

SECTION 01 1200 SUMMARY OF THE WORK

PART 1—GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section summarizes construction operations required by the Contract Documents, defines aspects of Prime Contractor's relationship with City and lists special City requirements.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 PROJECT DESCRIPTION

- A. The work covers interior renovations, accessibility upgrades including elevator, lifts and accessible toilet rooms; new mechanical, electrical, plumbing, fire protection and telecom systems, a new sprinkler system; exterior upgrades including an artificial turf field, improved stormwater management, new playground with safety surface and accessible play equipment, improved internal pathways, lighting, gathering space and amenities; additional plantings and improvements to surface of courts.

Kingsessing Recreation Center Building and Site Improvements is located at 4901 Kingsessing Ave, Philadelphia, PA 19143.

For completed scope of work please refer to the Project Drawings and the Specifications. This project is part of the City's Rebuilding Community Infrastructure Program ("Rebuild").

1.4 CONTRACTS

- A. Construct Work under a Prime Contract for General Construction Work. The scope of Work for each Contract shall be as indicated below.
 - 1. Incidental Work provided by a one Prime Contractor but specified in a Division mainly the responsibility of a different Prime Contractor shall conform to the applicable specifications (i.e. earthwork required for Plumbing Work shall comply with the requirements of Division 2).
- B. General Construction Work: Provide all the Work of the Contract, no matter where the information is located, except as specifically indicated to be performed by one of the other Prime Contractors.
 - 1. Selective demolition and new construction as required for new Mechanical., Plumbing and Electrical Work but only if indicated on the Demolition or Architectural Drawings. Cutting and patching required by the other Prime Contractors and not specifically indicated on the drawings are the responsibility of the respective Prime.
 - a. Remove conduit runs with wiring, boxes and devices built into existing walls, floors or roof slabs which are to be removed.
 - 2. Install access doors and panels, anchors, embedments, bolts, plates, sleeves, boxes, etc. furnished under other Contracts.
 - 3. Provide blocking, backing, box-outs, openings, recesses, etc. required for the Work of other Contracts.
 - 4. Provide a dumpster for the use of all Contractors.

5. Provide periodic and final cleaning of building and site.
 6. Normal patching of sprayed-on fireproofing required because of the installation of Work required in other Contracts.
 7. Provide control lines and elevation benchmarks at central locations for the extension by other Prime Contractors.
 8. Provide temporary site perimeter fence and sidewalk cover if required.
 9. Provide temporary toilet facilities for all Contractors.
 10. Provide base flashing of roof-mounted curbs and rails provided under other Prime Contracts.
 11. Provide painting of all surfaces and equipment exposed to view in the finished Work, regardless of which Prime Contractor provided the surface or equipment.
 12. Furnish starters and disconnects for electrical components of systems included in the General Construction Work for installation under the Electrical Contract.
- C. Contractor will also be responsible for Moving, storage, and return to facility of property including but not limited to:
1. Boxes, sports and recreational equipment, maintenance equipment, appliances, and furniture. Type and quantity of items to be finalized prior to commencement of work.
 2. Bidder to provide an inventory of all items including quantity and condition to owner immediately after completing the move.
 3. Bidder to return all items in like condition immediately following issuance of Certificate of Substantial Completion.
 4. Bidders may propose to move items to an off-site secure (insured) location or provide a secure area on-site during construction for the storage of items, or propose a combination of on and off-site storage.
 5. Payment for moving and storage will be based on final inventory and invoices.
- D. Construction Sequencing
1. The pool is to be opened for the 2024 season. The contractor is to schedule work to complete all elements required to allow safe operation of the pool, access to the pool, and egress from the pool. This includes, but is not limited to:
 - a. Repairs to the pool site wall: pointing, reconstruction at the southeast corner, and other crack repair as described on the drawings;
 - b. New pool egress ramp and gate (South side);
 - c. New pool entrance gate (North side);
 - d. Protected public access way from street to entry and from exits to public way;
 - e. All equipment, fixtures, finishes, MEP systems required for new toilet rooms Women's Toilet Rm 010 and Men's Toilet Rm 013 to be operational;
 - f. All services related to pool operation and maintenance such as water supply, power supply, and filter room and chlorine storage tank operations and access;

- g. Pool schedule is not currently known; allow for 3 months June 1 through August 31.

1.5 CONTRACTOR'S USE OF PREMISES

- A. Prime Contractors shall have complete and exclusive use of premises as required for execution of Work of this Contract only.
- B. Coordinate use of premises with Project Coordinator
- C. Protect products stored on-site
- D. Store products to avoid interference with operations of City or other Prime Contractors
- E. Secure and pay for additional storage and work areas if required by Contractor.
- F. Do not overload structure with stored materials.

END OF SECTION

SECTION 01 2100 ALLOWANCES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies each Prime Contractor's administrative and procedural requirements governing handling and processing allowances

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Each section of the specifications including an allowance.

1.3 COORDINATION

- A. Designate required selection and delivery dates for products under each allowance in the Contractor's Construction Schedule.
- B. Designate each allowance with extensions based on estimated quantities for unit price allowances on Contractor's Schedule of Values.

1.4 DEFINITIONS

- A. Refer to Section 007200.

1.5 ALLOWANCES

- A. Include in Total Base Bid Amount, an amount equal to Two Percent (2%) of the base bid amount for payment of permit fees. This is a direct cost; no mark-ups will be permitted.
- B. Include in Total Base Bid Amount, an amount equal to \$30,000 for new site signage as per PPR standards.
- C. Include in Total Base Bid Amount, an amount equal to \$25,000 (twenty-five thousand dollars) for Moving and Storage scope. Refer to 011000 "Summary".
- D. Include in Total Base Bid Amount, an amount equal to \$50,000 (fifty thousand dollars) for site security as per PPR standards.
- E. Amount of each allowance (excluding 1.5.A above) shall include:
 - 1. Net cost of product.
 - 2. Delivery to site.
 - 3. Applicable taxes.
 - 4. Preparing submittals.
- F. In addition to amounts of allowances (excluding 1.5.A above), include in the base bid amount, the Contractor's cost for:
 - 1. Assisting in selection and obtaining proposals from suppliers and subcontractors.
 - 2. Processing submittals.
 - 3. Handling at site, including unloading, uncrating and storage.
 - 4. Protection from elements and from damage.

5. Labor, installation and finishing.
6. Other expenses required to complete installation.
7. Overhead and profit.

1.6 SELECTION OF PRODUCTS

- A. Design Professional shall issue by Change Order a full specification for the final selected product.
- B. Contractor's Duties
 1. Notify Design Professional of deadlines for specification of final products, allowing for Contractor's required submissions as required to meet Date of Completion.
 2. Provide cost proposals for products being considered when requested by Design Professional.
 3. Notify Design Professional of any effect anticipated by selection of product or supplier under consideration as it relates to:
 - a. Construction Schedule.
 - b. Contract Sum.
 - c. On notification of selection, enter into purchase agreement with designated supplier.

1.7 INSTALLATION

- A. Comply with requirements of applicable specification section, including warranties/guarantees.

1.8 ADJUSTMENT OF COSTS

- A. Should actual purchase cost be more or less than specified amount of allowance, Contract Sum shall be adjusted by Change Order equal to amount of difference. A percentage to cover Contractor's overhead and profit, as stated in Standard Contract Requirements, will be applied to difference in cost.
- B. For products specified under unit cost allowance unit cost applies to quantity required to complete the Work as determined by the Contractor.
 1. Submit invoices or other data to substantiate quantity actually used.
- C. Submit request for other costs, claimed for additional work caused by increase over amount of allowance, prior to required submission for product.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 01 2200 UNIT PRICES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.
- C. Defect assessment and non-payment for rejected work.

1.02 RELATED REQUIREMENTS

- A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Document 00 4322 - Unit Prices Form: List of Unit Prices as supplement to Bid Form
- C. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

1.03 COSTS INCLUDED

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.04 UNIT QUANTITIES SPECIFIED

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

1.05 MEASUREMENT OF QUANTITIES

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Owner will take all measurements and compute quantities accordingly.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.
- D. Measurement Devices:
 - 1. Weigh Scales: Inspected, tested and certified by the applicable state Weights and Measures department within the past year.
 - 2. Platform Scales: Of sufficient size and capacity to accommodate the conveying vehicle.

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UNIT PRICES

3. Metering Devices: Inspected, tested and certified by the applicable state department within the past year.
- E. Measurement by Weight: Concrete reinforcing steel, rolled or formed steel or other metal shapes will be measured by handbook weights. Welded assemblies will be measured by handbook or scale weight.
- F. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- G. Measurement by Area: Measured by square dimension using mean length and width or radius.
- H. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- I. Stipulated Price Measurement: Items measured by weight, volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.
- J. Perform surveys required to determine quantities, including control surveys to establish measurement reference lines. Notify Architect prior to starting work.
- K. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes, calculate and certify quantities for payment purposes.

1.06 PAYMENT

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.
- B. 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 transporting vehicle.
 4. Products placed beyond the lines and levels of the required Work.
 5. Products remaining on hand after completion of the Work.
 6. Loading, hauling, and disposing of rejected Products.

1.07 DEFECT ASSESSMENT

- A. Replace Work, or portions of the Work, not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct one of the following remedies:
 1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Architect.
 2. The defective Work will be partially repaired to the instructions of the Architect, and the unit price will be adjusted to a new unit price at the discretion of Architect.
- C. If, in the opinion of Owner, it is not practical to remove and replace the Work, Owner will direct one of the following remedies:
 1. The defective Work may remain, but the unit price will be adjusted to a new unit price at the discretion of Owner.

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UNIT PRICES

2. The defective Work will be partially repaired to the instructions of the Owner, and the unit price will be adjusted to a new unit price at the discretion of Owner.
- D. The individual specification sections may modify these options or may identify a specific formula or percentage price reduction.
- E. The authority of Owner to assess the defect and identify payment adjustment is final.

1.08 SCHEDULE OF UNIT PRICES

- A. Unit Price No. 1: Repair of plaster – level 1 repair
 1. Description: Hairline cracks, small holes/bubbles:
 - a. clean joint or area, apply joint compound & mesh, sand / prep for scheduled finishes
 2. Section 092400 "CEMENT PLASTERING"
 3. Unit of Measurement: Square foot of damage.
- B. Unit Price No. 2: Repair of plaster – level 2 repair
 1. Description: Large cracks, loose plaster, water damage
 - a. Remove loose plaster back to solid material; apply 3-coat plaster system, finish as scheduled.
 2. Section 092400 "CEMENT PLASTERING"
 3. Unit of Measurement: Square foot of damage.
- C. Unit Price No. 3: New openings in masonry walls
 1. Description: Provide opening and steel lintel per structural dwgs.
 2. Unit of Measurement: Square foot of opening.
- D. Unit Price No. 4: New furring over masonry walls
 1. Description: metal stud wall and 5/8" abuse-resistant GWB, installed full height to underside of structure.
 2. Section 092500 GYPSUM BOARD; 092216 NON-STRUCTURAL METAL FAMING
 3. Unit of Measurement: Square foot of wall
- E. Unit Price No. 5: Wood Floor repair
 1. Description: Repair of wood floors at gyms, and 2nd floor
 2. Section 062000 FINISH CARPENTRY
 3. Unit of Measurement: Square foot of surface.
- F. Unit Price No. 6: Underlayment
 1. Description: Provide new underlayment; remove deteriorated underlayment and install new.
 2. Section 062000 "FINSH CARPENTRY"
 3. Unit of Measurement: Square foot of surface.
- G. Unit Price No. 7: Brick Replacement – Site wall and at select areas indicated on drawings.
 1. Description: Remove damaged brick and replace with new matching brick according to:
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Each brick replaced.
- H. Unit Price No. 8: Crack and spall repair - Brick – Site wall

1. Description: Repairs per detail 1/S304-R.2
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Lineal foot of crack.
- I. Unit Price No. 9: Mortar joint crack repair - Brick – Site wall
1. Description: Repairs per detail 2/S304-R.2
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Lineal foot of crack.
- J. Unit Price No. 10: Dutchman repair – Limestone
1. Description: Remove damaged stone and replace with new limestone dutchman with profiled and flat surfaces to match existing limestone according to the following Section and as indicated on structural Drawings.
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Square foot of dutchman repair.
- K. Unit Price No. 11: Dutchman repair – Granite.
1. Description: Remove damaged stone and replace with new Granite dutchman with profiled and flat surfaces to match existing Granite according to the following Section and as indicated on structural Drawings.
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Square foot of dutchman repair.
- L. Unit Price No. 12: Repair of cracks with composite patching material – Granite.
1. Description: Cut out material in surface crack and apply composite patching material and crushed granite to fill crack and shed water away from surface of building according to:
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Lineal foot of crack repaired.
- M. Unit Price No. 13: Repair of cracks with composite patching material – Granite.
1. Description: Cut out material in surface crack and apply composite patching material and crushed granite to fill crack and shed water away from surface of building according to:
 2. Section 040101 "REPAIR AND CLEANING OF EXISTING MASONRY"
 3. Unit of Measurement: Lineal foot of crack repaired.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 2200

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UNIT PRICES

SECTION 01 2300 ALTERNATES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Description of Alternates.
- B. Procedures for pricing Alternates.
- C. Documentation of changes to Contract Price and Contract Time.

1.02 RELATED REQUIREMENTS

- A. Document 00 4323 - Alternates Form: List of Alternates as supplement to Bid Form.

1.03 ACCEPTANCE OF Alternates

- A. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- B. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.
- C. Note: Select Alternates require select items to be priced separately.

1.04 SCHEDULE OF Alternates

- A. The following enumeration represents the general intent of base bid and alternate scope and is not meant to be all-inclusive. See also drawings and specifications.
- B. Alternate No. R1: DEDUCT ALT - Architectural Reductions (Lower Level)
 - 1. Base Bid: Interior renovations at the Lower Level per Package 2 set,
 - 2. Alternate: See also drawing AD101B-R.2, A101B-R.2; Respective MEP/FP/IT drawings
 - a. Reduction of scope at Lower Level (LL) as shown on drawings
 - b. Do not demolish existing walls except as required for (LL) restrooms and elevator modifications.
 - c. Provide abuse resistant GWB on furring at interior side of exterior walls in lieu of plaster repair at LL areas to be renovated.
 - 1) See Scope of Work notes on Demolition and New Work on drawings.
 - d. Elec: same as base bid, except provide new lighting only at areas to be renovated and at stairs and as needed for egress/exits. See Electrical drawings.
 - e. Mech: No change from Base Bid. See Mech. drawings.
 - f. Plumb: No change from Base Bid. See Plumbing drawings
 - g. Fire Protection: No change from Base Bid. See Fire Protection drawings.
 - h. Fire Alarm: No change from Base Bid. See FA drawings
 - i. Telecom: No change from Base Bid. See Telecom drawings.
- C. Alternate No. R2: ADD ALT – Additional scope at Lower Level
 - 1. Base Bid: Interior renovations at the Lower Level per Package 2 set

2. Alternate: See also drawing AD101C-R.2, A101C-R.2; Respective MEP/FP/IT drawings per Base Bid.
 - a. Full lower level renovation: In addition to walls to be removed in Base Bid, remove additional walls at lower level (at areas indicated Add Alternate) as shown on drawings and provide new reconfigured spaces:
 - 1) Provide new single use toilet room at Locker Area.
 - 2) Enlarged Multi-space 034
 - 3) Reduced Telecom Rm 028
 - 4) See Scope of Work notes on Demolition and New Work on drawings.

- D. Alternate No. S1: Playing Fields
 1. Base Bid: Artificial turf field including underground storm-water management.
 2. Alternate: Provide Natural Turf Field; reduce storm basin by 50%

- E. Alternate No. S2: Rec Center Frontage Paving
 1. Base Bid:
 - a. New concrete vehicular paving – extent as indicated on drawings
 - b. Repairs to existing brick paving – extent as indicated on drawings
 2. Alternate:
 - a. Provide asphalt vehicular paving in lieu of concrete

- F. Alternate No. **S3**: Tennis Courts
 1. Base Bid: No Scope
 2. Alternate:
 - a. Color coating and white line striping only.

- G. Alternate No. **S4**: Diagonal path from 51st and Chester to playground
 1. Base Bid:
 - a. Diagonal Vehicular path: asphalt paving
 - b. Lighting: Install (5) PPR Standard pedestrian light posts
 2. Alternate (Add):
 - a. Install concrete pads, PPR Standard backless benches – (3) location as shown on landscape drawings L100-R.2
 - b. Trash (1) and recycling (1) receptacles
 - c. Install (5) Canopy trees

- H. Alternate No S5: Scoreboard
 1. Base Bid:
 - a. Power to location shown on Civil dwgs C-xxx for scoreboard
 2. Alternate (Add)
 - a. Furnish and install scoreboard.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 2300

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies each Prime Contractor's administrative and procedural requirements for handling requests for substitutions made after award of the Contract. Procedural requirements governing the Contractor's selection of products and product options are included under Section 016001 "Products and Materials".

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change or modify the meaning of other terms used in the Contract Documents.
- B. Substitutions - Requests for changes in products, materials, equipment, and construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions". The following shall not be considered substitutions:
 - 1. Substitutions requested by Bidders during the bidding period, and accepted in Addenda prior to award of Contract.
 - 2. Revisions to Contract Documents requested by the City or Design Professional.
 - 3. Specified options of products and construction methods included in Contract Documents.
 - 4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.
- C. "Or equal", "or equivalent", "approved equal", "approved equivalent", "equivalent substitution" and all other similar terms shall be interpreted as "substitution" as defined above.

1.4 SUBMITTALS

- A. Submit three (3) copies of each request for substitution. Submit requests with the form attached at the end of this Section and in accordance with procedures required for Change Order proposals. Attach all other data and certification.
- B. Identify the product, or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate.
- C. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
- D. Samples, where applicable or requested.
- E. A detailed comparison of salient features and qualities of the proposed substitution with those of the Work specified. Salient features and qualities may include elements such as size, weight, durability, performance, and visual effect

as determined by the Design Professional. Submit documentation of salient features and qualities from independent testing agencies performing industry recognized tests. The manufacturer's claims of performance may or may not be used in evaluation of substitutions at the discretion of the Design Professional.

- F. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the City and separate Contractors, that will become necessary to accommodate the proposed substitution.
- G. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
- H. Cost information, including a proposal of the net change, if any in the Contract Sum. The Contractor shall certify that the cost data presented is complete and includes all related costs under this Contract, but excludes the Design Professional's redesign costs.
- I. Certification by the Contractor that the substitution proposed is equal-to or better in every significant respect to that required by the Contract Documents, and that it will perform adequately in the application indicated. Include the Contractor's waiver of rights to additional payment or time, that may subsequently become necessary because of the failure of the substitution to perform adequately.
- J. Certification that the Contractor will reimburse the City for all costs for additional services by the Design Professional and/or the Department of Parks & Recreation relating to any substitution that necessitates a design change and related documentation.
- K. Design Professional's Action - The Design Professional will notify the Contractor of acceptance or rejection of the proposed substitution. The Design Professional will be the sole judge of the acceptability of the proposed substitution. Acceptance will be in the form of a Change Order. The Change Order will include a deduction from the Contract Sum for additional costs incurred by the City because of the substitution including, but not limited to, Design Professional's fees.

PART 2 PRODUCTS

2.1 SUBSTITUTIONS

- A. Conditions - The Contractor's substitution request will be received and considered by the Design Professional when one or more of the following conditions are satisfied, as determined by the Design Professional; otherwise requests will be returned without action except to record noncompliance with these requirements.
 - 1. Extensive revisions to Contract Documents are not required.
 - 2. Proposed changes are in keeping with the general intent of Contract Documents.
 - 3. The request is timely, fully documented and properly submitted.
 - 4. The request is directly related to an "or approved substitution" clause or similar language in the Contract Documents.
 - 5. The specified product or method of construction cannot be provided within the Contract Time. The request will not be considered if the

product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.

6. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
 7. A substantial advantage is offered the City, in terms of cost, time, energy conservation or other considerations of merit, after deducting offsetting responsibilities the City may be required to bear. Additional responsibilities for the City may include additional compensation to the Design Professional for redesign and evaluation services, increased cost of other construction by the City or separate Contractors, and similar considerations.
- B. The specified product or construction cannot be provided in a manner that is compatible with other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
 - C. The specified product or construction cannot be coordinated with other materials, and where the Contractor certifies that the proposed substitution can be coordinated.
 - D. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provide the required warranty.
 - E. Where a proposed substitution involves more than one Prime Contractor, each Contractor shall cooperate with the other Contractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of products.
 - F. The Contractor's submittal and Design Professional acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 3 EXECUTION Not Applicable

Attachment - Substitution Request Form (4 pages)

- END -

CITY OF PHILADELPHIA SUBSTITUTION REQUEST FORM

INSTRUCTIONS:

- A. This request must be submitted and signed by the Prime Contractor.
- B. A request for each substitution must be exactly in this form, including all items. (One (1) item of substitution per form).
- C. Attach complete information on changes to Drawings and Specifications that proposed substitution will require for its proper installation.
- D. Submit with request, all necessary samples and substantiating data to prove quality and performance is equal to that which is specified. Clearly mark manufacturer's literature to indicate equality in performance

CONTRACT AWARD DATE: _____ DATE OF REQUEST: _____

CONTRACTOR: _____

PROJECT: _____

—

We hereby submit for your consideration the following substitution in lieu of the specified item for the above project:

SPEC. SECTION NO.: _____ PARAGRAPH: _____ SPECIFIED ITEM: _____

PROPOSED
SUBSTITUTION: _____

REASON
FOR
REQUEST: _____

—

ITEMIZED COMPARISON OF SPECIFIED ITEM WITH THE PROPOSED SUBSTITUTION:
PERFORMANCE: _____

—

APPEARANCE: _____

—

REFERENCED
STANDARDS: _____

DEDUCT CHANGE ORDER OFFERED FOR PROPOSED SUBSTITUTION: _____

MANUFACTURER'S WARRANTIES OF THE PROPOSED AND SPECIFIED ITEMS:

LENGTH OF WARRANTY: AS SPECIFIED []. PROPOSED []

MATERIALS COVERED: AS SPECIFIED []. PROPOSED []

LABOR COVERED: AS SPECIFIED []. PROPOSED []

OTHER TERMS: AS SPECIFIED: _____

PROPOSED SUBSTITUTION: _____

DESIGNATION OF MAINTENANCE SERVICES AND SOURCES: _____

DOES SUBSTITUTION AFFECT DIMENSIONS OR CLEARANCES SHOWN ON THE
DRAWINGS? YES [] NO [].

IF YES, CLEARLY INDICATE
CHANGES: _____

—

WILL THE UNDERSIGNED PAY FOR CHANGES TO THE BUILDING DESIGN, INCLUDING
ENGINEERING AND DETAILING COSTS CAUSED BY THE REQUESTED SUBSTITUTION?
YES [] NO [].

IF NO, FULLY EXPLAIN: _____

—

WHAT EFFECT DOES SUBSTITUTION HAVE ON OTHER CONTRACTS OR TRADES?__

WHAT EFFECT DOES SUBSTITUTION HAVE ON CONSTRUCTION SCHEDULE? _____

CONTRACTORS CERTIFICATION OF EQUAL PERFORMANCE

The undersigned certifies that:

He/she has investigated the proposed substitution and has determined that it is equal to or better than the product specified.

He/she will guarantee the substitution in the same manner as the product specified.

He/she will coordinate and make other changes as required in the Work as a result of the substitution.

He/she waives all claims for additional costs as a result of the substitution, with the exception of those identified above under "cost data".

He/she will reimburse the City for all costs for design change resulting from the substitution.

Submitted by:

Signature _____

Name: _____ Title: _____

Firm: _____ Date: _____

Street: _____

City _____ State _____ Zip Code _____

Telephone: _____

Signature shall be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in rejection without further review by Design Professional.

Design Professional's Action

Accepted []

Accepted as noted []

Not accepted []

Received too late []

Signature: _____

-END-]

SECTION 01 2600
CONTRACT MODIFICATION PROCEDURES

PART 1 GENERAL

1.1 CHANGE ORDER PROCEDURE

- A. If a change in the design of any portion of the work or the requirements of the Project Manual is deemed necessary by the City/PRA, they may order an alteration to, or a change in, the work covered by the Contract Documents, and the contractor shall comply with such orders. If such changes increase the cost of the work to the Contractor, the City/PRA will allow additional compensation. If such changes diminish the cost of the work to the Contractor the City/PRA may deduct the amount of the diminution. No consequential loss or profit due to reduction in the scope of work will be allowed the Contractor, but the Contractor may be entitled to an extension of time in these instances. No changes shall be made except upon a standard Change Order Form, signed and executed by the Contractor and the City/PRA authorizing the change and fixing the method of compensation or deduction. This Section specifies administrative and procedural requirements for handling and processing Change Orders.
- B. The execution of a change order (increase or decrease) will require a proposal from the Contractor on company letterhead. Such proposal will include a complete description of the change and schedule impact and a complete cost breakdown including such items as Labor, Materials, Equipment, Crew Composition, Sub-Contractor costs, and associated Insurance and Bonding costs (if applicable). The contractor is entitled to percentage mark-ups on some of these items as stated in the Standard Contract Requirements. The proposal is to be submitted to the City/PRA. Upon review and approval by the City/PRA Project Team, a signed standard Change Order Form will be forwarded to the Contractor for final execution.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements and other Division 1 sections of the Standard Contract Requirements (007200).

1.3 CONTRACTOR'S RESPONSIBILITY TO INFORM

- A. Communication, either verbal or written, between the City/PRA or Design Professional and the Contractor, Subcontractors, or other parties involved, during the normal course of administration of the Contract, does not in any way constitute acceptance of a Change Order or direction to modify the Contract unless said communication is in the form of a written Change Order or Construction Change Directive as specified herein.
- B. Communication from the City/PRA or Design Professional including, but not limited to the following, does not constitute approval of a Change Order:
 - 1. Submittal review including submittals returned with notations and corrections;
 - 2. Site observation, conversation and reports;
 - 3. Participation in pre-construction, pre-installation, progress or other meetings;
 - 4. Clarification sketches or drawings.
- C. It is the responsibility of the Contractor to inform the City/PRA that any communication has, in the Contractor's opinion, caused reason to modify the Contract. The Contractor shall not undertake work which, in his opinion, requires a Change Order without completing procedures outlined herein.
- D. Work done without completing Change Order procedures is entirely at the Contractor's own risk, even if the Contractor believes that communications from

the City/PRA or Design Professional contain instructions to do work outside of the Contract scope.

- E. The City/PRA and Design Professional will not willfully instruct work to be done that differs from the contract except through the Change Order procedures contained herein.
- 1.4 MINOR CHANGES IN THE WORK
- A. Supplemental instructions, not involving an adjustment to the Contract Sum or Contract Time, may be issued in writing by the PRA.
- 1.5 CHANGE ORDER PROPOSALS
- A. City/PRA-Initiated Change Order Proposal - Proposed changes in the Work that will require adjustment to the Contract Sum or Contract Time will be issued by the City/PRA, with a detailed description of the proposed change and supplemental or revised Drawings and Specifications, if necessary.
 - 1. Change Order Proposal requests issued by the City/PRA are for information only. Do not consider them as instruction either to stop work in progress, accelerate the work or to execute the proposed change.
 - 2. Unless otherwise indicated in the Change Order Proposal request, within 20 days of receipt of the Change Order Proposal request, submit to the City/PRA for review, an estimate of cost necessary to execute the proposed change.
 - a. Include a list of quantities of products to be purchased and unit costs, along with the total amount of purchases to be made. Separate labor and material charges. Where requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time or any special efforts of the Contractor that will be employed to reduce the delay.
 - d. Indicate that the Change Order Proposal is in response to a City/PRA request and submit it to the City/PRA as stated in 1.1 (B) of this section.
 - B. Contractor-Initiated Change Order Proposal – When Contractor claims latent or other unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a Change Order Proposal.
 - 1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
 - 2. Include a list of quantities of products to be purchased and unit costs along with the total amount of purchases to be made. Where requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Comply with requirements in Section 012500 “Substitution Procedures” if the proposed change in the Work requires the substitution of one product or system for a product or system specified.
 - 5. Submit the proposal to the City/PRA as stated in 1.1 (B) of this section.
- 1.6 ALLOWABLE MARKUPS
- A. For change orders, overhead and profit shall be the aggregate total amount allowed to the Contractor and shall include the costs of the Project Manager,

office personnel, small tools, among other things. The markup for overhead and profit shall be calculated as follows:

- i. Cost between \$0.00 and \$25,000.00 - **12%**
- ii. Cost between \$25,001.00 and \$50,000.00 - **10%**
- iii. Cost over \$50,000.00 - **8%**
- iv. Contractor markup for Subcontractor, and lower tier contractors shall not exceed **8%**

B. Under no circumstances shall the total combined markup for overhead and profit by the Contractor exceed the percentages for markup for overhead and profit indicated in Subparagraphs (1), (2), (3) and (4) above. The Rebuild Office shall make the final determination as to net cost of labor and materials. All Change Orders relating to price and/or time are subject to prior acceptance or approval by the Rebuild Office, or express ratification of Change Order work already for the Rebuild Office.

1.7 ALLOWANCES

A. Refer to Section 012100, Allowances.

1.8 CONSTRUCTION CHANGE DIRECTIVE (Force Account)

A. When the City/PRA and Contractor are not in total agreement on the terms of a Change Order Proposal, the City/PRA may issue a Construction Change Directive instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

B. The Construction Change Directive will contain a complete description of the change in the Work.

C. Documentation - Maintain detailed records on a time and material basis of work required by the Construction Change Directive. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1. Contractor's documentation will not, by itself, establish the final cost.
2. The City/PRA reserves the right to determine the value of the change in Work per the requirements of this Section.

1.9 DETERMINATION OF COST

A. City/PRA reserves the right to use established estimating methods (including but not limited to industry standards and unit prices listed in this manual) to determine a fair and reasonable cost for changes in the Work.

PART 2 PRODUCTS Not used.

PART 3 EXECUTION

3.1 Sample Change Order Form, contact Project Coordinator for actual document.

-END-

SECTION 01 2900
PAYMENT PROCEDURES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies administrative and procedural requirements governing each Prime Contractor's submission of invoices for Payment. These may also be referred to as "Current Estimates" in the Standard Contract Requirements (007200).
- B. Coordinate the Contractor's Construction Schedule, List of Subcontracts, and Submittal Schedule with the Standard Cost Breakdown.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements and other Division 1 of the Standard Contract Requirements (007200).

1.3 GENERAL REQUIREMENTS

- A. Each invoice for payment shall be consistent with previous applications and payments.
- B. The initial submission of the Standard Cost Breakdown at time of Substantial Completion, and the final Standard Cost Breakdown involve additional requirements.
- C. Withholding Payment - Any payment may be withheld in accordance with the Contract Documents
 - 1. Any payment may be withheld if the procedural requirements including submittal of current administrative items listed including Certificates of Insurance are incomplete or outdated.
 - 2. Portions of payment requested for Work installed without approved submittals may be withheld.
- D. Standard Cost Breakdown Preparation - Complete every entry on the Standard Cost Breakdown:
 - 1. Contractor (name and address)
 - 2. Contract number (from Notice to Proceed);
 - 3. Requisition No. (sequential number);
 - 4. Date Prepared;
 - 5. Project (title of project);
 - 6. STANDARD COST BREAKDOWN
 - a. No. (sequentially numbering);
 - b. Item (phases of scope of work);
 - c. Unit (each, sq. ft., etc.);
 - d. Material;
 - e. Labor;
 - f. Unit Cost;

g. Total (total of Material and Labor).

7. PAYMENT APPLICATION

- a. Previous Billing (as billed previous application);
- b. Percent Complete (completed to date);
- c. Total Completed (Total column under COST BREAKDOWN multiplied by Percent Complete column under PAYMENT APPLICATION.)

Incomplete Standard Cost Breakdowns will be returned without action.

- E. Entries shall match data on the Contractor's Construction Schedule. Use updated schedules if revisions have been made.
- F. Include amounts of Change Orders issued prior to the last day of the construction period covered by the Standard Cost Breakdown.
- G. Submit original plus 2 copies of each Standard Cost Breakdown to the Robert LaBrum, Director, Design & Construction, PRA, 1234 Market Street, 16th Floor, Philadelphia, PA 19107

1.4 INITIAL STANDARD COST BREAKDOWN

A. Actions and submittals that shall precede or coincide with submittal of the first Standard Cost Breakdown include the following:

- 1. List of subcontractors.
- 2. List of principal suppliers and fabricators.
- 3. Schedule of Values.
- 4. Contractor's Construction Schedule (preliminary if not final).
- 5. Schedule of unit prices.
- 6. Submittal Schedule (preliminary if not final).
- 7. List of Contractor's staff assignments.
- 8. List of Contractor's principal consultants.
- 9. Copies of building permits.
- 10. Copies of authorizations and licenses from governing authorities for performance of the Work.
- 11. Report of pre-construction meeting.
- 12. Certificates of insurance.
- 13. Performance and payment bonds.
- 14. Complete Submittals for each product or system included in the Application.
- 15. Initial settlement survey and damage report.
- 16. Reference Point Survey.
- 17. Current Daily and Monthly Reports.
- 18. Initial Construction Photographs and/or videos.

1.5 STANDARD COST BREAKDOWN AT SUBSTANTIAL COMPLETION

A. This Standard Cost Breakdown shall reflect any Certificates of Partial Substantial Completion issued previously for City occupancy of designated portions of the Work.

- B. Actions and submittals which shall proceed or coincide with this Standard Cost Breakdown include:
1. Occupancy permits and similar approvals.
 2. Warranties (guarantees) and maintenance agreements.
 3. Test/adjust/balance records.
 4. Maintenance instructions.
 5. Utility meter readings.
 6. Start-up performance reports.
 7. Certified improvement survey.
 8. Change-over information related to City's occupancy, use, operation and maintenance.
 9. Final cleaning.
 10. Final progress photographs.
 11. List of incomplete Work (punch list), recognized as exceptions to Certificate of Substantial Completion.
 12. Record Documents.

1.6 FINAL STANDARD COST BREAKDOWN

- A. Actions and submittals which shall precede or coincide with submittal of the final Standard Cost Breakdown include the following:
1. Project Closeout Form fully executed (signed).
 2. Completion of items specified for completion after Substantial Completion (punch list).
 3. Assurance that unsettled claims will be settled.
 4. Assurance that Work not complete and accepted will be completed without undue delay.
 5. Transmittal of required Project construction records to City/PRA.
 6. Proof that taxes, fees and similar obligations have been paid.
 7. Removal of temporary facilities and services.
 8. Removal of surplus materials, rubbish and similar elements.
 9. Change of door locks to City's access.

- END -

**STANDARD COST BREAKDOWN/
PAYMENT APPLICATION**

CITY OF PHILADELPHIA
 Department of Public Property
 CITY HALL, 1400 JOHN F KENNEDY BLVD, 7th FLR
 PHILADELPHIA, PA 19107



CONTRACTOR:

Project Title: _____ **Project #:** _____

Contract #: _____ **PO #(s):** _____

Bid # _____ **Date** _____ **Req #** _____

ITEM NO.	DESCRIPTION	CONTRACT BID/COST BREAKDOWN						% COMP	PREVIOUSLY BILLED	CURRENT BILLING	TOTAL DUE
		QTY	UNIT	MATERIAL	LABOR	UNIT COST	TOTAL COST OF ITEM				
TOTALS FOR PAGE:											

GRAND TOTALS (Contract Amount):

COMMITTED AMOUNTS	PREVIOUS PAYMENT(S)	CURRENT PAYMENT	TOTAL PAYMENTS
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SUBCONTRACTORS	SUBCONTRACTOR #1		COMMITTED AMOUNTS	PREVIOUS PAYMENT(S)	CURRENT PAYMENT	TOTAL PAYMENTS
	DESCRIPTION	OEO (M/W/DS)				
	SUBCONTRACTOR #2	OEO (M/W/DS)				
	SUBCONTRACTOR #3	OEO (M/W/DS)				
	SUBCONTRACTOR #4	OEO (M/W/DS)				
	SUBCONTRACTOR #5	OEO (M/W/DS)				
	SUBCONTRACTOR #6	OEO (M/W/DS)				
	SUBCONTRACTOR #7	OEO (M/W/DS)				
	SUBCONTRACTOR #8	OEO (M/W/DS)				

(Additional subcontractors to be added on next page)

DEPARTMENT OF PUBLIC PROPERTY APPROVALS

CONTRACTOR SUBMITTAL

PROJECT COORDINATOR: Print Name	DATE: _____	CONSTRUCTION ENGINEER/INSPECTOR: RETAINAGE: 10% 5% 2% 0% \$ _____	DATE: _____	AUTHORIZED SIGNATURE: _____	DATE: _____
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SECTION 01 2973

SCHEDULE OF VALUES (CURRENT ESTIMATE)

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes administrative requirements for each Prime Contractor's Schedule of Values, referred to as "Current Estimate" in the Standard Contract requirements.

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 COORDINATION

- A. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:
 1. Contractor's Construction Schedule.
 2. Standard Cost Breakdown
 3. List of subcontractors.
 4. Schedule of allowances.
 5. Schedule of alternates.
 6. Schedule of submittals.
- B. Submit the Schedule of Values to the City no later than ten (10) days after receipt of the Notice to Proceed. Submit six (6) copies.

1.4 FORMAT AND CONTENT

- A. Arrange the Schedule of Values in a tabular form with separate columns to indicate the following for each item listed:
 1. Generic name.
 2. Related Specification Section.
 3. Name of subcontractor.
 4. Name of manufacturer or fabricator.
 5. Name of supplier.
 6. Change Orders (numbers) that have affected value.
 7. Dollar value.
 8. Percentage of Contract Sum to the nearest one-hundredth percent, adjusted to total 100 percent.
 9. Margins of Cost - Show line items for indirect costs, and margins on actual costs, only to the extent that such items will be listed individually in Standard Cost Breakdown. Each item in the Schedule of Values and Standard Cost Breakdown shall be complete including its total cost and proportionate share of general overhead and profit margin unless otherwise indicated.

10. At the Contractor's option, temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown as separate line items in the Schedule of Values or distributed as general overhead expense.
11. Itemize separate line item cost for the following items under Division 1:
 - a. Field Engineering.
 - b. Construction Photographs.
 - c. Mock-up.
12. Itemize separate line item cost for each of the construction cost items under all applicable specification sections.
13. Itemize separate line item cost for each service contract.
14. Breakdown costs into:
 - a. Delivered cost of material, with taxes paid, with overhead and profit.
 - b. Installation cost, with overhead and profit.
 - c. If requested, break down high value line items to list major materials or operations.
 - d. Round off figures to nearest ten dollars.
 - e. Make sum total costs of all items listed in Schedule equal to Contract Limit.

1.5 UPDATING

- A. After review by the City, revise and resubmit schedules as required.
- B. Update and resubmit the Schedule of Values when change orders or construction change directions result in a change in the Contract Limit.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 01 3113
PROJECT COORDINATION

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section includes the General Contractor's responsibilities to coordinate the work and related administrative procedures.

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 SUBMITTALS

- A. Submit the following prior to or coincidental with the initial application for payment.
1. List of contractor's staff assigned to the project and responsibilities including personnel on and off-site. Include mailing address, delivery address, phone, fax, mobile phone, etc. For at least three (3) staff, list phones where personnel can be reached during non-work hours for emergencies.
 2. List of contractor's consultants and sub-contractors with similar requirements as above.
 3. List of principal suppliers and fabricators with similar requirements as above. No emergency phone number required.

1.4 OBSERVATION OF WORK BY OTHERS

- A. Observation of the Work by the City/PRA, Design Professional, Inspection and Testing Agencies or any other party shall not be interpreted as relieving the Contractor from responsibility for coordination of all Work, superintendence of the Work, and scheduling and direction of the Work or any other requirement of the Contract.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 01 3119
PROJECT MEETINGS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies each Prime Contractor's administrative and procedural requirements for project meetings. Requirements contained herein in no way limit each Prime Contractor's responsibility to effectively communicate with parties involved in order to meet the requirements of the Contract.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Project Coordination: Division 1.
- C. Construction Scheduling: Division 1.

1.3 ADMINISTRATION

- A. The Philadelphia Redevelopment Authority ("PRA") will schedule and administer the pre-construction meetings, periodic project meetings, pre-installation, coordination and other specially called meetings throughout the progress of the work. They will also:
 - 1. Prepare agenda for meetings.
 - 2. Distribute written notice of each meeting four (4) days in advance of meeting date.
 - 3. Make physical arrangements for meetings.
 - 4. Preside at meetings.
- B. During the course of the pre-construction meetings, periodic project meetings, pre-installation, coordination and other specially called meetings throughout the progress of the work, the Design Professional will:
 - 1. Record the minutes, including all significant proceedings and decisions.

- C. Representatives of Contractors, subcontractors and suppliers attending the meetings shall be qualified and authorized to act on behalf of the entity each represents.

1.4 PRE-CONSTRUCTION MEETING

A. Attendance

1. Project Coordinator.
2. Design Professional's Representative.
3. Prime Contractor's Representatives.
4. Major subcontractors.

B. Suggested Agenda

1. Discussion of coordination of Prime Contracts.
2. Discussion on major subcontracts and suppliers and projected construction schedules.
3. Critical work sequencing.
4. Major equipment deliveries and priorities.
5. Project Coordination and designation of responsible personnel.
6. Procedures and processing of field decisions, proposal requests, submittals, change orders and applications for payment.
7. Procedures for maintaining Record Documents.
8. Use of premises, office, work and storage areas, and City's requirements.
9. Construction facilities.
10. Temporary utilities.
11. Housekeeping procedures.
12. Dispute resolution.

1.5 PROGRESS, PRE-INSTALLATION AND COORDINATION MEETINGS

- A. Schedule regular and special meetings, as required by progress of the Work.

- B. Location of the Meetings - The Project field office of the Contractor [or as otherwise directed].

C. Attendance

1. Project Coordinator.
2. Design Professional's Representative.
3. Contractor's Representatives.
4. Subcontractors as appropriate to the agenda.
5. Suppliers as appropriate to the agenda.
6. Others as appropriate.

D. Suggested Agenda

1. Review and approval of minutes of previous meeting.
2. Review of work progress since previous meeting.

3. Field observations, problems, and conflicts.
4. Problems which impede Construction Schedule.
5. Coordination issues between Prime Contractors.
6. Review of off-site fabrication, delivery schedules.
7. Corrective measures and procedures to regain projected schedule.
8. Revisions to Construction Schedule.
9. Plan progress, schedule, during succeeding work period.
10. Coordination of schedules.
11. Review submittal schedules; expedite as required.
12. Maintenance of quality standards.
13. Review proposed changes for:
 - a. Effect on Construction Schedule and on completion date.
 - b. Effect on other contracts of the Project.
14. Review record drawings.
15. Other business.

PART 2 PRODUCTS Not Used

PART 3 - EXECUTION Not Used

- END -

SECTION 01 3216
CONSTRUCTION SCHEDULING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies administrative and procedural requirements for schedules prepared by each Prime Contractor.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 CONSTRUCTION SCHEDULE

- A. Each Prime Contractor shall prepare a Contractor's Construction Schedule including all phases of work as follows:
1. Initial Construction Schedule - Within 10 (ten) calendar days after Notice to Proceed, submit an initial construction schedule. Break down at least by 16 Division Specification format for General Construction and into at least 12 operations for Electrical, Plumbing, or Mechanical Construction. This schedule must be in agreement with the time frame stated in the Bid Proposal. Coordinate schedule with the following:
 - a. Prepurchase products.
 - b. Allowances.
 - c. Application for Payments.
 - d. Mock-ups.
 - e. Schedule of Submittals.
 - f. Schedule of Values.
 2. Final Construction Schedule - Within 20 (twenty) calendar days after Notice to Proceed, submit a complete detailed construction schedule showing each activity having impact upon the timely completion of the Project. Activities shall be broken down generally similar to the individual specification sections but not less than 20 separate operations. The schedule shall include, but not be limited to the following:
 - a. Schedule each activity with a time limit per activity not to exceed ten (20) working days.
 - b. Time frames for testing of materials.
 - c. Time frames for shop fabrication and delivery of all parts of the work. Identify by specification section number and title. Coordinate with Schedule of Submittals. Allow time for reviews, resubmissions, and approval.
 - d. Decision dates for selection of finishes and colors.
 - e. Decision dates for selection of products specified by allowances.
 - f. Deadlines for submissions of substitutions.
 - g. Identification for work of mock-ups, separate phases or other logically grouped activities.
 - h. Separate network for each trade or operation.

1.4 FORMAT

- A. Initial Construction Schedule - Horizontal bar chart form divided vertically by weeks.
- B. Final Construction Schedule - Horizontal bar chart form showing each trade or operation.

1.5 SCHEDULE OF SUBMITTALS

- A. Submit a preliminary Schedule of Submittals within 30 days after the Notice to Proceed. Submit the final schedule with the final Contractor's Construction Schedule.
- B. Coordinate submittal schedule with the list of subcontracts, schedule of values, submittal register and the Contractor's construction schedule.
- C. Coordinate scheduling of interrelated submissions to allow for review of required data and to avoid delays in reviewing submittals caused by lack of coordinated submission.
- D. Coordinate scheduling of submission to allow for approval of products prior to construction of mock-up.
- E. Contractor shall estimate number of resubmissions required for each submittal based on complexity. However, the submittal schedule in no way binds the City to approve a submittal to meet the submittal schedule or construction schedule. It is the contractor's sole responsibility to prepare acceptable submissions in a timely fashion in order to maintain schedule.
- F. Allow for City's and Design Professional's review of each submission and resubmission.
- G. Prepare the schedule in chronological order. Provide the following information:
 - 1. Related Section number.
 - 2. Submittal category.
 - 3. Name of subcontractor.
 - 4. Description of the part of the Work covered.
 - 5. Scheduled date for the first submittal.
 - 6. Scheduled date for resubmittal or resubmittals.
 - 7. Scheduled date the City's final release or approval.
- H. Distribution - Following response to initial submittal, print and distribute copies to the City, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.
- I. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

1.6 COORDINATION

- A. All Prime Contractors shall submit their schedules to the General Contractor.
- B. The General Contractor shall prepare an overall schedule including all trades and contracts.
- C. The City will resolve conflicts among schedules of various Prime Contractors.
- D. The General Contractor shall distribute copies of the approved final Construction Schedule to other Prime Contractors involved.

1.7 UPDATING

- A. Updating of the final Construction Schedule and Schedule of Submittals shall be required on a monthly basis.

- B. Show all changes occurring since previous submission of updated schedules.
- C. Indicate progress of each activity, show completion dates.
- D. Include major changes in scope, activities modified since previous updating, revised projections due to changes and other identifiable changes.

1.8 DISTRIBUTION

- A. Distribute copies of revised schedules to:
 - 1. Project Coordinator.
 - 2. Design Professional.
 - 3. Other Prime Contractors.
 - 4. Subcontractors.
 - 5. Other Concerned Parties (surety, insurance, etc.).
 - 6. Instruct recipients to report any inability to comply, and provide detailed explanation, with suggested remedies.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 01 3233
CONSTRUCTION PHOTOGRAPHS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes photographic services provided by the General Contractor required to record the progress of the work of all Prime Contractors.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 SUBMITTALS

- A. Digital images – color images of each view, containing accurate camera-generated date/time stamp embedded in image, and sufficient background image to orient view to overall site if possible. For close-up images, include an additional photograph showing the relationship of close-up area to overall site. Forward electronic copies to City and Design Professional and retain copy for Contractor's files. Each individual photograph's electronic file to be named using the following naming convention using the date image was taken:

YYYY-MM-DD[space]Projectname[space](specific or general description as needed)

For example: 2018-10-28 Torresdale wall footing

- B. Submit hard copy images within text, or attached to end of, monthly progress reports.

PART 2 PRODUCTS

2.1 DIGITAL IMAGES

- A. Color
- B. 2 images maximum per 8.5" x 11" sheet.
- C. Minimum image size shall be 3 inches by 5 inches.
- D. Identify each image listing:
 - 1. Name of project.
 - 2. Orientation of view.
 - 3. Date and time stamp automatically recorded by camera within image.
 - 3. Name and address of photographer.

PART 3 EXECUTION

3.1 DIGITAL IMAGES (ELECTRONIC FILES)

- A. Take 30 initial photographs and 30 photographs (minimum) once monthly from points designated by the Project Manager, for the length of the Contract. First photographs shall be taken prior to start of construction. Include additional images as needed to memorialize key stages in construction process.
- B. Take photographs of installed subsurface features— especially underground utility locations — prior to backfilling or covering over, clearly showing orientation to overall site.

- END -

SECTION 01 3330 SUBMITTALS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's administrative and procedural requirements for submission of shop drawings, product data, samples and other required information.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Submittal Schedule specified in Construction Scheduling, Section 013216.

1.3 WORK WITHOUT APPROVED SUBMITTALS

- A. City may withhold payment for the value of Work installed without first obtaining approved submittals, when submittal is required by individual specification sections. Refer to section 012900 "Payment Procedures".

1.4 SHOP DRAWINGS

- A. Shop drawings are Contractor's or subcontractor's Drawings made specifically for this Project, for use in fabrication and installation.
- B. Shop drawings must show sufficient data including layout, fabrication and erection details to establish evidence of conformance with design concept and compliance with the Contract Documents. Shop drawings must show relationships with adjacent construction.
- C. Do not use reproductions of Contract Drawings as Shop Drawings unless specifically permitted in the Contract Documents.
- D. Identify details by reference to sheet and detail numbers shown on Contract Drawings and by reference to paragraphs and specification section.
- E. Orient Shop Drawings in same manner as drawings.
- F. Manufacturer's Standard Schematic Drawings
 1. Modify drawings to delete information that is not applicable to Project. Drawings showing information which is not applicable or unaltered standard drawings shall be returned without review.
 2. Add supplemental information applicable to Project.

1.5 PRODUCT DATA

- A. Manufacturer's Catalog Sheets, Brochures, Diagrams, Schedules, Performance Charts, Illustrations and Other Standard Descriptive Data.
- B. Clearly mark each copy to identify materials, products or models applicable to this Project. Submittals not marked shall be returned without review.
- C. Show colors when required for evaluation, record or other purpose. Where product data is printed in color, submit all copies in original colors as published.
- D. Show dimensions and clearances required.
- E. Show performance, characteristics and capacities.

- F. Show wiring and piping diagrams, and controls.
 - G. Show by reference to paragraphs and specification section.
- 1.6 SAMPLES
- A. Samples: Actual samples of products proposed for use. Samples must be of sufficient size and quantity to clearly illustrate:
 - 1. Functional characteristics of product or material, with integrally related parts and attachment devices.
 - 2. Full range of color, texture and patterns.
- 1.7 FIELD SAMPLES AND MOCKUPS
- A. Erect at project site in location as directed.
 - B. Construct each sample or mock-up complete, including work of all trades required in the finished work.
 - C. Remove mockup at conclusion of work or when directed by City.
- 1.8 COORDINATION
- A. Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.
 - B. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.
 - C. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
 - D. The City reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 - E. When mock-ups are required, submittals for all products used in mock-up shall be coordinated with schedule for mock-up construction.
- 1.9 SUBMISSION REQUIREMENTS
- A. Comply with Schedule of Submittals.
 - B. Accompany each submission with a transmittal indicating project name, location, City's project number, referenced specification number, submission number, date, item submitted, Contractor's name, Sub-contractor, supplier or manufacturer.
 - 1. Transmittal shall include Contractors certification that information complies with Contract Documents.
 - 2. Indicate on transmittal or on submittal deviations from Contract Documents requirements.
 - C. Copies
 - 1. For sample selections, submit one (1) set. For sample approval, submit three (3) sets. The Design Professional will retain one (1) set.
 - D. Where product data is printed in color and requires color for evaluation, record, or other purpose, all copies submitted shall be in original colors as published.
 - E. In addition to information required on the transmittal, submittals shall include:
 - 1. Relation to adjacent structure or material
 - 2. Field dimensions, clearly identified as such.

3. Finishes.
4. Shipping and operating weights
5. Gauges, fastenings, reinforcements, welding details.
6. Applicable standards, such as ASTM or Federal Specification numbers.
7. A blank space, 3 inches by 10 inches for action stamp.

F. Contractor's Review:

1. Contractor shall review each submittal and indicate approval with a stamp, dated, initialed and/or signed. Review shall include but not be limited to; verification of field measurements, coordination with all trades involved and compliance with Contract Documents. The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the City's or Design Professional's action on submittals unless the Contractor has given specific notice of deviation at the time of submission and written approval of the specific deviation is given. The Contractor shall not be relieved from responsibility for errors or omissions in submittals by the City's or Design Professional's approval thereof.
2. If Contractor does not review submittals and provide the signed approval stamp before sending them to the Design Professional, they will be returned unchecked.

1.10 SUBMISSION ROUTING

- A. Forward submittal direct to Design Professional via Unifier and email copy of transmittal letter to Project Coordinator.
- B. Design Professional will forward Submittals marked as "Approved" or "Approved as Noted" to Project Coordinator.
- C. Design Professional will forward Submittals marked as "Revise and Resubmit" or "Rejected" back to Contractor and will fax copy of transmittal to Project Coordinator.
- D. Project Coordinator will forward Submittals back to Contractor and email copy of transmittal to Design Professional.

1.11 DESIGN PROFESSIONAL'S DUTIES

- A. Review submittals within 10 working days of receipt.
- B. Review for conformance to design concept of Project and for compliance with information given in Contract Documents. Review of separate item does not constitute review of an assembly in which item functions.
- C. Affix stamp and initials or signature certifying to review of submittal.
- D. Design Professional's action on submittals will result in the making of one of the following notations with related meanings:
 1. APPROVED: The work involved may proceed, and no further submission is required.
 2. APPROVED AS NOTED: The work involved may proceed incorporating comments. Annotations do not authorize changes to Contract Sum.
 3. REVISE AND RESUBMIT: The work involved may not proceed. Submittal must be corrected and resubmitted.
 4. REJECTED: The submittal is not in accordance with the Contract Documents, and a completely new submittal is required.

- E. In the event any comment made to the Submittal results in a claim for a change in the Contract, the Project Coordinator shall be notified immediately, and fabrication may not be undertaken until contract modification procedures are completed.

1.12. CITY'S RESPONSIBILITY

- A. Review submittals within 5 working days of receipt.
- B. Review for compliance Contract Documents. Review of separate item does not constitute review of an assembly in which item functions.
- C. Affix stamp and initials or signature certifying to review of submittal.
- D. City's action on submittals will result in the making of one of the following notations with related meanings:
 - 1. NO EXCEPTION TAKEN: The work involved may proceed, and no further submission is required.
 - 2. MAKE CORRECTIONS NOTED, RESUBMISSION NOT REQUIRED: The work involved may proceed by incorporating comments. Annotations do not authorize changes to Contract Sum.
 - 3. REVISE AND RESUBMIT: The work involved may not proceed. Submittal must be corrected and resubmitted.
 - 4. SUBMIT SPECIFIED ITEM: Substitution of specified item not permitted.
 - 5. REJECTED: The work involved may not proceed. Submittal must be resubmitted.

1.13 RESUBMISSION REQUIREMENTS

- A. Identification of Changes - Clearly identify changes made from the initial submittal other than those requested by the Design Professional. The Design Professional will review only those changes requested and those identified by the Contractor.

1.14 DISTRIBUTION OF APPROVED SUBMITTALS

- A. Contractor shall reproduce and distribute copies of submittals having the Design Same Professional's and City's stamp ("Approved" or "Approved as Noted") as required to coordinate and complete the Work and to records documents file.

1.15 SUBSTITUTIONS

- A. Substitutions submitted as a shop drawing, product data or sample will be returned without action.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 01 3513.18

SPECIAL REQUIREMENTS FOR WORK WITHIN THE PHILADELPHIA PARKS & RECREATION SYSTEM

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This section describes special administrative and procedural requirements for all contractors, subcontractors and their employees performing work within the Philadelphia Parks & Recreation System under the jurisdiction of Philadelphia Parks & Recreation.

1.2 DEFINITIONS

- A. "Park Authorities" or "proper authorization" shall mean the Park Engineer or Project Manager unless specified otherwise.
- B. "Personnel" shall mean all employees or related staff or associates of the contractors, subcontractors, suppliers, delivery services, consultants, testing or inspection agencies, or other group performing work or services required for completion of this contract.

1.3 ADMINISTRATION REQUIREMENTS

- A. All Contractors must complete an Application for Permit (a form of which is attached to the end of this section). This Permit Application must be submitted to the Park Engineer and approved before the start of any work on Park property.
- B. All work is to be coordinated with the Park Engineer or designated representative to minimize disruption to the Parks & Recreation's daily operations, programs, and special events.

1.4 ACCESS, STAGING, STORAGE AND PROPOSED WORK

- A. All Contractors' must provide a Logistic Plan including access, staging, storage and the proposed work to be reviewed and approved by the Park Engineer.
- B. No parking of any vehicles or equipment on grass areas.
- C. Trees within proximity of work, plant materials, and historic features are to be protected from injury.
- D. Advise the Park Engineer of any hazardous materials proposed and provide all Material Safety Data Sheets for such materials.
- E. Truck tires to be free from mud when leaving work site. All truck and debris containers must be covered tightly to prevent dust and spillage.

1.5 PERSONNEL ACTIVITY

- A. The following items are prohibited from being brought into the Park areas and construction sites, any violation of these regulations may result in default of contract and may additionally be subject to prosecution:
 - 1. Alcoholic beverages and drugs.
 - 2. Explosives and firearms.
 - 3. Inflammable material except as required for performance of work (with prior Parks & Recreation approval).

PART 2 PRODUCTS Not Used
PART 3 EXECUTION Not Used

END

SECTION 01 3591

HISTORIC TREATMENT PROCEDURES

1.1 SUMMARY

- A. General protection and treatment procedures for designated historic spaces, areas, rooms, and surfaces. It is the intention of this project to preserve designated areas within the building for future historic preservation.

1.2 QUALITY ASSURANCE

- A. Preservation protection program.
- B. Preservation Area Protection Plan.
- C. Historic treatment preconstruction conference.
- D. Before commencing work in the building, provide photographs and video of existing conditions of areas indicating on the Drawings as "Existing to Remain: Protect for Future Preservation." Especially document existing conditions which could be misconstrued as damage resulting from selective demolition work. File photographs and video with the Construction Manager prior to starting work.

1.3 PROJECT CONDITIONS

- A. City will not occupy portions of building immediately adjacent to removal and dismantling area.

1.4 EXECUTION

- A. Areas for Preservation:
 - 1. Areas indicating on the Drawings as "Existing to Remain: Protect for Future Preservation" are excluded from the scope of selective demolition. These areas are to be protected by the Contractors. No invasive work or removal of building and finish materials is allowed in these areas. This includes removal of building systems, ductwork, plumbing, conduit or abatement of installed hazardous building materials.
 - 2. All selective demolition for all Contractors is to be terminated outside the envelope shown on the drawings for "Existing to Remain: Protect for Future Preservation."
 - a. All building systems i.e. conduit, ductwork, sprinkler and plumbing piping shall be terminated 12" outside the envelope of the preservation area.
 - 3. Contractors shall enforce restricted access to areas indicated as "Existing to Remain: Protect for Future Preservation." Entry to these areas shall only be by essential personnel as verified by the Construction Manager.
 - 4. Access through these spaces shall be limited to access required within the spaces. Route all general circulation, egress and hauling routes around these areas.
 - 5. Removal of existing debris and trash, including those areas requiring hazardous materials abatement, within the boundary of the areas indicating on the Drawings as "Existing to Remain: Protect for Future Preservation" shall be conducted under the supervision of the Construction Manager.

KINGSESSING RECREATION CENTER BUILDING AND SITE IMPROVEMENTS

01 3591-1

HISTORIC TREATMENT PROCEDURES

B. Protection:

1. Maintain supervisory personnel on-site and on duty during work in and adjacent to areas designated for preservation.
2. Provide barricades, barriers, and temporary directional signage to exclude non-essential construction personnel.
3. Provide shoring, bracing, and supports as required to maintain the perimeter of areas to be protected to prevent movement, settlement or collapse of areas to be demolished as adjacent facilities to remain.
4. Provide floor, wall, door, door frame and other surface protection along circulation, egress and haul routes.
5. Maintain protection for all exterior building and site feature surfaces and materials including, but not limited to masonry walls, windows, doors, stairs, site walls, fences, light fixtures, railings, roofing and other artifacts.
6. Prepare a Preservation Area Protection Plan for review by the Construction Manager. No construction shall commence until the Preservation Area Protection Plan is accepted by the Construction Manager. The Preservation Area Protection Plan shall show all barricades, barriers, directional signage, surface protection, circulation, egress and haul routes, and designation of access restriction.

1.5 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

- A. No existing building materials or finishes shall be removed from the areas indicating on the Drawings as "Existing to Remain: Protect for Future Preservation." Any loose items in these areas shall be salvaged on site as per the direction and review of the Design Professional and Construction Manager.
- B. Historic artifacts, including their contents, commemorative plaques and tablets, antiques and other articles of historic significance remain property of the City. Notify the Construction Manager if such items are encountered and obtain acceptance regarding method of removal and salvage from the Design Professional.

1.6 HISTORIC PRESERVATION SCHEDULE

- A. Spaces, areas, rooms, and surfaces requiring special care and treatment to ensure successful preservation are indicated on Drawings as "Existing to Remain: Protect for Future Preservation."
- B. Please note that areas designated as "Existing to Remain: Protect for Future Preservation" may isolate the areas for selective demolition into two separate areas. Provide access and haul routes from these selective demolition areas that do not pass through the area for future preservation. This may require routes through intervening floors or two separate vertical routes.

END OF SECTION 090391

SECTION 01 4100
CODES, REGULATIONS AND STANDARDS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's responsibilities regarding codes, regulations and standards included in the Contract Documents by reference.

1.2 RELATED REQUIREMENTS

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. All technical sections.

1.3 APPLICABLE CODES AND REGULATIONS

- A. The following codes and regulations are applicable to the project. The list does not represent all codes, regulations and standards:

1. The Philadelphia Building Construction and Occupancy Code
 - a. The Philadelphia Administrative Code
 - b. The Philadelphia Building Code
 - c. The Philadelphia Electrical Code
 - d. The Philadelphia Fire Prevention Code
 - e. The Philadelphia Mechanical Code
 - f. The Philadelphia Plumbing Code
 - g. The Philadelphia Property Management Code

- B. It is not the intent of the Contract Documents to conflict with any Code, or Regulation. Report any conflicts to Design Professional for clarification.

1.4 REFERENCED STANDARDS

- A. For products or workmanship specified by association, trade, or Federal Standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes or intended use.
- B. The referenced standards shall have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- C. Should specified reference standards conflict with Contract Documents, request clarification from Design Professional before proceeding but generally the more stringent requirement shall apply.
- D. In the absence of specific instructions in the specifications, materials, products, equipment, and their installation shall conform to the applicable codes, regulations and standards specified herein.
- E. The contractual relationship of the parties to the Contract shall not be altered from the Contract Documents by mention or inference otherwise in any referenced document.

- F. Dates of codes, regulations and standards specified shall be the latest date prior to the date of issue of this Project Manual, except where, prior to the date of issue of this Project Manual, modified or otherwise directed by the applicable codes and their supplements and amendments adopted by the code authorities having jurisdiction.
- G. Each entity engaged in construction of the Project shall be familiar with industry standards applicable to its construction activity. If unfamiliar, obtain copies and review with all workers. Obtain copies of standards when required by individual specification sections. Maintain copy at job site until Substantial Completion.

1.5 ASSOCIATIONS, INSTITUTIONS AND SOCIETIES

- A. Associations, Institutions, and Societies and their abbreviations if any, appearing in the Project Manual or elsewhere in the Contract Documents, shall be as generally recognized in the industry. Refer to the "Encyclopedia of Associations" published by Gale Research Company for abbreviations, addresses and phone numbers.

PART 2 PRODUCTS Not Used

PART 3 PRODUCTS Not Used

- END -

SECTION 01 4516.13
CONTRACTOR'S QUALITY CONTROL

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

- A. This section describes each Prime Contractor's requirements for quality assurance including:
 - 1. Control of installation
 - 2. Tolerances
 - 3. Mockups
 - 4. Inspection and Testing services
 - 5. Manufacturer's field services

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Each technical section required for materials and products in mockup
- C. Each technical section requiring independent inspection and testing.

1.3 QUALITY ASSURANCE – CONTROL OF INSTALLATION

- A. Each Prime Contractor is responsible to deliver Work of quality specified regardless Contractor's sub-contracting or purchasing arrangements.
- B. Monitor quality control over suppliers, manufacturer's products, services, site conditions and workmanship to produce Work of specified quality.
- C. Comply with manufacturers written instructions, including preparation and each step in sequence.
 - 1. Should manufacturer instructions differ from Contract Documents, request clarification but assume the more stringent will apply.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.

1.4 TOLERANCES

- A. Monitor tolerance control of installed products to produce acceptable Work. Do not allow tolerances to accumulate.
- B. Comply with manufacturers written tolerances.
 - 1. Should manufacturer tolerances differ from Contract Documents, request clarification but assume the more stringent will apply.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.5 INSPECTION AND TESTING SERVICES

- A. Each Prime Contractor shall retain independent inspection and testing services when required by individual specification sections or by building code authority.

- B. The independent agency shall perform inspection and testing services on and off site as required by individual specification sections and as required to comply with requirements of the building code authority.
- C. Independent agency shall submit reports to Prime Contractor and direct to City indicating compliance or non-compliance. Notify City the same day of non-compliance.
- D. Cooperate with independent agency; furnish samples, mix designs, equipment, tools, storage, safe access, and assistance by incidental labor.
- E. Inspection and testing does not relieve Contractor to perform Work to contract requirements.
- F. Retesting required because of non-conformance to specified requirements shall be performed by the original agency at no additional cost to City.

1.6 MANUFACTURERS FIELD SERVICES

- A. When specified in individual specification sections, require manufacturer to provide qualified technical staff personnel to observe site conditions, quality of workmanship, start-up or training of City personnel as specified.
- B. Technical staff shall not be the local sales staff or independent manufacturers sales representatives.
- C. Manufacturers technical representative shall submit written reports of findings to Contractor and direct to City. Notify City the same day of non-compliance

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's construction facilities and services required for performance of the Work but not a permanent part of the finished construction. Included are temporary utilities, temporary construction and support facilities and security and protection services.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Environmental Controls: Division 1.

1.3 SUBMITTALS

- A. Submit reports of tests, inspection, meter readings and similar procedures performed on temporary utilities.

1.4 INSPECTION

- A. Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certificates and permits.

PART 2 PRODUCTS

2.1 TEMPORARY MATERIALS

- A. Materials may be new or used, but must be adequate in capacity for the required usage and must not violate requirements of applicable codes and standards. Generally, temporary materials shall comply with related specification sections for materials to be incorporated into final work.

PART 3 EXECUTION

3.1 TEMPORARY UTILITIES

- A. Provide temporary utilities including water, drainage, electrical power, communications, lighting, and steam where applicable.
- B. Contractor shall pay all costs associated with temporary utilities.

3.2 TEMPORARY ELECTRICITY

- A. Provide electrical service adequate for work of all trades, and terminate in fused safety switch and circuit breaker distribution panels.
- B. For welding at site or electrical requirements beyond the capacity of temporary system, supply generator, fuel, maintenance, and other incidentals required.

3.3 TEMPORARY LIGHTING

- A. Provide temporary lighting required for construction operations

- B. Provide temporary lighting for exterior staging and storage areas for security purposes.
 - C. Provide temporary lighting in interior work areas after dark for security purposes.
 - D. Provide lighting at each landing of each stair or ladder run.
 - E. Permanent building lighting may [not] be utilized during construction.
- 3.4 HEATING AND VENTILATING
- A. Provide temporary heat as required for construction operations. Temporary sources of heat shall be direct vented and thermostatically controlled. Open flame devices or solid fuels are not allowed.
 - B. Provide forced ventilation by portions of the permanent system or by portable units, to cure materials, to disperse humidity, and to prevent accumulations of dust, fumes, vapors, or gases. Provide ductwork with temporary filters to prevent the broadcasting of dust and debris.
 - C. In occupied facilities, while performing operations that generate fumes or dust, provide both fresh air intake and fan powered ventilation to control spread of fumes or dust to occupied areas of the building.
- 3.5 TEMPORARY TELEPHONE
- A. City telephones on-site may not be used by Contractors.
- 3.6 TEMPORARY WATER SUPPLY
- A. Provide temporary water service of adequate size as required for fire protection and construction operations.
 - B. Provide drinking water, paper cups, and waste receptacles for personnel.
- 3.7 SANITARY FACILITIES
- A. Provide sanitary facilities according to law at locations approved by the City. Provide privacy enclosures, toilet paper, waste receptacles, and periodic janitorial services.
 - B. Enforce use of sanitary facilities. Evidence to the contrary shall require removal, disinfecting, and reconstruction of defaced work or landscape.
 - C. The use of the Owner's toilet facilities by construction personnel will not be permitted.
- 3.8 FIRE PROTECTION
- A. Provide temporary fire protection and portable fire extinguishers according to law.
- 3.9 CONSTRUCTION AIDS
- A. Provide construction aids required for execution of the work, including scaffolds, staging, ladders, stairs, ramps, runways, platforms, railings, hoists, cranes, chutes, and other facilities and equipment.
 - B. Provide and operate drainage and pumping equipment; maintain excavations and site free of standing water. Coordinate with Division 2.
- 3.10 STAIRS AND ELEVATORS
- A. Designated existing stairs may be used by Construction personnel.
- 3.11 BARRIERS
- A. Provide barriers to prevent unauthorized entry to construction areas to allow for City's use of site, and to protect existing facilities and adjacent properties from damage from construction and demolition operations.

- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.
- 3.12 FENCING
- A. Construction - Commercial grade chain link fence.
 - B. Provide 8-foot high (min.) fence around construction site; equip with vehicular gates with locks.
- 3.13 EXTERIOR ENCLOSURES
- A. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.
 - B. Provide temporary tarps or other protection to roofs made open to weather by construction operations.
- 3.14 INTERIOR ENCLOSURES
- A. Provide temporary partitions to separate work areas from City occupied areas, to prevent penetration of dust and moisture into City occupied areas, to prevent damage to existing materials and equipment and as indicated.
 - B. Construction - Steel stud framing and gypsum board with closed joints and sealed edges at intersections with existing surfaces.
- 3.15 PROTECTION OF INSTALLED WORK
- A. Protect installed Work and provide special protection where specified in individual specification sections.
 - B. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
 - C. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by covering with durable sheet materials.
 - D. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
 - E. Prohibit traffic from landscaped areas.
- 3.16 SITE SECURITY
- A. The City assumes no responsibility for loss, theft, or damage to the work, tools, equipment, and construction. In the instance of any such loss, theft, or damage, the Contractor shall be responsible to renew, restore, or remedy the work, tools, equipment, and construction in accordance with requirements of the Contract Documents without additional cost to the City.
 - B. **The Contractor, at his own cost, may provide watchman services, and other means of site security.**
 - C. Site parked equipment, operable machinery, and hazardous parts of the new construction subject to mischief and accidental operation, shall be inaccessible, locked, or otherwise made inoperable when left unattended.
 - D. Liability - The City is not responsible for damage, liability, theft, casualty, or other hazard to the automobiles or other vehicles, nor to injury including death to occupants of automobiles or other vehicles on the City's property. Provide signs to this effect in the designated parking area.
- 3.17 ACCESS ROADS AND PARKING AREAS

- A. Access Roads
 - 1. Use existing roads on Site for access. Protect roads from damage from extra heavy loading by use of timbers or other approved means.
 - B. Parking Areas
 - 1. City will permit use of a designated area of the existing parking lot on the Site for exclusive parking of workmen's automobiles and of the automobiles of the Design Professional, Consultants, and other visitors having business at the Site.
- 3.18 PROJECT SIGN
- A Provide project identification sign, and temporary information and direction signs as required and approved. See Specification section 015800 for requirements.
- 3.19 TERMINATION AND REMOVAL
- A. Remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, but no later than Substantial Completion. Complete or restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.
 - B. Materials and facilities that constitute temporary facilities are property of the Contractor
 - C. Remove temporary paving that is not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that does not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances which might impair growth of plant materials or lawns. Repair or replace street paving, curbs and sidewalks at the temporary entrances, as required by the governing authority.

- END -

SECTION 015639
TEMPORARY TREE AND PLANT PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section includes general protection and pruning of existing trees and plants that are affected by execution of the Work, whether temporary or permanent construction.
- B. Related Requirements:
1. Section 024119 - Selective Demolition
 2. Section 312000 - Earth Moving
 3. Section 329300 - Plants

1.3 DEFINITIONS

- A. Caliper: Diameter of a trunk measured by a diameter tape at a height 6 inches above the ground for trees up to and including 4-inch size at this height and as measured at a height of 12 inches above the ground for trees larger than 4-inch size.
- B. Tree-Protection: Individual tree guard surrounding single tree trunk delineating area not to be disturbed during construction and indicated on drawings.
- C. Critical Root Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, as indicated on Drawings and defined by the drip line of individual trees or the perimeter drip line of groups of trees unless otherwise indicated.
- D. Diameter Breast Height (DBH): Diameter of a trunk as measured by a diameter tape at a height 54 inches above the ground line.
- E. Drip line: Outermost circumference of a tree canopy or the outermost extents of the collective canopy of a group of trees.
- F. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:
 - (a.) Tree-service firm's personnel and equipment needed to make progress and avoid delays.
 - (b.) Arborist's responsibilities.
 - (c.) Quality-control program.
 - (d.) Coordination of Work and equipment movement with the locations of protection zones.
 - (e.) Trenching by hand or with air spade within protection zones.
 - (f.) Field quality control.

1.5 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, elevations, sections, and locations of protection-zone fencing and signage, showing relation of equipment-movement routes and material storage locations with protection zones.
2. Detail fabrication and assembly of protection-zone fencing and signage.
3. Indicate extent of trenching by hand or with air spade within protection zones.

C. Samples: For each type of the following:

1. Organic Mulch: 1-quart volume of organic mulch; in sealed plastic bags labeled with composition of materials by percentage of weight and source of mulch.

D. Arborist Report: Written report prepared by Certified Arborist for care and protection of trees affected by construction during and after completing the Work.

1. Report shall be submitted prior to any removals on site and shall include, but is not limited to: recommendations for soil amendments at existing trees to remain, watering (volume) during all work (at no additional cost to Owner), any required treatment for pests or disease, decompaction procedures within critical root zones, and any required root pruning. Soil amendment recommendations shall be coordinated with work of Section 329113 and shall include list of products, timing, and methodology.
2. Report shall include Tree Pruning Schedule with dates for such work. The written pruning schedule shall detail scope and extent of pruning for all trees to remain that interfere with or are affected by construction. Report shall include:
 - (a.) Species and size of tree.
 - (b.) Location on site plan. Include unique number identifier for each as shown in Contract Documents.
 - (c.) Reason for pruning.
 - (d.) Description of pruning to be performed.
 - (e.) Timing of pruning to be performed.
 - (f.) Description of maintenance by tree service firm following pruning.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For arborist and tree service firm.
- B. Certification: From arborist, certifying that trees indicated to remain have been protected during construction according to recognized standards and that trees were promptly and properly treated and repaired when damaged.
- C. Existing Conditions: Documentation of existing trees and plantings indicated to remain, which establishes preconstruction conditions that might be misconstrued as damage caused by construction activities.
 - 1. Use sufficiently detailed photographs or video recordings.
 - 2. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.
 - 3. Identify any pests or disease as trees or other plants to remain that should be addressed in maintenance recommendations.
- D. Quality-control program.

1.7 QUALITY ASSURANCE

- A. Arborist Qualifications: Certified Arborist as certified by ISA.
- B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work. Tree service firm shall have experience working in plaza areas with tight conformance to grade conditions.
- C. Quality-Control Program: Prepare a written program to systematically demonstrate the ability of personnel to properly follow procedures and handle materials and equipment during the Work without damaging trees and plantings. Include dimensioned diagrams for placement of protection zone fencing, the arborist's and tree-service firm's responsibilities, instructions given to workers on the use and care of protection zones, and enforcement of requirements for protection zones.

1.8 FIELD CONDITIONS

- A. The following practices are prohibited within protection zones:
 - 1. Storage of construction materials, debris, or excavated material.
 - 2. Moving or parking vehicles or equipment.
 - 3. Foot traffic.
 - 4. Erection of sheds or structures.
 - 5. Impoundment of water.
 - 6. Excavation or other digging unless otherwise indicated.
 - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

- B. Do not direct vehicle or equipment exhaust toward protection zones.
- C. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Backfill Soil: Planting soil of suitable moisture content and granular texture for placing around tree; free of stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth.
 - 1. Planting Soil: Planting soil as specified in Section 329113 "Soil Preparation."
- B. Protection Fencing: Fencing fixed in position and meeting the following requirements:
 - 1. Tree Guard (Type 1): Fencing constructed of two 2-by-4-inch horizontal rails, with 4-by-4-inch preservative-treated wood posts spaced not more than 60 inches apart, and lower rail set 6 inches above existing grade. Plastic barrier fabric (color: orange) to be used as infill between posts.
 - (a.) Height: 48 inches.
 - 2. Critical Root Zone Protection (Type 2): Fencing constructed of 1 3/4" x 1" 13 GA U Channel steel posts. Plastic barrier fabric (color: orange) to be used as infill between posts.
 - (a.) Height: 48 inches
- C. Plastic Barrier Fabric: high-density extruded and stretched polyethylene fabric with 2-inch maximum opening in pattern and weighing a minimum of 0.4 lb/ft.; remaining flexible from minus 60 to plus 200 deg F; inert to most chemicals and acids; minimum tensile yield strength of 2000 psi and ultimate tensile strength of 2680 psi; secured with plastic bands or galvanized-steel or stainless-steel wire ties on protection fencing support system.
 - 1. Height: As required
 - 2. Color: High-visibility orange, nonfading

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion- and sedimentation-control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

- B. Prepare written report, endorsed by arborist, listing conditions detrimental to tree and plant protection.

3.2 PREPARATION

- A. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. Tie a 1-inch blue vinyl tape around each tree trunk at 54 inches above the ground.
- B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.
- C. Critical Root Zone Protection: Mulch areas inside critical root zone protection areas and other areas indicated. Do not exceed indicated thickness of mulch.
 - 1. Apply 4-inch uniform thickness of organic mulch unless otherwise indicated. Do not place mulch within 6 inches of tree trunks.

3.3 PROTECTION ZONES

- A. Protection-Zone Fencing: Install protection-zone fencing along edges of protection zones before materials or equipment are brought on the site and construction operations begin in a manner that will prevent people from easily entering protected areas except by entrance gates. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.
 - 1. Critical Root Zone Protection Fencing: Set or drive posts into ground to a minimum three (3) foot depth without concrete footings. Where a post is located on existing paving or concrete to remain, provide appropriate means of post support acceptable to Owner's Representative.
- B. Tree Protection: Install guards under direct supervision of arborist. The intent of the guard placement is to allow hand removal of pavers without disturbing individual tree guard protection.
- C. Maintain protection zones free of weeds and trash.
- D. Maintain all protection zone fencing in good condition as acceptable to Owner's Representative or Landscape Architect and remove when construction operations are complete, and equipment has been removed from the site.
 - 1. Do not remove Tree Protection Fencing, even temporarily, to allow deliveries or equipment access through the protection zone.
 - 2. Temporary access for activities such as hand removal of pavers is permitted within the critical root zone protection area, subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

- A. General: Excavate at edge of protection zones and for trenches indicated within protection zones according to requirements in Section 312000 "Earth Moving" unless otherwise indicated.
- B. Trenching within Protection Zones: Where utility trenches are required within protection zones, excavate under or around tree roots by hand or with air spade, or tunnel under the roots by drilling, auger boring, or pipe jacking. Do not cut main lateral tree roots or taproots; cut only smaller roots that interfere with installation of utilities. Cut roots as required for root pruning. If excavating by hand, use narrow-tine spading forks to comb soil and expose roots.
- C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction and as required for root pruning.
- D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 SOIL DECOMPACTION AT EXISTING TREES

- A. Contractor shall follow direction on decompaction procedures within critical root zones of existing trees as described in Arborist's written report.

3.6 ROOT PRUNING

- A. Prune tree roots that are affected by temporary and permanent construction. Prune roots as follows, unless arborist has provided detailed written instructions specific to the trees at this location:
 - 1. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop, or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.
 - 2. Cut Ends: Coat cut ends of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other coating formulated for use on damaged plant tissues and that is acceptable to arborist.
 - 3. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
 - 4. Cover exposed roots with burlap and water regularly.
 - 5. Backfill as soon as possible according to requirements in Section 312000 "Earth Moving"
- B. Root Pruning at Edge of Protection Zone: Prune tree roots 12 inches outside of the protection zone by cleanly cutting all roots to the depth of the required excavation.

- C. Root Pruning within Protection Zone: Clear and excavate by hand or with air spade to the depth of the required excavation to minimize damage to tree root systems. If excavating by hand, use narrow-tine spading forks to comb soil to expose roots. Cleanly cut roots as close to excavation as possible.

3.7 CROWN PRUNING

- A. Prune branches that are affected by temporary and permanent construction. Prune branches as directed by arborist.
 - 1. Prune to remove only injured, broken, dying, or dead branches unless otherwise indicated. Do not prune for shape unless otherwise indicated.
 - 2. Do not remove or reduce living branches to compensate for root loss caused by damaging or cutting root system.
 - 3. Pruning Standards: Prune trees according to ANSI A300 (Part 1).
- B. Unless otherwise directed by arborist and acceptable to Owner's Representative or Landscape Architect, do not cut tree leaders.
- C. Cut branches with sharp pruning instruments; do not break or chop.
- D. Do not paint or apply sealants to wounds.
- E. Provide subsequent maintenance pruning during Contract period as recommended by arborist.
- F. Chip removed branches and dispose of off-site.

3.8 REGRADING

- A. Lowering Grade within Protection Zones: Where new finish grade is indicated below existing grade around trees, slope grade away from trees as recommended by arborist unless otherwise indicated.
 - 1. Root Pruning: Prune tree roots exposed by lowering the grade. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots as required for root pruning.
- B. Raising Grade: Where new finish grade is indicated above existing grade around trees, slope grade beyond the protection zone as recommended by arborist, unless otherwise indicated on drawings. Maintain existing grades within the protection zone.
- C. Temporary Minor Fill within Protection Zones: Where existing grade is 2 inches or less below elevation of finish grade, temporarily fill with specified soil. Place backfill soil in a single uncompacted layer and hand grade to required finish elevations.

3.9 FIELD QUALITY CONTROL

- A. Inspections: Engage a qualified arborist to direct plant-protection measures in the vicinity of trees, shrubs, and other vegetation indicated to remain and to prepare inspection reports.

3.10 REPAIR AND REPLACEMENT

- A. General: Repair or replace trees, shrubs, and other vegetation indicated to remain or to be relocated that are damaged by construction operations, in a manner approved by Director's Representative.

1. Submit details of proposed pruning and repairs.
2. Perform repairs of damaged trunks, branches, and roots within 24 hours according to arborist's written instructions.
3. Replace trees and other plants that cannot be repaired and restored to full-growth status, as determined by Director's Representative.

- B. Trees: Remove and replace trees indicated to remain that are more than 25 percent dead or in an unhealthy condition or are damaged during construction operations that Director's Representative determines are incapable of restoring to normal growth pattern.

1. Replacement Trees: Provide new trees of same size and species as those being replaced for each tree that measures 4 inches or smaller in caliper size.
2. Restitution Planting: Provide new tree(s) of 4-inch caliper size for each tree being replaced that measure more than 4 inches in caliper size. Provide one additional tree for each 4-inch caliper increment above 4". For example, a 6-inch caliper restitution credit would equal two (2) 4-inch caliper trees. Tree shall be planted at same location or elsewhere within park.

(a.) Species: As selected by Owner's Representative or Landscape Architect.

3. Plant and maintain new trees as specified in Section 329300 "Plants."

- C. Excess Mulch: Rake mulched area within protection zones, being careful not to injure roots. Rake to loosen and remove mulch that exceeds a 2-inch uniform thickness to remain. Do not place mulch within 6" of tree trunks.

- D. Soil Aeration: Where directed by Director's Representative, aerate surface soil compacted during construction. Aerate 10 feet beyond drip line and no closer than 36 inches to tree trunk. Drill 2-inch- diameter holes a minimum of 12 inches deep at 24 inches o.c. Backfill holes with an equal mix of augured soil and sand.

3.11 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Disposal: Remove excess excavated material, displaced trees, trash, and debris and legally dispose of them off Owner's property.

END OF SECTION 015639

SECTION 01 5719
ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractors requirement for protection of the atmosphere, waterways, groundwater, plants, animal habitats, soils, etc., both on and off site.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Earthwork in Division 2.

1.3 REGULATORY AGENCIES AND CODES

- A. Comply with the following in accordance with Division 1:
 - 1. United States Department of Agriculture (USDA)
 - 2. Urban Hydrology for Small Watersheds, Technical Release No. 55, Engineering Division, Soil Conservation Service.
 - 3. National Engineering Handbooks, Section 4 (Hydrology); Section 5 (Hydraulics); Section 16 (Drainage), Soil Conservation Service.
 - 4. City of Philadelphia

1.4 DEFINITIONS

- A. Sediment - Soil that has been eroded and transported by runoff water.
- B. Degradable Debris - Debris which can undergo biodegradation or combustion, or which can be dissolved in or suspended by water.
- C. Nondegradable Debris - Inorganic debris which will not disintegrate nor dissolve when exposed to moisture or water.
- D. Chemicals - Petroleum or cementitious products, bituminous materials, salts, acids, alkalis, herbicides and pesticides.
- E. Waste - Sewage, including domestic sanitary sewage, garbage, and trash.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Compost Sock: 5mil photo-degradable HDPE fabric, in-filled with weed-free, well-decomposed organic compost. Fabric sock "Siltsoxx" as manufactured by MCS Inc. (www.mcsnjinc.com) or approved equal.
- B. Silt Fences: Three (3) foot wide fabric designed to filter sediment, as manufactured by Mirafi, Inc. Amoco, or Exxon.
- C. Earth Stabilizer: Rye grass seed, hay, straw mulch, chemical stabilizer, or other devices approved by the environmental protection agency having jurisdiction and by the Design Professional.

- D. RipRap: Sizes as shown on drawings.

PART 3 EXECUTION

3.1 GENERAL

- A. Establish and enforce ecological preservation measures which will avoid pollution of the atmosphere, waterways, groundwater, plants, soils, animal habitats, landfills, wetlands, the site, adjacent sites, roadways, etc.
- B. Prevent spilling of chemicals or waste. Provide emergency plans and methods for abatement of accidental spills of toxic substances.

3.2 SEDIMENT CONTROL

- A. Until permanent work establishes sediment control, provide temporary control, using vegetative cover with seeding, mulch, and binder within [ten (10)] days after completion of grading of any given area.
- B. As a temporary measure, provide silt fences, arranged along the toe of surface drainage ways and inlets, in such a manner that water will pass through the silt fences and filter the sediment. Embed silt fence in ground 6 inches deep and anchor to the ground with posts, as shown on the drawings. Replace silt fences when they become clogged and ineffective.
- C. During pipe laying work, prevent silt from entering the piping systems by use of hay bales, silt fence, temporary closures of pipe ends, or other means as best suited to the conditions.

3.3 CONTROLS DURING EARTH MOVING

- A. Perform earth moving in phases to minimize the area and extent of exposed land.
- B. Control the rate of water runoff by diversion ditches, benches, berms, and other earth-formed shaping so that the rate of flow is retarded and silting shall be minimized. Reshape and restore conditions showing evidence of earth erosion.

3.4 DUST CONTROL

- A. Keep dust down at all times, including non-working days, weekends, and holidays. Wet down or treat disturbed soil with dust suppressers as required and approved.
- B. Do not leave areas of disturbed earth unworked for long periods of time. Provide temporary or permanent earth stabilization promptly.
- C. In sandblasting operations, confine the dust.
- D. Use wet-cutting methods for cutting concrete, asphalt, and masonry.
- E. Do not shake out bags containing dust-causing substances.

3.5 NOISE CONTROL

- A. Provide mufflers on internal combustion engine equipment. Maximum noise level shall be 90 dbA at 50 feet.
- B. Where blasting is permitted, special permit and other requirements of the governing authorities regarding blasting shall govern.

- 3.6 C. Limit hours of operation of noisy construction to limits set by City

ordinance.

DISPOSAL OF DEBRIS, CHEMICALS AND WASTE

- A. Legally dispose of debris, chemicals, and waste off the site
- B. Collect and contain materials before disposal in orderly fashion and by means which prevent contamination of air, water and soil.
- C. Store chemicals in watertight containers.
- D. Do not burn materials on the site.

3.7 TRUCKS

- A. Dump trucks shall be tarpaulin-covered so that spillage does not occur.
- B. Provide a gravel surfaced truck wheel washing area at entrances. Clean all truck wheels of mud and debris before the trucks leave the site

3.8 MAINTENANCE AND TERMINATION

- A. Maintain in working order environmental protection measures until they are no longer required.
- B. Terminate environmental control measures when there is no longer a threat of pollution. Remove temporary control measures. Complete or, if necessary, restore permanent construction that may have been delayed or damaged because of interference with environmental controls.

- END -

SECTION 01 5800

PROJECT IDENTIFICATION AND SIGNS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

Requirements include the following which shall be provided by the Contractor for General Construction:

- A. Furnish, install and maintain project identification sign.
- B. Provide temporary on-site information signs to identify Owner's temporary relocation.
- C. Remove signs on completion of construction.
- D. Allow no other signs to be displayed without approval of owner.

1.2 RELATED REQUIREMENTS

- A. Section 011100 – Summary of Work
- B. Section 015000 – Temporary Facilities and Controls
- C. Section 0151719 – Environmental Controls

1.3 PROJECT IDENTIFICATION SIGN

- A. Two (2) digitally printed signs, not less than 4 feet x 8 feet, with graphic content as shown on sample exhibit (1) on the next page of this section.
- B. Erect/Fasten on the site at location shown on drawing or as directed by the owner.

1.4 INFORMATIONAL SIGNS

- A. Provide at all public entrances, stairways and temporary gates digitally printed signs with lettering indicating Owner's relocated address. Each sign to be 3 feet by 3 feet and up to 100 letters, with graphic content as shown on sample exhibit (2) on the next page of this section. Allow for a total of eight [8] signs.
- A. Erect/Install at appropriate locations to provide required information. Coordinate location with owner/owner's representative.

1.5 QUALITY ASSURANCE

- A. Digital Sign Printer: Professional experience in type of work required.
- B. Finishes: Adequate to resist weathering and fading for scheduled construction period.

PART 2 PRODUCTS

2.1 SIGN MATERIALS

KINGSESSING RECREATION CENTER BUILDING AND SITE IMPROVEMENTS
01 5800 –1

PROJECT IDENTIFICATION AND SIGNS

- A. Sign surfaces: Dibond material (aluminum sheets with plastic core).
 - 1. Thickness: at least 3 millimeters
- B. Hardware used to secure sign: Galvanized bolts with plastic fasteners.

PART 3 EXECUTION

3.1 PROJECT IDENTIFICATION SIGN

- A. Sign should be printed/manufactured with style, sizes and colors shown on exhibit attached on page 3 of this section.

3.2 INFORMATION SIGNS

- A. Signs should be printed/manufactured in style, sizes and colors as shown in Exhibit 2
- B. Install at a height for optimum visibility, on ground-mounted poles or attached to temporary structural surfaces.

3.3 MAINTENANCE

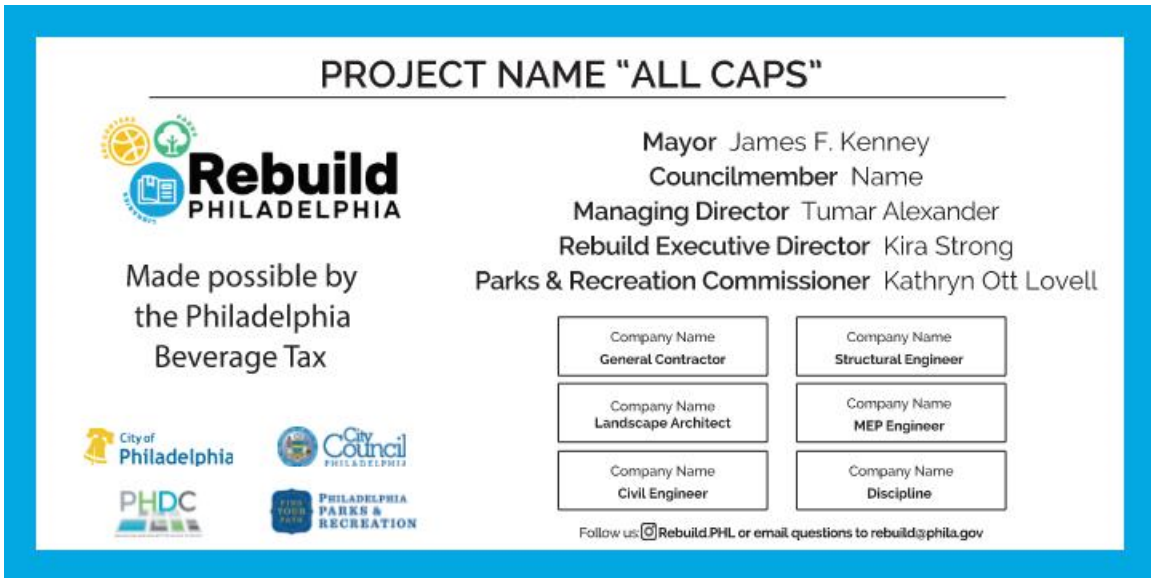
- A. Maintain signs, fasteners, and hardware in a neat, clean condition; repair damaged sign if needed.
- B. Relocate informational signs as required by progress of work.

3.4 REMOVAL

- A. Remove signs, supports, fasteners at completion of project.

END OF SECTION

Sample – Exhibit 1 - PROJECT IDENTIFICATION SIGN



Note for Sample - Exhibit 1 –

City of Philadelphia and City Council logos are on ALL signs.

The following logos are dependent on project delivery and Owner (see below).

- PPR - only when site is a PPR site.
- FLP - only when site is a FLP site.
- PPR/FLP - need to show both when a co-located site exists.
- PHDC - logo used when project is being bid through PRA.
- Project User -logo used when project is bid through a Project User
- Funders – It may be required for funder logos to be included on the project sign. This will be at the direction of Rebuild.

Sample – Exhibit 2 - INFORMATION SIGNS (PPR & FLP)

OUR APOLOGIES
FOR THE INCONVENIENCE

Programs at this site
have temporarily
relocated. To find your
program's location,
please visit:

Rebuild.Phila.gov



 (Name of Site)

PLEASE EXCUSE OUR APPEARANCE!

While we make physical
improvements to this library, we
have temporarily relocated
library programming. To find your
program's location, please visit:

libwww.freelibrary.org/locations/(LibraryLink)



 (Library Name)

Note for Sample - Exhibit 2

- PPR Info Sign - QR code to direct to the Rebuild.Phila.gov website
- FLP Info Sign – QR code to direct to the freelibrary.org website

SECTION 01 6001
PRODUCTS AND MATERIALS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes administrative procedures regarding each Prime Contractor's selection of products, materials, and equipment required for the completion of the Work. Requirements for handling, storing and installing products are also included.

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 DEFINITIONS

- A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties", "structure", "finishes", "accessories", and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.
- B. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material", "equipment", "system", and terms of similar intent.
- C. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature.
- D. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
- E. "Equipment" is a product with operational parts, whether motorized or manually operated, that require service connections such as wiring or piping.
- F. "System" is an integrated assembly of materials and/or equipment which when combined form an integral whole to serve a function.

1.4 QUALITY ASSURANCE

- A. Source Limitations - To the fullest extent possible, provide products of the same kind, from a single source.
- B. Compatibility of Options - When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
- C. Each Prime Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate Contractors.
- D. If a dispute arises between prime Contractors over concurrently selectable, but incompatible products, the Design Professional will determine which products shall be retained and which are incompatible and must be replaced.
- E. Nameplates - Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed

surfaces of products which will be exposed to view in occupied spaces or on the exterior.

- F. Labels - Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface that is not conspicuous.
- G. Equipment Nameplates - Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
 - 1. Name of product and manufacturer.
 - 2. Model and serial number.
 - 3. Capacity.
 - 4. Speed.
 - 5. Ratings.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss, including theft.
- B. Schedule delivery in accordance with the Construction Schedule and to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
- C. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
- D. Deliver products to the site in the manufacturer's original sealed container or other packaging system, complete with legible labels and instructions for handling, storing, unpacking, protecting and installing.
- E. Inspect products upon delivery to ensure compliance with the Contract Documents, and to ensure that products are undamaged and properly protected.
- F. Store products at the site in a manner that will facilitate inspection and measurement of quantity of counting of units.
- G. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
- H. Store product subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

1.6 OPERATION, MAINTENANCE, TRAINING AND CALIBRATION

- A. Furnish manuals and services specified and as required to start-up, operate and maintain all equipment and systems.

PART 2 PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS

- A. Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation. All products shall be certified asbestos-free.

- B. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
- C. Where the work requires testing for assurance of performance, that portion of the work shall not proceed until such testing has been completed and written test report has been approved.
- D. Do not use material or equipment for any purpose other than for which it is designed or specified.
- E. Certification of Compatibility: If indicated, the material and equipment manufacturers shall certify in writing that:
 - 1. Other manufacturer's materials or equipment coming into contact with their product are compatible with their product in every way and that the intended performance of the system in which their product is incorporated will not be affected as a result of such contact. Also, physical breakdown of their product by chemical reaction or otherwise will not occur as a result of such contact.
 - 2. The combination of products by one (1) manufacturer to make up the manufacturer's specified system, will contribute to the performance of the system as intended, and will remain operational, reliable and durable. The manufacturer will be the source of routine maintenance and replacement parts.
- F. Reuse of Existing Material
 - 1. Except where indicated or otherwise approved in writing, materials and equipment removed from an existing structure shall not be used in the work.
 - 2. Where use of existing material is indicated or approved, use special care in removing, handling, storing, and reinstallation to assure proper function in the completed work.

2.2 PRODUCT SELECTION PROCEDURES

- A. Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:
 - B. Where products or manufacturers are specified by name, description, or performance accompanied by the term "or equivalent substitution", "or approved substitution", "or approved equal" or similar terms comply with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
 - C. Proprietary Specification Requirements - Where products or manufacturers are named, provide the product indicated or submit a substitution request.
 - D. Descriptive Specification Requirements - Where Specifications describe a product or assembly, listing exact characteristics required, without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements. If descriptive specification also includes manufacturers or products, provide product indicated or submit a substitution request.
 - E. Performance Specification Requirements - Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. Compliance shall be certified by independent testing

agencies furnished by manufacturer. General overall performance of a product is implied where the product is specified for a specific application.

- F. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.
- G. Compliance with Standards, Codes and Regulations - Where the Specifications require compliance with an imposed code, standard or regulation, select a product that complies with the standards, codes or regulations specified. Compliance shall be certified by independent testing agencies furnished by manufacturer.
- H. Visual Matching - Where Specifications require matching an established sample or existing construction, the Design Professional's decision will be final on whether a proposed product matches satisfactorily.
- I. Visual Selection - Where specified product requirements include the phrase "...as selected from manufacturer's standard colors, patterns, textures..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Design Professional will select the color, pattern and texture from the product line selected.
- J. Allowances - Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection, and for procedures required for processing such selections.

PART 3 EXECUTION

3.1 ACCEPTABLE INSTALLERS

- A. Installers shall be familiar with products and experienced in their installation. Comply with more stringent requirements of individual sections for installer qualifications.

3.2 EXAMINATION OF SUBSTRATE

- A. Each installer shall examine substrate onto which the product will be installed. Inspect for any condition which would in any way reduce the quality, performance or durability of the product including but not limited to; dimensional or location tolerances, dampness, dryness, installation not meeting specified criteria for substrate, poor workmanship, etc. Do not proceed with installation over unacceptable substrates. Notify Contractor to have substrate repaired. Work installed over unacceptable substrates shall be redone after substrate is repaired at no cost to the City.

3.3 PREPARATION

- A. Protect adjacent work from possible damage which installation could cause including but not limited to staining, overspray, denting, gouging, displacement, etc.
- B. Clean and prepare substrates to receive products with primers, bonding agents, barrier coats, etc. as per manufacturer's instructions.

3.4 PASSAGE OF MATERIALS AND EQUIPMENT

- A. Establish passage clearances required to deliver and install materials and equipment.

- B. Where there will be insufficient clearance for passage of materials and equipment, deliver and protect such equipment before confining construction is installed.
- C. If existing structures, equipment and systems must be altered to provide passage of new materials and equipment, engage those skilled in the respective trade to restore structures, equipment, and systems to their original condition at no additional cost. Do not alter structure, equipment, or systems without written approval.
- D. In lieu of altering structures to provide passage of materials and equipment, provide materials and equipment that can be disassembled, brought into the building, and reassembled.
- E. If exterior windows or doors must be removed to provide passage of materials and equipment into the building, store and protect removed work at the site and reinstall as soon as possible. If any damage occurs to the work during their removal, transit, storage or reinstallation, replace or repair the work to like new condition at no cost to Owner.

3.5 INSTALLATION

- A. Comply with manufacturer's instructions and recommendations and requirements of individual specification sections in the applications indicated. If manufacturer's instructions and specifications indicate differing installation techniques, request clarification from Design Professional but generally comply with more stringent requirement.
- B. Anchor each product securely in place accurately located and aligned with other Work.
- C. Coordinate installation with surrounding Work to allow for optimum end product.

3.6 FIELD QUALITY CONTROL

- A. Have manufacturer's technical representative on-site to observe crucial installation steps as required by individual specification sections or as required to meet manufacturer's warranty or to meet other indicated criteria.

3.7 ADJUSTING

- A. Adjust installed products for proper operation and fit.

- END -

SECTION 01 7123
FIELD ENGINEERING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. The General Contractor shall engage the services of a Surveyor to establish grades, lines and levels.
- B. Each separate Prime Contractor shall be responsible for layout of his own work, from grades, lines and levels established by the General Contractor.

1.2 RELATED REQUIREMENTS

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 QUALITY ASSURANCE

- A. Surveyor shall be licensed in the Commonwealth of Pennsylvania.

1.4 SUBMITTALS

- A. Submit name, address, and telephone number of Surveyor prior to starting survey work.
- B. On request, submit documentation verifying accuracy of survey work.
- C. Submit reference point survey including field notes for record.
- D. Submit certification, signed and sealed by the Surveyor showing that elevations and locations of all improvements are or are not in conformance with Contract Documents.

1.5 PROJECT RECORD DOCUMENTS

- A. Maintain complete, accurate log of control and survey work as it progresses.
- B. Record on record documents all pertinent information under provisions of Division 1.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION

3.1 INSPECTION

- A. Verify locations of survey control points prior to starting work. Promptly notify Design Professional of any discrepancies discovered.

3.2 SURVEY REFERENCE POINTS

- A. Protect survey control points prior to starting site work; preserve permanent reference points during construction. Make no changes without prior written notice to Design Professional.
- B. Promptly report to Project Coordinator destruction of any reference point or relocation required because of changes in grades or other reasons. Replace dislocated survey control points based on original survey control.

3.3 SURVEY REQUIREMENTS

- A. Use instruments to establish a minimum of two (2) permanent bench marks on the site. Reference benchmarks to data established by survey control points. Record bench mark locations with horizontal and vertical data for Project Record Documents. Reference these benchmarks to finish floor lines. Provide accurate alignment and level of the work, and correct slope and curvatures as required.
- B. Periodically verify layouts by same means. No extra charges will be allowed for differences between dimensions shown and actual measurements. Advise the Project Coordinator of any differences.
- C. Prepare as-built site utility plan showing all utilities including stormwater, sanitary, water, gas and electric lines for permanent record.

- END -

SECTION 01 7329
CUTTING, PATCHING, SLEEVES AND INSERTS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's cutting, fitting, patching, sleeves, and inserts required to complete the Work and to:
1. Make the parts come together properly.
 2. Uncover or remove portions of the Work to provide for installation of ill-timed work.
 3. Remove and replace defective work.
 4. Remove samples of installed work for testing as specified.
 5. Provide penetrations for installation of piping and electrical conduit.
 6. Repair surfaces shown to remain in the finished work, which are damaged in the process of demolition.
 7. Coordinate penetrations, sleeves, and inserts that are specified in one specification section and installed by another.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 REGULATORY REQUIREMENTS

- A. All cutting, fitting and patching shall be performed in compliance with governing code regulations relative to firestopping and smoke penetration.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Use materials that exactly match materials being cut or patched. If exact materials are not available, match with new materials with installed performance matching or exceeding cut or patched material. Comply with specifications and standards for each material involved.
- B. Sleeves and Inserts: as specified in the Trade Sections requiring inserts and sleeves for the installation of their work.

PART 3 EXECUTION

3.1 INSPECTION

- A. Inspect existing conditions, including work subject to damage or movement during cutting and patching.
- B. Report unsatisfactory conditions to the City. Do not proceed until directed.

3.2 PREPARATION

- A. Provide temporary support as required to maintain the structural integrity of work.

- B. Provide materials and methods to protect other work from damage, including exposure to the elements.

3.3 PERFORMANCE

- A. Do not cut or alter the work of another Prime Contractor without written consent of the City.
- B. Perform cutting of structural steel, structural concrete or load bearing unit masonry only after approval of the City.
- C. Execute cutting and demolition by methods that will prevent damage to other work, and provide proper surfaces to receive installation of repairs.
- D. Remove excess materials resulting from cutting and patching and dispose of legally off site.
- E. Perform excavating and backfilling by methods that will prevent settlement or damage to other work. Maintain excavations free of water.
- F. Where cutting and patching of materials provided under this Contract is required, employ the original installer or fabricator to perform cutting and patching of:
 - 1. Structural steel and concrete.
 - 2. Weather-exposed elements.
 - 3. Moisture- or corrosion-resistant elements.
 - 4. Sight-exposed finished surfaces.
- G. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.
- H. Restore work to remain, or be reused, which has been cut or removed. Install new products to provide complete work in accordance with Contract Documents.
- I. Refinish entire surface to provide an even finish to match adjacent surfaces. For continuous surfaces, refinish to nearest intersection. For an assembly, refinish the entire unit.
- J. Furnish sleeves and inserts required under individual specification sections to Contractor installing the Work to be sleeved or to have insert embedded. Be responsible for their correct location and installation.
- K. Penetrations required, but not shown on the Drawings, shall be cut into the work.

- END -

SECTION 01 7419
CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.02 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition and construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition and construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition and construction waste and subsequent incorporation into the Work.

1.03 PERFORMANCE REQUIREMENTS

- A. General: Develop waste management plan that results in end-of-Project minimum rates for salvage/recycling of 75 percent by weight of total waste generated by the Work.
 - 1. Identify materials targeted for salvage and recycling.

1.04 SUBMITTALS

- A. Waste Management Plan: Submit via Unifier within 7 days of date established for the Notice to Proceed.
 - 1. Plan shall identify the diversion goals of the project, relevant construction debris and materials diverted, implementation protocols, and parties responsible for implementation.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment,

submit via Unifier Include separate reports for demolition and construction waste. Include the following information:

1. Material category.
 2. Generation point of waste.
 3. Total quantity of waste in tons.
 4. Quantity of waste salvaged, both estimated and actual in tons.
 5. Quantity of waste recycled, both estimated and actual in tons.
 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- C. Waste Reduction Calculations: Before request for Substantial Completion, submit 3 copies of calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- D. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- E. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- F. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- G. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- H. Qualification Data: For refrigerant recovery technician.
- I. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.05 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management.

1.06 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
 - 1. Include separate sections in plan for demolition and construction waste.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
 - 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
 - 5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
 - 6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.

- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 - 2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.02 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until installation.
 - 4. Protect items from damage during transport and storage.
 - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale and Donation: Not permitted on Project site.
- C. Salvaged Items for Owner's Use:
 - 1. Clean salvaged items.
 - 2. Pack or crate items after cleaning. Identify contents of containers.
 - 3. Store items in a secure area until delivery to Owner.
 - 4. Transport items to Owner's storage area designated by Owner.
 - 5. Protect items from damage during transport and storage.

3.03 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives

received for recycling waste materials shall accrue to Contractor.

- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.
 - 1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
 - 2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
 - 3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
 - 4. Store components off the ground and protect from the weather.
 - 5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.04 RECYCLING DEMOLITION WASTE

- A. Asphaltic Concrete Paving: Break up and transport paving to asphalt-recycling facility.
- B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.
- C. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
 - 1. Clean and stack undamaged, whole masonry units on wood pallets.
- D. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- E. Metals: Separate metals by type.
 - 1. Structural Steel: Stack members according to size, type of member, and length.
 - 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- F. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.
- G. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- H. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
 - 1. Separate suspension system, trim, and other metals from panels and tile and sort

with other metals.

- I. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
 - 1. Store clean, dry carpet and pad (if present) in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- J. Equipment: Drain tanks, piping, and fixtures. Seal openings with caps or plugs. Protect equipment from exposure to weather.
- K. Plumbing Fixtures: Separate by type and size.
- L. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- M. Lighting Fixtures: Separate lamps by type and protect from breakage.
- N. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.
- O. Conduit: Reduce conduit to straight lengths and store by type and size.

3.05 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 - 2. Polystyrene Packaging: Separate and bag materials.
 - 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 - 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Site-Clearing Wastes: Chip brush, branches, and trees on-site or at landfill facility. Do not include land clearing debris such as soil, vegetation and rocks in LEED calculations.
- C. Wood Materials:
 - 1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
 - 2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- D. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location.

3.06 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
 2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Do not burn waste materials.
- C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

- END -

SECTION 01 7423

CLEANING

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies each Prime Contractor's cleaning of the Work during construction and before completion.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Additional cleaning is specified under the technical sections for that work.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Use only cleaning materials recommended by manufacturer of surface to be cleaned.
- B. Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 EXECUTION

3.1 PERIODIC CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Broom clean paved surfaces. Rake clean other surfaces of grounds. Remove snow and ice from access to building.
- C. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
- D. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust.
- E. Collect and remove waste materials, debris, and rubbish from site at least weekly and dispose of legally off-site.
- F. Open free-fall chutes not permitted. Terminate closed chutes into appropriate containers with lids.
- G. Clean mechanical equipment, ductwork and replace filters as specified under Division 23.
- H. Clean electrical work including lighting fixtures as specified under Division 26.
- I. Maintain cleaning until Project or portion thereof is accepted by Certificate of Substantial Completion. If minor work is required after Substantial Completion, clean affected areas afterwards.

3.2 FINAL CLEANING

- A. Immediately before observation of the Work for Substantial Completion, clean all sight-exposed surfaces. Clean all ledges and other horizontal or near horizontal surfaces that may not be sight-exposed but are contiguous to finished spaces.
- B. At Substantial Completion, clean and renovate permanent facilities that have been used during the construction period, including but not limited to:
 - 1. Replace significantly worn parts and parts that have been subject to unusual operating conditions.
 - 2. Replace lamps that are burned out or noticeably dimmed by substantial hours of use.

- END -

SECTION 01 7700
CLOSEOUT PROCEDURES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section specifies each Prime Contractor's administrative and procedural requirements for project closeout.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 SUBSTANTIAL COMPLETION

- A. When the work is considered substantially complete, submit a written notice to the PRA that the Work, or a designated portion thereof, is substantially complete. Include a list of all items that require completion or correction.
- B. Within a reasonable time after receipt of such notice, an inspection by the PRA/City will be made to determine the status of completion.
- C. If the Work is not considered substantially complete; the Contractor will be notified in writing, giving the reasons therefore.
- D. Contractor shall remedy the deficiencies in the Work, and send a second written notice of substantial completion. This notice shall include a statement of action taken on each item noted as requiring correction or completion to achieve "Substantial Completion" status.
- E. The Work will be inspected a second time and if not considered substantially complete, the two steps in paragraphs A and B above will be repeated.
- F. When the PRA/City concurs that the Work is substantially complete, they will:
 - 1. Prepare a Certificate of Substantial Completion, accompanied by Contractor's list of items to be completed or corrected, as verified and amended by the PRA.
 - 2. Submit the Certificate to Contractor for written notice of the responsibilities assigned in the Certificate.
- G. Contractor shall prepare Application for Payment at Substantial Completion and complete administrative and submittal requirements per Section 012900 Payment Procedures.

1.4 FINAL OBSERVATION

- A. When the Work is considered complete, submit written certification that:
 - 1. Contract Documents have been reviewed.
 - 2. Work has been inspected by the Contractor and has been completed in compliance with Contract Documents.
 - 3. Equipment and systems have been tested in the presence of the Project Coordinator and are operational.
 - 4. Work is ready for final observation.
- B. Inspection by the PRA/City will be made to verify the status of completion with reasonable promptness after receipt of such certification.

- C. If the Work is not considered complete; the Contractor will be notified in writing, listing the incomplete or defective Work.
- D. Contractor shall take immediate steps to remedy the stated deficiencies, and, after correcting deficiencies, he shall send a second written certification that the Work is complete. This certification shall itemize each deficiency noted and a statement of action taken to remedy or complete the Work.
- E. The Work will be observed a second time and if not considered substantially complete, the two steps in paragraphs A and B above will be repeated.
- F. When the Work is acceptable under the Contract Documents, the Contractor shall be requested to make closeout submittals.

1.5 ADDITIONAL OBSERVATION FEES

- A. Should more than two observations at substantial or final completion and/or for required mock ups be required due to failure of the Work to comply with the claims of status of completion made by the Contractor:
 - 1. PRA will compensate the Design Professional for such additional services.
 - 2. PRA will deduct the amount of such compensation from the final payment to the Contractor.

1.6 CLOSEOUT SUBMITTALS

- A. When the Work is complete submit the following:
 - 1. Evidence of compliance with requirement of governing authorities as follows:
 - a. Certificate of Occupancy.
 - b. Certificates of Inspection for Work requiring Certificate of Inspection by governing authority.
 - c. Certificate and Reports of Inspection, Testing and Approval.
 - 2. Project Record Documents as specified under Division 1.
 - 3. Operation and Maintenance Manuals as specified under Division 1.
 - 4. Warranties as specified under Division 1.
 - 5. Keys and Keying Schedule as specified under Finish Hardware - Division 8.
 - 6. Spare Parts and Maintenance Materials as specified.
 - 7. Evidence of Payment and Release of Liens to the requirements of General and Supplementary Conditions.
 - 8. Requirements for Final Payment Application per Section 012900 Payment Procedures, Division 1.
 - 9. Consent of Surety.

1.7 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Furnish spare parts and maintenance materials as specified under various Sections of the Specifications.
- B. Package and label parts and materials as directed and store in area of the building where directed by the PRA.

1.8 FINAL ADJUSTMENT OF ACCOUNTS

- A. Submit a final statement of accounting.

- B. Statement shall reflect all adjustments to the Contract Sum:
 - 1. The original Contract Sum.
 - 2. Additions and deductions resulting from:
 - a. Previous Change Orders.
 - b. Change Orders caused by substitutions including deductions for review.
 - 3. Deductions for uncorrected Work.
 - 4. Deductions for re-inspection payments.
 - 5. Other adjustments.
 - 6. Total Contract Sum, as adjusted.
 - 7. Previous payments.
 - 8. Sum remaining due.
 - C. The PRA will prepare a final Change Order, reflecting approved adjustments to the Contract Sum which were not previously made by Change Orders.
- 1.9 FINAL APPLICATION FOR PAYMENT
- A. Submit the final Application for Payment in accordance with procedures and requirements stated herein.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION

- 3.1 Sample Certificate of Substantial Completion Form, see Project Coordinator for actual form.

– END –

SECTION 01 7823
OPERATION AND MAINTENANCE MANUALS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's procedural requirements for compiling and submitting operation and maintenance data.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.3 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.4 FORMAT

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8-1/2 by 11 inch three ring binders with plastic covers. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- D. Provide tabbed flyleaf, indexed for each separate product and system, with typed description of product and major component parts of equipment.
- E. Text: Manufacturer's printed data or typewritten data.
- F. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- G. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Design Professional, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance equipment for equipment and systems.

- f. Maintenance instructions for [special] finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3 - Project documents and certificates, including the following:
 - a. Shop drawings and product data.
 - b. Air and water balance reports.
 - c. Certificates.
 - d. Photocopies of warranties and bonds.
- H. Data
 - 1. For Each Product or System - List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
 - 2. Product Data - Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
 - 3. Drawings - Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawing.

1.5 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual Product Specification sections.

1.6 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and model number of replaceable parts.
- B. Panelboard Circuit Directories - Provide electrical service characteristics, controls, and communications.
- C. Include color-coded wiring diagrams
as installed.
- D. Operating Procedures - Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shutdown and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

- F. Troubleshooting: Include step-by-step chart listing common problems with appropriate repairs.
- G. Provide servicing and lubrication schedule, and list of lubricants required.
- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequences of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Include test and balancing reports as specified.
- O. Additional Requirements - As specified in individual Product specification sections.
- P. Where the complexity of machinery is such that regular maintenance by a specialty service company is normal, or may be required by law, give notice thereof in writing.

1.7 INSTRUCTION OF CITY PERSONNEL

- A. Before final inspection, instruct City's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
- B. For equipment requiring seasonal operation, perform instructions for other seasons within two (2) months.
- C. 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.
- D. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.8 SUBMITTALS

- A. For equipment, or component parts of equipment put into service during construction and operated by City, submit documents within ten days after acceptance.
- B. Submit 2 copies of completed volumes fifteen (15) days prior to final inspection. This copy will be reviewed and returned after final observation, with comments. Revise content of all document sets as required prior to final submission.
- C. Submit six (6) sets of revised final volumes in final form prior to or coincidental with Final Application for Payment.

PART 2 - PRODUCTS Not Used

PART 3 - EXECUTION Not Used

- END -+

SECTION 01 7836

WARRANTIES

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's procedural requirements for executing, assembling and submitting warranties.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.
- B. Individual Specification sections requiring warranties or service/maintenance contracts.

1.3 SUBMITTAL REQUIREMENTS

- A. Submit two (2) sets of original signed copies of warranties, bonds, service and maintenance contracts, executed by the respective manufacturers, suppliers, and subcontractors.
- B. Contents - Neatly type, in orderly sequence, the following information for each item.
 - 1. Product or work item.
 - 2. Subcontractor supplier and manufacturers names, addresses, and telephone numbers.
 - 3. Date of beginning and duration time of warranty, bond, or service and maintenance contract.
 - 4. Proper procedure in case of failure.
 - 5. Instances which might affect the validity of warranty or bond.
- C. Bind each set in 8 1/2 inch by 11 inch commercial quality, three-ring binders with plastic covers. Identify each binder with typed or printed title "Warranties" with title of project and location.

1.4 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment placed into service during progress of construction, submit documents within ten (10) days after inspection and acceptance.
- B. Make other submittals within ten (10) days after Date of Substantial Completion, prior to final request for payment.
- C. For items of work, where acceptance is delayed materially beyond the Date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing the date of acceptance as the start of the warranty period.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 01 7839
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 DESCRIPTION OF WORK

- A. This Section describes each Prime Contractor's administrative and procedural requirements for recording final product and material selections, changes to the Contract, and recording Work concealed by subsequent construction.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- A. Applicable provisions of Bidding Requirements, Contract Requirements in Division 0 and all applicable Division 1 sections.

1.3 MAINTENANCE OF DOCUMENTS

- A. Maintain at job site, one (1) copy of record documents including Drawings, Specifications, Addenda, Change Orders and other modifications, Shop Drawings, product data and samples.
- B. In addition, maintain one (1) copy of field orders or written instructions, field test records, testing and inspection reports, progress reports, meeting minutes and construction photographs.
- C. Maintain documents in a clean, dry, legible condition and in good order.
- D. Make documents available at all times for inspection.
- E. Review documents at progress meetings.

1.4 RECORDING

- A. Neatly label each document and binder with "Project Record" and project name and location.
- B. Record information concurrently with construction progress.
- C. Do not conceal any work until required information is recorded.
- D. Record Construction Drawings and Shop Drawings: Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
 - 1. Note horizontal and vertical locations of concealed elements, referenced to permanent, visible features.
 - 2. Note field changes of dimension and detail.
 - 3. Note details not on original Contract Drawings.
- E. Record Project Manual: Mark to show substantial variations in actual Work performed in comparison with the text of the original. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related record drawing information and Product Data.
- F. Record Product Data: Maintain one copy of each Product Data submittal. Mark documents to show significant variations in actual Work performed in comparison with information submitted. Give particular attention to concealed products and

portions of the Work that cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of record drawings and Specifications.

1.5 SUBMITTALS

- A. Preceding or coincidental with the final pay application, submit the following:
- B. Record Construction Drawings: One (1) set of reproducible Mylar transparencies showing all clearly-indicated notations specified above, and including notation "AS BUILT DRAWINGS" with submission date and General Contracting company's information grouped together near the titleblock's original date. Transparencies of the Design Professional's drawings may be used for this purpose upon reimbursement of the printing costs to the Design Professional.
- C. Record Shop Drawings: One (1) copy of any shop drawings.
- D. Record Project Manual: One (1) copy bound in 3 ring binder(s).
- E. Record Product Data: One (1) copy organized by CSI format bound in 3 ring binder(s).
- F. If review of Record Documents reveals noncompliance with Contract Documents, errors or omissions, Contractor shall correct deficiencies and resubmit.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

- END -

SECTION 019113
GENERAL COMMISSIONING REQUIREMENTS

PART 1 - GENERAL

1.01 SUMMARY

- A. This Section specifies the Contractor's responsibilities in the commissioning process. Commissioning requires the participation of the Contractor to ensure that all systems are operating in a manner consistent with the Contract Documents.
- B. The commissioning process integrates the traditionally separate functions of system documentation, equipment startup, performance testing and training. Commissioning during the construction phase is intended to achieve the following specific objectives in accordance with the Contract Documents:
 - 1. Verify and document that applicable equipment and systems are installed according to the manufacturer's recommendations, contract requirements, and industry standards and that they receive adequate operational checkout by installing contractors.
 - 2. Verify and document proper performance of equipment and systems.
 - 3. Verify and document that O&M documentation is complete.
 - 4. Verify and document that the Facility operating personnel are properly trained.
- C. The systems and equipment to be commissioned are listed in this Section. The Contractor's general commissioning requirements and coordination are detailed in this Section. Specific requirements for commissioning of each system or piece of equipment are detailed in the specification Section for the individual systems or pieces of equipment. A detailed description of the overall commissioning process is included in the appendix.
- D. The commissioning process does not reduce the responsibility of the Contractor to provide finished and fully functional systems and equipment.

1.02 SYSTEMS TO BE COMMISSIONED

- A. Refer to the individual commissioning specifications, plumbing, electrical, and mechanical for the systems to be commissioned.
 - a. New Building Automation Systems (BAS) - interface with the new BAS equipment.
 - b. New HVAC Systems and Distribution
 - c. New Domestic Systems – new gas fired water heater, circulator pump, plumbing fixtures.
 - d. New Playground Sprinkler System
 - e. New Lighting Control Systems
 - f. New Power Distribution
- B. Equipment and system specific Pre-Functional Checklists and Functional Test procedures will be developed by the Commissioning Provider based on approved submittals, and then will be provided to the Contractors.

1.03 DEFINITIONS

- A. Acceptance Phase: Phase of construction after startup and initial checkout when functional performance tests, O&M documentation review and training occurs.

- B. Approval: Acceptance that a piece of equipment or system has been properly installed and is functioning in the tested modes in accordance with the Contract Documents.
- C. Commissioning Provider (CxA, CCP): An independent agent responsible for the direction and coordination of the commissioning activities. The CxA responsible to the Owner's Representative.
- D. Commissioning Plan: An overall plan that provides the structure, schedule and coordination planning for the commissioning process.
- E. Commissioning Team: The members of the commissioning team consist of the Commissioning Authority, the Owner's Representative, the Contractor, the architect and design engineers. The owner and the building or plant operator/engineer also may be members of the commissioning team.
- F. Deferred Functional Tests: Functional tests that are performed after substantial completion, due to partial occupancy, seasonal requirements, design or other site conditions that prevent the test from being performed prior to substantial completion.
- G. Deficiency: A condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents.
- H. Factory Testing: Testing of equipment on-site or at the factory by factory personnel.
- I. Functional Performance Test (FT-FPT): Test of the dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional testing is the dynamic testing of systems (rather than just components) under full operation. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc. The CxA develops the functional test procedures in sequential written form. The CxA coordinates, oversees and documents the actual testing. The Contractor performs the functional tests. FTs are performed after pre-functional checklists and startup are complete.
- K. Pre-functional Checklist (PC): A list of items to inspect and component tests to conduct to verify proper installation of equipment prior to initiating functional testing.
- L. Startup: The initial starting or activating of dynamic equipment, including executing pre-functional checklists.

1.04 COORDINATION

- A. The CxA is hired by, and works for, the Owner. The CxA directs and coordinates the commissioning activities. All members of the commissioning team shall work together to fulfill their contractual responsibilities and meet the objectives of the Contract Documents.
- B. The CxA will work with the Contractor according to established protocols to schedule the commissioning activities. The Contractor shall integrate all commissioning activities into the approved progress schedule. All parties will address scheduling problems and make necessary notifications and changes in a timely manner in order to expedite the commissioning process and maintain the approved progress schedule.

1.05 COMMISSIONING PROCESS

- A. Commissioning Plan. The commissioning plan provides guidance in the execution of the commissioning process. Following the initial commissioning scoping meeting the CxA

will update the plan which is then considered the “final” plan, although it may be revised as the project progresses.

- B. Commissioning Process. The following narrative provides a brief overview of the typical commissioning tasks during construction and the general order in which they occur.
1. Commissioning during construction begins with a scoping meeting conducted by the CxA where the commissioning process is reviewed with the Commissioning Team.
 2. Additional meetings will be required throughout construction, scheduled by the Owner's Representative, to plan, scope, coordinate, and schedule future activities and to resolve problems. When possible, commissioning meetings will be scheduled immediately following construction meetings.
 3. Equipment documentation is submitted to the CxA during the submittal process, including detailed start-up procedures.
 4. The CxA works with the Contractor to develop startup activity lists and startup documentation. The CxA provides pre-functional checklists to be completed by the installing contractors prior to the startup process.
 5. In general, the checkout and performance verification proceeds from simple to complex; from component level to equipment to systems and intersystem levels. In each case pre-functional checklists are completed, submitted, and approved before functional testing begins.
 6. The CxA and Contractor executes and documents the pre-functional checklists, and provides notification to the Owner's Representative. The Contractor performs startup. The CxA documents that the startup was completed according to the approved plans.
 7. The CxA develops specific equipment and system functional performance test procedures. The Contractor reviews the procedures and submits suggestions or comments. Procedures are finalized by the CxA.
 8. The procedures are executed by the Contractor, under the direction of the CxA.
 9. Items of non-compliance in material, workmanship, or setup are corrected and retested at the Contractor's expense. The Contractor is responsible for providing all resources, manpower, and materials necessary to rectify deficiencies as per requirements of the approved schedule.
 10. The O&M documentation prepared by the Contractor is reviewed for completeness by the CxA.
 11. Commissioning is completed before Substantial Completion.
 12. The CxA reviews, pre-approves and coordinates the training provided by the Contractor and verifies that it was completed.
 13. Deferred testing is conducted, as specified or required.

1.06 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor's commissioning responsibilities are as follows (all references apply to commissioned systems and equipment only):
1. Construction and Acceptance Phase:
 - a. Attend the commissioning scoping meeting and other necessary meetings scheduled by the Owner's Representative to facilitate the commissioning process.
 - b. Facilitate the coordination of the commissioning work by the CxA, and with the CxA ensure that commissioning activities are being scheduled into the approved progress schedule.
 - c. Provide detailed manufacturer installation and start-up, operating, troubleshooting and maintenance procedures, factory test reports, and full warranty information, including all responsibilities of the Owner to keep the warranty in force. The installation, start-up and checkout

materials that are actually shipped with the equipment and the actual field checkout sheet forms to be used by the factory or field technicians shall be submitted to the CxA. The CxA may request further documentation necessary for the commissioning process.

- d. In each purchase order or subcontract written, include requirements for submittal data, O&M data, commissioning tasks and training.
- e. Ensure that all subcontractors execute their commissioning responsibilities according to the Contract Documents and approved progress schedule.
- f. Assist in the process of writing detailed test procedures by clarifying the operation and control of commissioned equipment.
- g. Review test procedures to ensure feasibility, safety and equipment protection and provide necessary written alarm limits to be used during the tests.
- h. Develop a full start-up and testing plan using manufacturer's start-up procedures and the pre-functional checklists from the CxA for all commissioned equipment. Submit to the CxA for review and approval prior to startup.
- i. During the startup and initial checkout process, execute all portions of the pre-functional checklists for all commissioned systems and equipment. Verify that system installations include all ports, gages, thermometers, access doors, valves, etc., required for specified functional performance testing.
- j. Provide all special tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment.
- k. Perform and clearly document all completed startup and system operational checkout procedures, providing a copy to the CxA.
- l. Address incomplete Work before functional performance testing.
- m. Provide skilled technicians to execute startup of equipment and to execute the functional performance tests. Ensure that they are available and present during the agreed upon schedules and for sufficient duration to complete the necessary tests, adjustments and problem-solving.
- n. Provide skilled technicians to perform functional performance testing under the direction of the CxA for specified equipment. Provide Manufacturer's Representative as required and as specified in the Specification. Assist the CxA in interpreting the monitoring data, as necessary.
- o. Correct deficiencies (differences between specified and observed performance) as directed by the CxA or Owner's Representative.
- p. Prepare O&M manuals according to the Contract Documents, including clarifying and updating the original sequences of operation to as-built conditions. Provide a copy of the O&M manuals and submittals of commissioned equipment to the CxA for review and approval.
- q. Provide training as specified.
- r. Coordinate with equipment manufacturers to determine specific requirements to maintain the validity of the warranty.

2. Warranty Period:

- a. Execute seasonal or deferred functional performance testing in accordance with the specifications
- b. Correct deficiencies and make necessary adjustments to O&M manuals and as-built drawings for applicable issues identified in any seasonal testing.

PART 2 - PRODUCTS

2.01 TEST EQUIPMENT

- A. All standard testing equipment required to perform startup and initial checkout and required functional performance testing shall be provided by the Contractor.
- B. Specified special equipment, tools and instruments (only available from vendor, specific to a piece of equipment) required for testing equipment shall be provided by the Contractor, and turned over to the facility at the completion of the Work.
- C. Datalogging equipment and software required to test equipment will be provided by the Contractor, but shall not become the property of the Owner's Representative.
- D. All testing equipment shall be of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified in the Specifications. All equipment shall be calibrated according to the manufacturer's recommended intervals. Calibration tags shall be affixed or certificates readily available.

PART 3 - EXECUTION

3.01 MEETINGS

- A. Scoping Meeting. Prior to the commencement of construction, the CxA will schedule, plan and conduct a commissioning scoping meeting with the Commissioning Team.
- B. Miscellaneous Meetings. Other meetings will be planned and conducted by the CxA as construction progresses. These meetings will cover coordination, deficiency resolution and planning issues with the Contractor, appropriate sub-contractors and suppliers, the Owner's Representative, and the Owner's Representative.

3.02 START-UP, PRE-FUNCTIONAL CHECKLISTS, AND INITIAL CHECKOUT

- A. Pre-functional checklists and initial checkout shall ensure that the equipment and systems are hooked up and operational. Each piece of equipment receives full pre-functional checkout. No sampling strategies are used. The pre-functional testing for a given system must be successfully completed prior to formal functional performance testing of systems or equipment.
- B. Start-up and Initial Checkout Plan. The CxA shall assist the commissioning team members responsible for startup of any equipment in developing detailed start-up plans for all equipment. The primary role of the CxA in this process is to ensure that there is written documentation that each of the manufacturer's recommended procedures have been completed.
- C. Execution of Pre-functional Checklists and Startup.
 - 1. Pre-functional checklists must be completed and returned to the CxA for verification prior to startup. Prior to startup, the Contractor shall schedule startup and checkout with the Owner's Representative.
 - 2. The Contractor shall execute startup and provide the CxA with a signed and dated copy of the completed start-up and pre-functional tests and checklists.

3.03 FUNCTIONAL PERFORMANCE TESTING

- A. Development of Test Procedures. Using the requirements in the specifications, the CxA shall develop specific test procedures and forms to verify and document proper operation

of each piece of equipment and system. The Contractor shall provide assistance to the CxA in developing the procedures. Prior to testing, the CxA shall provide a copy of the test procedures to the Contractor who shall review the tests for feasibility, safety, equipment and warranty protection.

- B. Functional performance testing shall document that each system is operating in accordance with the Contract Documents. During the testing process, areas of deficient performance shall be identified. Deficiencies shall be corrected by the Contractor and functional testing shall be re-scheduled. The Contractor shall be responsible for all costs associated with re-testing for functional performance.
- C. Each system shall be operated through all modes of operation. Proper responses to such modes and conditions as power failure, freeze condition, low oil pressure, no flow, equipment failure, etc. shall also be tested.
- D. Test Methods. Each function and test shall be performed under conditions that simulate actual conditions as closely as possible. The Contractor shall execute the test and shall provide all necessary materials, system modifications, etc. to produce the necessary flows, pressures, temperatures, etc. necessary to execute the test according to the specified conditions. At the completion of the test, the Contractor shall return all building equipment and systems affected by these temporary modifications to their pre-test condition.

3.04 OPERATION AND MAINTENANCE MANUALS

- A. Standard O&M Manuals. The specific content and format requirements for the standard O&M manuals are detailed in Specifications
- B. The Contractor shall compile and prepare commissioning documentation for all equipment and systems and include this information in the O&M manuals.

3.05 TRAINING

- A. The Contractor shall be responsible for coordinating, scheduling, and documenting that all required training has been completed successfully.
- B. The Contractor shall have the following training responsibilities:
 - 1. Provide a training plan two weeks before the planned training.
 - 2. Provide comprehensive orientation and training in the understanding of the systems and the operation and maintenance of each piece of equipment.
 - 3. Training shall normally start with classroom sessions followed by hands-on training on each piece of equipment.
 - 4. The training sessions shall follow the outline in the Table of Contents of the operation and maintenance manual and illustrate whenever possible the use of the O&M manuals for reference.
 - 5. Training shall include:
 - a. Use of the printed installation, operation and maintenance instruction material included in the O&M manuals.
 - b. A review of the written O&M instructions emphasizing safe and proper operating requirements, preventative maintenance, special tools needed and spare parts inventory suggestions. The training shall include start-up, operation in all modes possible, shut-down, and any emergency procedures.
 - c. Discussion of relevant health and safety issues and concerns.
 - d. Discussion of warranties and guarantees.
 - e. Common troubleshooting problems and solutions.

- f. Explanatory information included in the O&M manuals and the location of all plans and manuals in the facility.
- g. Discussion of any peculiarities of equipment installation or operation.

3.06 DEFERRED TESTING

- A. Unforeseen Deferred Tests. If any check or test cannot be completed due to project conditions, required occupancy condition or other deficiency, execution of checklists and functional testing may be delayed upon approval of the Owner's Representative. These tests will be conducted in the same manner as the seasonal tests as soon as possible.
- B. Seasonal Testing. Seasonal testing (tests delayed until weather conditions are closer to the system's design conditions) shall be completed as part of this contract. Make any final adjustments to the O&M manuals and as-builts resulting from information gained during testing.

END OF SECTION