier

        3) Manufacturer

    e. Identification of the product, with the section number, page and paragraph(s).

    f. Field dimensions, clearly identified as such.

    g. Relation to adjacent or critical features of the work or materials.

    h. Applicable standards, such as ASTM or Federal Standards numbers.

    i. Identification of deviations from Contract Documents.

    j. Identification of revisions on resubmittals.

    k. A blank space suitably sized for Contractor and Engineer stamps.

    l. Where calculations are required to be submitted by the Contractor, the calculations shall have been checked by a qualified individual other than the preparer. The submitted calculations shall clearly show the names of the preparer and of the checker.

B. Engineer's Review of Submittals.

1. Engineer's review of submittals will cover only general conformity to the Drawings and Specifications, external connections, and dimensions which affect the layout. Engineer's review does not indicate a thorough review of all dimensions, quantities, and details of the material, equipment, device, or item shown. Engineer's review shall not relieve Contractor of Contractor's sole responsibility for errors, omissions, or deviations in the drawings and data, nor of Contractor's sole responsibility for compliance with the Contract Documents.

2. In general, Engineer’s submittal review period will not exceed 28 consecutive calendar days in length and shall commence on the first calendar day immediately following the date of arrival of the submittal or resubmittal in Engineer’s office. Submittals requiring complex review and coordination may involve additional review time. The time required to mail the submittal or resubmittal back to Contractor shall not be considered a part of the submittal review period.

3. If the shop drawings, data or samples as submitted describe variations and show a departure from the Contract requirements which Engineer finds to be in the interest of the Owner and to be so minor as not to involve a change in Contract Price or Contract Time, the Engineer may return the reviewed drawings without noting an exception.

4. Submittals will be returned to the Contractor under one of the following codes.

   Code 1 "APPROVED" is assigned when there are no notations or comments on the submittal. When returned under this code the Contractor may release the equipment and/or material for manufacture.

   Code 2 "APPROVED AS NOTED". This code is assigned when a confirmation of the notations and comments IS NOT required by the Contractor. The Contractor may release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product.

   Code 3 "APPROVED AS NOTED/CONFIRM". This combination of codes is assigned when a confirmation of the notations and comments IS required by the Contractor. The Contractor may, at his own risk, release the equipment or material for manufacture; however, all notations and comments must be incorporated into the final product. This confirmation shall specifically address each omission and nonconforming item that was noted. Confirmation is to be received by the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the confirmation.

   Code 4 "APPROVED AS NOTED/RESUBMIT". This combination of codes is assigned when notations and comments are extensive enough to require a resubmittal of the entire package. This resubmittal is to address all comments, omissions and non-conforming items that were noted. Resubmittal is to be received by the Engineer within 15 calendar days of the date of the Engineer's transmittal requiring the resubmittal.

   Code 5 "NOT APPROVED" is assigned when the submittal does not meet the intent of the Contract Documents. The Contractor must resubmit the entire package revised to bring the submittal into conformance. It may be necessary to resubmit using a different manufacturer/vendor to meet the Contract Documents.

   Code 6 "COMMENTS ATTACHED" is assigned where there are comments attached to the returned submittal which provide additional data to aid the Contractor.

   Code 7 “RECEIPT ACKNOWLEDGED” is assigned to acknowledge receipt of submittal that is not subject to the Engineer’s review and approval and is being filed for information purposes only.

   Codes 1 through 5 designate the status of the reviewed submittal with Code 6 showing there has been an attachment of additional data.

5. Resubmittals will be handled in the same manner as first submittals. On resubmittals the Contractor shall identify all revisions made to the submittals, either in writing on the letter of transmittal or on the shop drawings by use of revision triangles or other similar methods. The resubmittal shall clearly respond to each comment made by the Engineer on the previous submission. Additionally, the

Contractor shall direct specific attention to any revisions made other than the corrections requested by the Engineer on previous submissions.

6. Partial submittals may not be reviewed. The Engineer will be the only judge as to the completeness of a submittal. Submittals not complete will be returned to the Contractor and will be considered "Not Approved" until resubmitted. The Engineer may at his option provide a list or mark the submittal directing the Contractor to the areas that are incomplete.

7. Repetitive Review

    a. Shop drawings and other submittals will be reviewed no more than twice at the Owner's expense (excluding one record set review cycle). All subsequent reviews will be performed at times convenient to the Engineer and at the Contractor's expense, based on the Engineer's then prevailing rates. The Contractor shall reimburse the Owner for all such fees invoiced to the Owner by the Engineer. Submittals are required until approved.

    b. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Time.

8. If the Contractor considers any correction indicated on the shop drawings to constitute a change to the Contract Documents, the Contractor shall give written notice thereof to the Engineer at least 20 working days prior to release for manufacture.

9. When the shop drawings have been completed to the satisfaction of the Engineer, the Contractor shall carry out the construction in accordance therewith and shall make no further changes therein except upon written instructions from the Engineer.

10. When the drawings and data are returned marked "NOT APPROVED", the corrections shall be made as noted thereon and as instructed by Engineer and six corrected copies (or one corrected reproducible copy) resubmitted. Facsimile (fax) copies will not be acceptable.

11. When the drawings and data are returned marked "APPROVED AS NOTED", "APPROVED", or "RECORD COPY", no additional copies need be furnished unless requested by Engineer at time of review.

C. Contractor's Responsibilities

1. Review shop drawings, product data and samples, including those by subcontractors, prior to submission to determine and verify the following:

    a. Field measurements

    b. Field construction criteria

    c. Catalog numbers and similar data

    d. Conformance with related Sections

2. Each shop drawing, sample and product data submitted by the Contractor shall have affixed to it the following Certification Statement including the Contractor's Company name and signed by the Contractor: "Certification Statement: by this submittal, I

hereby represent that I have determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data and I have checked and coordinated each item with other applicable approved shop drawings and all Contract requirements." Shop drawings and product data sheets 11 in x 17 in and smaller shall be bound together in an orderly fashion and bear the above Certification Statement on the cover sheet. The cover sheet shall fully describe the packaged data and include a listing of all items within the package. Submittals shall be delivered to the Engineer's site field office.

3. The Contractor shall utilize a 10 character submittal identification numbering system in the following manner:

   a. The first character shall be a D, S, or M, which represents Shop/Working Drawing and other Product Data (D), Sample (S), or Operating/ Maintenance Manual (M).

   b. The next five digits shall be the applicable Section Number.

   c. The next three digits shall be the numbers 001 to 999 to sequentially number each initial separate item or drawing submitted under each specific Section Number.

   d. The last character shall be a letter, A to Z, indicating the submission, or resubmission of the same Drawing, i.e., "A=1st submission, B=2nd submission, C=3d submission, etc. A typical submittal number would be as follows:

D 03300 008 B

D	=	Shop Drawing
03300	=	Section for Concrete
008	=	The eighth initial submittal under this section
B	=	The second submission (first resubmission) of that particular shop drawing

4. Notify the Engineer in writing, at the time of submittal, of any deviations in the submittals from the requirements of the Contract Documents.

5. The review and approval of shop drawings, samples or product data by the Engineer shall not relieve the Contractor from the responsibility for the fulfillment of the terms of the Contract. All risks of error and omission are assumed by the Contractor and the Engineer will have no responsibility therefor.

6. No portion of the work requiring a shop drawing, sample, or product data shall be started nor shall any materials be fabricated or installed prior to the approval or qualified approval of such item. Fabrication performed, materials purchased or on site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The Owner will not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.

7. Project work, materials, fabrication, and installation shall conform with approved shop drawings, applicable samples, and product data.

D. Resubmittal of Drawings and Data

1. Contractor shall accept full responsibility for the completeness of each resubmittal. Contractor shall verify that all corrected data and additional information previously requested by Engineer are provided on the resubmittal.

2. When corrected copies are resubmitted, Contractor shall in writing direct specific attention to all revisions and shall list separately any revisions made other than those called for by Engineer on previous submissions.

3. Requirements specified for initial submittals shall also apply to resubmittals. Resubmittals shall bear the number of the first submittal followed by a letter (A, B, etc.) to indicate the sequence of the resubmittal.

4. If more than one resubmission is required because of failure of Contractor to provide all previously requested corrected data or additional information, Contractor shall reimburse Owner for the charges of Engineer for review of the additional resubmissions. This does not include initial submittal data such as shop tests and field tests which are submitted after initial submittal.

5. Resubmittals shall be made within 30 days of the date of the letter returning the material to be modified or corrected, unless within 14 days Contractor submits an acceptable request for an extension of the stipulated time period, listing the reasons the resubmittal cannot be completed within that time.

6. Any need for more than one resubmission, or any other delay in obtaining Engineer's review of submittals, will not entitle Contractor to extension of the Contract Times unless delay of the Work is directly caused by a change in the Work authorized by a Change Order or by failure of Engineer to review any submittal within the submittal review period specified herein and to return the submittal to Contractor.

E. Color Selection

1. Contractor shall submit color choices for Owner selectrion.

1.08 ELECTRICAL AND CONTROL WIRING IDENTIFICATION

A. Contractor shall verify approved submittals, provided with unique wiring identification, match actual installation of product or equipment. In the event that installation does not match wiring identification on submittal, a resubmittal and approval process shall be required at no expense to the Owner.

1.09 SOURCE (ORIGINAL) ELECTRONIC FORMAT

A. Shop Drawings and Submittals for equipment, components, and products containing documentation generated or modified specifically for this project shall be provided in their source (original) electronic format (ex. AutoCAD).

1.10 PROFESSIONAL ENGINEER (P.E.) CERTIFICATION FORM

A. If specifically required in other related Sections, submit a P.E. Certification for each item required, in the form attached to this Section, completely filled in and stamped.

PART2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

P.E. CERTIFICATION FORM

The undersigned hereby certifies that he/she is a professional engineer registered in the Commonwealth of Virginia and that he/she has been employed by

_____to design
(Name of Contractor)

_____
_
(Insert P.E. Responsibilities)

in accordance with Section _____for the CTP Solids Building Elevator Modernization.

The undersigned further certifies that he/she has performed the design of the _____

_____
_

_____, that said design is in conformance with all applicable local, state and federal codes, rules, and regulations, and that his/her signature and P.E. stamp have been affixed to all calculations and drawings used in, and resulting from, the design.

The undersigned hereby agrees to make all original design drawings and calculations available to the

_____
__
(Insert Name of Owner)

or Owner's representative within seven days following written request therefore by the Owner.

_____	_____
P.E. Name	Contractor's Name
_____	
P.E. Registration Number	
_____	_____
Signature	Signature
_____	_____
Address	Title
	_____
	Address

NO TEXT THIS PAGE

SECTION 01410

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Partial outline of the major laws, codes and requirements to be followed on the project.

1.02 REFERENCES

A. International Codes/International Code Council
B. Virginia Uniform Statewide Building Code (VUSBC)
C. Fairfax County Public Facilities Manual
D. National Electrical Code (NEC)
E. Virginia Water Control Board Regulations
F. Section 14250-Hydraulic Elevator Modernization
G. ASME A17.1 Safety Code for Elevators and Escalators
H. ASME A17.2 Guide for Inspection of Elevators, Escalators and Moving Walks.
I. ASME A17.5 Elevator and Escalator Electrical Equipment.

1.03 REGULATORY REQUIREMENTS

A. Compliance with the Law: Precautions shall be exercised at all times for the protection of persons and property. The safety provisions of all applicable laws, building and construction codes including, but not limited to, the U.S. Department of Labor Occupational Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54), shall be observed. The U.S. Department of Labor Safety and Health Regulations shall be complied with except where state safety standards have been approved by the Secretary of Labor in accordance with provisions of the Occupational Safety and Health Act, in which case compliance with state and local standards is required.

B. Applicable Codes: The codes listed under references of this Section are the applicable codes for this project. Other standard codes which apply to the Work are designated in the individual specification Sections.

1.04 PERMITS

A. The Contractor shall obtain, keep current and pay all fees for any necessary construction permits from those authorities, agencies, or municipalities having jurisdiction over land areas, utilities, or structures which are located within the Contract Limits and which will be occupied, encountered, used, or temporarily interrupted by the Contractor's operations unless otherwise stated. Record copies of all permits shall be furnished to the Engineer and Owner.

B. When construction permits are accompanied by regulations or requirements issued by a particular authority, agency or municipality, it shall be the Contractor's responsibility to familiarize himself and comply with such regulations or requirements as they apply to his operations on this Project.

C. The Contractor shall abide by the conditions of permits related to the Work and shall obtain proof of satisfaction of conditions from issuers of permits prior to acceptance of the Work by the Owner.

D. Noise Variance: The Contractor is responsible for obtaining this in accordance with Section 01500.

E. Trade Permits: The Contractor shall be responsible for obtaining his own trade permits.

F. The Contractor shall submit all required documentation for permits to be obtained by the Contractor without delay, allowing for adequate review time by approving authorities. Any delay caused by the failure of the Contractor to submit permit applications in a timely fashion or to respond to comments from reviewers, will not entitle the Contractor to an extension of time.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not used

END OF SECTION 01410

NO TEXT ON THIS PAGE

SECTION 01420

REFERENCES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Abbreviations

B. Reference Standards

1.02 ABBREVIATIONS AND SYMBOLS

A. Technical Societies, organizations, other bodies: Reference to a technical society, organization, or body may be made in the Specifications by abbreviations in accordance with the following list:

AAMA	Architectural Aluminum Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AFBMA	Antifriction Bearing Manufacturers Association
AGA	American Gas Association
AGMA	American Gear Manufacturers Association
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
AREA	American Railway Engineering Association
APA	American Plywood Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASSE	American Society of Sanitary Engineering
ASTM	American Society for Testing and Materials
AWPA	American Wood Products Association
AWWA	American Water Works Association
CISPI	Cast Iron Soil Pipe Institute
CMAA	Crane Manufacturers Association of America
CRSI	Concrete Reinforcing Steel Institute
DHI	Door and Hardware Institute
FGMA	Flat Glass Marketing Association
IEEE	Institute of Electrical and Electronics Engineers
IFI	Industrial Fasteners Institute
ISA	International Society of Arboriculture
NAAMM	National Association of Architectural Metals
NACE	National Association of Corrosion Engineers
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association Manufacturers
OSHA	Occupational Safety and Health Administration
PCI	Prestressed Concrete Institute
SAE	Society of Automotive Engineers
SCPRF	Structural Clay Products Research Foundation
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
SPI	Society of the Plastics Industry
SSPC	Steel Structures Painting Council

UL	Underwriters' Laboratories, Inc.
USACOE	U.S. Army Corps of Engineers
USBS	U.S. Bureau of Standards
USBR	U.S. Bureau of Reclamation
VDH	Virginia Department of Health
VDOT	Virginia Department of Transportation
VSWCB	Virginia State Water Control Board

B. Common Abbreviations:

AWG	American Wire Gauge
CS	Commercial Standard
Fed Spec	Federal Specifications
IPS	Iron Pipe Size
MIL	Military Specification
NEC	National Electrical Code
PS	Product Standard

1.03. REFERENCES

A. Section 14250-Hydraulic Elevator Modernization

1.04 REGULATORY REQUIREMENTS

A. Reference to Standards: Whenever reference is made to furnishing materials or testing thereof to conform to the standards of any technical society, organization, or body, it shall be construed to mean the latest standard, code, or specification, adopted and published at the time of the Bid unless otherwise noted.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION 01420

SECTION 01450

QUALITY CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Inspection Services

B. Inspection of Materials

C. Contractor's Quality Control

D. Cost of Inspection

E. Failure to Comply with Contracts

1.02 SUBMITTALS

A. Certificates of Manufacture: The Contractor shall furnish the Engineer authoritative evidence in the form of Certificates of Manufacture that the materials and equipment to be used in the Work have been manufactured and tested in conformity with the Contract Documents. These certificates shall include copies of the results of physical tests and chemical analyses, where necessary, that have been made directly on the product or on similar products of the manufacturer.

1.03 INSPECTION OF WORK

A. Work May Be Rejected at Any Time: During the progress of the Work and until the Date of Final Completion, the Contractor shall at all times afford the Authorized Representatives every reasonable, safe, and proper facility for inspecting the Work at the Site. The observation and inspection of any Work shall not relieve the Contractor of any of his obligations to perform proper and satisfactory Work as herein specified. If at any time an inspection, test, or analysis of Work reveals faulty design, inferior, or defective materials, poor workmanship, improper installation, excessive wear, or nonconformity with the requirements of the Contract Documents, such Work will be rejected and shall be replaced with satisfactory Work at the Contractor's expense. Finished or unfinished Work found not to be in strict accordance with the Contract shall be replaced as directed, even though such Work may have been previously approved and payment made therefore.

B. Removal of Rejected Work and Materials: The Owner or its Authorized Representatives shall have the right to reject materials and workmanship which are defective or require correction. Rejected Work and materials must be promptly removed from the Site, which must at all times be kept in a reasonably clean and neat condition.

C. Failure to Reject Inferior Work and Materials: Failure or neglect on the part of the Owner or its Authorized Representatives to condemn or reject bad or inferior Work or materials shall not imply an acceptance of such Work or materials. Nor shall it be construed as barring the Owner or its Authorized Representatives at any subsequent time from recovering damages or a sum of money needed to build anew all portions of the Work in which inferior workmanship or improper materials were used.

D. Examination of Completed Work: Should it be considered necessary or advisable by the Owner or its Authorized Representatives at any time before final acceptance of the Work to make examinations of portions already completed, by removing or tearing out all or portions of such Work, the Contractor shall, on request promptly furnish all necessary facilities, labor, and material for that purpose. If such Work is found to be defective in any respect, the Contractor shall defray all expenses of such examination and of satisfactory reconstruction. If, however, such Work is found to meet the requirements of the Contract, the cost of examination and

restoration of the Work shall be considered an item of Extra Work to be paid for in accordance with the provisions of these Contract Documents.

E. Proper Operation of Equipment during Tests or Training: The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner accepts the Work and issues a Certificate of Beneficial Use.

1.04 INSPECTION OF MATERIALS

A. Inspection During Manufacture, Preparation or Testing: Where required by the Contract Documents, the Contractor shall give notice in writing to the Engineer sufficiently in advance of his intention to commence the manufacture or preparation of materials especially manufactured or prepared for use in or as part of the permanent construction. Such notice shall contain a request for inspection, the date of commencement, and the expected date of completion of the manufacture or preparation of materials. Upon receipt of such notice, the Engineer will arrange to have a representative present at such times during the manufacture or testing as may be necessary to inspect the materials, or he will notify the Contractor that the inspection will be made at a point other than the point of manufacture or testing, or he will notify the Contractor that the inspection will be waived. The Contractor must comply with these provisions before shipping any materials. Such inspection will not release the Contractor from the responsibility for furnishing materials meeting the requirements of the Contract Documents.

B. Testing Electrical and Mechanical Equipment: Tests of electrical and mechanical equipment and appliances shall be conducted in accordance with recognized test codes of the ANSI, ASME, or IEEE, except as may otherwise be stated herein.

1.05 COSTS OF INSPECTION

A. Inspection by the Owner or its Authorized Representatives: All inspection and testing of materials furnished under this Contract will be performed by the Owner or its Authorized Representatives or inspection bureaus without cost to the Contractor, unless otherwise expressly specified. The Contractor shall reimburse the Owner for expenditures incurred in making such tests on materials and equipment which were rejected for noncompliance. Costs of inspections required outside of normal working hours will be paid by the Contractor at a rate of $115/hr for each inspector required. Normal working hours are considered to be a maximum of 10 hours per day, Monday through Saturday.

B. Shop and Field Tests: The cost of shop and field tests of equipment and certain other tests specifically called for in the Contract Documents shall be borne by the Contractor, and such cost shall be deemed to be included in the Contract Sum.

C. Tests for Equivalent Materials and Equipment: Materials and equipment submitted by the Contractor as the equivalent to these specifically named in the Contract may be tested by the Owner for compliance. The Contractor shall reimburse the Owner for expenditures incurred in making such tests on materials and equipment which were rejected for noncompliance.

1.06 FAILURE TO COMPLY WITH CONTRACTS

A. Rejection of Equipment or Material: If it is ascertained by testing or inspection that the material or equipment does not comply with the Contract, the Contractor will be notified and he will be directed to refrain from delivering said material or equipment, or to remove it promptly from the Site or from the Work and replace it with acceptable material without cost to the Owner. Failure of the Owner or its Authorized Representatives to ascertain noncompliance or to notify the Contractor of any noncompliance shall not relieve the Contractor from fulfilling his obligations under the terms and conditions of the Contract.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Equipment and Machinery: The Contractor shall have on hand sufficient proper equipment and machinery of adequate capacity to facilitate the Work and to handle all emergencies normally encountered in Work of this character.

END OF SECTION 01450

NO TEXT THIS PAGE

SECTION 01500

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. General Requirements

B. Temporary Utilities

C. Temporary Construction

D. Barricades and Enclosures

E. Security

F. Temporary Controls

G. Access and Parking

H. Use of Site for Storage and Field Offices

I. Emergencies

1.02 RELATED SECTIONS

A. (Not Used)

1.03 GENERAL REQUIREMENTS

A. Furnish plant and equipment which will be efficient, appropriate and large enough to secure a satisfactory quality of work and a rate of progress which will ensure the completion of the work within the time stipulated in the Bid Form. If at any time such plan appears to the Engineer to be inefficient, inappropriate or insufficient for securing the quality of work required or for producing the rate of progress aforesaid, he may order the Contractor to increase the efficiency, change the character or increase the plant equipment, and the Contractor shall conform to such order. Failure of the Engineer to give such order shall in no way relieve the Contractor of his obligations to secure the quality of the work and rate of progress required.

B. Contractor to Furnish Temporary Facilities: All false work, scaffolding, ladders, hoistways, braces, pumping plants, shields, trestles, roadways, sheeting, centering forms, barricades, drains, flumes, and the like, any of which may be needed in the construction of any part of the work and which are not herein described or specified in detail, must be furnished, maintained and removed by the Contractor, and he shall be responsible for the safety and efficiency of such works and for any damage that may result from their failure or from their improper construction, maintenance or operation.

C. First Aid: In addition to any other requirements, the Contractor shall maintain a readily accessible, completely equipped first aid kit at each location where work is in progress.

D. Safety Responsibility: The Contractor shall be solely responsible for safety and security at the site. The Contractor will indemnify and hold harmless the Owner and its Authorized

Representatives for any safety violation, or noncompliance with governing bodies and their regulations, and for accidents, deaths, injuries, or damage at the site during occupancy or partial occupancy of the site by the contractor and while performing any part of the Work.

1.04 TEMPORARY UTILITIES

A. Light and Power: The Contractor shall provide temporary lighting and power facilities required for the proper construction and inspection of the Work. If these facilities are inadequate, the Contractor will not be permitted to proceed with any portion of the Work affected thereby. Temporary lighting and power shall be maintained until the Work is accepted.

B. Heat: The Contractor shall provide temporary heat, whenever required, for work being performed during cold weather and to prevent freezing of water pipes and other damage to the Work or existing facilities. The use of open salamanders and other temporary heating devices that cause smoke are not permitted.

C. Sanitary Facilities: The Contractor shall not be allowed to use any of the Owner's existing sanitary facilities or those included in the Work. The Contractor shall furnish and maintain adequate temporary sanitary facilities for his personnel, including all subcontractor personnel, for the duration of the Contract; shall prohibit and prevent nuisances on the site of the Work or on adjoining property; and shall permanently remove from the site any employee who violates this rule. The Contractor shall also abide by all applicable health and environmental regulations and shall obtain all permits required by local code.

D. Connections to Existing Utilities:

1. Unless otherwise specified or indicated, the Contractor shall make all necessary connections to existing facilities including structures, drain lines, and utilities such as water, sewer, gas, telephone, and electricity. In each case, the Contractor shall receive permission from the Owner or the owning utility prior to undertaking connections. The Contractor shall protect facilities against deleterious substances and damage.

2. Connections to existing facilities which are in service shall be thoroughly planned in advance, and all required equipment, materials, and labor shall be on hand at the time of undertaking the connections. Work shall proceed continuously to complete connections in the minimum time. Operation of valves or other appurtenances on existing utilities, when required, shall be by or under the direct supervision of the owning utility.

1.05 TEMPORARY CONSTRUCTION

A. Temporary Bridges: The Contractor will be required to place and design suitable temporary bridges where necessary for the maintenance of vehicular and pedestrian traffic. He shall be responsible for the sufficiency and safety of all such temporary work or bridges and for any damage which may result from their failure or their improper construction, maintenance, or operation and will indemnify and save harmless the Owner from all claims, suits or actions, and damages or costs of every description arising by reason of failure to comply with the above provisions.

1.06 BARRICADES AND ENCLOSURES

A. Protection of Workmen and Public: During the prosecution of the Work, the Contractor shall put up and maintain at all times barriers and lights to prevent accidents. The Contractor shall provide suitable barricades, lights, "danger" or "caution" or "street closed" signs and watchmen at all

places where the Work causes obstructions to the normal traffic or constitutes in any way a hazard to Owner's personnel or the public.

B. Barricades and Lights:

1. Streets, Roads and Highways: All streets, roads, highways, and other public thoroughfares which are closed to traffic shall be protected by effective barricades which display acceptable warning signs (meeting VDOT standards). Barricades shall be located at the nearest public highway or street on each side of the blocked section.

2. Excavations and Trenches: All open trenches and other excavations shall have barricades, signs, and lights suitable to provide adequate protection for plant personnel. Obstructions such as material piles and equipment shall be posted with similar warning signs and lights.

3. Statutory Requirements: All barricades, signs, lights, and other protective devices shall be installed and maintained in conformity with applicable statutory requirements and, within highway rights-of-way, as required by the authority having jurisdiction there over.

1.08 SECURITY

A. Preservation of Property:

1. The Contractor shall preserve from damage all property along the line of the Work in the vicinity of or in any way affected by the Work, the removal or destruction of which is not called for by the Drawings. He shall preserve from damage public utilities, trees, lawn areas, building monuments, fences, pipe and underground structures, and public streets. (Normal wear and tear of streets resulting from legitimate use by the Contractor shall not be considered as damage.) Whenever the Contractor damages such property, he shall immediately restore it to its original condition at his own expense.

2. In case of failure on the part of the Contractor to restore such property or make good such damage or injury, the Owner may, upon 24 hours written notice, proceed to repair, rebuild, or otherwise restore such property as may be deemed necessary, and the cost thereof will be deducted from any moneys due or which may become due the Contractor under this Contract. If removal, repair or replacement of public or private property is made necessary by alteration of grade or alignment authorized by the Owner and not contemplated by the Contract Documents, the Contractor shall be compensated, in accordance with the General Conditions provided that such property has not been damaged through fault of the Contractor or his employees.

B. Public Utility Installations and Structures:

1. Public utility installations and structures shall be understood to include all poles, tracks, pipes, wires, conduits, vaults, manholes, and other appurtenances and facilities, whether owned or controlled by public bodies or privately owned individuals, firms or corporations, used to serve the public with transportation, gas, electricity, telephone, storm and sanitary sewers, water, or other public or private utility services. Facilities appurtenant to public or private property which may be affected by the Work shall be deemed included hereunder.

2. The Contract Documents contain data relative to existing public utility installations and structures above and below the ground surface. Existing public utility installations and structures are indicated on the Drawings only to the extent such information was made available to, or discovered by, the Engineer in preparing the Drawings. This data is not guaranteed for completeness or accuracy, and the Contractor is responsible for making his

own investigations to fully inform himself of the character, condition, and extent of all installations and structures that may be encountered and that may affect the construction operations.

3. Further, the Contractor is responsible for enforcing the requirements of Chapter 63, Fairfax County Code Chapter 63, Excavation and Utility Line Installation. In particular, the Contractor is directed to Section 63-2-2, Demolition or Excavation; Prior Notice. The Contractor shall contact VA811 (Miss Utility of Virginia) sufficiently in advance of the start of construction to comply with this requirement.

4. The Contractor must remove, replace, relocate, repair, rebuild, and secure at his expense any public utility installations and structures. The Contractor shall be responsible and liable for any consequential damages done to or suffered by any public utility installations or structures. The Contractor also shall be responsible for any injury, damage, or loss which may result from or be consequent to interference with, or interruption or discontinuance of, any public utility service.

5. Any water, gas, or other service connection damaged during the Work shall be repaired or replaced by the Contractor at his expense, which shall be deemed included in the Contract Price.

6. The Contractor shall, at all times in performance of the Work, employ proven methods and exercise reasonable care and skill to avoid unnecessary delay, injury, damage, or destruction to public utility installations and structures; and shall avoid unnecessary interference with, or interruption of, public utility services; and cooperate fully with the owners thereof to that end.

7. The Contractor shall give written notice to the owners of all public utility installations and structures affected by his proposed construction operations, sufficiently in advance of breaking ground in any area or on any unit of the Work, to obtain their permission before disturbing the lines and to allow them to take measures necessary to protect their interests. The Contractor must advise the Chiefs of Police and the Fairfax County Fire and Rescue Services of any excavation in public streets or the temporary shut-off of any water main. At least 24 hours notice shall be given by the Contractor to all affected property owners whenever service connections are taken out of service.

C. Work on Private Property: Where installations are to be placed on private property, rights-of-way or easements will be secured by the Owner without cost to the Contractor. Where Work is required on private property in order to construct an installation within the rights-of-way, the Contractor shall be responsible, without cost to the Owner, for securing written permission to work on the private property. The Contractor shall conduct his operations along rights-of-way and easements through private property to avoid damage to the property and to minimize interference with its ordinary use. The Contractor shall, upon completion of the Work through such property, restore the surface and all fences or other structures disturbed by his operations as nearly as possible to the conditions in which he found them. No material shall be used or removed from private property without the consent of the Owner or responsible party in charge of such property. The Contractor shall save the Owner harmless from any claim or damage arising out of or in connection with the performance of Work across and through private property.

D. Miscellaneous Structures: The Contractor shall be held entirely responsible for all injuries or damage to culverts, building foundations and walls, retaining walls, or other structures of any kind met with during the prosecution of the Work, and shall be liable for damages to public or private property resulting there from. All pipes carrying liquid shall be adequately protected against freezing.

E. Site Security

1. The area affected by this project is considered by The Owner to be critical infrastructure and therefore the physical security of this site shall be maintained to the same or greater standard throughout the duration of the work as it was prior to commencement. If Contractor activities diminish, compromise, or alter the site's perimeter controls (e.g. fencing or gates) or other security systems, then the Contractor must develop a physical security plan to be submitted for review by The Owner prior to commencement of work. No work shall commence that effects the security of the site without written permission of The Owner.

2. To the extent possible the Contractor shall use The Owner designated gates and site access roads as the primary entrance and exit from the site. In all cases the Contractor shall ensure that the facility is locked at the end of each workday and when no Contractor personnel are on site. In the event of an emergency or as the Construction activities require additional or alternative access locations the Contractor shall get written approval from The Owner to cut additional openings. No permission will be necessary for emergencies threatening life or safety.

3. Throughout the duration of the work under this contract, the Contractor will be required to inspect all perimeter fencing and gates at least weekly. The fence lines must be kept clear of vegetation and construction materials within 4 feet of a fence line. Construction materials and equipment are not permitted to be stored against the fence or in the manner that which creates a bridge by which someone can easily traverse the fence. All damage must be reported to The Owner's representative. Damaged fences resulting in an opening or a means to gain access to the site constitute an immediate security risk and shall be considered the highest priority for repairs.

4. All personnel gates, vehicle gates, buildings, vaults, tanks, ladder hatches, electrical junctions, and tank hatches shall be kept locked at all times unless a member of the Contractor's staff is manning the normally locked facility or within sight of the facility and in a position to monitor access to it unless specific procedures have been established and approved by The Owner to allow the facility to be left unlocked.

5. At the sole discretion of The Owner, for reasons to secure the identified critical infrastructure, the Contractor may be asked to cease all or portions of the work and to vacate the site. The Contractor shall promptly comply with The Owner's request and will resolve scheduling matters by the provisions outlined in Article 8 of the General Conditions.

6. Key Control: The Owner will control and issue Electronic Keys to the Contractor to secure access to the general site and other locations that require shared access by both The Owner and the Contractor personnel. A reasonable number of keys will be assigned to the Contractor at the beginning of the project in exchange for the acknowledgement that the use of the keys to The Owner's premises is governed by The Owner's Access Key Control Program. In the event that any key in Contractor's possession is lost or stolen, the Contractor must to report such loss immediately to The Owner's representative. The keys shall remain the sole and exclusive property of The Owner while in the Contractor's possession and shall be returned within one business day of a request. Any direct costs incurred by The Owner to recover keys or to re-key locks to secure the site may be passed on to the Contractor. Deliberate avoidance or non-compliance with the procedures in this section or in The Owner's Key Control Program may result in a revocation of key use privileges.

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7. Contractor's Identification: All Contractor employees and subcontractors shall have a photo identification card that must be carried by the employee at all times. The identification card must contain the following information: employee photograph, company name, employee

name, color coded symbols designating approved work area(s), employee number (matching hardhat), and project name. All Contractor employees without current identification cards will be stopped to verify that the person is authorized to be on site and a Contractor escort will be required from the Contractor. All construction employees must show a valid identification card at the entrance gate and upon request while working on site. The Contractor shall provide and issue these cards to the employees and provide the owner with an up-to-date list of employees on a weekly basis and a monthly log with application for payment.

8. Hard Hat Identification: Each Contractor employee, including subcontractors, must wear a hard hat with proper identification. Each hard hat shall display a distinctive corporate logo to identify the responsible company. The Owner shall be provided a list of all companies and personnel to be assigned work in the area. The Owner will designate the work area color code. Each hard hat must also have lettering/numbering at least 2-inches in height that identifies the specific employees entering authorized construction areas and exclude them from prohibited areas.

9. Deliveries: Contractor deliveries must occur only when The Owner's Representative is on the site. No after-hour deliveries are permitted without Owner approval. Upon arrival, The Owner's Representative will notify the Contactor's representative to verify the delivery (company, type of material and vehicle information/identification). Deliveries may be subjected to a security inspection before the delivered item can enter the building.

10. Contractor's Work Site Security: The Contractor must store all equipment and materials only in those areas designated by the Owner for this purpose. The Owner is neither responsible nor liable for any equipment, materials, or other property of the Contractor. The Contractor may choose, at his expense, to provide additional security elements as desired to adequately protect his assets on the job site.

1.09 TEMPORARY CONTROLS

A. During Construction:

1. Debris Control:

   a. During construction of the Work, the Contractor shall at all times keep the site of the Work and adjacent premises as free from materials, debris, and rubbish and shall remove such from any portion of the site if, in the Engineer's opinion, such material, debris, or rubbish constitutes a nuisance or is objectionable.

2. Remove Surplus Materials: The Contractor shall remove from the site all these surplus materials and temporary structures when they are no longer needed.

3. Construction Materials: Construction materials such as concrete forms and scaffolding shall be neatly stacked by the Contractor when not in use. The Contractor shall promptly remove splattered concrete, asphalt, oil, paint, corrosive liquids, and cleaning solutions from surfaces to prevent marring or other damage.

4. Volatile Wastes: Volatile wastes shall be properly stored in covered metal containers and removed daily.

5. Waste Disposal: Wastes shall not be buried or burned on the site or disposed of into storm drains, sanitary sewers, streams, or waterways. All wastes shall be removed from the site and disposed of in a manner complying with local ordinances and antipollution laws.

B. Smoke Prevention:

1. The Contractor shall strictly observe all air pollution control regulations.

2. No open fires will be permitted on site.

C. Noises:

1. Acceptable Noise Levels: The Contractor shall be responsible for maintaining acceptable noise levels in the vicinity of the Work and compliance with the Code of the County of Fairfax, Chapter 108 the performance of the Work under this Contract. The Contractor shall limit noise production to acceptable levels by using special mufflers, barriers, enclosures, equipment positioning, and other approved methods.

2. Variance Requirements: The Contractor shall supply written notification to the Owner sufficiently in advance of the start of any Work which violates this provision and shall not proceed until the Contractor obtains all applicable authorizations, including a variance from the County of Fairfax and the Owner's written consent.

D. Hours of Operation:

1. The Contractor shall keep the Engineer informed regarding his hours of operation and work activities. The Contractor shall submit his normal working hours to the Engineer prior to starting any work in the field. Whenever the Contractor works outside his normal working hours, adequate advance notice shall be provided to the Engineer.

2. The Code of the County of Fairfax, Chapter 108, specifically prohibits the operation of construction equipment between the hours of 9:00 P.M. and 7:00 A.M. the following day. The Contractor shall supply written notification to the Owner sufficiently in advance of the start of any work which violates this provision and shall not proceed until a variance has been obtained from Fairfax County allowing for night operations and until he has the written consent of the Owner.

3. No non-emergency Work, including equipment moves, shall be performed on Sundays without prior authorization by the Owner.

E. Dust Control:

1. The Contractor shall take measures to prevent unnecessary dust. Earth surfaces exposed to dusting shall be kept moist with water or by application of a chemical dust suppressant. Materials in piles or in transit shall be covered to prevent blowing or spreading dust.

2. Buildings or operating facilities which may be affected adversely by dust shall be adequately protected. Machinery, motors, instrument panels, or similar equipment shall be protected by suitable dust screens. Proper ventilation shall be included with dust screens.

3. Sweep and wash all paved roads daily.

4. Sweep and wash all paved roads used for hauling roads twice daily.

5. Provide wheel wash facility at locations adjacent to paved roads. All vehicles leaving unpaved roads must use the wheel wash facility before using the paved roads.

G. Pollution Control

1. Provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
2. Provide equipment and personnel, perform emergency measures required to contain any spillages, and to remove contaminated soils or liquids. Excavate and dispose of any contaminated earth offsite, and replace with suitable compacted fill and/or topsoil.
3. Take special measures to prevent harmful substances from entering public waters. Prevent disposal of wastes, effluents, chemicals, or other such substances adjacent to streams, or in sanitary or storm sewers.
4. Provide systems for control of atmospheric pollutants, prevent toxic concentrations of chemicals, and prevent harmful dispersal of pollutants into the atmosphere.
5. All Contractors' equipment used during construction shall conform to all current federal, state and local laws and regulations.

1.10 ACCESS AND PARKING

A. Access:

1. Access to the site of the work shall be restricted to existing public roads and to roads and easements owned by the Owner.

2. The Contractor shall construct and maintain all access of haul roads, except where noted, necessary for equipment and material movement.

3. The Contractor shall provide and maintain suitable parking areas for the use of all construction workers and others performing Work or furnishing services in connection with the Contract, to avoid any need for parking personal vehicles where they may interfere with public traffic or construction activities.

4. Maintenance of Traffic: The Contractor shall conduct his work in such a manner as to interfere as little as possible with public travel, whether vehicular or pedestrian. Whenever it is necessary to cross, obstruct, or close roads, driveways, parking spaces and walks, whether public or private, the Contractor shall provide and maintain suitable and safe bridges, detours, or other temporary expedients for the accommodation of public and private travel, and shall give reasonable notice to owners of private parking and drives before interfering with them. Such maintenance of traffic will not be required when the Contractor has obtained permission from the owner and tenant of private property, or from the Owner having jurisdiction over the public property involved, to obstruct traffic at the designated point.

1.11 USE OF SITE FOR STORAGE AND FIELD OFFICES

A. Requirements:

1. The staging area is identified on the drawings. Contractor shall restrict usage to area designated and shall notify Owner prior to storing of any large equipment which will impose heavy concentrated loading on floor area. Do not store such equipment until approval is received.

2. Any structures or facilities needed for storage or field office shall be constructed by the Contractor at his own expense and no separate payment will be made therefor.

3. All security requirements for such facilities shall be provided and maintained by the Contractor.

4. Space on the site for storage and materials, spoil, construction offices, and the like, is limited. The Contractor shall submit his requests and proposed layouts for space allocations to the Engineer for review. The Contractor is limited to the area shown as limits of work on the site plan.

5. The Contractor shall confine his use of the site to the areas designated by the Engineer.

6. Whenever the Engineer determines that the use of the site by the Contractor is detrimental to the overall performance of the work under the several Contracts, or interferes with the operation of the facility, and notwithstanding prior allocation or approval by the Engineer, the Engineer may order the Contractor to relocate his materials, equipment, temporary plants, and the like, and the Contractor shall comply with the directive of the Engineer. No additional compensation or extension of Contract time will be allowed for any such relocation of materials, equipment, temporary plant, or the like.

7. Nothing contained herein or shown on the Drawings shall be interpreted as giving any Contractor exclusive occupancy of the areas on the site provided for his operations. Owner personnel, for any purpose, and other contractors of the Owner, for any purpose required by their respective Contracts, may enter upon or occupy portions of it, as directed or permitted by the Engineer. The Contractor shall conduct his work so as to prevent interference with the work of the Owner or other Contractors.

8. Upon completion of the work and as directed by the Engineer, the Contractor shall clean up the areas, remove any temporary facilities, finish grade and return the areas to previous existing conditions as necessary all to the satisfaction of the Engineer.

B. The Contractor shall provide a secure cabinet where readily accessible copies of both the Contract Documents and the latest approved shop drawings will be kept at this location.

1.12 EMERGENCIES

A. The Contractor shall at all times, before and after regular working hours including weekends and holidays, maintain a telephone number where he or his representative can be reached on an emergency basis. The Contractor or his representative shall be prepared to act to correct conditions on site that are deemed to constitute an emergency by the Owner, his agent, the Engineer, or local authorities and is obligated to act to prevent threatened damage, injury or loss without special instructions from the Owner or Engineer. The Contractor shall give the Engineer prompt written notice of all significant changes in the work or deviations from the Contract Documents caused thereby. If a condition on the site requires attention after hours, either the Owner, his agent, the Engineer, or local Authorities shall call the Contractor or his representative at the emergency telephone number, identify himself and describe the emergency condition. The Contractor is expected to dispatch personnel and equipment to adequately institute corrective measures within 2 hours. If for any reason the Contractor or his agent cannot be reached at the emergency number after a reasonable amount of time (not exceeding 30 minutes), the Owner reserves the right to initiate corrective measures and the costs shall be deducted from payments due to the Contractor.

B. In the event that the Contractor fails to maintain safe job conditions and traffic conditions, including but not limited to trench settlement and storage of hazardous backfill or construction materials, the Owner, after failure of the Contractor to commence substantial steps at the job site to rectify the situation within 2 hours of the time the Contractor has been notified of the unsafe condition, may hire guards, take such precautions, make such repairs, and take any other steps which the Owner or the Owner's agent in its discretion considers necessary to protect the property, persons or Owner. The costs for such actions shall be deducted from payments due to the Contractor.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

NO TEXT THIS PAGE

SECTION 01600

MATERIAL AND EQUIPMENT

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Material and equipment incorporated into the Work:

1. Conform to applicable specifications and standards.

2. Comply with size, make, type and quality specified, or as specifically approved in writing by the Engineer.

3. Manufactured and Fabricated Products:

a. Design, fabricate and assemble in accord with the best engineering and shop practices.

b. Manufacture like parts of duplicate units to standard sizes and gages, to be interchangeable.

c. Two or more items of the same kind shall be identical, by the same manufacturer.

d. Products shall be suitable for service conditions.

e. Equipment capacities, sizes and dimensions shown or specified shall be adhered to unless variations are specifically approved in writing.

4. Do not use material or equipment for any purpose other than that for which it is designed or is specified.

1.02 RELATED REQUIREMENTS

A. Conditions of the Contract.

B. Summary of Work is included in Section 01110.

C. Shop Drawings, Working Drawings, Product Data and Samples are included in Section 01330.

D. Substitutions and Product Options are included in Section 01630.

E. Cleaning is included in Section 01710.

F. Operating and Maintenance Data is included in Section 01782.

G. Warranties and Bonds are included in the General Conditions, Division 0.

1.03 APPROVAL OF MATERIALS

A. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor shall be subject to the inspection and approval of the Engineer. No material shall be delivered to the work without prior approval of the Engineer.

B. Within 30 days after the effective date of the Agreement, or in strict compliance with the submittal schedule approved as specified in Section 01330, the Contractor shall submit to the Engineer, data relating to materials and equipment he/she proposes to furnish for the work. Such data shall be in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the specifications. The data shall comply with Section 01330.

C. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during the progress of the work, the Contractor shall submit samples of materials for such special tests as may be necessary to demonstrate that they conform to the specifications. Such samples shall be furnished, stored, packed, and shipped as directed at the Contractor's expense. Except as otherwise noted, the Owner will make arrangements for and pay for the tests.

D. The Contractor shall submit data and samples sufficiently early to permit consideration and approval before materials are necessary for incorporation in the work. Any delay of approval resulting from the Contractor's failure to submit samples or data promptly shall not be used as a basis of claim against the Owner or the Engineer.

E. In order to demonstrate the proficiency of workmen or to facilitate the choice among several textures, types, finishes and surfaces, the Contractor shall provide such samples of workmanship or finish as may be required.

F. The materials and equipment used on the work shall correspond to the approved samples or other data.

1.04 MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION

A. When Contract Documents require that installation of work shall comply with manufacturer's printed instructions, obtain and distribute copies of such instructions to parties involved in the installation, including five copies to the Engineer.

1. Maintain one set of complete instructions at the job site during installation and until final acceptance.

B. Handle, install, connect, clean, condition and adjust products in strict accord with such instructions and in conformity with specified requirements.

1. Should job conditions or specified requirements conflict with manufacturer's instructions, consult with Engineer for further instructions.

2. Do not proceed with work without clear instructions.

C. Perform work in accordance with manufacturer's instructions. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by Contract Documents.

1.05 STORAGE AND HANDLING OF EQUIPMENT ON SITE

A. Because of the long period allowed for construction, special attention shall be given to the storage and handling of equipment on site. As a minimum, the procedure outlined below shall be followed.

1. Equipment shall not be shipped until approved by the Engineer. The intent of this requirement is to reduce on-site storage time prior to installation and/or operation. Under no circumstances shall equipment be delivered to the site more than three months prior to installation without written authorization from the Engineer. Operation and

maintenance data as described in Section 01782 shall be submitted to the Engineer for review prior to shipment of equipment.

2. All equipment shall be stored fully lubricated with oil, grease, etc, unless otherwise instructed by the manufacturer.

3. A copy of the manufacturer's storage instructions shall be given to the Engineer and shall be carefully studied by the Contractor and reviewed with the Engineer by him. These instructions shall be carefully followed and a written record of this kept by the Contractor.

4. Upon installation of the equipment, the Contractor shall start the equipment, at least half load, once weekly for an adequate period of time to insure that the equipment does not deteriorate from lack of use.

5. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the work, if stored for longer than ninety days, shall have the bearings cleaned, flushed and lubricated prior to testing and startup, at no extra cost to the Owner.

6. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in a condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective. It shall be removed and replaced at the Contractor's expense.

7. Contractor shall store his equipment and materials at the job site in accordance with the requirements of the General Conditions, the Supplemental Conditions, and as hereinafter specified. All equipment and materials shall be stored in accordance with manufacturer’s recommendations and as directed by the Owner or Engineer, and in conformity to applicable statutes, ordinances, regulations and rulings of the public authority having jurisdiction. The Contractor shall provide a temporary storage building for storage of all major equipment items to be stored on site prior to incorporation into the Work. Provision shall be made for electric service to power space or strip heaters as necessary. Where space or strip heaters are provided within the enclosure for motors, valve operators, motor starters, panels, instruments, or other electrical equipment, the Contractor shall make connections to these heaters from an appropriate power source and operate the heaters with temperature control as necessary until the equipment is installed and being operated according to its intended use. Where space heaters are not provided but temperature and/or humidity control are recommended by the equipment manufacturer, and for all electric panels, Contractor shall provide temporary heat as required to meet the requirements as directed by the Engineer.

8. The Contractor shall maintain an equipment storage rotation log for all equipment provided. Rotation log shall include, as a minimum, the equipment identification, date stored, date removed from storage, copy of manufacturer’s recommended storage guidelines, date of rotation of equipment, and signature of party performing rotation. Moving parts shall be rotated a minimum of once weekly. Contractor shall submit a copy of the rotation log to the Engineer at each monthly progress meeting. Failure to properly maintain stored materials is sufficient cause for rejection of the equipment by the Owner.

9. Contractor shall enforce the instructions of Owner and Engineer regarding the posting of regulatory signs for loadings on structures, fire safety, and smoking areas.

10. Contractor shall not store unnecessary materials or equipment on the job site, and shall take care to prevent any structure from being loaded with a weight which will endanger its security or the safety of persons.

11. Materials shall not be placed within 30 feet of fire hydrants or no closer than allowed by local codes. Gutters, drainage channels and inlets shall be kept unobstructed at all times.

12. Stored materials shall not encroach upon private property without written agreement that storage on their property is acceptable.

13. Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specific conditions and free from damage or deterioration.

14. Protection after Installation

    a. Provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. Remove covering when no longer needed.

15. The Contractor shall be responsible for all material, equipment and supplies sold and delivered to the Owner under this contract until final inspection of the work and acceptance thereof by the Owner. In the event any such material, equipment and supplies are lost, stolen, damaged, or destroyed prior to final inspection and acceptance, the Contractor shall replace some without additional cost to the Owner.

16. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven days after written notice to do so has been given, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contractor's contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, engineering, and any other costs associated with making the necessary corrections.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

SECTION 01615

BUILDING, WIRE, AND EQUIPMENT IDENTIFICATION

PART 1 GENERAL

1.1 SCOPE

A. This section covers the equipment identification system established by the Owner and the Engineer to provide consistent designation for all equipment items, valves, electrical and instrumentation control devices and equipment, panels, and other similar items identified in the Contract Documents. An identification number or designation shall be provided on a nameplate or tag for each equipment item, valve, device, panel, or other similar item as specified or as indicated in the equipment symbols in the Contract Documents. Where no identification number of designation is provided in the specifications or on Drawings, the Engineer will provide the designation in accordance with the equipment identification numbering system defined herein.

1.2 GENERAL

A. All electrical wiring, control wiring, equipment items, valves, devices, panels, and other similar items specified or indicated on Drawings shall be provided with a permanent identification nameplate or tag. Electrical and control wiring shall be provided with permanent unique identification tags at terminations, which match identification in as-built drawings and/or approved respective submittal(s). Except as otherwise specified, the identification number shall be stamped or engraved on a stainless steel or anodized aluminum nameplate or tag, or engraved on a laminated plastic nameplate or tag, at the option of and as acceptable to the Engineer.

1.3 ELECTRICAL AND CONTROL WIRING IDENTIFICATION

A. Wires shall be identified with permanent unique tags at terminations. Tags shall be constructed of PVC, yellow or white, with legible machine-printed black markings, as manufactured by Raychem Type D-SCE or ZH-SCE, or Brady Type 3PS. Tags shall match identification in project as-built drawings and/or approved respective submittal(s).

B. Provide wiring types, color coding, and other identification requirements as specified in Section 14250.

1.4 SUBMITTALS

A. List of SAP Number, Asset Management Identifier, nameplates and sample tags before production for Owner approval.

B. Equipment Index, as shown in Table 01615A and described herein.

1.5 NAMEPLATES AND TAGS

A. Equipment and valves shall be identified with tags only when the item is too small to accommodate the specified nameplates. Identification used shall be the same as the designation indicated in the specifications or on Drawings. Nameplates and tags shall be located in a conspicuous place acceptable to the Engineer.

B. Plastic nameplates shall be laminated in phenolic resin not less than 1/8 inch thick and shall

be black with white core. Letters and numbers shall be at least 3/16 inch high extending through the black face into the white layer.

C. Metal nameplates and tags shall be stainless steel or anodized aluminum not less than 12 gage thickness and shall have black enamel background. Letters and numbers shall be 1 inch high with machine produced font engraved or imprinted thereon.

D. Tags shall have smooth edges and shall have a minimum diameter of 2 inches. Letters and numbers shall be machine produced font at least 1 inch high.

E. Nameplates shall be installed with corrosion-resistant mechanical fasteners. Tags shall be installed with corrosion-resistant chains or straps.

F. Nameplates and tags shall not be painted over.

G. All Equipment shall be labeled with the SAP Number and Asset Management Identifier on separate nameplates or tags.

1.6 EQUIPMENT IDENTIFICATION LABELING SYSTEM

A. Each equipment item, valve, device, panel, and other similar item that is specified or indicated on the drawings shall have a SAP Number and Asset Management Identifier as shown on Table 01615A.

1.7 EQUIPMENT INDEX

A. Complete Table 01615A, Equipment Index, and provide to the Owner as an Excel file.

B. Identify equipment by the Asset Management Identifier provided in Table 01615A and complete all fields in the Equipment Index with the exception of the SAP No. The Owner will generate the final SAP Numbers during the Construction Phase and provide them to the Contractor.

C. Provide the Equipment Index for all equipment that is on site every 60 days. New items and changes to previous submissions shall be reflected on the Equipment Index. The Owner will provide SAP Numbers for equipment labeling for approved Equipment Indexes. A complete Equipment Index for all applicable equipment shall be provided 60 days prior to the date of Beneficial Use of the Entire project.

1.8 SUPPLEMENTS

A. The following Supplement, following “End of Section,” is part of this Specification:

1. Table 01615A, Equipment Index.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION (NOT USED)

END OF SECTION

INSERT EXCEL TABLE 01615A INTO THIS LOCATION.

NO TEXT THIS PAGE

Table 01615A, Equipment Index

Equipment No.	General Information								SAP Information							Basic Name Plate Info									Warranty	
	Project/Subdivision	Equip Type		Description	Drawings	GIS Facility ID	Acquisition Date	Acquisition Value	Start-up Date	FLOC or Superior Equipment	Settlement Order	Cost Center	Work Center		SAP Catalog	SAP BOM #	ABC Indicator	Manufacturer	Model	Serial No	Part No	Country Manufactured	Year Manufactured	Month Manufactured	Weight	Unit	Size/Dimension	Start Date	End Date
If Applicable	P-1800-006	VLV	Valve	Sluice Gate Valve 2	GTP-FWP-FIN-SGV-002	V-01231-0002	1/1/2015	200.00	2/1/2015	FW-26-30-FW1-VLV-SCG-002	2630	728	728-01	Plant Maint Griffith	VLV-001	312	3	Rodney Hunt	0120	02244-2/3	AB-1234	US	2014	01	200	lb	60" X 72"	1/1/2015	1/2/2016
364546	P0579-480	ELV	Elevator	Solids Freight Elevator		TP-00111-0001				FW-24-80-SDB-BLD-ELV		723	723-01	Plant Maint Corbalis														

SECTION 01630

PRODUCT OPTIONS AND SUBSTITUTIONS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section outlines the policies and procedures for obtaining consideration and acceptance of products other than those specified.

1.02 RELATED SECTIONS

A. Section 01600 Materials and Equipment

1.03 DESIGN REQUIREMENTS

A. Intention of Contract Documents: It is the intention of the Contract Documents to construct the Work with the specified products. The Contractor shall base his bid price on the products specified. The Owner has the right to reject proposed substitutions for any reason.

B. Equivalent Materials and Equipment

1. Whenever a material, article or method is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, followed by the phrase "or equal", the specific item mentioned shall be understood as establishing the type, function, dimension, appearance, and quality desired and is to be the basis upon which bids are to be prepared. Other manufacturer's products or methods not named will be considered as substitutions provided required information is submitted in the manner set forth herein and provided substitution will not require design revisions or revisions of the Contract Documents. This applies to specific construction methods when such are required by the Contract Documents.

2. Whenever a material, article, or method is specified or described without the phrase "or equal", no substitutions will be allowed.

1.04 SUBMITTALS

A. Substitution Requests: For a period of 90 Days after issuance of a Notice to Proceed, the Engineer will consider written requests from the Contractor for substitution or equivalence of products other than those specified. The Contractor shall submit a separate request for each product, supported with complete data, drawings, and samples as appropriate, including but not limited to the following information:

1. A detailed description of the Contractor’s proposed substitution with comparison to product specified, including supplementary or revised Drawings and Specifications, as applicable.

2. A statement of the reason for the proposed substitution and an explanation as to why implementation of such substitution would benefit the Project.

3. A statement of the impact of the proposed substitution, if any, on the Contract Period and/or the Contract Sum.

4. Cost data comparing the proposed substitution with the product specified and the amount of credit that the Contractor proposes to issue to the Owner if the proposed substitution is accepted.

5. Any required license fees or royalties.

6. Availability of maintenance service and source of replacement parts and materials.

7. Such supporting documentation as may be necessary under the circumstances to permit the Owner to evaluate fully the information set forth in 1 through 6 above.

B. Contractor to Submit Requests for Substitutions: Requests for review of a substitution or equivalence will not be accepted from anyone except the Contractor. Moreover, such requests will not be considered until after the issuance of the Notice to Proceed.

C. No substitution will be accepted for any product to be furnished under this Contract unless the manufacturer is, in the Engineer's opinion, of good reputation and has a plant of ample capacity. The manufacturer shall, upon the Engineer's request, be required to submit evidence that he has manufactured a product like the one specified that has been previously used for a like purpose and for a sufficient length of time to demonstrate its satisfactory performance.

D. In no case shall the Owner’s acceptance of a substitution be considered as grounds for a contract time extension or delay claim by the Contractor.

1.05 QUALITY ASSURANCE

A. Contractor Certification: By the submittal of a substitution request, the Contractor shall represent that:

1. He has investigated the proposed substitute product and determined that it is equal to or superior in all respects to the product specified;

2. He shall provide the same warranties or bonds for the substitutions as for the specified products;

3. He shall coordinate the installation of an accepted substitution into the Work and make such other changes as may be required to make the Work complete in all respects;

4. He shall waive all claims for additional costs due to the substitution which may subsequently become apparent. He also agrees to hold the Owner harmless from claims for extra costs and time incurred by other subcontractors and suppliers, or additional services which may have to be performed by the Engineer, for changes or extra work that may, at some later date, be determined to be necessary in order for the Work to function in the manner intended in the Contract Documents.

B. Contractor Responsible for Performance: Neither the acceptance by the Engineer of alternate material or equipment as being equivalent to that specified nor the furnishing of the material or equipment specified shall in any way relieve the Contractor of responsibility for failure of the material or equipment due to faulty design, material, or workmanship, to perform the functions required by the Contract Documents.

C. After approval of a substitution or an equal product, if it is determined that the Contractor submitted defective information or data regarding the product upon which Owner's approval was based, and that unexpected or uncontemplated redesign or rework of the project will be required in order to accommodate the product, or that the item will not perform or function as well as the specified item for which equal product was requested, the Contractor will be required to furnish the originally specified item; the Contractor shall pay all costs, expenses or damages associated with or related to the unacceptability of such an equal product and the resultant utilization of another item and no time extension shall be granted for any delays associated with or related to such an equal product.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

NO TEXT ON THIS PAGE

SECTION 01710

CLEANING

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

A. Execute cleaning, during progress of the Work, and at completion of the Work, as required by General Conditions.

1.02 RELATED REQUIREMENTS

A. General Conditions of the Construction Contract are included in Division 0

B. Each Specification Section: Cleaning for specific Products or work

C. Construction Facilities and Temporary Controls – Section 01500

1.03 DISPOSAL REQUIREMENTS

A. Conduct cleaning and disposal operations to comply with codes, ordinances, regulations and anti-pollution laws.

PART 2 PRODUCTS

2.01 MATERIALS

A. Use only those cleaning materials which will not create hazards to health or property and which will not damage surfaces.

B. Use only those cleaning materials and methods recommended by manufacturer of the surface material to be cleaned.

C. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.01 DURING CONSTRUCTION

A. Execute periodic cleaning to keep the Work, the site and adjacent properties free from accumulations of waste materials, rubbish and windblown debris, resulting from construction operations.

B. Provide on-site containers for the collection of waste materials, debris and rubbish.

C. Remove waste materials, debris and rubbish from the site periodically and dispose of at legal disposal areas away from the site.

3.02 DUST CONTROL

A. Clean interior spaces prior to the start of finish painting and continue cleaning on an as-needed basis until painting is finished.

B. Schedule operations so that dust and other contaminants resulting from cleaning process will not fall on wet or newly-coated surfaces.

3.03 FINAL CLEANING

A. Employ skilled workmen for final cleaning.

B. Remove grease, mastic, adhesives, dust, dirt, stains, fingerprints, labels and other foreign materials from sight-exposed interior and exterior surfaces.

C. Wash and shine glazing and mirrors.

D. Polish glossy surfaces to a clear shine.

E. Ventilating Systems:

1. Clean permanent filters and replace disposable filters if units were operated during construction.

2. Clean ducts, blowers and coils if units were operated without filters during construction.

F. Broom clean exterior paved surfaces; rake clean other surfaces of the grounds.

G. Prior to final completion, or Owner occupancy, Contractor and Engineer shall conduct an inspection of sight-exposed interior and exterior surfaces and all work areas, to verify that the entire Work is clean.

END OF SECTION

SECTION 01770

BENEFICIAL USE, CONTRACT CLOSEOUT, AND WARRANTY PERFORMANCE

PART 1 GENERAL

1.01 SECTION INCLUDES

A. This section includes the procedures to be followed when closing out the contract.

1.02 FINAL FIELD TESTS

A. Requirements: Upon completion of the Work and prior to final payment, the Contractor shall furnish all labor, materials, and instruments and shall make field tests of equipment as specified to prove compliance with the Contract Documents. If the field tests disclose that any equipment furnished by the Contractor under this Contract does not comply with the requirements of the Contract Documents, the Contractor shall make all changes, adjustments, and replacements required, and repeat the field tests until compliance with those requirements is demonstrated.

1.03 SUBMITTALS

A. Manufacturer's Certificates: Manufacturer's certificates confirming that materials and equipment have been properly installed and are ready to be placed in service shall be submitted by the Contractor prior to Beneficial Use. If material stored on site, also refer to Equipment Manufacturer’s Certification of Installation Testing and Instruction in Section 01600.

B. Operation and Maintenance Data: All operation and maintenance manuals and data required for proper operation and maintenance of equipment and all required training of Owner personnel shall be completed prior to Beneficial Use.

C. Project Record Documents: Project record documents required by the individual specification Sections shall be submitted within 14 days of the date of the Notice of Completion for Beneficial Use.

D. Equipment Index: Equipment Index shall be submitted 30 days prior to Beneficial Use in accordance with Section 01615.

E. Paragraphs A, B, C, and D preceding are considered requirements for Beneficial Use.

1.04 BENEFICIAL USE

A. Notification: When the Contractor considers the Work ready for Beneficial Use, the Contractor shall so notify the Engineer in writing.

B. Inspection: After the Contractor's notification, the Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If the Engineer does not consider the Work complete for Beneficial Use, the Engineer shall notify the Contractor in writing giving reasons therefor. If the Engineer considers the Work complete for Beneficial Use, he shall prepare and deliver to the Owner and Contractor a Notice of Completion for Beneficial Use fixing the date of Beneficial Use, and stating the responsibilities between the Owner and Contractor for operation, heating, utilities, and maintenance. The Notice shall include a list of items to be completed or corrected before final acceptance.

1.05 RELEASING COMPLETED WORK FOR USE

A. Unless otherwise specified, it is the intent of these Specifications that all newly constructed Work be placed in use, when inspected and accepted and placed in service for its intended use. The Contractor shall arrange his operations to permit access to all such parts of the Work by the Owner and other contractors for the Owner.

B. Taking over of parts of the Work for operation before completion of the entire Contract shall not relieve the Contractor of any responsibility for proper integrated operations of all parts of the Work, nor shall it act to relieve him of any responsibilities under the Contract except as follows:

1. When parts of the Work are accepted by the Owner or Engineer in advance of the date of Beneficial Use for the entire Project and such Work is taken over for use by the Owner, the starting date for the warranty period shall be the date for that portion of the Work accepted for Beneficial Use by the Owner.

2. The Engineer will issue certificates describing the Work which is taken over for use by the Owner and the Contractor shall furnish all maintenance and warranty information of manufacturers or suppliers that is applicable to the Work being taken over for use.

1.06 FINAL CLEANING

A. Removal of Contractor's Materials: At the conclusion of the Work, all erection plant, tools, temporary structures and materials belonging to the Contractor shall be promptly taken away and he shall remove and promptly dispose of all water, dirt, rubbish or any other foreign substances.

B. Cleaning Materials and Equipment: The Contractor shall thoroughly clean all materials installed by him and existing structures, materials or equipment soiled by the contractor during construction and shall deliver over such materials and equipment undamaged in a bright, clean and polished condition.

C. Elevator hoistways and all equipment therein shall be cleaned and left free of rust, filings, welding slag, rubbish, loose plaster, mortar drippings, extraneous construction materials, dirt, and dust. Include walls, building beams, sill ledges, and hoistway divider beams.

1.07 FINAL INSPECTION

A. When the Work has been completed in accordance with the requirements of the Contract and final cleaning has been performed, the Contractor shall request a final inspection which shall be performed by the Engineer within 10 days after receipt of the request. The Work will be deemed complete as of the date set by the Contractor if, upon inspection, the Engineer determines that no further Work remains to be done at the site. Upon determination that all Work is completed, the Engineer will issue a certificate of final completion. The Engineer’s inspection shall include as minimum:

1. Workmanship and equipment compliance with Contract Documents.

2. Contract speed, capacity, floor-to-floor, and door performance comply with Contract Documents.

3. Performance of following is satisfactory:

a. Starting, accelerating, running

b. Decelerating and stopping accuracy

c. Door operation and closing force

d. Equipment noise levels

e. Signal fixture utility

f. Overall ride quality

g. Performance of door control devices

h. Operations of emergency two-way communication device

i. Operations of firefighters' service

4. Test Results:

a. In all test conditions, obtain specified contract speed, performance times, stopping accuracy without re-leveling, and ride quality to satisfaction of Purchaser and Consultant. Tests shall be conducted under both no load and full load condition.

b. Temperature rise in motor windings limited to 50° Celsius above ambient. A full-capacity one (1) hour running test, stopping at each floor for ten (10) seconds in up and down directions, may be required.

B. However, if such inspection, in the opinion of the Engineer, reveals items of Work still to be performed, the Contractor shall promptly perform them and then request a reinspection. In the event the Engineer then determines that the Work is complete, the date of final completion shall be deemed to be the last day of such reinspection.

C. When the Engineer finds that the Work is acceptable under the Contract Documents, he shall request the Contractor to make closeout submittals.

1.08 REINSPECTION FEES

A. Should the Engineer perform reinspections due to failure of the Work to comply with the claims of status of completion made by the Contractor, Owner will be reimbursed for such inspection by the contractor.

1.09 CONTRACTOR'S CLOSEOUT SUBMITTALS TO ENGINEER

A. Submit evidence of compliance with requirements of governing authorities, including documentation that all permit conditions and closure requirements have been satisfied.

B. Submit evidence of payment and release of liens: Requirements of General Conditions.

1.10 FINAL ADJUSTMENT OF ACCOUNTS

A. Submit a final statement of accounting to the Engineer.

B. Statement shall reflect all adjustments to the Contract amount:

1. The original Contract amount.

2. Additions and deductions resulting from:

a. Change Orders.

b. Units installed and unit prices.

c. Deductions for uncorrected or incomplete Work.

d. Deductions for liquidated damages.

e. Deductions for reinspection payments.

f. Other adjustments.

g. Extended engineering and/or inspection services and inspection overtime.

h. Excessive shop drawings review cost by the engineer.

3. Total Contract amount as adjusted.

4. Previous payments.

5. Remaining payment due.

C. Engineer will prepare a final Change Order reflecting approved adjustments to the Contract amount which were not previously made by Change Orders.

1.11 FINAL APPLICATION FOR PAYMENT

A. Contractor shall submit the final Application for Payment reflecting the above final contract value in accordance with procedures and requirements stated in the General Conditions.

1.12 WARRANTY PERFORMANCE

A. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Owner will have the work performed by others, and after completion of the work, will charge any remaining contract funds for expenses incurred by the Owner while performing the work, including, but not limited to administrative expenses. In the event sufficient funds are not available to cover the construction warranty work performed by the Owner at the Contractor's expense, the Owner will have the right to recoup expenses from the Contractor's Surety under the performance bond or warranty/maintenance bond.

B. Following oral or written notification of the required construction warranty repair work, the Contractor shall respond within one working day of his intentions/actions in pursuit of the warranty repair. Failure of the Contractor to respond will be cause for the Owner to proceed against the Contractor as noted in 1.12.A.

C. Warranty Repair Priority

1. The nature of the warranty issue and its impact on operations will be evaluated by the Owner and a Response Priority assigned to the notice as followings:
   a. First Priority Code 1 – Contractor to provide on-site inspection to evaluate the situation and determine the course of action within four (4) hours, initiate the work within six (6) hours and work continuously to completion or relief.
   b. Second Priority Code 2 – Perform on-site inspection to evaluate the situation and determine the course of action within eight (8) hours, initiate the work within 24 hours and work continuously to completion or relief
   c. Third Priority Code 3 – Necessary work to be initiated within three working days and work performed during standard work hours each subsequent day to completion or relief.

D. Contractor's Response to Construction Warranty Requirements

1. Following the oral or written notification by the Owner, the Contractor shall respond to

construction warranty service requirements in accordance with the assigned Response Priority code. The Contractor shall submit a report within seven (7) calendar days after completion of activities on any warranty item that has been repaired during the warranty period. The report shall include:

a. The cause of the problem
b. The date/time reported
c. The assigned Response Priority Code
d. Corrective action taken
e. When repairs were completed

E. If the Contractor does not perform the construction warranty items within the time frames specified above, the Owner retains the right to perform the work and recover all costs from the Contractor or its surety.

PART 2 PRODUCTS

(Not Used)

PART 3 EXECUTION

(Not Used)

END OF SECTION

SECTION 01780

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. The Contractor shall furnish all labor, materials, and data necessary to maintain and produce Project Record Documents (drawings and specifications) in accordance with applicable Contract provisions.

B. Impacts resulting from the Contractor's failure to meet Project Record Documents requirements shall in no part become the subject of a claim for extension of time or for excess costs or damages by the Contractor.

C. The terms 'drawings", "contract drawings", "record documents", "working as-built", and "as-built drawings" all refer to contract drawings which are revised and used for final Project Record Documents.

1.02 MAINTENANCE OF DOCUMENTS AND SAMPLES

A. Store working drawings, submittals, shop drawings, and samples in field office apart from documents used for construction.

B. File all documents and samples in accordance with CSI/CSC format.

C. Maintain all documents in a clean, dry, legible condition and in good order. Do not use the Record Documents for construction purposes.

D. Make all documents and samples available at all times for inspection by the Engineer.

1.03 SUBMITTAL

A. Prior to the date of Beneficial Use, submit 2 sets of red-lined final Project Record Documents to the Engineer for review and approval. This submittal is one of the prerequisites to Beneficial Use.

B. Record documents are to be submitted in searchable PDF and be provided as computer generated drawing files (AutoCAD). Photocopied or scanned documents shall not be acceptable.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 Record Documents Posting During Construction – Working As-Built

A. The Contractor shall maintain 2 sets of contract drawings and revise by red-line editing to track changes and show the as-built conditions during the execution of the project for each project discipline including, when applicable, Civil, Architectural, Structural, Mechanical, Plumbing, Electrical, Instrumentation / Controls, and special construction. These working as-built documents shall be kept current and updated on a weekly basis and at least one set shall be available for review at the jobsite at all times. Changes from the contract documents which are made in the work, field changes, and additional information uncovered in the course of construction shall be accurately and neatly

recorded as they occur by means of details and notes on the drawings. The working record documents will be jointly reviewed for accuracy and completeness by the Owner/Engineer and the Contractor prior to submission of each of the Contractor's monthly Applications for Payment.

B. The Contractor shall maintain 2 sets of contract Technical Specifications and revise by red-line editing to accurately reflect all changes to the specifications that occur during the performance of the contract as the result of Addenda, Request for Clarification, Change Orders, and all other written directives.

C. The working as-built shall be marked up accurately and legibly.

   a. When revisions to drawings are made, make changes to affect related section views, details, legends, profiles, plans and elevation views, schedules, notes and designations. No stapling or taping of source document is allowed.
   b. When changes are required on small-scale drawing details, use large-scale inserts with leaders to the applicable location.
   c. Use written explanation to describe changes when graphic means are not sufficient to completely depict the change conditions.

D. Owner/Engineer's review of record documents is for verifying accuracy and conformance to contract requirements. This review is a condition precedent to the approval and processing of each monthly pay application. Accuracy and completeness of all details in record documents such as dimensions, quantities, installation of equipment or systems remain the responsibility of the Contractor.

3.02 CONTENT

A. The Project Record Document packages shall be submitted as follows:

   1. Project Record Documents - Drawings and Specifications

      a. The Contractor shall submit two paper set of red-lined contract drawings and technical specifications for review and approval of the Engineer. The documents should be marked neatly and accurately to reflect actual civil, architectural, structural, electrical, plumbing, mechanical, instrumentation and controls, fire protection, and special construction final as-built conditions of the project as applicable.

      b. Label each set of plans and specifications "RECORD DOCUMENTS". Have skilled draftsperson transfer all changes, corrections, and entries.

      c. Submission and Approval of final Project Record Documents is one of the pre-requisites to final completion of the project.

      d. Submittal information should include the following as applicable:
         1) Changes or modifications as a result of Addenda, Approved Shop Drawings, Request for Clarifications, Record of Minor Changes, Work Orders, Change Orders, and all other written instructions.
         2) Field changes of installation, dimensions, and details of all project components
         3) Field changes to all water mains, valves, structures, fire hydrants, and related appurtenances, showing horizontal and vertical locations, pipe sizes, material, lengths, and elevations
         4) Pipe manufacturer's Laying Schedule and actual field cut dimensions, lay lengths and rotations necessary to tie into existing pipe/facilities.

5) Final location and depth of all underground and aboveground utilities and raceways
6) Changes in details of design or additional information obtained from fabrication documents, erection plans, material changes, substitutions, installation plans, and placement details
7) Actual locations of anchors and all joints in concrete
8) Relocations or changes in the orientation of equipment and piping
9) Location of concealed internal utilities and appurtenances referenced to visible and accessible features of structure
10) Layout and schematic drawings of electrical panels, raceways, circuits and wiring complete with field verified labels and numbering
11) Layout and schematic drawings of instrumentation control panels, raceways, and wiring complete with field verified labels and numbering
12) Where contract drawings or specifications present options, only the option selected for construction shall be shown
13) Changes or modifications resulting from the Regulatory and Beneficial Use inspections

2. Site As-Built – Projects with a separate site plan or a site permit issued by the locality require an as-built site plan as outlined below:

a. The Contractor shall submit a site as-built prepared by a licensed Land Surveyor or licensed Professional Engineer to Owner/Engineer for review and approval prior to the date of Beneficial Use.

b. The contractor shall also submit the site as-built to local authorities having jurisdiction for review for conformance with the approved site plan and regulatory approval. The site as-built shall be in accordance with the requirements of the Fairfax County Zoning Ordinance 17-300 or other localities having jurisdiction. The Contractor shall pay any required filing, correction, and resubmission fees at no additional cost to the Owner. The approval of site as-built by local authorities is a prerequisite to Final Completion.

c. The site as-built should minimally include the following:
1) Boundary of the site
2) Locations of all utilities, water mains, storm drainage systems, and sanitary sewer pipes with elevations, inverts, and slopes
3) Dimensional locations of all buildings and structures
4) Location and cross-sectional survey of all stormwater or bio-retention facilities
5) Curb and gutter and/or ditch elevations
6) Survey and record topographic elevations for all paving, sidewalks, stairs, ramps, and entrances to verify conformance with contract requirements.
7) Deed book and page number of any dedication and easements
8) Certification by the Contractor's licensed engineer or surveyor indicating that the as-built conforms with the approved site plan except as shown and that it represents the actual conditions on the site, and bearing his seal and signature
9) Any other regulatory requirements and pertinent information as determined by the Owner/Engineer

C. Engineer's review of project record Documents submittal is not conducted for purpose of determining accuracy and completeness of other details such as dimensions, quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor.

3.03 PAYMENT

A. A separate fixed-price pay line item with a designated value is provided for in the Bid Form, Section 00400, Part B, for the Project Record Documents updates and final submissions as outlined herein. This Project Record Documents pay item is not an allowance and the contractor must account for the designated value noted in the bid form in its total base bid price for the project and reflected as such in the schedule of value. The Payment for Project Record Documents will be made as follows:

1. Initial 50% of the pay line item amount shall be divided equally for the duration of the Contract Time and will be paid monthly on the contractor's pay request subsequent to review and approval of working as-built documents by the Owner/Engineer. Failure to obtain this approval will result in rejection of the payment for the Project Record Document pay line item.
2. Final 50% of the Project Record Document pay line item will be paid at final completion upon review and Engineer's approval of the final Project Record Documents including any regulatory review and approval.
3. In the event that the interim working as-built or the final Project Record Documents submittal are found to be incomplete and rejected by the Engineer due to inaccuracies, incomplete information, or other non-conformance issues, the Owner reserves its right to hire an outside engineering firm to field-verify all as-built information and revise the Project Record Documents as required. All costs associated with this effort will be back-charged to the contractor and deducted from the contract amount at final payment.

- END OF SECTION -

SECTION 01782

OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SCOPE OF WORK

A. This section includes procedural requirements for compiling and submitting operation and maintenance data required to complete the project.

1.02 RELATED WORK

A. Shop Drawings, Product Data and Samples are included in Section 01330.

B. Project Closeout is included in Section 01770.

C. Project Record Documents are included in Section 01780.

1.03 GENERAL

A. Adequate operation and maintenance information shall be supplied for all equipment requiring maintenance or other attention. The equipment Supplier shall prepare an operation and maintenance manual for each type of equipment indicated in the equipment schedule section, or as specified in the specific equipment section.

B. Equipment Suppliers' standard Operation and Maintenance (O&M) Manuals shall be submitted to the Engineer no later than 15 days following approval of the shop drawings for each piece of equipment. Upon approval of the Equipment Suppliers' standard O&M Manuals and a minimum of 15 days prior to equipment startup, four (4) hard copies and one electronic copy of the O&M Manual shall be submitted for use during construction. The electronic manuals shall be provided in Adobe Acrobat electronic portable document format (PDF), latest version and be viewable and searchable (where possible) on CDROM. Scanned or photocopied files/pages are not acceptable.

1.04 OPERATION AND MAINTENANCE DATA AND MANUALS

A. Operations and Maintenance Manuals and/or Standard Catalogs are to contain only that information which applies to the equipment provided. Instructions, drawings, schematics, wiring diagrams, parts lists and other materials which contain information such as optional accessories, alternate equipment arrangements, other equipment series or other equipment models which are not being provided under the contract may be included only if the Contractor neatly lined out or crosses out this information. Arrows which identify specific items of equipment or referenced items shall be made by stamp or be of drafting quality; hand-drawn arrows are not acceptable.

B. Service manuals shall contain complete and detailed operating, maintenance and repair instructions in sufficient detail to allow journeyman mechanics and Plant operators to adjust, operate, maintain and repair all components of the equipment, and to order all parts, without consultation with the manufacturer or his representative.

C. A. Provide electronic copies (flash drive or Consultant-approved equivalent) of written information necessary for proper maintenance and adjustment of equipment within 30

days following final acceptance. Final retention will be withheld until data is received by Purchaser and reviewed by Consultant. Include the following as minimums:

1. Straight-line wiring diagrams of “as-installed” elevator circuits with index of location and function of components. Provide one set reproducible master. Mount one set wiring diagrams on panels, racked, or similarly protected, in elevator machine room. Provide remaining set rolled and in a protective drawing tube. Maintain all drawing sets with addition of all subsequent changes. These diagrams are Purchaser’s property.

2. Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract. Include any unique or product specific procedures or methods required to inspect or test the equipment. In addition, identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedures, including statutory and other required equipment tests.

3. Provide any necessary interface cards required for equipment maintenance, code mandated testing, and troubleshooting.

4. Lubrication instructions including recommended grade of lubricants.

5. Parts catalogs for all replaceable parts including ordering forms and instructions.

6. Four sets of keys for all switches and control features properly tagged and marked.

7. Diagnostic equipment complete with access codes, adjusters manuals and set-up manuals for adjustment, diagnosis and troubleshooting of elevator system, and performance of routine safety tests.

D. Preventive Maintenance Contract: Furnish properly executed contract for continuing, preventive maintenance. Utilize contract form herein provided, Section 14325, Vertical Transportation Preventive Maintenance Contract.

1.05 CONTENTS OF OPERATIONS AND MAINTENANCE MANUALS

A. This section describes the required content of the Operations and Maintenance Manuals.

B. The O&Ms shall include all general instructions, a description of the equipment and how it functions, and shall provide all information necessary for identification and normal operation.

C. Include the equipment pre-startup, startup, and normal operating instructions. Include the sequence of operation by the controls manufacturer. Also, include the shutdown and emergency shutdown instructions.

D. Include general assembly drawings, sections, and photographic views as necessary to completely depict and properly identify the equipment. The material provided shall indicate the dimensions, weight, capacity and design conditions for the equipment.

E. Include detailed information, drawings, procedures and guides to allow for the proper installation, calibration, testing, PM and CM maintenance procedures.

F. Include all the drawings or schematics necessary to properly assemble and install the equipment including alignment, clearances, tolerances and interfacing equipment requirements. Denote by trade the skill level required to install the equipment, any special rigging required to place the equipment in place, and any special test equipment required to place the equipment in service.

G. Include all safety and tag-out procedures necessary to safely operate and maintain the equipment. Address all lubrication points, reservoirs or locations.

H. Include statistical information from the original equipment manufacturer as to performance such as pump curves, flow charts, insulation resistance, calibration, or test data sheets, etc. Include actual operational startup and testing procedures and data obtained, recorded and submitted denoting test method, test equipment used and the procedure used. The Contractor shall submit startup and testing forms for the Engineer's approval.

I. Include preventive maintenance (PM) requirements for equipment inspection, testing, routine adjustments and lubrication to address work at the component level (e.g., motor, drive, gearbox, etc.); the frequency that work is to be performed; drawing(s) references; and service manual references.

J. PM requirements shall encompass all levels of effort ranging from daily/weekly inspections performed by operations personnel through routine PMs scheduled weekly, monthly, quarterly, semi-annually or annually through major overhauls by maintenance personnel. Include predictive maintenance work which will include testing analysis of the equipment such as vibration, flow, oil sampling, meggering, alignment, lubrication, etc.

K. For corrective maintenance procedures, all equipment shall be detailed for complete disassembly and assembly, and shall be covered by cross-sectional drawings or exploded views with all parts numbered to correspond with the numbers in the parts list to permit identification of the various parts. Normal clearances, diameters, thicknesses of new parts and limits permissible for wearing parts shall be included. Torque settings for nuts, bolt and fasteners shall be provided as required.

L. Provide a complete list of parts (with a cross-reference to other manufacturers) or suppliers(s) of the same type of interchangeable component or product included along with their part numbers. The parts list shall be complete, and described so that parts may be readily identified and ordered. Each part shall be identified by the manufacturer's part number and cross referenced to the OEM part number (i.e., SKF bearing #63052/manufacturer's #B-K-1905F.)

M. Recommend spare parts listing and frequency of replacement for all wearing components. Include part numbers, frequency of replacement on a running time, calendar and/or seasonal basis as applicable and annotate with the manufacturer's anticipated useful life expectancy of the unit expressed in running time and calendar years. A listing of gaskets or any other items which may be required to perform a complete and satisfactory replacement and/or overhaul shall be included with the replacement parts list.

N. The minimum and maximum stock level requirements for spare parts should be quantified. Identify recommended emergency reserve parts, components, and whole equipment units and their extended cost.

O. All internal test points and maintenance checks of each piece of equipment and/or device shall be shown on drawings and diagrams, and referenced to the maintenance and testing procedures.

P. Include all necessary diagrammatic piping and wiring diagrams and miscellaneous necessary drawings and equipment. Lettering shall be typed or printed; hand lettering is not acceptable.

Q. Include all of the Contractor's and/or manufacturer’s warranty information. This shall include effective warranty dates.

R. For all service manuals submitted for field assembled equipment such as electrical systems (e.g., MCCs, switchgear and control panels) and control instrumentation, as-built drawings shall be submitted by the Contractor whenever the equipment as finally installed differs from the manner in which it was depicted in the earlier submittals. These drawings shall be in the same format as the original submittals and shall be suitable for insertion into the service manuals as replacement drawings.

S. The operation and maintenance manuals shall be in addition to any instructions or parts lists packed with or attached to the equipment when delivered, or which may be required by Contractor for installation purposes.

T. Shipment of equipment will not be considered complete until all required manuals and data have been received.

1.07 ELECTRONIC DOCUMENT PROGRAM DOCUMENTATION.

A. Contractor shall provide electronic document program documentation that includes the following:

1. Define file-naming convention.

2. Identifies vendor point of contact and telephone and fax numbers, and e-mail address.

3. There shall be no passwords or security settings applied by Contractor.

1.08 ELECTRONIC DOCUMENT WARRANTY

A. The Contractor shall provide a twelve month warranty on all electronic documents that covers the following items:

1. Contractor shall agree to replace any portion of the electronic document that does not view or print to the Owner's satisfaction.

2. Contractor shall agree to file re-sizing in the event the Engineer deems document access unsatisfactory.

Contractor shall agree to provide the electronic document for any missing reference materials.

PART 2 PRODUCTS (NOT USED)

PART 3 EXECUTION

3.01 PAYMENT

A. A separate fixed-price pay line item with a designated value is provided for in the Bid Form, Section 00400, Part B, for the approved O & M manuals outlined herein. This pay item is not an allowance and the Contractor must account for the designated value noted

in the bid form in its total base bid price for the project and reflected as such in the schedule of value. The payment will be made as follows:

1. 50% of the pay line item will be paid in partial amounts for the submission of approved preliminary O&M Manuals as these documents are delivered for the Owner's use prior to equipment start-up and turnover of portions of the work.

2. The final 50% of the pay line item will be paid after the delivery of final O & M Manuals to the Owner prior to acceptance of the entire project for Beneficial Use.

3. Approval of O & M Manuals by the Owner is required prior to release of any payment under this pay line item.

END OF SECTION

SECTION 01800

EQUIPMENT AND SYSTEM TRAINING

PART 1 GENERAL

1.01 TRAINING OF PLANT PERSONNEL

A. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

B. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

C. The training provided to the mechanical, electrical, or instrumentation maintenance personnel; the lesson plan shall be delivered one time for each specific trade material.

D. Material contained or required in the Operation and Maintenance Manuals shall be used for the development of the training program, training aids, and handouts. Promotional material will not be acceptable.

E. The following items shall be submitted for approval for each item of equipment requiring training:

1. Credentials of the equipment manufacturer representative who is to be the course instructor. This submittal shall include documentation details the instructor's general knowledge of the material he or she will teach, specific knowledge of the application of this equipment, and qualifications and history as an adult vocational instructor. Specific items are discussed below:

a. Lesson plans, to include time allotted for each entry, and lesson plans for approval 45 days prior to the proposed date for the training sessions. Include copies of all audio/visual and other training aids to be used during course of instruction and cross-reference each training aid within each subsection of the lesson plan.

b. Submit requests for scheduling training to the Engineer at least three weeks prior to the training sessions.

c. For each training class, provide instructional material for at least 10 attendees.

d. At the conclusion of training, submit 2 copies of the final lesson plan, overhead transparencies, and handouts, plus two copies of all other audio-visual aids utilized during each training course. Material shall be submitted as one final record submittal and submitted as a single transmittal for record.

2. Detailed lesson plans shall include the information outlined below:

a. Contractor's proposed lesson plans should include the elements presented in the outlines of the instruction lesson plans herein for each craft. Specific components and procedures shall be identified in the proposed lesson plans.

b. Contractor's proposed lesson plans should detail specific instruction topics. "Hands-on" demonstrations planned for the instructions shall be described in the lesson plans. Training aids to be utilized in the instruction shall be cross-

referenced in the proposed lesson plans. Training strategies such as planned blackboard work, instructor questions, and discussion points or other planned classroom or field strategies shall be detailed in the lesson plan document.

3. Handouts for training shall be attached to the lesson plans cross-referenced by section or topic in the lesson plan.

    a. The Contractor shall indicate the duration of each segment of the training lesson plans, as spelled out in the outline.

    b. The outline of the Maintenance Instruction lesson plan shall be as follows:

4. Equipment Operation: All crafts

    a. Describe equipment's operating (process) function and system theory.

    b. Describe equipment's fundamental operating principles and dynamics.

    c. Identify equipment's mechanical, electrical, and electronic components and features.

    d. Identify all support equipment associated with the operation of subject equipment.

    e. Detail the relationship of each piece of equipment or component to the subsystems, systems, and processes related to this project.

    f. Cite all hazards associated with the operation, exposure to chemicals associated with the component, or the waste stream handled by the component.

    g. Specify the appropriate and safety precautions, equipment, and procedures to eliminate, reduce, or overcome these hazards.

5. Detailed Component Description: Specific for Mechanical, Instrumentation, and Electrical/HVAC

    a. Describe PM inspection procedures required to perform an inspection of the equipment in operation, spot potential trouble symptoms (anticipate breakdowns), and forecast maintenance requirements (predictive maintenance).

    b. Identify and describe in detail each component function.

    c. Where applicable, group relative components into subsystems.

    d. Identify and describe in detail equipment safety features, permissive and controls interlocks.

    e. Review preventive maintenance frequency and task analysis table.

    f. Detail procedure to perform each PM activity performed weekly or less frequently.

6. Equipment Troubleshooting: Specific for Mechanical, Instrumentation, and Electrical/HVAC:

    a. Define recommended systematic troubleshooting procedures as they relate to specific craft problems.

b. Provide component specific troubleshooting checklists as they relate to specific craft problems.

7. Equipment Corrective Maintenance (CM) Specific for Mechanical, Instrumentation, and Electrical/HVAC:

   a. Describe recommended equipment preparation requirements as they relate to specific craft problems.

   b. Identify and describe the use of any special tools required for maintenance of the equipment as they relate to specific craft problems.

   c. Describe component removal/installation and disassembly/assembly procedures for specific craft repairs.

   d. Perform at least two “hands on” demonstrations of common creative maintenance repairs. Additional demonstrations may be required by the Owner.

   e. Describe recommended measuring instruments and procedures, and provide instruction on interpreting alignment measurements, as appropriate

   f. Describe recommended procedures to check/test equipment following a corrective maintenance repair.

8. “Hands-on” instruction shall be conducted according to the following descriptions:

   a. Course instructor shall present hands-on” demonstrations of common corrective maintenance repairs for each group. The manufacturer shall provide the tools and equipment to conduct the demonstrations. Requests for supplemental assistance and facilities should be submitted with the Contractor’s proposed lesson plans. Each trainee will demonstrate skill acquisition to the satisfaction of the instructor.

   b. For those hands-on training situations where the Owner’s operations or maintenance personnel will participate in disassembly or assembly of equipment, Contractor shall be responsible for such disassembly or assembly and, on completion of all hands-on training, shall provide written certification of proper equipment operation to the Engineer. Each trainee will demonstrate skill acquisition to the satisfaction of the instructor.

   c. The second part of the training program shall be scheduled after Beneficial Use and after at least one month of operating time by plant personnel. Follow-up sessions shall consist of hands-on and classroom meetings to review previous training lessons and to answer questions from Plant personnel.

   d. Hands-on training for operations personnel will cover proper start-up, shutdown, normal and alternative operating strategies. Each trainee will demonstrate skill acquisition of the satisfaction of the instruction.

9. The Contractor shall have instructions and training sessions audio/video taped, in digital format, while they are being given to the Owner’s personnel. Audio/video taping shall be performed by a person or organization experienced in the production of tapes and shall include the entire inspection and training session (including classroom and

field) and all question and answer periods. The video tape(s) or other electronic media shall become the property of the Owner.

F. The Contractor shall provide for classroom and hands-on training during regular working hours on weekdays for the plant's supervisory and operating personnel. Training shall be conducted by knowledgeable, competent personnel who are thoroughly familiar with the theory, design, operation and maintenance of the equipment. Audio quality shall not be degraded during the taping of the field sessions due to background noise, space, distance or other factors. The contractor shall provide a written release from all claims to the video taped training material produced.

G. The Plant's operating personnel shall be thoroughly trained to perform all operations covered in the instruction manuals including the assembly and disassembly of all equipment items. The Contractor shall submit for approval a detailed outline of the proposed training schedule indicating how the training will be conducted, what subjects will be covered, and estimated dates for the start and completion of each phase of training.

H. The Contractor shall bear all costs of the training program. Salaries, fringe benefits, payroll taxes, and unemployment compensation costs for plant personnel will be borne by the Authority. The cost of training shall be included in the lump sum Contract Item for Structures and Equipment Work and no separate payment will be made therefore. Training costs shall be prorated among the appropriate specifications sections in the Contractor's bid breakdown.

I. The Contractor may request to provide a DVD as a training aid to the instructor’s presentation of instruction material. DVDs must be professionally produced of good sound and video quality, contain relevant O&M information and specifically applicable to the equipment provided by this contract. The Contractor will submit the request and DVD 15 days in advance of training for Owner/Engineer review and acceptance. Submitting and acceptance of DVDs does not preclude the Contractor from conducting training as defined herein.

J. Manufacturer’s Training and summary Report, a copy of which is appended to this section will be completed by the Owner and Engineer at the completion of each vendor training session. Training sessions which receive an unsatisfactory rating by more than half the attendees shall be revised and conducted again until acceptable.

PART 2 – PRODUCTS

(NOT USED)

PART 3 – EXECUTION

(NOT USED)

ATTACHMENT 01800-1

MANUFACTURER'S TRAINING SUMMARY REPORT

EQUIPMENT ITEM: _____

VENDOR/MANUFACTURER:_____

DATE:_____ NAME OF REPRESENTATIVE:_____

		(Circle One)	
1.	Was representative prepared?	Acceptable	Unacceptable
2.	Was an overview description presented?	Acceptable	Unacceptable
3.	Were specific details presented for system components?	Acceptable	Unacceptable
4.	Were alarm and shutdown conditions clearly presented?	Acceptable	Unacceptable
5.	Were step-by-step procedures for starting, stopping and troubleshooting presented?	Acceptable	Unacceptable
6.	Were routine and preventive maintenance items clearly identified?	Acceptable	Unacceptable
7.	Was the lubrication schedule (if any) discussed?	Acceptable	Unacceptable
8.	Was the representative able to answer all questions?	Acceptable	Unacceptable
9.	Did the representative agree to research and answer unanswered questions?	Acceptable	Unacceptable
10.	Comments:		
11.	Overall Rating:	Satisfactory	Unsatisfactory

_____

_____

_____

Notes: Sessions judged "Unsatisfactory" by a majority of attendees shall be revised and conducted again until a satisfactory rating is achieved.

Engineer will attend all training sessions.

All training sessions shall be provided in standard DVD as a digital copy in DVD-ROM viewable.

END OF SECTION

SECTION 14250

HYDRAULIC ELEVATOR MODERNIZATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes modernization of hydraulic elevator:

(i) One (1) freight elevator, Elevator No. 1 – Solids Building.

1.02 DEFINITIONS

A. Technical terms used are defined in the latest edition of the Safety Code for Elevators and Escalators, ASME A17.1. or in this section.

1.03 WORK INCLUDED

A. All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents.

B. All engineering, equipment, labor, and permits required to satisfactorily complete elevator modernization required by Contract Documents

C. Applicable conditions of Owner's General, Special, and Supplemental Conditions.

D. Cartage and Hoisting: All required staging, hoisting, and movement to, on, and from the site including new equipment, retained equipment, or dismantling and removal of existing equipment.

E. Unless specifically identified as "Retain," "Reuse," or "Refurbish," provide new equipment. Contractor may, with approval prior to quotation, provide new equipment in lieu of refurbishing existing.

F. Reference to a device or a part of the equipment applies to the number of devices or parts required to complete the installation.

G. Provisions of this specification are applicable to all elevator unless identified otherwise.

H. Provide hoistway, pit, and machine room barricades.

I. Provide temporary and permanent pit ladders, working platforms, inspection platforms, and guard rails required to comply with applicable Building Code, work safety standards, and Authority Having Jurisdiction (AHJ) requirements.

1.04 RELATED WORK

A. Hoistway and Pit:

(i) Patch of voids and openings in the hoistway walls, ceiling and pit area.
(ii) Clear, plumb, substantially flush hoistway with variations not to exceed 1" at any point.

(iii) Provide Wall blockouts closure for control and signal fixture boxes which penetrate walls.
(iv) Cut and patch walls and floors.
(v) Grout floor up to hoistway sills and around hoistway entrances.
(vi) Provide pit access ladder .
(vii) Paint pit with drylock waterproofing paint.
(viii) Provide indirect waste drain or sump with flush grate and pump and oil separator. Sump pump/drain capacity minimum 3000 gallons per hour, per elevator. Surface mounted is acceptable if approved by AHJ.
(ix) Protect open hoistways and entrances during construction per OSHA Regulations.

B. Machine Room:

(i) Provide sealing, fire rated, code compliant self-closing and locking access door; door seals shall prevent air from the adjacent process area from infiltrating into the machine room when the door is closed.
(ii) Provide dry wall and insulation over existing glass windows.
(iii) Provide ventilation and heating via mini-split HVAC designed for new equipment to be installed. Maintain minimum temperature of 55° F, maximum 90° F. Maintain maximum 80% relative humidity, non-condensing.
(iv) Provide Class “ABC” fire extinguisher in elevator machine room.
(v) Install the necessary machine room signage.
(vi) Paint walls and Ceiling white for improved reflectivity.
(vii) Paint floor light gray.

C. Electrical Service, Conductors, and Devices:

(i) Provide LED lighting and GFCI convenience outlets in pit, machine room, and overhead machinery spaces. Provide one additional non-GFCI convenience outlet in pit for sump pump.
(ii) Provide guarded LED lighting with an illumination level of not less than 100 lx (10 fc) at the pit floor.
(iii) Provide guarded LED lighting with an illumination level of 200 lx (19 fc) at the machine room floor.
(iv) Provide a three-phase mainline copper power feeder with true earthen grounding to terminals of each elevator controller in the machine room with protected, lockable “open” disconnecting means. Auxiliary disconnects in multi-level machine room.
(v) Provide a single-phase copper power feeder to each elevator controller for car lighting and exhaust blower with individual protected, lockable “open” disconnecting means located in machine room.
(vi) Provide an emergency telephone line to elevator control panel in elevator machine room.
(vii) Provide fire alarm initiating devices in elevator lobby for the elevator and machine room to initiate firefighters’ return feature. Provide alarm initiating signal wiring from hoistway or machine room connection point to elevator controller terminals. Device in machine room and at top of hoistway to provide signal for general alarm and discrete signal for Phase II firefighters’ operation.
(viii) Provide control panel compliant with UL 508A SB. SCCR of 5000A required.
(ix) Provide single-phase power feeders to machine room elevator monitoring panel/display unit with single-phase, protected, lockable “open” disconnecting means.
(x) Provide single-phase power feeders to controllers for CCTV with lockable “open” disconnecting means.
(xi) Connect devices to internet connection (provided by Owner) in machine room for emergency communications.

D. Auxiliary Battery Lowering:

(i) Provide three-phase mainline copper power feeder with true earthen grounding to terminals to elevator controller in the machine room with protected, lockable “open” disconnecting means with auxiliary contacts to allow Elevator Contractor to electronically interlock battery power lowering unit.

1.05 SOURCE QUALITY CONTROL

A. Country of Origin: Submit list of all major original equipment manufacturer components identifying origin of each component.

1.06 SUBMITTALS

A. Shop Drawings and Engineering Data

(i) Per Section 01330- Submittals and Within forty-five calendar days after award of contract and before beginning equipment fabrication, submit planned modernization design information, shop drawings, and required material samples for review.

(ii) Indicate equipment lists, reactions, and design information on layouts in table form, including:

a. Car:

1. Total car weight to be included on new crosshead data tag.
2. Verify buffer capacity via data tags or known manufacturing data

b. Power Confirmation Information: Design for existing conditions.

1. Motor horsepower and code letter designation.
2. Motor drive starting current, full load running current, and demand factor.
3. Engineered power consumption based on 90 starts per hour full load.
4. Written confirmation that existing electrical provisions are adequate for post modernization installation equipment requirements.

c. Written confirmation that totals planned modernization reactions on building structure do not exceed originally designed reactions by more than 5 percent due to increased post modernization weights of:

1. Hydraulic power unit and motor.
2. Total car weight.
3. Adequacy of existing electrical provisions.
4. Adequacy of existing car and platform structure for intended loading.
5. Car Capacity.

d. Product Data, Including:

1. Capacities, sizes, performances, operation, control, signal systems operations, safety features, finishes, and similar information.
2. Product data for car enclosures and hoistway entrances.
3. Product data for signal fixtures, lights, graphics, tactile marking plates, and details of mounting.
4. Two-way conversation devices.
5. Post-modernization machine room heat emissions in BTU.

(iii) Shop Drawings:

a. Scaled or Fully Dimensioned Layout: Plan of machine room indicating equipment arrangement, details of car enclosures, hoistway entrances, and car/hall signal fixtures.

b. Fully Dimensioned Fixture Drawings:

1. Car operating panels.
2. Car floor indicators.
3. Hall stations.
4. Destination/landing input stations.
5. Access key switch.
6. Remote panels.
7. Firefighter's control panel.

B. Other Submittals

(i) Samples for Verification:

a. For exposed car, hoistway door and frame, and signal equipment finishes.
b. Samples of Sheet Materials: 3-inch (75 mm) square.
c. Running Trim Members: 4-inch (100 mm) lengths.
d. Include full component samples, if requested:

1. Signal fixtures.
2. Lighting.
3. Graphics.
4. Braille plates.

(ii) Written Maintenance Control Program (MCP) specifically designed for the equipment included under this contract.

a. Include any unique or product specific procedures or methods required to inspect or test the equipment.
b. Identify weekly, bi-weekly, monthly, quarterly, and annual maintenance procedres, including statutory and other required equipment tests.

(iii) Owner's manual per Section 01782 Operation and Maintenance Data

1.07 PERMITS, TESTS, and CERTIFICATES

A. Permits:

(i) Secure and pay for all permits required for Work to be performed, including but not limited to:

a. Municipal and State permits.
b. Device or equipment removal permits.
c. Hot works permits.
d. Confined space access permits.

(ii) Post, maintain, and renew all permits in compliance with local governmental requirements.

(iii) Obtain documentation of final AHJ close-out of all permits.

B. Tests and Inspections:

(i) Schedule and perform all tests required in accordance with procedure described in ASME A17.2 Guide for Inspection of Elevators, Escalators, and Moving Walks in the presence of Authorized Representative of the AHJ.

1.08 QUALITY ASSURANCE

A. Compliance with Regulatory Agencies: Comply with most stringent applicable provisions of currently enforced codes, laws, and/or authorities, including revisions and changes in effect.

B. Inspections: Provide access to areas where work is being performed for the Consultant at any time throughout the project.

1.09 MAINTENANCE

A. YEAR 1 WARRANTY MAINTENANCE

(i) Provide preventive maintenance and 24-hour emergency callback service for one year commencing on date of final acceptance of modernized elevator by Owner and Consultant. Systematically examine, adjust, clean, and lubricate all equipment. Repair or replace defective parts using parts produced by the Contractor of installed equipment. Maintain elevator machine room, hoistway, and pit in clean condition. Provide all Category I, III, and V testing as required by Fairfax County AHJ.
(ii) Use competent personnel, acceptable to the Owner, supervised and employed by Contractor.

B. YEARS 2 AND 3 EXTENDED WARRANTY AND PREVENTIVE MAINTENANCE

(i) Provide two-year EXTENDED WARRANTY AND PREVENTIVE MAINTENANCE Agreement with two, one-year extensions, commencing upon completion of the YEAR 1 WARRANTY MAINTENANCE period.
(ii) Provide preventive maintenance and 24-hour emergency callback service for one year commencing on the expiration date of the first-year warranty. Systematically examine, adjust, clean, and lubricate all equipment. Repair or replace defective parts using parts produced by the Contractor of installed equipment. Maintain elevator machine room, hoistway, and pit in clean condition. Provide all Category I, III, and V testing as required by Fairfax County AHJ.
(iii) Use competent personnel, acceptable to the Owner, employed and supervised by Contractor.

1.10 DELIVERY, STORAGE, AND HOISTING

A. Per Section 01600- Materials and Equipment.

B. Hoisting: Arrange and pay for all required hoisting and movement of equipment.

PART 2 - PRODUCTS

2.01 REFERENCES

A. American Society of Mechanical Engineers:

(i) ASME A17.1 Safety Code for Elevators and Escalators.
(ii) ASME A17.2, Guide for Inspection of Elevators, Escalators, and Moving Walks.
(iii) ASME A17.5, Elevator and Escalator Electrical Equipment.

(iv) ASME A17.6, Standard for Elevator Suspension, Compensation, and Governor Systems.

B. National Fire Protection Association (NFPA):

(i) NFPA 70, National Electric Code.
(ii) NFPA 80, Fire Doors and Windows.
(iii) NFPA 101, Life Safety Code.
(iv) NFPA 13, Installation of Sprinkler Systems.

C. International Building Code (IBC).

D. Local Codes:

(i) Virginia Uniform Statewide Building Code: VUSBC.
(ii) Virginia Existing Building Code: VEBC.
(iii) Virginia Construction Code: VCC.

2.02 MANUFACTURERS AND PRODUCTS

A. Approved Elevator Components:

The following Manufacturers are approved for the specific components listed below, subject to the requirements of the contract:

(i) Controllers:

a. Controllers:
b. GAL Galaxy.
c. Motion Control Engineering.
d. Smart Rise.
e. Elevator Controls.
f. Or approved equal

(ii) Hydraulic Machines (Power Units) and Related Components

a. EECO.
b. Maxton.
c. IMO.
d. NIDEC / CANTON.
e. MEI.
f. Or approved equal

(iii) Hydraulic Jack Assemblies

a. EECO.
b. Custom Elevator Manufacturing.
c. D.L. Martin.
d. NIDEC / Canton.
e. Or approved equal

(iv) Freight Vertical Bi-Parting Door:

a. Courion/EMS
b. Peelle.

c. Or approved equal

(v) Elevator Car Enclosures:

a. Courion/EMS.
b. Peelle.
c. MEI.
d. Or approved equal

(vi) Car and Hall Signal Fixtures: Vandal resistant:

a. EPCO.
b. Innovation.
c. MAD Fixtures.
d. Monitor
e. Or approved equal
f. .

(vii) Two-Way Emergency Communication Device:

a. MAD Fixtures.
b. Rath Communications.
c. Or approved equal

2.03 PERFORMANCE REQUIREMENTS

A. Car Speed:

(i) +10% / -20% of 100fpm contract speed.

B. Car Capacity: Safely lower, stop, and hold rated load.

C. Car Stopping Zone: ± 1/4" under any loading condition.

D. Car Ride Quality:

(i) Ride Quality measured and analyzed according to the methods specified in ISO18738.
(ii) Utilize EVA-625 Elevator Vibration Analysis System as manufactured by Physical Measurement Technologies (PMT) to record field measurements.
(iii) Specified levels apply to horizontal and vertical acceleration measured from within car, from the point at which the car has moved ½ meter from start position to ½ meter from final position, as defined by ISO18738.
(iv) Maximum Allowable Peak-to-Peak Vibration for the Horizontal Axis: 15 mg.
(v) Maximum Allowable Peak-to-Peak Vibration for the Vertical Axes: 15 mg.

E. Noise and Vibration Control:

(i) Airborne Noise:

a. Measured noise level of elevator equipment and its operation shall not exceed 60 dBA inside car under any condition including door operation and car ventilation exhaust blower on its highest speed.
b. Limit noise level in the machine room relating to elevator equipment and its operation to no more than 80 dBA. All dBA readings to be taken 3'-0" off the floor and 3'-0" from the equipment using the "A" weighted scale.

(ii) Vibration Control:

a. Vibration Control: Mechanically isolate all new elevator equipment from the building structure and other components. Minimize objectionable noise and transmission of vibrations to occupied areas of the building. All elevator equipment provided under this contract, including power unit, controller, oil supply lines, and their support shall be mechanically isolated from the building structure and electrically isolated from the building power supply and to each other to minimize the possibility of objectionable noise and vibrations being transmitted to occupied areas of the building.

2.04 ELEVATOR DUTY ALTERATIONS

A. Corbalis Solids Building Freight Elevator:

ALTERATION SUMMARY		
SOLIDS BUILDING	**EXISTING INSTALLATION**	**MODERNIZED INSTALLATION**
Capacity:	6,000 lbs.	No Change
Class of Loading:	Freight Class C3	No Change
Contract Speed:	100 fpm	No Change
Hydraulic Power Unit Location:	Adjacent at 2nd floor.	No Change
Operation Control:	Single automatic with manual closing door	No Change
Floors Served:	Front: 1 (building egress), 2, 3 Rear: 1R	No Change
Total Entrances:	3 front; 1 rear	No Change
Entrance Type:	Manual Bi-Parting	No Change
Entrance Size:	5'-8" wide x 8'-0" high	No Change
Minimum Clear to Underside of Canopy:	8'-0" high	No Change
Installation Year:	1979	TBD
OEM:	Dover	TBD
Jack:	In-Ground Bore	No Change

2.05 OPERATION

A. General:

(i) Elevator to automatically slow down and stop level at floors in response to car and landing calls with stops made in sequence in the established direction of travel, regardless of order in which buttons are pressed.

(ii) Landing calls are canceled when the assigned car arrives at the landing.

(iii) Automatic Leveling:

a. When arriving at a floor the car shall level to within 1/4" above or below the landing sill prior to opening doors, without travelling past the landing during leveling

b. Maintain leveling accuracy regardless of carload and direction of travel.

(iv) Power Conservation:

a. Car interior illumination and ventilation turns off after adjustable period (60-180 seconds) of no elevator demand and turns on prior to opening car doors when elevator demand returns.

B. Manual Door Operation: Operator to open or close doors and car gate at floor when car is stopped in leveling zone.

(i) Independent Service:

a. When feature is activated from within the car allow control of car only from buttons and controls inside the car.

C. Single Automatic Operation:

(i) Operate car without attendant from pushbuttons in car and at each landing. When car is idle, automatically start car, and dispatch it to appropriate floor when call is registered by pressing car or hall pushbutton.
(ii) Illuminate, “in use” lights in each hall pushbutton station when car is responding to registered car or hall call. Prevent registration of another call until trip is complete including time for passenger transfer and registration of car call if car is responding to a hall call. Extinguish “in use” light to indicate system is available to respond to new hall calls.

D. Car and Hall Lanterns:

(i) Car Riding Lanterns provide audio and visual signal upon each stop, regardless of responding to car or hall call.
(ii) Hall Lanterns to provide advance visual and audio signal prior to door opening.
(iii) Car Riding Lanterns and Hall Lanterns visual signal remains illuminated from commencement of door opening until doors are completely closed.

E. Auxiliary Power Lowering Operation:

(i) Upon loss of normal power automatically lower car to the nearest landing depending on position at time of power outage.
(ii) Upon arrival at the landing, the elevator doors shall manually open and the elevator shall then be removed from service.
(iii) The auxiliary power source shall be provided via 12-volt D.C. battery units installed in machine room.
(iv) Include solid-state charger and testing means mounted in a common metal container.
(v) Battery to be rechargeable lead acid or nickel cadmium with a ten-year life expectancy.
(vi) Upon restoration of normal power, the elevator shall automatically resume normal operation.
(vii) Enable if normal power switched off.

F. Firefighters’ Emergency Operation: Provide equipment and operation in accordance with code requirements. Replace all Firefighters Emergency Operation key switches that control non-modernized elevator in this building to match modernized elevator when first car in group is returned to service.

G. Interface to Building Management Systems:

(i) The elevator monitoring system shall be capable of interfacing and exchanging data with third-party building management systems including SCADA.
(ii) Information shall be exchanged by Modbus protocol.

H. Battery Operation of Emergency Lighting, Communications, and Alarm:

(i) Car mounted battery unit with solid-state charger to operate alarm bell, car emergency lighting, and voice communication system. Provide spill containment or sealed lead acid battery.
(ii) Car lighting and communication shall be provided with a minimum of 4 hours of operation on back-up power during a loss of normal power, and a minimum of 1 hour of operation for car-mounted alarm.

(iii) Battery to be rechargeable with minimum five-year life expectancy.
(iv) Provide constant pressure test button in service compartment of car operating panel.
(v) Provide lighting integral with portion of normal car lighting system.

I. Emergency Car Communication System Operation:

(i) Hands-Free Phone System:

a. Two-way communication instrument in car to provide automatic dialing, tracking, and recall features.

1. Automatic dialer to include automatic rollover capability with minimum two numbers:

b. Activated by “Help” button in car or by external telephone call.
c. Adjacent light jewel illuminates and flashes when call is acknowledged.

(ii) Emergency Personnel Communication:

a. Communication system allows emergency personnel to establish communications with each elevator individually.
b. Emergency Personnel Communication overrides any existing connection outside of building.
c. Adjacent light jewel shall illuminate and flash when call is acknowledged.
d. On the same car operating panel as the phone push button, provide capability to communicate with and obtain responses from passengers.
e. Provide display video capability for entrapment assessment.

(iii) Communication for Deaf, Hard of Hearing and Speech Impaired: On the same car operating panel as the phone pushbutton, provide capability to communicate with and obtain responses from passengers, including those passengers who cannot communicate verbally or hear.

J. Building Automation Monitoring: Provide each controller with a single, optically isolated discreet output for each elevator to indicate elevator has demand but is not running. An open main line disconnect, inspection service, independent service, etc. does not indicate trouble.

K. Electrical Wiring and Wiring Connections:

(i) Conductors and Connections:

a. Copper throughout with individual wires coded and connections on identified studs or terminal blocks.
b. Use no splices or similar connections in wiring except at terminal blocks, control compartments, or junction boxes.

(ii) Conduit:

a. Match existing conduit type in the space. See Drawings for additional information.
b. Flexible conduit length not to exceed 3’-0”.

(iii) Traveling Cables:

a. Provide 12 twisted shielded pairs in addition to wires needed to connect specified items and code required spares.
b. Tag spares in machine room.
c. Provide cables from controller to car top.

(iv) Auxiliary Wiring:

a. Provide machine room demarcation junction boxes for the fire alarm initiating devices, emergency two-way communication system, firefighters' phone jack.
b. Provide conduit, wiring and connections for the fire alarm initiating devices, emergency two-way communication system and firefighters' phone jack from machine room junction box to car controller in machine room.

2.06 MACHINE ROOM EQUIPMENT

A. Provide and arrange equipment in existing machine room spaces and/or as shown on drawings.

B. Identification: Permanently identify (painted on or securely attached) machine room equipment with minimum 3" characters corresponding to elevator identification.

(i) Hydraulic Machine (Power Unit)
(ii) Controller.
(iii) Main line disconnect switch.
(iv) Pit equipment.

C. Hydraulic Machine (Power Unit):

(i) Assembled unit consisting of dry positive displacement pump, induction motor, master-type control valves combining safety features, holding, direction, bypass, stopping, manual lowering functions, shut off valve, oil reservoir with protected vent opening, oil level gauge, outlet strainer, drip pan, muffler. Mount power unit on isolating pads.
(ii) Oil Cooler:

a. Provide radiator with fan and adjustable thermostat cold water coil type oil cooler.
b. Installation of unit must be coordinated with Owner to allow fan exhaust outside of the elevator machine room.

(iii) Tank Heater:

a. Provide an oil tank heater with adjustable thermostat to keep the oil tank temperature within the manufacturer's recommended operating range.

1. Enclose entire unit with removable sheet steel panels lined with sound-absorbing material.

D. Controller:

(i) Compartment:

a. UL/CSA labeled.
b. Securely mount all assemblies, power supplies, chassis switches, relays, etc., on a substantial, self-supporting steel frame.
c. Completely enclose equipment with covers.
d. Provide means to prevent overheating.

(ii) Relay Design:

a. Magnet operated with contacts of design and material to insure maximum conductivity, long life, and reliable operation without overheating or excessive wear.

b. Provide wiping action and means to prevent sticking due to fusion.
c. Contacts carrying high inductive currents shall be provided with arc deflectors or suppressors.

(iii) Microprocessor Hardware:

a. Provide built-in noise suppression devices that provide a high level of noise immunity on all solid-state hardware and devices.
b. Provide power supplies with noise suppression devices.
c. Isolate inputs from external devices (such as pushbuttons) with opto-isolation modules.
d. Design control circuits with one leg of power supply grounded.
e. Safety circuits shall not be affected by accidental grounding of any part of the system.
f. System shall automatically restart when power is restored.
g. System memory shall be retained in the event of power failure or disturbance.
h. Equipment shall be provided with Electro Magnetic Interference (EMI) shielding within FCC guidelines.

(iv) Wiring:

a. CSA labeled copper for factory wiring.
b. Neatly route all wiring interconnections and securely attach wiring connections to studs or terminals.
c. Provide labels for all extra or spare wires, neatly organized at base of controller cabinet.

(v) Permanently mark components (relays, fuses, PC boards, etc.) with symbols shown on wiring diagrams.
(vi) Provide electrical design compliant with UL 508A SB.SCCR of 5000A required.

E. Muffler:

(i) Provide in discharge oil line near pump unit.

a. Design shall dampen and absorb pulsation and noise in the flow of hydraulic fluid.

F. Piping and Oil:

(i) Provide piping, connections and oil for the system.
(ii) Buried piping shall be secondarily contained with watertight Schedule 80 PVC sleeves between elevator machine room and pit.
(iii) A minimum of two sound isolation couplings shall be provided between the pump unit and oil line and the oil line and jack unit.
(iv) Provide 2-90°joints to reduce vibration and create wave diffraction.
(v) Provide isolated pipe stands or hangers.

G. Shut-Off Valve:

(i) Provide oil line shut off valve in the machine room or accessible from outside the hoistway.
(ii) Provide second valve in pit adjacent to jack unit.

2.07 HOISTWAY EQUIPMENT

A. Provide and arrange equipment in existing hoistways and/or as shown on drawings.

B. Guide Rails: Retain main guide rails in place.

(i) Clean rails and brackets. Remove rust.
(ii) Check all rail and bracket fastenings and tighten.
(iii) Terminal Stopping: Provide normal and final devices.

C. Hoistway Entrance Equipment:

(i) Door Guide Tracks: Continuous steel angles or formed steel tracks fastened to hoistway door jamb.
(ii) Door Guide Shoes: Machined iron shoes. Four shoes per door panel, with not less than 2½" lateral contact per shoe.
(iii) Door Interlocks: Operable without retiring cam.

D. Hoistway Freight Door Unlocking Device: Provide unlocking device with pull chain under hinged, lockable cover with stainless steel No. 4 finish at all floors.

E. Floor Numbers: Stencil paint 4" high floor designations in contrasting color on inside face of hoistway doors or hoistway fascia in location visible from within car.

2.08 PIT EQUIPMENT

A. Buffers, Car: Spring type with blocking and support channels. Provide sign in pit indicating designed counterweight runby.

B. Hydraulic Jack Assembly:

(i) Cylinders:

a. Seamless steel pipe.
b. Design head to receive unit-type packing and provide means to collect oil at cylinder head and return automatically to oil reservoir.
c. Design shall include:

1. Secondary containment/cylinder protection.
2. Cylinder stabilizer bracketing between guide rails as required.

(ii) Plungers:

a. Polished seamless steel tubing or pipe.
b. If plunger length exceeds 24'-0", provide two or more sections not exceeding 16'-0" in length, or coordinate installation of longer unit at the jobsite.
c. Join sections by internal threaded couplings.
d. Multiple section jack units shall be factory polished while assembled and marked.
e. Isolate plunger from car frames.

C. Jack Support and Shut-Off Valves:

(i) Provide steel pit channels to support jack assembly and transmit loads to building structure.
(ii) Provide intermediate stabilizers as required.
(iii) Provide manual on/off valves in oil lines adjacent to pump unit and jack units in pit.

2.09 HOISTWAY ENTRANCES

A. Provide and arrange equipment in same location as existing entrances and/or as shown on drawings.

B. Frames: Retain existing and paint. Color to be selected by Owner.

(i) Provide new Arabic floor designation/tactile marking plates:

a. Centered at 60" above finished floor.
b. Located on both side jambs of all entrances.
c. Minimum 4" high.
d. Tactile marking indications shall be below Arabic floor designation.

(ii) Provide plates at main egress landing with “Star” designation.
(iii) Designated Emergency Elevator: Provide “Star of Life” cast designation plates at height of 78"-84" above finished floor on both side jambs at all floors.
(iv) Provide car identification label:

a. Mounted directly below floor designation/tactile marking plates.
b. Located on both side jambs at the following levels:

1. Designated level.
2. Alternate level.

c. Finish and design to match floor designation/tactile marking plates.
d. Permanently fastened.

C. Struts and Headers: Retain existing. Check and tighten all fastenings.

D. Vertical Bi-Parting Freight Door Panels: Retain existing and paint. Color to be selected by Owner.

(i) Installation includes:

a. Safety astragals.
b. Vision panels.
c. Truckable sills.
d. Load transfer angles.

E. Finish of Frames and Doors: Color selection by Owner.

2.10 CAR EQUIPMENT

A. Frame: Retain Existing. Check and tighten all fastenings. Adjust as required for plumb and square alignment.

B. Platform: Retain existing.

(i) Adjust as necessary for plumb and level alignment.
(ii) Reinforce if required.
(iii) Check and tighten all fastenings.
(iv) Inspect after existing finished flooring is removed. Immediately notify Owner and Consultant if any damage or deterioration requiring repairs is observed.
(v) Replace isolation pads.

C. Platform Guard:

(i) New extended platform guard to meet Code requirements.

(ii) Minimum 0.059" (1.5 mm) thick steel, or material of equivalent strength and stiffness.
(iii) Reinforced and braced to car platform front and rear.
(iv) Contractor's standard finish.

D. Freight Elevator Guide Shoes:

(i) Solid guides with oil less inserts.

E. Finish Floor Covering: Provided.

(i) Freight Elevator: 3/8" thick steel diamond plate over 3/4" thick marine plywood sub-floor; fastened directly to the existing elevator platform via countersunk bolts.

F. Restricted Opening Device:

(i) Restrict opening of car doors to Code required limit outside unlocking zone.
(ii) Adjust for smooth and quiet operation with operating noise undetectable from inside any car or outside of the hoistway.
(iii) Plunger type restrictors not acceptable.
(iv) Utilize mechanical angle to prevent door opening.

G. Door and Gate Reopening Device:

(i) Black, fully enclosed door reopening device with 3D full screen infrared matrix or multiple beams extending vertically inside or along edge of each car gate guide track to a minimum height of 7'-0" above finished floor to a height of 10'-0" above finished floor {maximum 10'-0" available} full height of opening.
(ii) Synchronized to stop and reverse car gate.

H. Car Gate: Power-operated, vertical rise, single-section minimum 6'-0" high, constructed of 12-gauge welded wire mesh welded into frame angles. Mount car gate lift chains on hoistway side of car gate.

I. Car Operating Panel:

(i) One car operating panel with faceplate:

a. Consisting of a metal box containing vandal resistant operating fixtures, mounted behind the car stationary side wall.
b. Faceplate shall be hinged and constructed of satin finish stainless steel.

(ii) Provide Exposed Pushbuttons to Initiate:

a. Car call registration.
b. Alarm.
c. Provide "door open" button to stop and reopen doors or hold doors in open position.
d. Provide "door close" button to activate door close cycle.

1. Cycle shall not begin until normal dwell time for a car or hall call has expired, except firefighters' operation.

e. Emergency push-to-call communication.

(iii) Pushbuttons:

a. Provide minimum 3/4-inch diameter flush floor pushbuttons which illuminate to indicate call registration.
b. Provide brushed stainless buttons with illuminated LED halo.
c. Locate operating controls no higher than 48 inches above the car floor; no lower than 35 inches for emergency push-to-call button and alarm button.
d. Identify buttons with flat stainless tactile symbols recessed flush mounted.

(iv) Locked Firefighters' Emergency Operation Panel:

a. For fire officer use and use of car on independent service only.
b. Openable by the same key which operates the Fire Operation switch.
c. Provide panel with solenoid operated key switch which automatically opens in the event of Firefighters' Emergency Operation Phase I activation.
d. Including the following features:

1. Phase II fire access switch.
2. Firefighters' visual indication.
3. Call cancel button.
4. Stop switch, manually operated.
5. Door open button.
6. Door close button.
7. Floors served.
8. Fire communication jack.

(v) Service Compartment:

a. Provide lockable service compartment with recessed flush door.
b. Door material and finish to match car return panel or car operating panel faceplate.
c. Include Integral flush window for displaying the elevator operating permit on inside surface of door.
d. Include the following controls in lockable service cabinet with function and operating positions identified by permanent signage or engraved legend:

1. Access switch.
2. Light switch.
3. Four-position exhaust blower switch.
4. Independent service switch.
5. Constant pressure test button for battery pack emergency lighting.
6. 120-volt, AC, GFCI protected electrical convenience duplex outlet.
7. Card reader override switch.
8. Switch to select either floor voice annunciation, floor passing tone, or chime.
9. Auxiliary light switch.
10. Keyed stop switch.

(vi) Provide black paint filled (except as noted), engraved, or approved etched signage as follows with approved size and font:

a. Phase II firefighters' operating instructions on inside face of firefighters' compartment door.
b. Engrave filled red firefighters' operation on outside face of compartment door.
c. Building identification car number on car operating panel.
d. "No Smoking" on main car operating panel.
e. Loading classification and description on car operating panel.
f. Car capacity in pounds on service compartment door.

J. Car Top Control Station:

(i) Mount to provide safe access and utilization while standing on car top.
(ii) Operating device with Up and Down direction buttons, a Run button, an Inspection/Automatic switch and Emergency Stop switch.
(iii) Operating device provides an audible and visible indicator that fire recall has been initiated.
(iv) Fix station to the car crosshead or provide portable station provided the extension cord and housing is permanently attached to the car crosshead.
(v) The car will be operated by constant pressure on the appropriate directional button and the Run button simultaneously.
(vi) Normal operating devices will be inoperative while this device is in use.

K. Car Top Emergency Audible Signal:

(i) Provide on top of each elevator.
(ii) Activation of Alarm Button or Emergency Stop switch will cause Emergency Audible Signal.
(iii) Provide auxiliary power supply to provide 1-hr. power in the event of loss of normal power.
(iv) Work Light and Duplex Plug Receptacle:
(v) GFCI protected outlet at top and bottom of car.
(vi) Include on/off switch and lamp guard.
(vii) Provide additional GFCI protected outlet on car top.

2.11 COMMUNICATION

A. Car Communication System:

(i) Hands-Free Phone System:

a. Two-way communication instrument in car with automatic dialing, tracking, and recall features, with shielded wiring to car controller in machine room.

System includes:
1. “Help” button on car operating panel to initiate two-way communication from Car. Button shall match car operating panel pushbutton design
2. Auto dialer with automatic rollover capability with minimum two numbers:
3. Adjacent light jewel illuminates and flashes when call is acknowledged.
4. “Help” button tactile symbol, engraved signage, and Tactile marking adjacent to button mounted integral with car front return panel.

(ii) Emergency Personnel Communication:

a. Communication system allowing emergency personnel to establish communications with each elevator individually.
b. Adjacent light jewel shall illuminate and flash when call is acknowledged.
c. Provide operating instructions.
d. On the same car operating panel as the phone push button, provide capability to communicate with and obtain responses from passengers.
e. Provide display video capability for entrapment assessment.

(iii) Communication for Deaf, Hard of Hearing and Speech Impaired: Device is located on the same car operating panel as the phone pushbutton.

a. Provide shielded twisted pair wiring to communicate to machine room equipment space network box.

2.12 CAR ENCLOSURE AND INTERIOR FINISHES

A. Freight Elevator Enclosure: Car weight to be verified prior to removal of interior cab finishes/cab enclosure. Remove existing interior finishes and enclosure components, weigh, and document. Provide complete as specified herein. New cab weight including all new finishes to be verified following completion of modernization. Post modernization weight not to exceed code allowable limits. Provide the following features:

(i) Enclosure Walls: Reinforced 10-gauge furniture steel formed panels no more than 20 inches wide with light-proof joints.

a. Reinforce and brace panels to provide rigid structure and securely fasten to car sling and platform.
b. Provide recess in car side wall for recessed mounting of car operating panel.

(ii) Enclosure Canopy:

a. Reinforced 12-gauge furniture steel formed panels no more than 20" wide with light-proof joints and Hinged emergency exit.
b. Interior finish white reflective baked enamel.
c. Lighting: Recessed LED down lights with on/off switch in car operating panel. Recess mount fixture flush with inside surface of car top. Provide steel guard on car top over fixture.
d. Bumper Rails: Two rows of 2 inch by 12-inch oak or maple bumpers mounted on both sides of the car.

1. Locate bottom rail at floor level and top rail at 36 inches above the car floor.
2. Bolt rails through car walls with bolt and captive nuts on exterior of wall panel sections on 18-inch centers.
3. Finish both upper and lower top edges with a 45-degree chamfered edge to eliminate collection of trash.
4. Finish ends of upper and lower bumpers on side walls to 45-degree chamfer to eliminate carts and people from hitting blunt ends.

B. Top of Car Guardrail: Provide car top railings where fall hazard exceeds 12 inches. Install guardrails, necessary hardware, and toe board to meet code requirements.

2.13 HALL CONTROL STATIONS

A. Pushbuttons:

(i) Flush mounted riser adjacent to hoistway entrances.
(ii) Single call button and “in use” light which illuminates when hall call is registered. Pushbutton design shall match car operating panel pushbuttons.
(iii) Vandal-resistant pushbutton and LED light assemblies.
(iv) Enlarged faceplate to cover existing wall block out.
(v) Approved engraved message and pictorial representation prohibiting use of elevator during fire or other emergency as part of faceplate.
(vi) Provide any cutting and patching required.

B. Fixture Faceplate Material and Finish:

(i) Satin stainless steel, all fixtures.
(ii) Tamper resistant fasteners for all public facing fastenings.

PART 3 - - EXECUTION

3.01 SITE CONDITION INSPECTION

A. Prior to beginning installation of equipment, examine hoistway and machine room areas. Verify no irregularities exist which affect execution of work specified.

B. Inform Owner or Consultant of any irregularities in writing prior to commencing work.

C. Do not proceed with installation until work in place conforms to project requirements.

3.02 INSTALLATION

A. Install all equipment as follows:

(i) in accordance with Contractor's instructions, referenced codes, specifications, and approved submittals.
(ii) with clearances in accordance with referenced codes, and specifications.
(iii) to be easily maintained and/or removed.
(iv) to afford maximum accessibility, safety, and continuity of operation.

B. Remove oil, grease, scale, and other foreign matter from the following equipment and apply one coat of field-applied machinery enamel.

(i) All exposed equipment and metal work installed as part of this work which does not have architectural finish.
(ii) Machine room equipment, and pit equipment.
(iii) Neatly touch up damaged factory-painted surfaces with original paint color.
(iv) Protect machine-finish surfaces against corrosion.
(v) Paint machine room walls and ceiling white and floors light gray.

3.03 FIELD QUALITY CONTROL

A. Work at jobsite will be checked during course of installation. Full cooperation with reviewing personnel is mandatory. Accomplish corrective work required prior to performing further installation.

B. Perform complete "Acceptance" level pre-testing as specified in the latest edition of ASME A17.2 "Guide for Inspection of Elevators, Escalators, and Moving Walks" prior to AHJ witnessed acceptance testing. Complete any adjustments, repairs, or replacements necessary to achieve code compliant operation including but not limited to:

(i) Car safety.
(ii) Car emergency communications. Inform Owner and Consultant of any noted failures of Owner provided and maintained equipment or systems.
(iii) Car and counterweight buffers.
(iv) Phase I and II Firefighters' Emergency Operation. Phase I initiated by smoke sensing devices.
(v) Power car door operation including door closing force, reopening device, and restricted opening.
(vi) Suspension members.
(vii) Compensation members.

C. Have Code Authority acceptance inspection performed and complete corrective work.

D. Provide access to installed equipment and elevator personnel assistance for consultant's final observation and review requirements.

3.04 ADJUSTMENTS

A. Static balance car to equalize pressure of guide shoes on guide rails.

B. Verify that weights of existing or altered car, counterweights, and compensation comply with traction machine manufacturers' requirements and do not exceed total weights indicated on approved submittals.

C. Lubricate all equipment in accordance with Contractor's instructions.

D. Adjust motors, power conversion units, brakes, controllers, leveling switches, limit switches, stopping switches, door operators, interlocks, and safety devices to achieve required performance levels.

3.05 CLEANUP

A. Keep work areas orderly and free from debris during progress of project. Remove packaging materials daily.

B. Remove all loose materials and filings resulting from Work.

C. Clean machine room equipment and floor.

D. Clean hoistways, car, car enclosure, entrances, operating and signal fixtures.

3.06 TRAINING

A. Provide per Section 01800 Equipment and System Training for the following:

(i) Elevator system
(ii) HVAC system

END OF SECTION