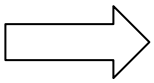
# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

**Quotes due 5/5/22 at 2pm**



**Email to Samantha.Tirk@HACP.org**

**Scope of Work**

For more information or questions, please contact Samantha Tirk @ 412-456-5000 x 2900 or Samantha.Tirk@HACP.org

# 3-Quote Bid for Homewood North Building #11 Restoration

1- The Scope of Work includes but shall not be limited to structural repair and restoration of existing window, masonry, gypsum board systems and finishes previously damaged by an automobile. All work necessary to complete the repairs shall be reflected in the General Contractor's bid. Please see the architectural drawings and project specifications for further details.

2- The Davis-Bacon and Related Acts (DBRA) apply to performing on federally funded or assisted contracts in excess of $2,000 for the construction, alteration, or repair (including painting and decorating) of public buildings or public works. Davis-Bacon Act and Related Act contractors and subcontractors must pay their laborers and mechanics employed under the contract no less than the locally prevailing wages and fringe benefits for corresponding work on similar projects in the area. Please see attachment D.

3- Contract work in excess of $10,000 will require Payment and Performance Bonds - (Attachment E)
   a. Performance bonds are means to ensure that the contract is successfully completed. A performance bond on the part of the contractor for 100 percent of the contract price is required
   b. The Payment bond is a method of ensuring that the contractor pays the subcontractors and suppliers. A payment bond on the part of the contractor for 100 percent of the contract price.

4- Contractor shall secure all necessary permits and arrange timely City PLI inspections.

5- All work shall be completed within 30 days from start of work.

6- Please see attachments A, B & C to view a recommendation from our structural engineer, the construction drawings and the specifications.

All associated fees for permit and inspections required to complete the scope of work described above.

# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

**Quotes due 5/5/22 @ 2pm**

Total Cost: $_____

(Number of Units x Billing Rate x Hours per Unit)

Total Cost: $_____

(in words)

**Contract award will be based on lowest responsive and responsible bid amount**

**(Please print clearly)**

**Company Name:** _____

**Address:** _____

(of company)

**Signature:** _____

**Print Name:** _____

(of person signing)

**Phone Number:**_____ **Fax:**_____

**Email:** _____

# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

## Attachment A
## Letter from Structural Engineer

Keystone Structural Solutions
Consulting Engineers

February 22, 2022

Mr. Vincent Trevino
Gerard Associates Architects
445 Fort Pitt Boulevard
Suite 410
Pittsburgh, PA 15219

Re: HACP Homewood North
1302 Ferris Court
Pittsburgh, PA 15208
KSS No. 22050

Dear Mr. Trevino:

On February 17, 2022 I met with you on site to review the existing structure at the above referenced address. It is my understanding that a vehicle struck the exterior face of the building on the south side, below the window, adjacent to the main entry door.

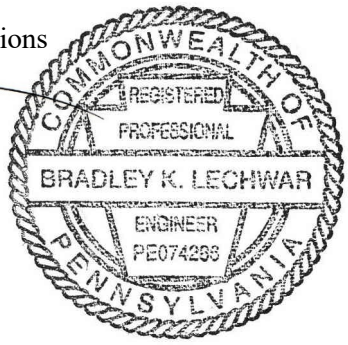
The exterior brick veneer was completely dislodged at the location of impact and appears to have been displaced over an area of approximately nine feet wide by eight feet high. We recommend removing and replacing the existing brick veneer, as well as the wall sheathing behind it, within this displaced area. Note, the existing brick veneer to remain above will need to be shored prior to removal and replacement of the damaged/displaced brick below. See photos #1 and #2.

The 2x4 wall studs, directly behind the area noted above, were displaced at the bottom and shifted out of alignment with the existing sill plate. The maximum amount of movement appeared to be approximately 4 1/2 inches. See photos #3 and #4. After the brick veneer and sheathing have been removed, the wall studs should be pushed back into alignment with the sill plate and each stud (or group of studs) shall be re-attached to the sill plate with four 10d toe-nails (two each side).

Please feel free to contact me with any questions or comments. I appreciate the opportunity to assist you with this matter.

Sincerely,
Keystone Structural Solutions

Bradley K. Lechwar, P.E.
Project Engineer




8150 Perry Highway, Suite 302, Pittsburgh, PA 15237
Phone: 412-369-9020 Fax: 412-369-9021 www.kss-eng.com

Photo #1

Photo #2

Photo #3

Photo #4

# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

## Attachment B
## Construction Drawings

STRUCTURAL ASSESSMENT AND CONSTRUCTION DOCUMENTS FOR UNIT RESTORATION MANAGEMENT:

# HACP TASK ORDER #68
# HOMEWOOD NORTH
# BUILDING #11

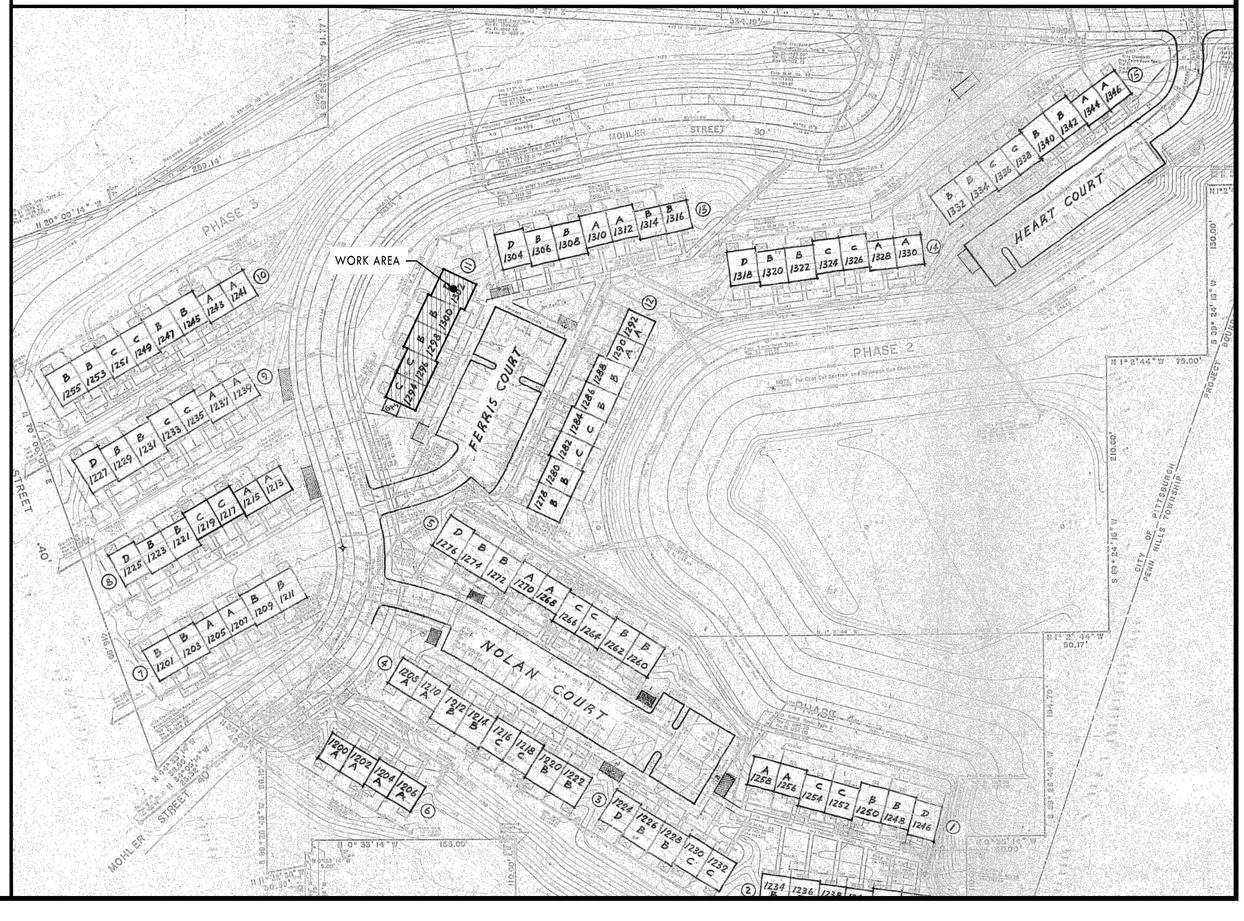
1302 FERRIS COURT
ALLEGHENY COUNTY
PITTSBURGH, PENNSYLVANIA 15208

| | | | | |
|---|---|---|---|---|
| 2201 | ■ | FEBRUARY 11, 2022 | ■ | SCHEMATIC DESIGN |
| 2201 | ■ | MARCH 02, 2022 | ■ | DESIGN DEVELOPMENT |
| 2201 | ■ | MARCH 31, 2022 | ■ | FOR CONSTRUCTION |

DRAWING LIST

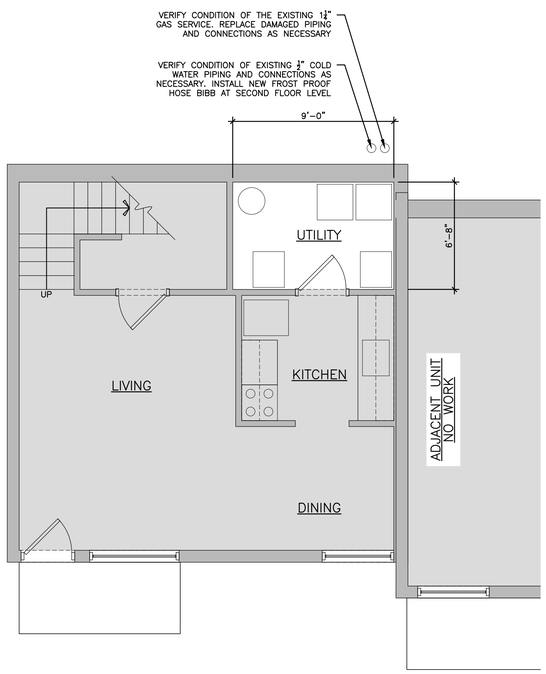
| NO. | DRAWING NAME | CURRENT |
|---|---|---|
| ARCHITECTURAL | | |
| A-101 | FLOOR PLANS | 03/31/22 |
| A-501 | SECTION, ELEVATIONS AND DETAILS | 03/31/22 |

SITE LOCATION MAP




GERARD
ASSOCIATES ARCHITECTS

410 FT. PITT COMMONS, 445 FT. PITT BLVD.
PITTSBURGH, PENNSYLVANIA 15219-1333
PHONE: 412-566-1531 FAX: 412-566-1532

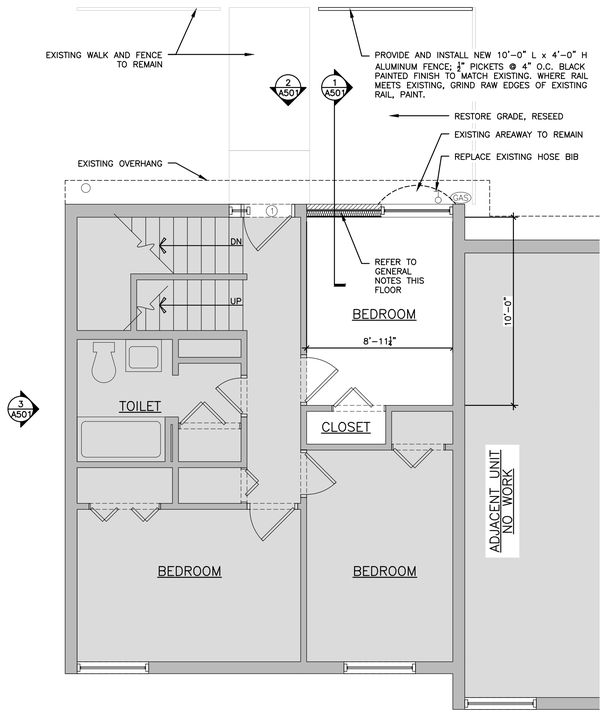



## UNIT 1302
## FIRST FLOOR BUILDING PLAN

SCALE: 1/4"=1'-0" (SHADED AREAS NOT IN PROJECT SCOPE)

GENERAL NOTES (APPLIES TO ALL FLOORS):

1) GENERAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SITE CONDITIONS.
2) GENERAL CONTRACTOR SHALL INCLUDE ALL WORK AS IS NECESSARY TO PROVIDE A COMPLETE PROJECT.
3) GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY MEASURES INCLUDING BUT NOT LIMITED TO SHORING AND SITE SECURITY.
4) GENERAL CONTRACTOR SHALL REPLACE/RESTORE ALL EXISTING SITE ELEMENTS DISRUPTED DURING THE COURSE OF RESTORATION WORK INCLUDING BUT NOT LIMITED TO PLANTERS, FENCING, TREES, RETAINING WALLS AND CONCRETE PAVEMENT/WALKS.
5) CONSTRUCTION ELEMENTS NOT INDICATED ON THE PLANS BUT OBSERVED ON SITE AS WITHIN THE AREA OF DISTURBANCE SHALL BE INCLUDED IN THE SCOPE OF WORK; QUESTIONS RELATING TO THE PROJECT SCOPE SHALL BE DIRECTED TO THE ARCHITECT PRIOR TO THE SUBMISSION OF BID.

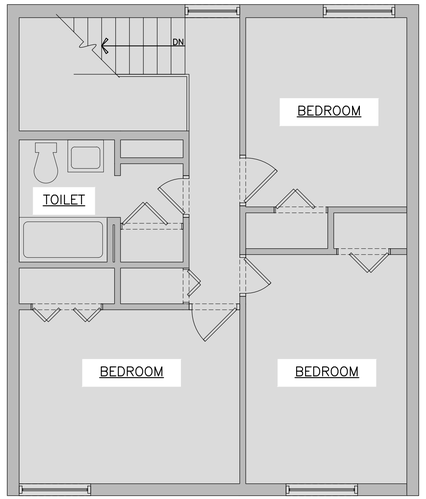



## UNIT 1302
## SECOND FLOOR BUILDING PLAN

SCALE: 1/4"=1'-0" (SHADED AREAS NOT IN PROJECT SCOPE)

GENERAL NOTES (SECOND FLOOR):

1) AT PROJECT AREA REMOVE EXISTING BRICK VENEER AND SHEATHING AT NORTH EAST CORNER TO 8'-0" ABOVE FLOOR LINE; EXISTING BRICK SHALL BE SALVAGED. REMOVE GYPSUM BOARD TO INTERIOR SIDE. REMOVE EXISTING WINDOW AND CAST SILL. CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AS REQUIRED.
2) SALVAGE AND REUSE EXISTING 2x4 WALL FRAMING; RE-ALIGN DISPLACED FRAMING WITH EXISTING SILL PLATE. FASTEN EACH STUD TO SILL PLATE WITH FOUR 10d TOE NAILS (TWO EACH SIDE).
3) UPON RESTORATION OF FRAMING:
   A) INSTALL NEW SHEATHING, MIN. ½" THICKNESS TO EXTERIOR SIDE; WEATHERPROOF WITH BUILDING PAPER.
   B) RESTORE BRICK VENEER. SALVAGED BRICKS SHALL BE RE-USED AS POSSIBLE; NEW BRICKS AND MORTAR SHALL MATCH EXISTING.
   C) PROVIDE AND INSTALL NEW CONCRETE CAST SILL TO MATCH EXISTING.
   D) PROVIDE AND INSTALL NEW SINGLE HUNG WINDOW.
   E) CAULK NEW WINDOW CONSTRUCTION IN PLACE; RESTORE CAULKED JOINT AT EXISTING ENTRANCE DOOR NO.1.
   F) INSPECT EXISTING GAS AND WATER PIPING FOR DAMAGE AND LEAKS. REPAIR/REPLACE EXISTING PIPING AND CONNECTIONS AS NECESSARY. INSTALL NEW FROST PROOF HOSE BIB.
4) INTERIOR CONSTRUCTION:
   A) REPLACE GYPSUM BOARD TO INTERIOR FACE OF NORTH EAST BEDROOM WALL. GYPSUM BOARD SHALL BE MIN. ⅝" THICK TYPE X BOARD. PATCH TO EXISTING ADJOINING CEILING AND WALL CONSTRUCTION. EXISTING POWER DEVICES SHALL BE SALVAGED AND REINSTALLED.
   B) REMOVE EXISTING VCT AND BASE, INCLUDING CLOSET. INSTALL NEW VCT FLOORING AND BASE.
   C) PAINT BEDROOM AND CLOSET AREAS IN THEIR ENTIRETY, INCLUDING DOORS, FRAMES AND TRIM.




## UNIT 1302
## THIRD FLOOR BUILDING PLAN

SCALE: 1/4"=1'-0" (NO WORK THIS FLOOR)

# FOR CONSTRUCTION



ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.

REVISIONS

| 1 |
|---|

STRUCTURAL ASSESSMENT AND CONSTRUCTION DOCUMENTS FOR UNIT RESTORATION MANAGEMENT:

# HACP TASK ORDER #68 HOMEWOOD NORTH FAMILY COMMUNITY

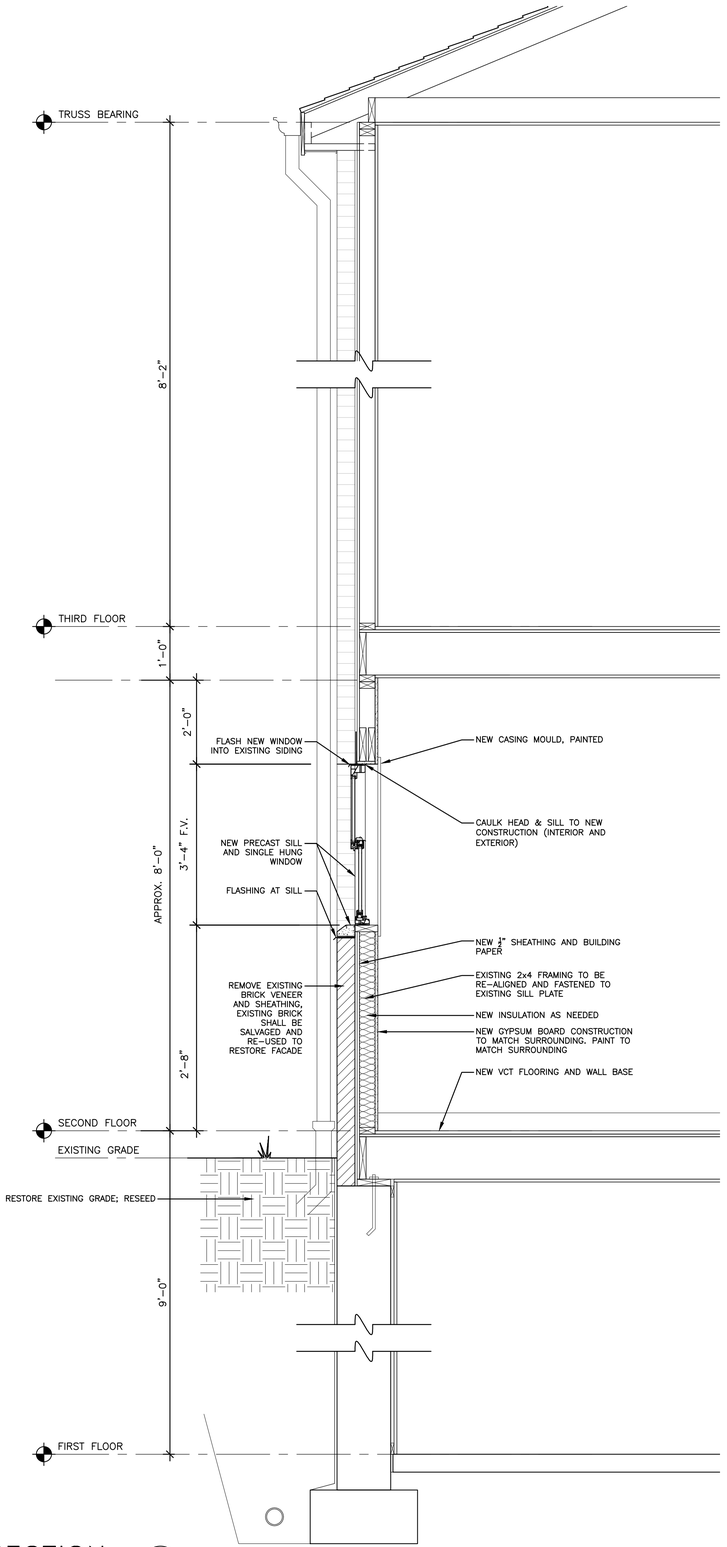
1302 FERRIS COURT
ALLEGHENY COUNTY
PITTSBURGH, PA 15208

GERARD
ASSOCIATES ARCHITECTS
410 FT. PITT COMMONS, 445 FT. PITT BLVD.
PITTSBURGH, PENNSYLVANIA 15219-1333
PHONE: 412-566-1531 FAX: 412-566-1532

DRAWING NAME

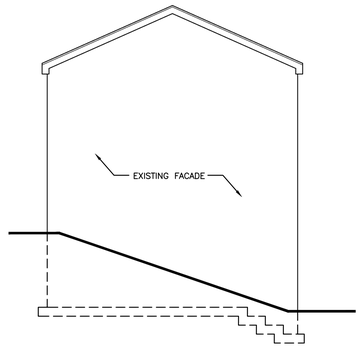
BUILDING FLOOR PLANS

| COMM. NO. | REVISION NO. | DWG NO. |
|---|---|---|
| 2201 | △ | A-101 |
| ISSUE DATE 03/31/22 | | |



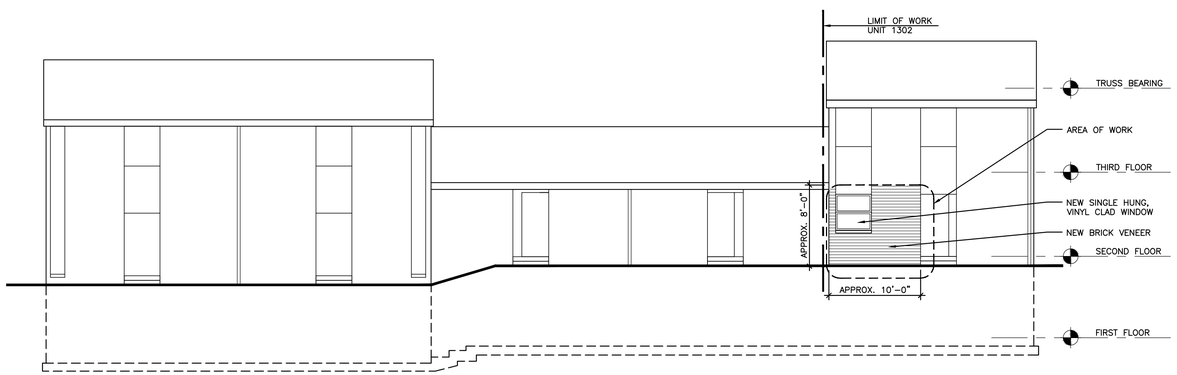

WALL SECTION 1 A501

SCALE: 3/4"=1'-0




ELEVATION 3 A501

SCALE: 1/8"=1'-0




ELEVATION 2 A501

SCALE: 1/8"=1'-0

# FOR CONSTRUCTION



ALL DIMENSIONS AND EXISTING CONDITIONS SHALL BE CHECKED AND VERIFIED BY THE CONTRACTOR AT THE SITE.

REVISIONS

| 1 |
|---|

REGISTERED ARCHITECT COMMONWEALTH OF PENNSYLVANIA

STRUCTURAL ASSESSMENT AND CONSTRUCTION DOCUMENTS FOR UNIT RESTORATION MANAGEMENT:

## HACP TASK ORDER #68 HOMEWOOD NORTH FAMILY COMMUNITY

1302 FERRIS COURT
ALLEGHENY COUNTY
PITTSBURGH, PA 15208

GERARD ASSOCIATES ARCHITECTS
410 FT. PITT COMMONS, 445 FT. PITT BLVD.
PITTSBURGH, PENNSYLVANIA 15219-1333
PHONE: 412-566-1531 FAX: 412-566-1532

DRAWING NAME

## SECTIONS & DETAILS

| COMM. NO. | REVISION NO. | DWG NO. |
|---|---|---|
| 2201 | △ | A-501 |
| ISSUE DATE 03/31/22 | | |

# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

## Attachment C
## Specifications

# SPECIFICATIONS MANUAL FOR

## Structural Assessment and Construction Documents for:

## Unit Restoration Management

# HOMEWOOD NORTH FAMILY COMMUNITY BUILDING #11

**1302 FERRIS COURT**
**ALLEGHENY COUNTY**
**PITTSBURGH, PENNSYLVANIA 15208**

**Housing Authority of the City of Pittsburgh**
**Task Order #68**

**March 2, 2022**
**Design Development Submission**

GERARD
ASSOCIATES ARCHITECTS

410 FT. PITT COMMONS, 445 FT. PITT BLVD.
PITTSBURGH, PENNSYLVANIA 15219-1532

TABLE OF CONTENTS

TECHNICAL SPECIFICATIONS



**END OF TABLE OF CONTENTS**

**SECTION 011000 - SUMMARY**

**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

1. Project information.
2. Work covered by Contract Documents
3. Phased construction.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.

B. Related Requirements:

1. Section 015000 "Temporary Facilities and Controls" for limitations and procedures governing temporary use of HACP's Facilities.

1.3 PROJECT INFORMATION

A. Project Identification: Housing Authority of the City of Pittsburgh, Homewood North Family Community, Building #11.

1. Project Location: 1302 Ferris Court, Pittsburgh, Pennsylvania

B. Owner: (HACP) Housing Authority of the City of Pittsburgh, 100 Ross Street, 2nd Floor, Pittsburgh, Pennsylvania 15219.

1. HACP Contact: Stephen Graziani, Project Manager

C. Architect: Gerard Associates Architects, L.L.C., 445 Fort Pitt Boulevard, Suite 410, Pittsburgh, Pennsylvania 15219.

1. Representative: Dawn Danyo DiMedio, A.I.A., LEED AP BD+C
Vincent Trevino

D. Architect's Consultants: The Architect has retained the following design professionals who have prepared designated portions of the Contract Documents:

a. No additional design professionals retained.

E. Contractor: To be determined.

F. Construction Manager / HACP's Representative: To be determined.

1. Construction Manager will be engaged for this Project to serve as an advisor to HACP and to provide assistance in administering the Contract for Construction between HACP and each Prime Contractor, according to a separate contract between HACP and Construction Manager.

G. Project Web Site: Not applicable to this project.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and consists of the following:

1. The Scope of Work Area includes but is not limited to selective demolition and restoration on the interior and exterior of the existing unit. The unit is unoccupied. The project shall be bid as s Single Prime.

2. General Prime Contractor: The Scope of Work includes but shall not be limited to structural repair and restoration of existing window, masonry, gypsum board systems and finishes previously damaged by an automobile. All work necessary to complete the repairs shall be reflected in the General Contractor's bid.

3. Electrical Prime Contractor: The Scope of Work includes but shall not be limited to miscellaneous electrical wiring in support of the General Construction. Cost shall be included in the General Contractor's bid.

4. Plumbing Prime Contractor: The Scope of Work includes but shall not be limited to miscellaneous plumbing work in support of the General Construction. Cost shall be included in the General Contractor's bid.

5. All associated fees for permit and inspections required to complete the scope of work described above.

B. Type of Contract:
1. Project will be constructed under a single prime contract, General Prime.

1.5 PHASED CONSTRUCTION AND OCCUPANT DISRUPTION

A. The Work shall be conducted in a single phase and will be required to be coordinated and sequenced by the General Prime Contractor.

1. General Prime Contractor is responsible for the Construction Schedule; Occupant Disruption Schedule, (DCPOD Schedule), coordination with all Contractors and disciplines and providing an update on a weekly bases during the Construction Phase. All Contractors and disciplines are required to coordinate and provide detailed Construction Schedules, for their disciplines scope of work, to the General Prime Contractor, to be incorporated into the comprehensive schedule. All milestones and occupancy disruptions shall be identified within the schedule and shall be provided at least 1 week prior to occupant disruptions, to allow HACP's Representative to coordinate with occupants.

    a. General Phasing and Occupant Disruption Schedule Milestones to be minimally identified: Start and End dates of specific scope of work milestones, occupant milestones, substantially complete milestones, ready for occupancy milestones and other associated milestones for approval from HACP and the Architect minimally for the Site, Building, each Elevation, each Public Area, each Employee Occupied Area, Roofs and all Interior Scope of Work. Schedules to be inclusive of all required Occupant Disruption and Displacement time frames for each scope of work Weekly and Daily. Listing all types of disruption. IE: Noise, Light, Odors, Displacement of Occupant, etc.

2. General Prime Contractor to Schedule a Demolition and Construction Phase Occupant Disruption Meeting within 7 calendar days of receiving the Notice to Proceed.

3. Demolition and Construction Phasing Occupant Disruption Schedule (DCPOD Schedule) shall be provided by each Contractor/Discipline to the General Prime Contractor within 14 calendar days from Notice to Proceed.

4. General Prime Contractor is to provide the initial DCPOD Schedule within 28 calendar days after the Notice to Proceed.

5. Phases can include multiple areas of scope of work simultaneously.

6. No Demolition or Construction shall start until the DCPOD Schedule has been provided and approved by HACP's Representative to Proceed.

B. Before commencing Work of each phase, submit an updated copy of Contractor's construction schedule showing the sequence, commencement and completion dates for all phases of the Work.

## 1.6 USE OF PREMISES

A. General: Contractor shall have limited use of premises for construction operations as indicated on Drawings by the Contract limits.

B. Use of Site: Limit use of Project site to work zones delineated in General Prime Contractor's approved CDPOD Plan and Schedule. Do not disturb portions of Project site beyond areas in which the Work is indicated.

1. Limits: Continue construction operations to HACP approved limits of work per construction plan.
2. HACP Occupancy: Allow for HACP resident and employee occupancy of Project site.
3. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to HACP, HACP's employees and emergency vehicles at all times. Each Prime Contractor will be responsible for providing offsite parking, offsite storage of materials, and offsite placement of trailer.

    a. Schedule deliveries to minimize use of driveways and entrances by construction operations and minimize space and time requirements for materials and equipment onsite.

C. Condition of Existing Building: Maintain existing building in a weather-tight condition throughout all phases of the demolition and construction period. Repair damage caused by construction operations. Protect building and its occupants at all times during construction period.

## 1.7 COORDINATION WITH OCCUPANTS

A. Full HACP Resident and Employee Occupancy: HACP employees and residents will occupy the site and existing building during entire construction period. The unit under construction will be unoccupied for the duration of the work. Cooperate with Construction Manager/HACP Representative during construction operations to minimize conflicts and facilitate HACP usage. Perform the Work so as not to interfere with HACP's day to day operations and to have minimal daily disruption to each apartment resident. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors or other occupied or used facilities without written permission from HACP and approval of authorities having jurisdiction.
2. Notify HACP not less than 120 hours in advance of activities that will affect HACP's operations.

B. Owner Limited Occupancy of Completed Areas of Construction: HACP reserves the right to occupy and to place and install equipment in completed portions of the Work, prior to Substantial Completion of the Work, provided such occupancy does not interfere with completion of the Work. Such placement of furniture and limited occupancy shall not constitute acceptance of the total Work.

1. Architect will prepare a Certificate of Substantial Completion for each specific portion of the Work to be occupied prior to HACP acceptance of the completed Work.

2. Obtain a Certificate of Occupancy from authorities having jurisdiction before limited HACP occupancy.

3. Before limited HACP occupancy, mechanical and electrical systems shall be fully operational, and required tests and inspections shall be successfully completed. On occupancy, HACP will operate and maintain mechanical and electrical systems serving occupied portions of the Work.

4. On occupancy, HACP will assume responsibility for maintenance and custodial service for occupied portions of Work.

C. Access to Occupied Building and Occupied Areas of the Building during Construction: HACP shall require access to occupied buildings and occupied areas of the building during the entire construction period. The Contractor shall provide temporary access and cooperate with HACP and HACP's contractors to provide access for the duration of the Work. Any temporary entrances shall be accessible as determined by UFAS standards and meet HACP's requirements for secure access to the buildings.

1. General Prime Contractor (G.C.) shall provide:

   a. Demolition to accommodate temporary entrances and the reinstallation or replacement in like kind of materials removed or damage during the work.
   b. Temporary Security Door and Frame:
      1) Door to be insulated hollow metal painted lack to match existing frame, with half wire glass for security. Door to be UFAS compliant.
      2) Frame to be hollow metal.
   c. Wall area adjacent to opening to be in filled. Interior – drywall, exterior with material to maintain building weather tightness.
   d. Any ramp and landing required to provide temporary access to the entrance area shall be removed without visible signs or have areas replaced in kind.

## 1.8 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8:00 a.m. to 5:00 p.m., Monday through Friday, unless otherwise indicated or directed by HACP Contracting Officer in writing.

1. Weekend Hours: Only upon receipt of written approval from HACP Contracting Officer in writing.
2. Early Morning Hours: None without prior approval of HACP Contracting Officer in writing.
3. Hours for Utility Shutdowns: None without prior approval of HACP Contracting Officer in writing.
4. Hours for noisy activity: 8:00 a.m. to 5:00 p.m.

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

1. Notify HACP's Representative and Architect not less than 7 calendar days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without HACP's written permission.
3. Interruptions shall be scheduled such that current tenants are not without service for more than 2 hours.
4. Schedule interruptions such that the minimum numbers of units are without heat or water at any given time.

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

1. Notify HACP Representative not less than two days in advance of proposed disruptive operations.
2. Obtain HACP's written permission before proceeding with disruptive operations.

E. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet (8M) of entrances, operable windows, or outdoor-air intakes.

F. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

G. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

H. Employee Screening: Comply with HACP's requirements for drug and background screening of Contractor personnel working on Project site.

1. Maintain list of approved screened personnel with HACP's Representative.

## 1.9 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall", "shall be", or "shall comply with", depending on the context, are implied where a colon (:) is used within a sentence or phrase.
2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specification Sections.
2. Abbreviations: Materials and products are identified by abbreviations published as part of the U.S. National CAD Standard and scheduled on Drawings.
3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 011000**

**SECTION 011200 – MULTIPLE CONTRACT SUMMARY**

**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 a summary of each contract, including responsibilities for coordination and temporary facilities and controls.

B. Specific requirements for work of each contract are also indicated in individual Specification Sections and on Drawings.

C. Related Sections:

1. Division 01 Section "Summary" for the Work covered by the Contract Documents, restrictions on use of the Project site, phased construction, coordination with occupants, and work restrictions, and continual fire protection systems.
2. Division 01 Section "General Conditions Responsibility Matrix" for division of responsibilities for the work.
3. Division 01 Section "Project Management and Coordination" for general coordination requirements.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

1.4 PROJECT COORDINATION

A. General Construction Contractor shall be responsible for coordination of all trades on sites. This project shall be bid as a single prime contract – General Construction.

1.5 COORDINATION ACTIVITIES

A. Refer to "General Conditions Responsibility Matrix" that describes ownership of each of the following coordination activities, but are not limited to the following:

1. Provide overall coordination of the Work.
2. Coordinate shared access to workspaces.
3. Coordinate product selections for compatibility.
4. Provide overall coordination of temporary facilities and controls.
5. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
6. Coordinate construction and operations of the Work with work performed by each Contract and Owner's construction forces.
7. Prepare coordination drawings in collaboration with each contractor to coordinate work by more than one contract.
8. Coordinate sequencing and scheduling of the Work. Include the following:
   a. Initial Coordination Meeting: At earliest possible date, arrange and conduct a meeting with all contractors and Owner's Representative for sequencing and coordinating the Work; negotiate reasonable adjustments to schedules.
   b. Prepare a combined Contractors' construction schedule for entire Project. Base schedule on preliminary construction schedule. Secure time commitments for performing critical construction activities from contractors. Show activities of each contract on a separate sheet. Prepare a simplified summary sheet indicating combined construction activities of contracts.
      1) Submit schedules for approval
      2) Distribute copies of approved schedules to contractors.
9. Provide quality-assurance and quality-control services specified in Division 01 Section "Quality Requirements".
10. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
11. Provide information necessary to adjust, move, or relocate existing utility structures affected by construction.
12. Provide progress cleaning of common areas and coordinate progress cleaning of areas or pieces of equipment where more than one contractor has worked.
13. Coordinate cutting and patching.
14. Coordinate protection of the Work.
15. Coordinate firestopping.
16. Coordinate completion of interrelated punch list items.
17. Coordinate preparation of Project record documents if information from more than one contractor is to be integrated with information from other contractors to form one combined record.
18. Print and submit record documents if installations by more than one contractor are indicated on the same contract drawing or shop drawing.
19. Collect record specification sections from contractors, collate Sections into numeric order, and submit complete set.
20. Coordinate preparation of operation and maintenance manuals if information from more than one contractor is to be integrated with information from other contractors to form one combined record.

21. Coordinate the waste disposal plan for the project to include all communications with sub-contractors.
22. Verify provision of waste management facilities, to divert as much waste as possible from landfill and provide training to other prime contractors.
    a. Evaluate facilities in enough time prior to removal from the site to ensure load complies with requirements or to require responsible prime to remove inappropriate items.
    b. Allow each prime a minimum of half a working day to correct incorrect disposal of waste items.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION (Not Used)**

**END OF SECTION 011200**

SECTION 012900 – Payment Procedures

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 administrative and procedural requirements necessary to prepare and process Applications for Payment.

B. Related Requirements:

1. Division 1 "Allowances" for procedural requirements governing the handling and processing of allowances.
2. Division 1 "Unit Prices" for administrative requirements governing the use of unit prices.
3. Division 1 "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
4. Division 1 "Construction Progress Documentation" for administrative requirements governing the preparation and submittal of the Contractor's construction schedule.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to Various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the schedule of values with preparation of Contractor's construction schedule. Cost-loaded Critical Path Method Schedule may serve to satisfy requirements for the schedule of values.

1. Coordinate line items in the schedule of values with other required administrative forms and schedules, including the following:

a. Application for Payment forms with continuation sheets.

b. Submittal schedule.
c. Items required to be indicated as separate activities in Contractor's construction schedule.

2. Submit the schedule of values to Architect through Construction Manager/HACP's Representative at earliest possible date, but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
3. Sub-schedules for Phased Work: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values coordinated with each phase of payment.
4. Sub-schedules for Separate Elements of Work: Where the Contractor's construction schedule defines separate elements of the Work, provide sub-schedules showing values coordinated with each element.
5. Sub-schedules for Separate Design Contracts: Where HACP has retained design professionals under separate contracts who will each provide certification of payment requests, provide sub-schedules showing values coordinated with the scope of each design services contract as described in Section 011000 "Summary".

B. Format and Content: Use Project Manual table of contents as a guide to establish line items for the schedule of values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the schedule of values:

a. Project name and location.
b. Name of Architect.
c. Architect's project number.
d. HACP's Project number.
e. Contractor's name and address.
f. Date of submittal.

2. Arrange schedule of values consistent with format of appropriate HUD forms. Arrange the schedule of values in tabular form with separate columns to indicate the following for each item listed:

a. Related Specification Section or Division.
b. Description of the Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value of the following, as a percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

1) Labor
2) Materials.
3) Equipment.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with Project Manual table of Contents. Provide multiple line items for principal subcontract amounts in excess of five percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the schedule of values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

    a. Differentiate between items stored on-site and items stored off-site. If required, include evidence of insurance.

6. Provide separate line items in the schedule of values for initial cost materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Allowances: Provide a separate line item in the schedule of values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
8. Purchase Contracts: Provide a separate line item in the schedule of values for each purchase contract. Show line-item value of purchase contract. Indicate HACP payments or deposits, if any, and balance to be paid by Contractor.
9. Each item in the schedule of values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

    a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the schedule of values or distributed as general overhead expense, at Contractor's option.

10. Schedule Updating: Update and resubmit the schedule of values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

## 1.5 APPLICATIONS FOR PAYMENT

A. Each Application for Payment following the initial Application for Payment shall be consistent with previous applications and payments as certified by Architect and Construction Manager/HACP's Representative and reviewed and paid upon approval of HACP's Contracting Officer.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Applicati0n for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between HACP and Each Prime Contractor. The period of construction work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Times: Submit Application for Payment to Project Manager/HACP's Representative by the 21st day of the month, unless indicated otherwise. The period covered by each Application for Payment is one month, ending on the last day of the month.

1. Submit draft copy of Application for Payment seven days prior to due date for review by Construction Manager/HACP's Representative and the Architect.

D. Application for Payment Forms: Use forms provided by HACP for Applications for Payment.

E. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Application will be returned without action if incomplete.

1. Entries shall match data on the schedule of values and Contractor's construction schedule. Use updated schedules if revisions were made.
2. Include amounts for work completed following previous Application for Payment, whether or not payment has been received. Include only amounts for work completed at time of Application for Payment.
3. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
4. Indicate separate amounts for work being carried out under Owner-requested project acceleration.

F. Stored Materials: Include in Application for Payment amounts applied for materials or equipment purchased or fabricated and stored, but not yet installed. Differentiate between items stored on-site and items stored off-site.

1. Provide certificate of insurance, evidence of transfer of title to HACP, and consent of surety to payment, for stored materials.
2. Provide supporting documentation that verifies amount requested, such as paid invoices. Match amount requested with amounts indicated on documentation; do not include overhead and profit on stored materials.
3. Provide summary documentation for stored materials indicating the following:

    a. Value of materials previously stored and remaining stored as of date of previous Applications for Payment.
    b. Value of previously stored materials put in place after date of previous Application for Payment and on or before date of current Application for Payment.
    c. Value of materials stored since date of previous Application for Payment and remaining stored as of date of current Application for Payment.

G. Transmittal: Submit three signed and notarized original copies of each Application for Payment to Construction Manager/HACP's Representative and Architect by a method

ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from entities lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested in previous application, after deduction to retainage, on each item.
2. When an application shows completion of an item, submit conditional final or full waivers.
3. HACP reserves the right to designate which entities involved in the Work must submit waivers.
4. Waiver Forms: Submit executed waivers of lien on forms acceptable to HACP.

I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.

1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
2. When an application shows completion on an item, submit conditional final or full waivers.
3. HACP reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or proceeded by conditional final waivers from every entity involved with performance of the Work covered by the application, which is lawfully entitled to a lien.
5. Waiver Forms: Submit executed waivers of lien on forms, acceptable to HACP.

J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of values.
3. Contractor's construction schedule (preliminary if not final).
4. Combined Contractor's construction schedule (preliminary if not final) incorporating Work of multiple contracts, with indication of acceptance of schedule by each Contractor.
5. Products list (preliminary if not final).
6. Schedule of unit prices.
7. Submittal schedule (preliminary if not final).
8. List of Contractor's staff assignments.
9. List of Contractor's principal consultants.
10. Copies of building permits.

11. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
12. Initial progress report.
13. Report of preconstruction conference.
14. Certificates of insurance and insurance policies.
15. Performance and payment bonds.
16. Data needed to acquire HACP's insurance.

K. Interim application for Payment: Administrative actions and submittals that are scheduled at regular intervals to coincide with Application submission.

1. Updated Schedule of Values.
2. Schedule of salvaged, refurbished and reused materials.
3. Schedule of recycled product content.
4. Schedule of regional material compliance.
5. Schedule of certified wood products used on the project.

L. Application for Payment at Substantial Completion: After Architect issues the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
2. This application shall reflect Certificate(s) of Substantial Completion issued previously for HACP occupancy of designated portions of the Work.

M. Final Payment Application: After completing Project closeout requirements, submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates for products and completed operations where required and proof that taxes, fees and similar obligations were paid.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. Use appropriate HUD or approved HACP form for, "Contractor's Affidavit of Payment of Debts and Claims".
5. Use appropriate HUD or approved HACP form, "Contractor's Affidavit of Release of Liens".
6. AIA Document G707 or approved HACP form, "Consent of Surety to Final Payment".
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when HACP took possession of and assumed responsibility for corresponding elements of the Work.
9. Final liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

# SECTION 013100 – PROJECT MANAGEMENT AND COORDINATION

## 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 administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Administrative and supervisory personnel.
3. Coordination drawings.
4. Requests for Information (RFIs).
5. Project meetings.

B. Contractor shall participate in coordination requirements for all work proceeding on site, not just work included in this contract. Certain areas of responsibility are assigned to a specific contractor.

C. Reference to "Contractor" on the drawings and the specifications shall refer to the each separate Prime Contractor, unless noted otherwise, with coordination responsibilities specified within this Section.

D. Related Requirements:

1. Section 011200 "Multiple Contract Summary" for a description of the division of work among separate contracts and responsibility for coordination activities not in this Section.
2. Section 017000 "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.

### 1.3 DEFINITIONS

A. RFI: Request from Contractor seeking interpretation or clarification of the Contract Documents.

1.4 COORDINATION

A. Coordination: The contractors shall coordinate their construction operations with those of the HACP's Contractors and Construction Manager/HACP's Representative and entities to ensure efficient and orderly installation of each part of the Work and the work by other HACP's Contractors.

The existing structure shall remain occupied and in use for the duration of construction activities. Coordination with the occupant shall be conducted and a work schedule agreed to by all parties, including but not limited to the Occupant, HACP Construction Manager/Representative, Architect and Contractors prior to the onset of work. No portion of the project site shall be unusable to the tenant/Occupant for a period of longer than 5 business days. Where completion of the work requires temporary relocation of Occupant furniture, fixtures and equipment, Contractor shall be responsible for temporary relocation and replacement.

B. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.
4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service and repair of all components, including mechanical and electrical.
5. Maintain safe access to all existing areas of the site.
6. Coordinate access to the site that will be concurrently under construction with other contractors.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for HACP and separate contractors if coordination of their Work is required.

D. Administrative Procedures: Coordinate scheduling and timing of administrative procedures with construction activities and activities of other contractors to ensure orderly progress of the Work. Activities include:

1. Preparation of Contractors' construction schedule.
2. Preparation of Contractors' Demolition and Construction Phasing Occupant Disruption Schedule (DCPOD).
3. Preparation of the schedule of values.
4. Preparation of the submittal schedule.

5. Installation and removal of temporary facilities and controls.
6. Delivery and processing of submittals.
7. Progress meetings.
8. Pre-installation conferences.
9. Project closeout activities.
10. Startup and adjustment of systems.
11. Project closeout activities.
12. All RFI's logged and coordinated through General Construction contractor.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water and materials.

## 1.5 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:

    a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    b. Locate existing utilities that enter the building.
    c. Locate existing Building Automation System (BAS) lines that enter the building.
    d. Indicate required installation sequences.
    e. Indicate functional and spatial relationships for components of systems.
    f. Show location and size of access doors required for access to concealed controls.
    g. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

2. Sheet Size: At least 11 by 17 inches bout no larger than 30 by 42 inches.
3. Submit Digitally to Architect through General Contractor's project web site: PDF electronic files.
4. After return from Architect, mark up and provide one printed copy to be located in trailer as a Project Record Drawing, and provide HACP with five printed copies.
5. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

B. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format: Same digital data software program, version and operating system as original Drawings.
2. File Preparation Format: DWG, Version 2013, operating in Microsoft Windows operating system.
3. File Submittal Format: Submit or post coordination drawing files using Portable Data File (PDF) format.
4. Architect will furnish the Contractor one set of digital data files of Drawings for use in preparing coordination digital data files. Refer to associated fees.

    a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
    b. Refer to "Division 01 Section Summary for requirements for using Architect's digital files.
    c. Digital Data Software Program: Drawings are available in Autodesk AutoCAD 2013 DWG format.

C. Key Personnel Names: Within 7 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.

1. Post copies of list on site, in temporary field office, on Project Website and by each temporary telephone. Keep list current at all times.

## 1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1. Include special personnel required for coordination of operations with other contractors.

## 1.7 PROJECT MEETINGS

A. General: Construction Manager/HACP's Representative will schedule and conduct meetings and conferences at Project site. Prepare the meeting agenda. Distribute agenda, record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including HACP and Architect, within three days of the meeting.

B. Preconstruction Conference: Construction Manager/HACP's Representative will schedule and conduct a preconstruction conference before starting construction, at a time convenient to HACP and Architect, but no later than 7 days after execution of the Agreement. Hold the conference at Project site. Conduct the meeting to review responsibilities and personnel assignments.

C. Progress Meetings: The Architect will Schedule and conduct progress meetings at weekly intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of HACP, Architect and Construction Manager/HACP's Representative, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Review schedule for next period.
    b. Cutting and Patching: Review requirements for cutting and patching work for each prime contract. Assign responsibility for each prime contractor to identify prime contract. Assign responsibility for each prime contractor to identify areas requiring cutting for the general to execute. Periodic meetings shall be held until the requirement for cutting and patching has been satisfied. Cutting and patching for all prime contractors shall be performed by the General Construction Contractor based upon locations as identified by the Prime Contractors.
3. Minutes: The Architect will record the meeting minutes.
4. Reporting: The Architect will distribute the meeting minutes to each party present and to parties who should have been present, via email in digital format with-in 3 days of the meetings date.

D. Pre-installation Conference: Conduct a pr-installation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect and Construction manager of scheduled meeting dates.
2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

    a. Contract Documents.

b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility problems.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written recommendations.
n. Warranty requirements.
o. Compatibility of materials.
p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

E. Project Closeout Conference: Construction Manager/HACP's Representative will schedule and conduct a project closeout conference, at a time convenient to HACP and Architect, but no later than 10 days prior to the scheduled date of Substantial Completion.

1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of HACP, Construction Manager/HACP's Representative, Architect and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the

meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:

    a. Preparation of record documents.
    b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
    c. Submittal of written warranties.
    d. Requirements for preparing sustainable design documentation.
    e. Requirements for preparing operations and maintenance data.
    f. Requirements for delivery of material samples, attic stock, and spare parts.
    g. Requirements for demonstration and training.
    h. Preparation of Contractor's punch list.
    i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
    j. Submittal procedures.
    k. Coordination of separate contracts.
    l. HACP's partial occupancy requirements.
    m. Installation of HACP's furniture, fixtures and equipment.
    n. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

1.8 REQUESTS FOR INTERPRETATION (RFI's)

A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.

1. RFI's shall originate with Contractor. RFI's submitted by entities other than Contractor will be returned with no response.

    a. RFI's should be submitted through the coordinating contractor.

2. Coordinate and submit RFI's in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.

B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:

1. Project name.
2. Date.
3. Name of Contractor.
4. Name of Architect and Construction Manager/HACP's Representative.
5. RFI number, numbered sequentially.
6. Specification Section number and title and related paragraphs, as appropriate.
7. Drawing number and detail references, as appropriate.
8. Field dimensions and conditions, as appropriate.
9. Contractor's suggested solution(s). If contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
10. Contractor's signature.
11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.

    a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies and attachments.

C. Format of RFI"s:

1. RFI's shall be submitted electronically via email on standard RFI form. Paper copies may be substituted in addition.
2. Identify each page of attachments with the RFI number and sequential page number.

D. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for Architect's response for each RFI. RFI's received after 1:00 p.m. will be considered as received the following work day.

1. The following RFI's will be returned without action:

    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for coordination information already indicated in the Contract Documents.
    d. Requests for adjustments in the Contract Time or the Contract Sum.
    e. Requests for interpretation of Architect's actions on submittals.
    f. Incomplete RFI's or RFI's with numerous errors.

2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.

3. Architect's action on RFI's that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 1 Section "Contract Modification Procedures".

    a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager/HACP's Representative in writing within 7 days of receipt of the RFI response.

E. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager/HACP's Representative within seven days if Contractor disagrees with response.

F. RFI Log: Prepare, maintain, and submit a tabular log of RFI's organized by the RFI number. RFI Log shall be submitted electronically via email. Submit log weekly. Use CSI Log Form 13.2B. Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect and Construction Manager/HACP's Representative.
4. RFI number including RFI's that were dropped and not submitted.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's and Construction Manager's/HACP's Representative response was received.
8. Identification of related Minor Change in the Work. Construction Change Directive, and Proposal Request, as appropriate.

G. The Architect shall maintain the RFI Log between the Architect and Contractor. It is recommended that the Contractor maintain a separate RFI log with subcontractors.

1.9 PROJECT WEB SITE (Not Used)

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

Project Name: Homewood North Family Community – Building #11

GAA Project Number: 2201

Date:

In accepting and using digital files, provided by Gerard Associates Architects, L.L.C. the undersigned recognizes and accepts that:

1. Gerard Associates Architects, L.L.C. is providing these digital files for the undersigned's sole convenience, and does not assume any responsibility for the accuracy or suitability of information contained therein for the use intended by the undersigned; and

2. The undersigned is fully and solely responsible to verify the accuracy of the digital files and the actual built conditions, as it may affect the undersigned's work; and

3. The digital files are an instrument of service of Gerard Associates Architects, L.L.C. who shall be deemed the author of the digital files and shall retain all common law, statutory and other reserved rights, including the copyright; and

4. Under no circumstances shall the transfer of the digital files, or other instruments of service for use by the undersigned be deemed to be a sale by Gerard Associates Architects, L.L.C. and Gerard Associates Architects, L.L.C. makes no warranties, express or implied, of merchantability or of fitness for a particular purpose; and

5. The digital files shall not be used in whole or part for any project or purpose, other than The Housing Authority of the City of Pittsburgh Task Order #39 Homewood North Community.

6. To the fullest extent permitted by law, the undersigned hereby indemnifies and holds harmless Gerard Associates Architects, L.L.C. and its officers, directors, employees and consultants from and against all claims, damages, losses and expenses, including, but not limited to, attorney's fees arising out of, relating to and resulting from use of any information provided by Gerard Associates Architects, L.L.C.

7. A service and administrative fee of $100 for each digital file is payable to Gerard Associates Architects, L.L.C. prior to transfer of the requested files.

The Undersigned:

| | |
|---|---|
| Signature | Company Name (Print Clearly) |
| Name and Title (Print Clearly) | Date |

SECTION 013300 – SUBMITTAL PROCEDURES

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 administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples and other submittals.

B. Related Requirements:

1. Section 012900 "Payment Procedures" for submitting Applications for Payment and the schedule of values.
2. Section 013100 "Construction Progress Documentation" for submitting schedules and reports, including Contractor's construction schedule.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information that requires Architect's responsive action.

B. Informational Submittals: Written information does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

C. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 SUBMITTAL PROCEDURES

A. General: Electronic copies of CAD Drawings of the Contract Drawings will not be provided by Architect for Contractor's use in preparing submittals.

1. E-mail all submittals as PDF file attachments to HACP Representative and Architect for review.

a. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
b. No hardcopies of the submittal is required unless specifically requested by the Architect or HACP representative.

2. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

3. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.

a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

C. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.

1, Submittals shall be "packaged" together by the due date they are needed by.

a. Contractor shall allow time for resubmission of items.
b. Contractor shall prioritize submissions with-in packages.

2. Submittal Packages shall be submitted at time indicated on the agreed upon schedule.

D. Processing Time: Allow enough time for submittal review, including time for re-submittals, as follows. Time for review shall commence in Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals.

1. Initial Review: Allow 7 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
3. Re-submittal Review: Allow 7 days for review of each re-submittal.
4. Sequential Review: Where sequential review of submittals by Architect's Consultants, HACP or other parties is indicated, allow 10 days for initial review of each submittal.
    a. Sequential review shall be required for Submittals specified in the HVAC and Electrical disciplines.

E. Identification: Place a permanent label or title block on each submittal for identification.

1, Indicate name of firm or entity that prepared each submittal on label or title block.
2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
3. Include the following information on label for processing and recording action taken:
    a. Project name.
    b. Date.
    c. Name and address of Architect.
    d. Name and address if Contractor.
    e. Name and address of subcontractor.
    f. Name and address of supplier.
    g. Name of manufacturer.
    h. Submittal number or other unique identifier, including revision identifier.
        1) Submittal number shall use Specification Section number followed by a decimal point and than a sequential number (e.g., 061000.01). Re-submittals shall include an alphabetic suffix after another decimal point (e.g., 061000.01.A).
    i. Number and title of appropriate Specification Section.
    j. Drawing number and detail references, as appropriate.
    k. Location(s) where product is to be installed, as appropriate.
    l. Other necessary identification.

F. Deviations: Highlight or otherwise specifically identify deviations from the Contract Documents on submittals.

G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.

1. Submit one copy of submittal to Architect in addition to specified number of copies to concurrent reviewer.
2. Additional copies submitted for maintenance manuals will not be marked with action taken and will be returned.

H. Electronic Submittal Delivery

1. Submittals shall be processed and delivered electronically via E-mail and PDF file attachments. Comments and sketches by the Architect shall be delivered to the Contractor electronically via E-mail and PDF file attachments.
2. The following types of submittals included in, but not limited to, the list below shall be delivered to the architect electronically:
    a. Product Data.
    b. Certifications.
    c. Test Data.
    d. Schedules.
    e. Calculations.
    f. Mix Designs.
    g. Warranty Information
3. All submittals which are 11" x 17" or smaller shall be delivered electronically via E-mail and PDF file attachment. The Contractor shall contact the Architect regarding delivery method for submittals larger than 11" x 17"
4. Shop Drawings may be delivered via E-mail and PDF file attachment. The Shop Drawings shall be packaged to assist the electronic review process on a computer screen. This includes keeping the number of pages to a minimum. Shop Drawings shall be broken down into 20 page increments and issued under separate submittal numbers.
5. All samples and color selections shall be delivered by mail or courier to the Architect for review. Samples and color selection shall not be reviewed electronically. See separate section of specifications for quantities and sample selection process. The Architect shall return review comments via web-based software.

I. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.

1. Transmittal Form: Provide locations on form for the following information:
    a. Project name.
    b. Date.
    c. Destination To:
    d. Source (From:).
    e. Names of subcontractor, manufacturer, and supplier.
    f. Category and type of submittal.
    g. Submittal purpose and description.
    h. Specification Section number and title according to specifications.
    i. Drawing number and detail references, as appropriate.
    j. Transmittal number, numbered consecutively.
    k. Submittal and transmittal distribution record.
    l. Remarks.
    m. Signature of transmitter.
2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents,

including minor variations and limitations. Include same label information as related submittal.

J. Re-submittals: Make re-submittals in same form and number of copies as initial submittal.

1. Note date and content of previous submittal.
2. Note date and content of revision in label or title block and clearly indicate extent of revision.
3. Resubmit submittals until they are marked "No Exception Taken".

K. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

L. Use for Construction: Use only final submittals with mark indicating "No Exception Taken" taken by Architect.

M. Submittal Logs: The Architect shall maintain the submittal log between the Architect and Contractor. It is recommended that the Contractor maintain a submittal log with subcontractors.

## 1.5 CONTRACTOR'S USE OF ARCHITECT'S CAD FILES

A. General: At Contractor's written request, copies of Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:

1. The Architect will provide electronic files for a fee. Drawings or Electronic media requested by the Contractor on the Drawings/Electronic Media Request Form, as provided by the Architect can be purchased upon completion of the "Release for Use of Electronic Drawing Media" form, also available from the Architect. Fees associated with a request are limited to administrative expenses incurred in satisfying a request and are set at $100 per file request.

# PART 2 - PRODUCTS

## 2.1 SUBMITTAL SCHEDULE

A. Contractor must submit to the Architect for review a submittal schedule that is included as part of the construction schedule. The specific requests for review of product data; shop drawings for product and systems must be identified with critical timing requirements, both for submission and review.

1. Contractor to submit a draft to Architect for agreement with required approval dates with submission time and submission packages.
2. Architect will review for items that will require earlier than scheduled review to meet required approval dates.
3. Submittals shall be "packaged" together by the due date the contractor will need approval by in order to timely order material.
   a. Contractor shall allow time for resubmission of rejected items.
   b. Contractor shall prioritize submissions with-in packages.
4. Submittal Packages shall be submitted at time indicated on the agreed upon schedule.
5. See Division 1 Section "Construction Progress Schedules" for additional requirements.

B. Timing of submittals will adhere to the submitted agreed upon schedule.

1. Contractor will prioritize groups of submittals together in packages as defined in the contract for review and approval by architects and consulting engineers.
2. Contractor shall schedule the submission packages the Architect, return due times, and critical Lead times on the construction schedule. To aid the Architect in staffing large volume of submittals for review.
   a. Contractor shall allow sufficient time for resubmission for items that may be rejected.
   b. The submittal packages and schedule shall be evaluated and items that have longer review times as determined by HACP, or Architect shall be submitted in an earlier package by the contractor.

2.2 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. Standard color charts.
   e. Manufacturer's catalog cuts.
   f. Wiring diagrams showing factory-installed wiring.
   g. Printed performance curves.
   h. Operational range diagrams.
   i. Mill reports.
   j. Standard product operation and maintenance manuals.

k. Compliance with specified referenced standards.
l. Testing by recognized testing agency.
m. Application of testing agency labels and seals
n. Notation of coordination requirements.

4. Submit Product Data before or concurrent with Samples.
   a. E-mail submittals as PDF file attachments to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
   b. Mark up and retain one returned copy as a Project Record Document.

C. Shop Drawings: Prepare Project specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the contract Documents or standard printed data, unless submittal of Architect's CAD Drawings are otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
   a. Dimensions.
   b. Identification of Products.
   c. Fabrication and installation drawings.
   d. Roughing-in and setting diagrams.
   e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
   f. Shop work manufacturing instructions.
   g. Templates and patterns.
   h. Schedules.
   i. Design Calculations.
   j. Compliance with specified standards.
   k. Notation of coordination requirements.
   l. Notation of dimensions established by field measurement.
   m. Relationship to adjoining construction clearly indicated.
   n. Seal and signature of professional engineer, if specified.
   o. Wiring Diagrams: Differentiate between manufacturer-installed and field installed wiring.
2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
   a. E-mail shop drawings as PDF file attachments to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
   b. Mark up and retain one returned copy as a Project Record Document.
   c. Submit five copies where copies are required for operation and maintenance manuals.

D. Samples: Submit Samples for review of kind, color, pattern and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample Source
   d. Number and title of appropriate Specification Section.
3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
   a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
   b. Samples not incorporated into the Work, or otherwise designated as HACP's property, are the property of Contractor.
4. Samples for initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches, showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
   a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample set, provide HACP Representative with on Sample set and return one set as a Project Record Sample.
      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of pared units that show approximate limits of variations.

E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:

1. Type of product. Include unique identifier for each product.
2. Number and name of room or space.
3. Location within room or space.

a. E-mail information as PDF file attachment to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
b. Mark up and retain one returned copy as a Project Record Document.
c. Submit five copies where copies are required to operation and maintenance manuals.

F. Contractor's Construction Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation".

G. Submittals Schedule: Comply with requirements of this section and those specified in Division 1 Section "Construction Progress Documentation".

H. Application for Payment: Comply with requirements specified in Division 1 Section "Payment Procedures".

I. Schedule of Values: Comply with requirements specified in Division 1 Section "Payment Procedures".

J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Number of Copies: Submit three copies of subcontractor list, unless otherwise indicated. Architect will return copies.
   a. Mark up and retain one returned copy as a Project Record Document.

## 2.3 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit informational Submittals required by other Specification Sections.
   1. Number of Copies:
      a. E-mail submittals as PDF file attachment to Architect for review. Architect will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.
      b. Mark up and retain one returned copy as a Project Record Document.
      c. Submit five copies where copies are required for operation and maintenance manuals. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.

2. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements".

B. Coordination Drawings: Comply with requirements specified in Division 1 Section "Project Management and Coordination".

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.

E. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.

F. Manufacturer's Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

G. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

H. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

I. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.

J. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

K. Schedule of Tests and inspections: Comply with requirements specified in Division 1 Section "Quality Requirements".

L. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.

M. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.

N. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 1 Section "Operation and Maintenance Data".

O. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

P. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:

1. Preparation of substrates.
2. Required substrate tolerances.
3. Sequence of installation or erection.
4. Required installation tolerances.
5. Required adjustments.
6. Recommendations for cleaning and protection.

Q. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:

1. Name address, and telephone number of factory-authorized service representative making report.
2. Statement on condition of substrates and their acceptability for installation of product.
3. Statement that products at Project site comply with requirements.
4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
6. Statement weather conditions, products, and installation will affect warranty.
7. Other required items indicated in individual Specification Sections.

R. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

S. Material Safety Data Sheets (MSDS's): Do not submit information directly to HACP or Architect.

1. Architect will not review submittals that include MSDS's and will return the entire submittal for resubmittal.

2.4 DELEGATED-DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.

1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.

B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 ARCHITECT'S ACTION

A. Action Submittals: Architect will review each submittal, make marks to indicate corrections or revisions required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action, as follows:

1. "No Exception Taken": Proceed with work covered by submittal provided it complies with requirements of Contract Documents; final acceptance will depend upon that compliance.
2. "Make Corrections Noted": Proceed with work covered by submittal provided it complies with notations or corrections on submittal and requirements of Contract Documents; final acceptance will depend on that compliance.
3. "Revise and Resubmit": Do not proceed with work covered by submittal, including purchasing, fabrication, delivery or other activity. Revise and/or prepare a new submittal in accordance with notations, and resubmit without delay. Repeat this procedure, if necessary, to obtain a different action mark. Do not use submittals marked "Revise and Resubmit" at Project site, or elsewhere where work is in progress.
4. "Not Acceptable": Work covered by this submittal is completely unacceptable. Prepare new submittal and submit without delay.
5. "Subject to Action by Architect's Consultant": Work covered by this submittal has been reviewed by the Architect but must also be reviewed by Architect's consultant before work covered by submittal can be purchased, fabricated, delivered, or used on this project.

B. Informational Submittals: Architect will review each submittal and will return it with appropriate comments. Architect will forward each submittal to appropriate party.

C. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.

D. Submittals not required by the Contract Documents may be returned by the Architect without action.

END OF SECTION 013300

SECTION 014000 – QUALITY REQUIREMENTS

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 administrative and procedural requirements for quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.
3. Requirements for Contractor to provide quality-assurance and control services required by Architect, HACP, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mock-ups: Full size physical assemblies that are constructed on-site. Mockups are constructed to verify selections made under Sample submittals; to demonstrate aesthetic effects and, where indicated, qualities of materials and execution; to review coordination, testing, or operation; to show interface between dissimilar materials; and to demonstrate

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

1. Integrated Exterior Mockups: Mockups of the exterior envelope erected separately from the building but on Project site, consisting of multiple products, assemblies, and subassemblies.

D. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.

E. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter". It also does not imply that requirements specified apply exclusively to trades people of the corresponding generic name.

F. Experienced: When used with an entity or individual, "experienced" means having successfully completed a minimum of five previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

## 1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

## 1.5 ACTION SUBMITTALS

A. Shop Drawings: For integrated exterior mockups, provide plan, sections, and elevations, indicating materials and size of mockup construction.

1, Indicate manufacturer and model number of individual components.

2. Provide axonometric drawings for conditions difficult to illustrate in two dimensions.

## 1.6 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for performing tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

C. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and re-inspecting.

D. Permits, Licenses and Certificates: For HACP's records, submit copies of permits, licenses certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

## 1.7 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Install Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated or this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. "Engineering services are defined as those performed for installations of the system, assembly, or products that are similar to those indicated for this Project in material, design and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and regulations governing the Work.

G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspecting indicated, as documented according to ASTM E 548; and with additional qualifications specified in individual Sections; and where required by authorities having jurisdiction, that is acceptable to authorities.

1. NRTL: a nationally recognized testing laboratory according to 29 CFR 1910.7.
2. NVLAP: a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.

H. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

I. Preconstruction Testing: Where testing agency is indicated to perform preconstruction testing for compliance with specified requirements and test methods, comply with the following:

1. Contractor responsibilities include the following:
   a. Provide test specimens representative of proposed products and construction.
   b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
   c. Provide sizes and configurations of test assemblies, mockups, and laboratory mockups to adequately demonstrate capability of products to comply with performance requirements.
   d. Build laboratory mockups at testing facility using personnel, products, and methods of construction indicated for the completed Work.
   e. When testing is complete, remove test specimens, assemblies, mockups, and laboratory mockups; do not reuse products on Project.
2. Testing Agency Responsibilities: Submit a certified written report of each test, inspection and similar quality-assurance service to Architect, with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.

1.8 QUALITY CONTROL

A. Costs for retesting and re-inspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor.

B. Tests and inspections are the Contractor's responsibility. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.
   a. Contractor shall not employ same entity engaged by HACP, unless agreed to in writing by HACP.
2, Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.
3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
4. Testing and inspecting requested by Contractor and not require by the Contract Documents are Contractor's responsibility.
5. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

C. Manufacturer's Field Services: Where indicated, engage a factory authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 1 Section "Submittal Procedures".

D. Retesting/Re-inspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and re-inspecting, for construction that replaced Work that failed to comply with the Contract Documents.

E. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-sit-tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

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

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

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

H. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Contract Documents. Submit schedule within 30 days of date established for the Notice to Proceed.

1. Distribution: Distribute schedule to HACP, Architect, testing agencies and each party involved in performance of portions of the Work where tests and inspections are required.

1.9 SPECIAL TESTS AND INSPECTIONS

A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:

1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviews the completeness and adequacy of those procedures to perform the Work.
2. Notifying Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
3. Submitting a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
4. Submitting a final report of special tests and inspections at Substantial Completion which includes a list of unresolved deficiencies.
5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
6. Retesting and re-inspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.

3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking and similar services, repair damaged construction and restore substrates and finishes.
   1. Comply with the Contract Document requirements for Division 1 Section "Cutting and Patching".

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

SECTION 015000 – TEMPORARY FACILITIES AND CONTROLS

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 PROJECT CONDITIONS

A. This Section is not intended to limit types and amounts of temporary construction facilities and controls required. Omission from this Section will not be accepted as an application that such temporary activity is not required for successful completion of the work and compliance with requirements of the Contract Documents.

B. Provide and maintain each temporary construction facility and control when required for proper performance of the work. Terminate and remove when no longer needed or when permanent facilities, with proper authorization, are available for use.

C, Obtain and pay for all required applications, fees, permits and inspections required for temporary construction facilities and controls.

D. Install, operate, maintain and protect temporary construction facilities and controls in a manner and at locations which are safe, non-hazardous, sanitary and adequately protect project work, workmen and the public.

E. The building will be occupied during construction. Provide temporary barriers to restrict access to the area(s) of construction for the health, safety and welfare of the Occupants and other members of the Public, to only those individuals that need for access to the area to complete the Work. Temporary barriers shall be required to coordinate with the Demolition and Construction Phasing and Occupant Disruption Schedule, provided by the General Prime Contractor, updated on a weekly bases and as approved by HACP. Access to individual apartment units on a daily bases is required. Maintain means of egress at all times.

1.3 REQUIREMENTS OF REGULATORY AGENCIES

A. Provide and maintain all temporary facilities off-site in compliance with governing rules, regulations, codes, ordinances and laws of agencies and utility companies having jurisdiction over work involved in project.

B. Be responsible for all temporary work provided and obtain any necessary permits and inspections for such work.

C. Confine equipment, storage of materials, and operation of workmen to the limits indicated or directed and shall abide by law, ordinances, conditions stated in permits and directions of the Construction Manager/HACP's Representative.

D. Do not interfere with normal use of roads in vicinity of project site, except as absolutely necessary to execute required work, and then only after proper arrangements have been made with authorities having jurisdiction, including permits, approvals and temporary traffic control as applicable.

## 1.4 TEMPORARY FIELD OFFICES AND TRAILERS

A. Due to the scope and size of the project, as well as the lack of available space on site, the bidding contractors are not required to provide temporary field offices and trailers. No available area inside the existing Community will be provided for the contractors' use.

## 1.5 TEMPORARY SANITARY FACILITIES

A. No facilities are available on site. General Prime Contractor to provide temporary portable toilet(s), acceptable to public health authorities, as required to service the project for the use of all construction personnel on site, including personnel from other prime contracts. Maintain in a clean, sanitary condition; provide all supplies. Locate as directed by Construction Manager/HACP's Representative within secure construction area.

## 1.6 TEMPORARY LIGHT AND POWER

A. Temporary use of on-site electrical power for construction shall be made available for use.

## 1.7 CONSTRUCTION AIDS

A. Shoring and Bracing: Provide all shoring and bracing required for safety and proper execution of their work. Remove these items when the work is completed

B. Barriers: Provide protective barriers and fencing as required to protect the public from demolition operations, including demolition preparation work, and construction activities for the duration of the Work.

a. Provide and maintain OSHA approved barriers where required by OSHA.

C. First Aid Facilities: Provide a minimum of one (1) 16-unit first-aid kit (or equivalent) for each 25 persons (or fraction thereof) on the worksite.

1.8 WATCHMAN SERVICE

A. If Contractor considers watchman services necessary or desirable for protection of their own interest, such services may be employed at their own complete expense.

1.9 SAFETY

A. Safety requirements shall be in accordance with the General Conditions.

B. Provide and maintain guard lights at all barricades, railings, obstructions in the roadways or sidewalks.

C. Strict attention and full adherence must be given the Williams-Steiger Occupational Safety and Health Act of 1970, U.S. Department of Labor.

1.10 TEMPORARY SIGNS

A. Temporary Signs: Provide as required to adequately direct traffic, personnel and the public regarding the project.

1.11 STREETS AND TRAFFIC

A. Cleaning and Repair

1. Contractors shall remove mud and spillage from public walks, streets and sewers without delay. Failure to clean areas promptly will result in areas being cleaned by HACP at the responsible Contractor's expense.
2. Damage to roads or other facilities on the grounds, resulting from hauling, storage of materials, or other activities in connection with the work shall be repaired or replaced, at no expense to HACP, by the Contractor causing the damage. Repairs or replacements shall be made to the satisfaction of the Construction Manager/HACP's Representative and the Architect.

B. Traffic

1. Notify City of Pittsburgh Police Department at least two (2) weeks in advance of any anticipated work affecting traffic flow.
    a. To assure maintenance of flow and to safeguard all parties involved in planning to maintain flow, a field inspection should be made jointly by the Construction

Manager/HACP's Representative, the Architect and Contractor personnel before performing any work which would interrupt normal traffic patterns.

b. Re-routing of traffic shall be planned, as to route and direction, in cooperation with the City of Pittsburgh Police Department.

1.12 PARKING

A. There are no on-site or assigned parking for employees of Contractors and subcontractors. Parking on streets or in restricted areas is prohibited. Specific parking plans will be discussed at the Pre-Construction Meeting.

1.13 USE CHARGES

A. General: Shall be as dictated by the General Conditions for Construction Contracts – Public Housing Programs and agreed upon between HACP and each Prime Contractor.

1.14 INFORMATIONAL SUBMITTALS

A. Off-Site Plans: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.

C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.

1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

D. Dust and HVAC Control Plan: Submit coordination drawing and narrative that indicates the dust and HVAC control measures proposed for use, proposed locations, and proposed time frame for their operation. Indentify further options if proposed measures are later determined to be inadequate. Include the following:

1. Locations of dust control partitions at each phase of work.
2. HVAC system isolation schematic drawing.

3. Location of proposed air-filtration system discharge.
4. Waste handling procedures.
5. Other dust-control measures.

1.15 QUALITY ASSURANCE

A. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC./ANSI A117.1.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch (3.8-mm) thick, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high galvanized-steel pipe posts; minimum 2-3/8 inch (60-mm) OD line posts and 2-7/8 inch (73-mm) OD corner and pull posts, with 1-5/8 inch (42-mm) OD top rails.

B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry".

C. Polyethylene Sheets: Reinforced, fire-resistive sheet, 10-mil (0.25-mm) minimum thickness, with flame-spread rating of 15 or less per ASTM E 84.

D. Dust Control Adhesive Surface Walk-off Mats: Provide mats minimum 36 by 60 inches (914 by 1624 mm).

E. Gypsum Board: Minimum 1/2 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.

F. Insulation: Un-faced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

G. Paint: Comply with requirements in Division 9 painting Sections.

2.2 TEMPORARY FACILITIES (Not Used)

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

B. HVAC Equipment: Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.

## PART 3 – EXECUTION

### 3.1 INSTALLATION, GENERAL

A. Locate facilities off-site in close proximity where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate temporary facilities to limit site disturbance and that minimize disruption of daily activities of HACP and residents.

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized.

### 3.2 TEMPORARY UTILITY INSTALLATION

A. Water Service: Use of HACP's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to HACP. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

B. Sanitary Facilities: Prime General Contractor to provide temporary toilets, wash facilities, and drinking water for use of all construction personnel. Comply with authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.

C. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

1. At all times during demolition and construction, HACP may request the contractor to provide temporary heating or insulating accommodations.

D. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.

1. Prior commencing work, isolate the HVAC system in area where work is to be performed according to coordination drawings.
   a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
   b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
3. Contractors are required to continuously clean floor areas to keep areas not under demolition and construction clean.
4. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.

E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

F. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity and power characteristics required for construction operations.

1. Connect temporary service to HACP's existing power source, as directed by HACP.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. Install lighting for Project identification sign.

## 3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for temporary offices, shops and sheds located off-site of the occupied building and construction area. Comply with NFPA 241.
2. Maintain support facilities until Construction Manager/HACP's Representative schedules Substantial Completing inspection. Remove before Substantial Completion.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: See Section 1.12.

D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution".

E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

F. Existing Elevator Use: Use of HACP's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to HACP. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes and similar items of limited life.

1. Do not load elevators beyond their rated weight capacity.
2. Provide protective coverings, barriers, devices, signs other procedures to protect elevator car and entrance doors and frame. If despite such protection, elevators become damaged, engage elevator installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

G. Existing Stair Usage: Use of HACP's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to HACP. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

## 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of authorities having jurisdiction.

1. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.
2. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
3. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

D. Tree and Plant Protection: Provide measures to prevent damage to existing tree and plants.

E. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

F. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

H. Temporary Partitions: Provide floor-to ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by HACP and Residents from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire –retardant-treated plywood on construction operations side.
2. Construct dustproof partitions with two layers of 3-mil polyethylene sheet on each side.. Cover floor with two layers of 3-mil polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood. This shall occur in the existing lobbies where adjacent to the units under construction.
3. Insulate partitions to control noise transmission to occupied areas.
4. Seal joints and perimeter. Equip partitions with gasketed dustproof doors and security locks where openings are required.
5. Provide walk-off mats at each entrance through temporary partition.

I. Existing exterior wall mural:

1. Protect temporary protection for existing exterior wall mural during cleaning of building and demolition and construction with materials and methods as required.

J. Temporary Fire Protection: Maintain existing fire-protection systems.

1. Smoking is prohibited on site and within construction areas.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

## 3.5 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect porous materials from water damage.
2. Project stored and installed material from flowing or standing water.
3. Keep porous and organic materials from coming into prolonged contact with concrete.
4. Keep deck openings covered or dammed.

C. Partially Enclosed Construction Phase: After installation of weather barriers, but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard, replace, or clean stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

## 3.6 OPERATION, TERMINATION AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. HACP reserves right to take possession of Project identification signs.
2. At Substantial Completion, repair, renovate and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures".

END OF SECTION 015000

SECTION 016000 – PRODUCT REQUIREMENTS

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 administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and equal products.

B. Related Requirements:

1. Division 01 Section "Substitution Procedures" for requests and reviews of substitutions.
2. Division 01 Section "Allowances" for products selected under an allowance.
3. Division 01 Section "Alternates" for products selected under an alternate.
4. Division 01 through 26 for specific product requirements.

1.3 DEFINITIONS

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

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. "Equal" Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis of Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis of design product", including make or model number or other designation, to establish the significant qualities related

to type, function, dimension, in-service performance, physical properties, appearance and other characteristics for purposes of evaluating "Equal" products of additional manufacturers named in the specification.

## 1.4 ACTION SUBMITTALS

A. "Equal" Product Requests: Submit request for consideration of each "Equal" product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "'Equal' Products" Article.
2. Include any previously submitted Substitution Request Forms whether for "during Bid phase" (form 012500.01) or "after Bid phase" (012500.02) with Architect's approval verification.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of an "Equal" product request. Architect will notify Contractor of approval or rejection of proposed "Equal" product request within 15 days of receipt of request, or seven days of receipt of additional information or documentation, whichever is later.
   a. Form of Approval: As specified in Section 013300 "Submittal Procedures".
   b. Use product specified if Architect does not issue a decision on use of an "Equal" product request within time allocated.

B. Basis of Design Product Specification Submittal: Comply with requirements in Section 013300 "Submittal Procedures". Show compliance with requirements.

## 1.5 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.

1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selected but incompatible products, Architect will determine which products shall be used.

## 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Delivery, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:

1. Schedule delivery to minimize long term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weather-tight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure off-site for storage of materials and equipment by HACP's construction forces. Coordinate location with HACP.

## 1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to HACP.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for HACP.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, read for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.

3. Refer to 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Section 017700 "Closeout Procedures".

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. HACP reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected", Architect will make selection.
5. Descriptive, performance, and referenced standard requirements in the Specifications establish salient characteristic of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal", or "or approved equal", or "or approved", comply with requirements in "Equal Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. "Equal" products or substitutions for Contractor's convenience will not be considered.
2. Products:
   a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. "Equal" products or substitutions for Contractor's convenience will be considered unless otherwise indicated.
   b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "'Equal' Products" Article for consideration of an unnamed product.
3. Manufacturers:
   a. Restricted List: Where Specifications include a list of manufacturer's names, provide a product by one of the manufacturers listed that complies with

requirements. "Equal" products or substitutions for Contractor's convenience will be considered unless otherwise indicated.

b. Non-Restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "'Equal' Products" Article for consideration of an unnamed manufacturers product.

4. Basis of Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or an "Equal" product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "'Equal' Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample" provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with other specified requirements, comply with requirements in Section 012500 "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 "EQUAL" PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for equal product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that proposed product does not require revisions to the Contract Documents, that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

## PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

## SECTION 017000 - EXECUTION AND CLOSEOUT REQUIREMENTS

## PART 1 - GENERAL

### 1.1 CLOSEOUT SUBMITTALS

A. Record Drawings: Maintain a set of prints of the Contract Drawings as record Drawings. Mark to show actual installation where installation varies from that shown originally.

1. Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

B. Operation and Maintenance Data: Submit one (1) copy of manual. Organize data into three-ring binders with identification on front and spine of each binder, and envelopes for folded drawings. Include the following:

1. Manufacturer's operation and maintenance documentation.
2. Maintenance and service schedules.
3. Maintenance service contracts.
4. Emergency instructions.
5. Spare parts list.
6. Wiring diagrams.
7. Copies of warranties.

### 1.2 CLOSEOUT PROCEDURES

A. Substantial Completion: Before requesting Substantial Completion inspection, complete the following:

1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
2. Advise Owner of pending insurance changeover requirements.
3. Submit specific warranties, maintenance service agreements, and similar documents.
4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Submit record Drawings, operation and maintenance manuals, and similar final record information.
6. Deliver tools, spare parts, extra materials, and similar items.
7. Make final changeover of permanent locks and deliver keys to Owner.
8. Complete startup testing of systems.
9. Remove temporary facilities and controls.

10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
11. Complete final cleaning requirements, including touchup painting.
12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Submit a written request for inspection for Substantial Completion. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

C. Request inspection for Final Completion, once the following are complete:

1. Submit a copy of Substantial Completion inspection list stating that each item has been completed or otherwise resolved for acceptance.
2. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.

D. Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

E. Submit a written request for final inspection for acceptance. On receipt of request, Architect will proceed with inspection or advise Contractor of unfulfilled requirements. Architect will prepare final Certificate for Payment after inspection or will advise Contractor of items that must be completed or corrected before certificate will be issued.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 EXAMINATION AND PREPARATION

A. Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance.

1. Verify compatibility with and suitability of substrates.
2. Examine roughing-in for mechanical and electrical systems.
3. Examine walls, floors, and roofs for suitable conditions.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Take field measurements as required to fit the Work properly. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication.

D. Verify space requirements and dimensions of items shown diagrammatically on Drawings.

## 3.2 CONSTRUCTION LAYOUT AND FIELD ENGINEERING

A. Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks.

B. Engage a land surveyor to lay out the Work using accepted surveying practices.

## 3.3 INSTALLATION

A. Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated. Make vertical work plumb and make horizontal work level.

1. Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections to form hairline joints.
2. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
3. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations.

C. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

D. Use products, cleaners, and installation materials that are not considered hazardous.

E. Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place. Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed.

## 3.4 CUTTING AND PATCHING

A. Provide temporary support of work to be cut. Do not cut structural members without prior written approval of Architect.

B. Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

C. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction in a manner that will minimize evidence of patching and refinishing.
2. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

## 3.5 CLEANING

A. Clean Project site and work areas daily, including common areas. Dispose of materials lawfully.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
3. Remove debris from concealed spaces before enclosing the space.

B. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion:

1. Remove labels that are not permanent.
2. Clean transparent materials, including mirrors. Remove excess glazing compounds. Replace chipped or broken glass.
3. Clean exposed finishes to a dust-free condition, free of stains, films, and foreign substances. Sweep concrete floors broom clean.
4. Vacuum carpeted surfaces and wax resilient flooring.
5. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication. Clean plumbing fixtures. Clean light fixtures, lamps, globes, and reflectors.
6. Clean Project site, yard, and grounds, in areas disturbed by construction activities. Sweep paved areas; remove stains, spills, and foreign deposits. Rake grounds to a smooth, even-textured surface.

## 3.6 DEMONSTRATION AND TRAINING

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Include a detailed review of the following:

1. Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

**END OF SECTION 017000**

# SECTION 017329 – CUTTING AND PATCHING

## 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. This Section includes procedural requirements for cutting and patching.

B. Related Sections include the following:

1. Division 01 Section "Selective Structure Demolition" for demolition of selected portions of the building.
2. Division 02 through 26 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
3. Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

### 1.3 DEFINITIONS

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

B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

### 1.4 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
3. Products: List products to be used and firms or entities that will perform the Work.
4. Dates: Indicate when cutting and patching will be performed.

5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory Work.

## 1.5 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operating elements include the following:

1. Primary operational systems and equipment.
2. Air or smoke barriers.
3. Fire-suppression systems.
4. Mechanical systems piping and ducts.
5. Control systems.
6. Communication systems.
7. Conveying systems.
8. Electrical wiring systems.
9. Operating systems of special construction in Division 13 Sections.

C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:

1. Water, moisture, or vapor barriers.
2. Membranes and flashings.
3. Equipment supports.
4. Piping, ductwork, vessels and equipment.
5. Noise and vibration control elements and systems.
6. Structural members not specifically noted to be modified.

D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding. Mechanical and electrical contractors shall clearly identify locations requiring cutting with the general Contractor present. Mechanical and Electrical prime contractors shall make every effort to minimize area of cutting required. Multiple conferences may be required to identify all areas requiring cuts and patches.

1.6 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections.

B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be use, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

## 3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

## 3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible tie and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Proceed with patching after construction operations requiring cutting are complete.

C. Patching: Patch construction by filling, repairing, refinishing, closing up and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Exposed Finishes: Restore expose finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weather-tight condition.

D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty and similar materials.

END OF SECTION 017329

**SECTION 024100 - SELECTIVE DEMOLITION**

**PART 1 - GENERAL**

1.1 DESCRIPTION OF WORK

A. Work Included:

1. Demolition and removal of buildings and structures and as required for new work. Refer to the Drawings for additional requirements.
2. Demolition and removal of selected site elements and as required for new work. Refer to the Drawings for additional requirements.
3. Removal and legal disposal of demolished materials off site. Except those items specifically designated to be relocated, reused, or turned over to the facility, all existing removed materials, items, trash and debris shall become property of the Contractor and shall be completely removed from the site and legally disposed of at their expense. Salvage value belongs to the Contractor. On-site sale of materials is not permitted.
4. Maintenance, watering and care of trees designated to remain by a certified arborist during the construction period.
5. Demolition and removal work shall properly prepare for new construction to be provided under the Contract.

B. Related Work: The following items are not included in this Section and will be performed under the designated Sections:

1. Section 01500 - TEMPORARY FACILITIES AND CONTROLS:
   a. Maintenance of access, cleaning during construction, dust and noise control.
2. Section 02300 - EARTHWORK:
   a. Excavating and removal of existing pavement, sub-surface building and utility structures and lines, appurtenances, and other elements indicated on the Drawings.
3. Division 15 - PLUMBING:
   a. Disconnecting, capping and otherwise making inactive existing mechanical services in areas where demolition and removal work is required. Mechanical tradesmen will disconnect, cap and deactivate such items where required to be removed.
4. Division 16 - ELECTRICAL WORK:
   a. Disconnecting, capping and otherwise making inactive existing electrical services in areas where demolition and removal work is required. Electrical tradesmen will disconnect, cap and deactivate such items where required to be removed.

1.2 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Salvage: Detach items from existing construction and deliver them to the Owner ready for reuse, at a location designated by the Owner. Protect from weather until accepted by Owner.

C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated. Protect from weather until reinstallation.

D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques, antiques, and other items of interest or value that may be encountered during selective demolition remain property of the Owner. Carefully remove each item or object in a manner to prevent damage and deliver promptly to a location acceptable to the Owner.

1.4 SUBMITTALS

A. Schedule of Selective Demolition Activities: Indicate the following:

1. Detailed sequence of selective demolition and removal work, with early and late starting and finishing dates for each activity.
2. Interruption of utility services. Indicate how long utility services will be interrupted.
3. Coordination for shutoff, capping, and continuation of utility services.

B. Landfill Records: Provide trip tickets (receipts) indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.5 QUALITY ASSURANCE

A. Examination of Existing Conditions: The Contractor shall examine the Contract Drawings for demolition and removal requirements and provisions for new work. Verify all existing conditions and dimensions before commencing work. The Contractor shall visit the site and examine the existing conditions as he finds them and shall inform herself/himself of the character, extent and type of demolition and removal work to be performed. Submit any questions regarding the extent and character of the demolition and removal work in the manner and within the time period established for receipt of such questions during the bidding period.

B. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.

C. Refrigerant Recovery Technician Qualifications: Certified by an EPA-approved certification program.

D. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

E. Standards: Comply with ANSI A10.6 and NFPA 241.

**PART 2 - PRODUCTS (Not Used)**

**PART 3 - EXECUTION**

3.1 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

C. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. Arrange to shut off indicated utilities with utility companies and Owner.
2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.
4. Prior to commencing cutting work in existing surfaces, take all precautionary measures to assure that mechanical and electrical services to the particular area have been made inactive. Coordinate with Fire Protection, Plumbing, HVAC, and Electrical subcontractors. Only licensed tradesmen of that particular trade shall disconnect and cap existing mechanical and electrical items that are to be removed, abandoned and/or relocated.
5. If, during the process of cutting work, existing utility lines are encountered which are not indicated on the Drawings, regardless of their condition, immediately report such items to the Architect. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection specified in Section 01500 - TEMPORARY FACILITIES AND CONTROLS.
2. Maintain adequate passage to and from all exits at all times. Before any work is done which significantly alters access or egress patterns, consult with the Architect and obtain

approval of code required egress. Under no condition block or interfere with the free flow of people at legally required exits, or in any way alter the required condition of such exits.

B. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area(s).

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction. Provide temporary barricades as required to limit access to demolition areas.
2. Protect existing site improvements, appurtenances, and landscaping to remain.

C. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.

3.4 PROTECTION OF PUBLIC AND PROPERTY

A. Provide all measures required by federal, state and municipal laws, regulations, and ordinances for the protection of surrounding property, the public, workmen, and Commonwealth's employees during all demolition and removal operations. Measures are to be taken, but not limited to installation of sidewalks, sheds, barricades, fences, warning lights and signs, trash chutes and temporary lighting.

B. Protect all walks, roads, streets, curbs, pavements, trees and plantings, on and off premises, and bear all costs for correcting such damage as directed by the Architect, and to the satisfaction of the Owner.

C. Demolition shall be performed in such a manner that will insure the safety of adjacent property. Protect adjacent property from damage and protect persons occupying adjacent property from injuries which might occur from falling debris or other cause and so as not to cause interference with the use of other portions of the building, of adjacent buildings or the free access and safe passage to and from the same.

D. Every precaution shall be taken to protect against movement or settlement of the building, of adjacent buildings, sidewalks, roads, streets, curbs and pavements. Provide and place at the Contractor's own expense, all necessary bracing and shoring in connection with demolition and removal work.

E. Remove portions of structures with care by using tools and methods that will not transfer heavy shocks to existing and adjacent building structures, both internal and external of the particular work area.

F. Provide and maintain in proper condition, suitable fire resistive dust barriers around areas where interior demolition and removal work is in progress. Dust barriers shall prevent the dust migration to adjacent areas. Remove dust barriers upon completion of major demolition and removal in the particular work area.

3.5 DISCOVERY OF HAZARDOUS MATERIALS

A. If hazardous materials, such as chemicals, asbestos-containing materials, or other hazardous materials are discovered during the course of the work, cease work in affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Continue work in other areas.

B. If unmarked containers are discovered during the course of the work, cease work in the affected area only and immediately notify the Architect and the Owner of such discovery. Do not proceed with work in such areas until instructions are issued by the Architect. Take immediate precautions to prohibit endangering the containers integrity. Continue work in other areas.

3.6 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Comply with requirements of Section 01741 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL and the following.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

**END OF SECTION**

**SECTION 042000 - UNIT MASONRY**

**PART 1 - GENERAL**

1.1 DESCRIPTION OF WORK

A. Work Included: Provide labor, materials and equipment necessary to complete the work of this Section, including but not limited to the following:

1. Standard concrete masonry units.
2. Special shapes, sizes and cuts as noted or detailed.
3. Mortar and grout.
4. Reinforcing steel, masonry joint reinforcement, ties and anchors.

B. Items To Be Installed Only: Install the following items as furnished by the designated Sections:

1. Section 05500 - METAL FABRICATIONS:
   a. Lintels, miscellaneous metal and iron sleeves, anchors, inserts and plates to be built into masonry walls.
2. Section 06100 - ROUGH CARPENTRY:
   a. Wood nailers and blocking built into masonry.
3. Section 08111 - STEEL DOORS AND FRAMES:
   a. Hollow metal frames in masonry openings.
4. Section 08411 – ALUMINUM FRAMED ENTRANCES AND STOREFRONTS

C. Related Work: The following items are not included in this Section and will be performed under the designated Sections:

1. Section 07920 - JOINT SEALANTS for sealing control and expansion joints in unit masonry.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Shop Drawings: For the following:

1. Masonry Units: Show sizes, profiles, coursing, and locations of special shapes.
2. Reinforcing Steel: Detail bending and placement of unit masonry reinforcing bars. Comply with ACI 315, "Details and Detailing of Concrete Reinforcement."

C. Qualification Data: For testing agency.

D. Material Certificates: Include statements of material properties indicating compliance with requirements including compliance with standards and type designations within standards. Provide for each type and size of the following:

1. Masonry units:

a. Include material test reports substantiating compliance with requirements.
b. For masonry units used in structural masonry, include data and calculations establishing average net-area compressive strength of units.

2. Cementitious materials. Include brand, type, and name of manufacturer.
3. Mortar mixes. Include description of type and proportions of ingredients.
4. Grout mixes. Include description of type and proportions of ingredients.
5. Reinforcing bars.
6. Joint reinforcement.
7. Anchors, ties, and metal accessories.

E. Mix Designs: For each type of mortar and grout. Include description of type and proportions of ingredients.

1. Include test reports, per ASTM C 780 for mortar mixes required to comply with property specification.
2. Include test reports, per ASTM C 1019 for grout mixes required to comply with compressive strength requirement.

F. Cold-Weather Procedures: Detailed description of methods, materials, and equipment to be used to comply with cold-weather requirements.

## 1.3 QUALITY ASSURANCE

A. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1093 for testing indicated, as documented according to ASTM E 548.

B. Source Limitations for Masonry Units: Obtain exposed masonry units of a uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, through one source from a single manufacturer for each product required.

C. Source Limitations for Mortar Materials: Obtain mortar ingredients of a uniform quality, from a single manufacturer for each cementitious component and from one source or producer for each aggregate.

## 1.4 DELIVERY, STORAGE, AND HANDLING

A. Store masonry units on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied. If units become wet, do not install until they are dry.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

D. Deliver pre-blended, dry mortar mix in moisture-resistant containers designed for lifting and emptying into dispensing silo. Store pre-blended, dry mortar mix in delivery containers on elevated platforms, under cover, and in a dry location or in a metal dispensing silo with weatherproof cover.

E. Store masonry accessories, including metal items, to prevent corrosion and accumulation of dirt and oil.

1.5 PROJECT CONDITIONS

A. Protection of Masonry: During construction, cover tops of walls, projections, and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.
2. Where 1 wythe of multi-wythe masonry walls is completed in advance of other wythes, secure cover a minimum of 24 inches down face next to unconstructed wythe and hold cover in place.

B. Stain Prevention: Prevent grout, mortar, and soil from staining the face of masonry to be left exposed or painted. Immediately remove grout, mortar, and soil that come in contact with such masonry.

1. Protect base of walls from rain-splashed mud and from mortar splatter by spreading coverings on ground and over wall surface.
2. Protect sills, ledges, and projections from mortar droppings.
3. Protect surfaces of window and door frames, as well as similar products with painted and integral finishes, from mortar droppings.
4. Turn scaffold boards near the wall on edge at the end of each day to prevent rain from splashing mortar and dirt onto completed masonry.

C. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Remove and replace unit masonry damaged by frost or by freezing conditions. Comply with cold-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until masonry has dried, but not less than 7 days after completing cleaning.

D. Hot-Weather Requirements: Comply with hot-weather construction requirements contained in ACI 530.1/ASCE 6/TMS 602.

**PART 2 - PRODUCTS**

2.1 MASONRY UNITS, GENERAL

A. Defective Units: Referenced masonry unit standards may allow a certain percentage of units to exceed tolerances and to contain chips, cracks, or other defects exceeding limits stated in the standard. Do not use units where such defects, including dimensions that vary from specified dimensions by more than stated tolerances, will be exposed in the completed Work or will impair the quality of completed masonry.

2.2 CONCRETE MASONRY UNITS (CMUs)

A. Concrete Masonry Units: ASTM C 90, normal weight unless indicated otherwise manufactured to dimensions 3/8 inch less than nominal dimensions.

B. Shapes: Provide standard shapes indicated and as required for building configuration. Provide special shapes for lintels, corners, jambs, sashes, movement joints, headers, bonding, and other special conditions.

2.3 MORTAR AND GROUT MATERIALS

A. Portland Cement: ASTM C 150, Type I or II, except Type III may be used for cold-weather construction. Provide natural color or white cement as required to produce mortar color indicated.

B. Hydrated Lime: ASTM C 207, Type S.

C. Aggregate for Mortar: ASTM C 144. For mortar that is exposed to view, use washed aggregate consisting of natural sand or crushed stone.

D. Aggregate for Grout: ASTM C 404.

E. Water: Potable.

2.4 REINFORCEMENT

A. Uncoated Steel Reinforcing Bars: ASTM A.

B. Masonry Joint Reinforcement, General: ASTM A 951.

1. Exterior Walls: Hot-dip galvanized, carbon steel.

2. Wire Size and Spacing: As required by Code.

## 2.5 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in subsequent paragraphs that are made from materials that comply with subparagraphs below, unless otherwise indicated.

1. Mill-Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 641/A 641M, Class 1 coating.
2. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82; with ASTM A 153/A 153M, Class B-2 coating.
3. Galvanized Steel Sheet: ASTM A 653/A 653M, Commercial Steel, G60 zinc coating.
4. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

## 2.6 MISCELLANEOUS ANCHORS

A. Anchor Bolts: L-shaped steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot-dip galvanized to comply with ASTM A 153/A 153M, Class C; of dimensions indicated.

## 2.7 EMBEDDED FLASHING MATERIALS

A. Laminated Flashing: Copper sheet 5 oz./ sq. ft. bonded with asphalt between two (2) layers of glass-fibre cloth.

## 2.8 MISCELLANEOUS MASONRY ACCESSORIES

A. Compressible Filler: Premolded filler strips complying with ASTM D 1056, Grade 2A1; compressible up to 35 percent; of width and thickness indicated; formulated from neoprene.

B. Preformed Control-Joint Gaskets: Made from styrene-butadiene-rubber compound, complying with ASTM D 2000, Designation M2AA-805 designed to fit standard sash block and to maintain lateral stability in masonry wall; size and configuration as indicated.

C. Bond-Breaker Strips: Asphalt-saturated, organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

D. Weep/Vent Products: Free-draining mesh; made from polyethylene strands, full height and width of head joint and depth 1/8 inch less than depth of outer wythe; in color selected from manufacturer's standard.

2.9 MASONRY CLEANERS

A. Proprietary Acidic Cleaner: Manufacturer's standard-strength cleaner designed for removing mortar/grout stains, efflorescence, and other new construction stains from new masonry without discoloring or damaging masonry surfaces. Use product expressly approved for intended use by cleaner manufacturer and manufacturer of masonry units being cleaned.

1. Available Manufacturers:

a. Diedrich Technologies, Inc.
b. EaCo Chem, Inc.
c. ProSoCo, Inc.

2.10 MORTAR AND GROUT MIXES

A. General: Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, except as otherwise indicated.

1. Do not use calcium chloride in mortar or grout.
2. Limit cementitious materials in mortar to portland cement and lime.

B. Mortar for Unit Masonry: Comply with ASTM C 270, Proportion Specification. Provide the following types of mortar for applications stated unless another type is indicated or needed to provide required compressive strength of masonry.

1. For masonry below grade or in contact with earth, use Type M.
2. For reinforced masonry, use Type S.
3. For exterior, above-grade, load-bearing and non-load-bearing walls and parapet walls; for interior load-bearing walls; for interior non-load-bearing partitions; and for other applications where another type is not indicated, use Type N.

**PART 3 - EXECUTION**

3.1 INSTALLATION, GENERAL

A. Thickness: Build composite walls and other masonry construction to full thickness shown. Build single-wythe walls to actual widths of masonry units, using units of widths indicated.

B. Build chases and recesses to accommodate items specified in this and other Sections.

C. Leave openings for equipment to be installed before completing masonry. After installing equipment, complete masonry to match the construction immediately adjacent to opening.

D. Use full-size units without cutting if possible. If cutting is required to provide a continuous pattern or to fit adjoining construction, cut units with motor-driven saws; provide clean, sharp, unchipped edges. Allow units to dry before laying unless wetting of units is specified. Install cut units with cut surfaces and, where possible, cut edges concealed. Do not use units cut to less than one-half size.

E. Do not install concrete masonry units with more than 5 percent damage to the face. Do not install masonry units which will show defects after installation. Cracked or damaged units shall be removed and replaced as directed by the Owner or Architect.

F. Select and arrange units for exposed unit masonry to produce a uniform blend of colors and textures. Mix units from several pallets or cubes as they are placed.

G. Comply with construction tolerances in ACI 530.1/ASCE 6/TMS 602 and with the following:

1. For conspicuous vertical lines, such as external corners, door jambs, reveals, and expansion and control joints, do not vary from plumb by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
2. For vertical alignment of exposed head joints, do not vary from plumb by more than 1/4 inch in 10 feet, or 1/2 inch maximum.
3. For conspicuous horizontal lines, such as lintels, sills, parapets, and reveals, do not vary from level by more than 1/8 inch in 10 feet, 1/4 inch in 20 feet, or 1/2 inch maximum.
4. For exposed bed joints, do not vary from thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to 1/2 inch. Do not vary from bed-joint thickness of adjacent courses by more than 1/8 inch.
5. For exposed head joints, do not vary from thickness indicated by more than plus or minus 1/8 inch. Do not vary from adjacent bed-joint and head-joint thicknesses by more than 1/8 inch.
6. For faces of adjacent exposed masonry units, do not vary from flush alignment by more than 1/16 inch except due to warpage of masonry units within tolerances specified for warpage of units.

## 3.2 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint thicknesses and for accurate location of openings, movement-type joints, returns, and offsets. Avoid using less-than-half-size units, particularly at corners, jambs, and, where possible, at other locations.

B. Bond Pattern for Exposed Masonry: Unless otherwise indicated, lay exposed masonry in running bond; do not use units with less than nominal 4-inch horizontal face dimensions at corners or jambs. Prior to installation review bond pattern with Architect and the Owner.

C. Stopping and Resuming Work: Stop work by racking back units in each course from those in course below; do not tooth. When resuming work, clean masonry surfaces that

are to receive mortar, remove loose masonry units and mortar, and wet brick if required before laying fresh masonry.

D. Built-in Work: As construction progresses, build in items specified in this and other Sections. Fill in solidly with masonry around built-in items.

E. Fill space between steel frames and masonry solidly with mortar, unless otherwise indicated.

F. Fill cores in hollow concrete masonry units with grout 24 inches under bearing plates, beams, lintels, posts, and similar items, unless otherwise indicated. Fill all below-grade concrete masonry units solid.

## 3.3 MORTAR BEDDING AND JOINTING

A. Lay concrete masonry units as follows:

1. With face shells fully bedded in mortar and with head joints of depth equal to bed joints.
2. With webs fully bedded in mortar in all courses of piers, columns, and pilasters.
3. With webs fully bedded in mortar in grouted masonry, including starting course on footings.
4. With entire units, including areas under cells, fully bedded in mortar at starting course on footings where cells are not grouted.

B. Lay solid masonry units with completely filled bed and head joints; butter ends with sufficient mortar to fill head joints and shove into place. Do not deeply furrow bed joints or slush head joints.

C. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness, unless otherwise indicated. Provide “weathered” (sloped) joint at top of projected accent courses.

D. Cut joints flush for masonry walls to receive plaster or other direct-applied finishes (other than paint), unless otherwise indicated.

## 3.4 MASONRY JOINT REINFORCEMENT

A. General: Install entire length of longitudinal side rods in mortar with a minimum cover of 5/8 inch on exterior side of walls, 1/2 inch elsewhere. Lap reinforcement a minimum of 6 inches. Space reinforcement not more than 16 inches o.c.

B. Interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Provide continuity at wall intersections by using prefabricated T-shaped units.

D. Provide continuity at corners by using prefabricated L-shaped units.

## 3.5 CONTROL AND EXPANSION JOINTS

A. General: Install control and expansion joint materials in unit masonry as masonry progresses. Do not allow materials to span control and expansion joints without provision to allow for in-plane wall or partition movement.

## 3.6 LINTELS

A. Install steel lintels where indicated.

B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

## 3.7 FLASHING, WEEP HOLES, CAVITY DRAINAGE, AND VENTS

A. General: Install embedded flashing and weep holes in masonry at lintels, other obstructions to downward flow of water in wall, and where indicated.

B. Install flashing as follows, unless otherwise indicated:

1. Prepare masonry surfaces so they are smooth and free from projections that could puncture flashing. Where flashing is within mortar joint, place through-wall flashing on sloping bed of mortar and cover with mortar. Before covering with mortar, seal penetrations in flashing with adhesive, sealant, or tape as recommended by flashing manufacturer.
2. At lintels extend flashing a minimum of 6 inches into masonry at each end. At heads and sills, extend flashing 6 inches at ends and turn up not less than 2 inches to form end dams.

C. Install reglets and nailers for flashing and other related construction where they are shown to be built into masonry.

D. Install weep holes in head joints in exterior wythes of first course of masonry immediately above embedded flashing and as follows:

1. Use open head joints to form weep holes.
2. Space weep holes 24 inches o.c., unless otherwise indicated.

E. Place cavity drainage material in cavities to comply with configuration requirements for cavity drainage material in Part 2 "Miscellaneous Masonry Accessories".

## 3.8 REPAIRING, POINTING, AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Install new units to match adjoining units; install in fresh mortar, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge voids and holes, except weep holes, and completely fill with mortar. Point up joints, including corners, openings, and adjacent construction, to provide a neat, uniform appearance. Prepare joints for sealant application, where indicated.

C. In-Progress Cleaning: Clean unit masonry as work progresses by dry brushing to remove mortar fins and smears before tooling joints.

D. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:

1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
2. Test cleaning methods on sample wall panel; leave one-half of panel uncleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning of masonry.
3. Protect adjacent non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent or polyethylene film and waterproof masking tape.
4. Wet wall surfaces with water before applying cleaners; remove cleaners promptly by rinsing surfaces thoroughly with clear water.
5. Clean concrete masonry by cleaning method indicated in NCMA TEK 8-2A applicable to type of stain on exposed surfaces.

## 3.9 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.

1. Crush masonry waste to less than 4 inches in each dimension.
2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 02300 - EARTHWORK.
3. Do not dispose of masonry waste as fill within 18 inches of finished grade.

C. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off the Site.

**END OF SECTION**

**SECTION 061053 - MISCELLANEOUS GENERAL CARPENTRY**

## PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for treated wood.

## PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA C2, except that lumber not in ground contact and not exposed to the weather may be treated according to AWPA C31 with inorganic boron (SBX).

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for all miscellaneous rough carpentry unless otherwise indicated.

1. Wood members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

C. Fire-Retardant-Treated Materials: Comply with performance requirements in AWPA C20.

1. Use Exterior type for exterior locations and where indicated.
2. Use Interior Type A, High Temperature (HT) where indicated.
3. Use Interior Type A unless otherwise indicated.
4. Identify with appropriate classification marking of a testing and inspecting agency acceptable to authorities having jurisdiction.

D. Provide fire-retardant treated materials for all miscellaneous rough carpentry.

2.3 LUMBER

A. Dimension Lumber:

1. Maximum Moisture Content: 15 percent.
2. Miscellaneous Framing: Construction, Stud, or No. 3.

B. Exposed Boards: Eastern white, Idaho white, lodgepole, ponderosa, or sugar pine, Premium or 2 Common (Sterling): NeLMA, NLGA, WCLIB, or WWPA; with 15 percent maximum moisture content.

C. Concealed Boards: Eastern softwoods, No. 3 Common: NELMA; with 15 percent maximum moisture content.

D. Miscellaneous Lumber: Standard, Stud, or No. 3 grade with 15 percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.4 PLYWOOD BACKING PANELS

A. Telephone and Electrical Equipment Backing Panels: Plywood, Exterior, fire-retardant treated, not less than 1/2-inch nominal thickness.

2.5 FASTENERS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

1. Power-Driven Fasteners: CABO NER-272.

**PART 3 - EXECUTION**

3.1 INSTALLATION

A. Set miscellaneous rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach miscellaneous rough carpentry to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in the IBC.

**END OF SECTION 061053**

**SECTION 079000 – JOINT SEALERS**

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Preparing substrate surfaces, both new and existing.
B. Sealant and joint backing for all new work.
C. Sealant for all existing joints in exterior masonry construction and exterior joints between dissimilar materials such as between masonry and glazing systems; and masonry and hollow metal frames.

1.2 RELATED SECTIONS

A. Section 033000 - Cast-In-Place Concrete: Sealants required in conjunction with cast-in-place concrete.
B. Section 042000 - Unit Masonry Systems: Sealants required in conjunction with masonry.

1.3 REFERENCES

A. ASTM C790 - Use of Latex Sealing Compounds.
B. ASTM C804 - Use of Solvent-Release Type Sealants.
C. ASTM C834 - Latex Sealing Compounds.
D. ASTM C920 - Elastomeric Joint Sealants.
E. ASTM D1565 - Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open-Cell Foam).
F. SWRI (Sealant, Waterproofing and Restoration Institute) - Sealant and Caulking Guide Specification.

1.4 SUBMITTALS

A. Submit under provisions of Section 013300.
B. Product Data: Provide data indicating sealant chemical characteristics, performance criteria, substrate preparation, limitations, and color availability.
C. Samples: Submit two samples, illustrating sealant colors for selection.
D. Manufacturer's Installation Instructions: Indicate special procedures, surface preparation, and perimeter conditions requiring special attention.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with sealant manufacturer's requirements for preparation

of surfaces and material installation instructions.
B. Perform acoustical sealant application work in accordance with ASTM C919.

1.6 QUALIFICATIONS

A. Manufacturer: Company specializing in manufacturing the Products specified in this section with minimum three years experience.
B. Applicator: Company specializing in performing the work of this section with minimum 3 years experience.

1.7 ENVIRONMENTAL REQUIREMENTS

A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.8 COORDINATION

A. Coordinate work under provisions of Section 013100.
B. Coordinate the work with all sections referencing this section.

PART 2 PRODUCTS

2.1 SEALANTS

A. Acrylic Emulsion Latex (Type A): ASTM C834, single component; color as selected; Acrylic Latex 834 manufactured by Tremco.
B. One Part Acrylic Terpolymer (Type B): single component, no mixing, non-staining, color as selected; MONO manufactured by Tremco.
C. Acoustical Sealant (Type C): Non-hardening, non-drying, non-bleeding; Acoustical Sealant manufactured by Tremco.

2.2 ACCESSORIES

A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
C. Joint Backing: ASTM D1056; round, closed cell polyethylene foam rod; oversized 30 to 50 percent larger than joint width.
D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that substrate surfaces and joint openings are ready to receive work.
B. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION OF NEW AND EXISTING JOINTS

A. Remove loose materials and foreign matter which might impair adhesion of sealant. For existing joints to be recaulked, remove existing sealant in its entirety.
B. Clean and prime joints in accordance with manufacturer's instructions.
C. Perform preparation in accordance with manufacturer's instructions.
D. Protect elements surrounding the work of this section from damage or disfiguration.

3.3 INSTALLATION

A. Install sealant in accordance with manufacturer's instructions. Seal all joints in new and existing exterior masonry work, joints between exposed architectural metals and adjoining masonry and elsewhere as noted or specified. Caulk all joints between gypsum products and differing materials. Apply acoustical sealant at perimeters of acoustical barriers or partitions.
B. Measure joint dimensions and size materials to achieve required width/depth ratios.
C. Install joint backing to achieve a neck dimension no greater than 1/3 of the joint width.
D. Install bond breaker where joint backing is not used.
E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
F. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
G. Tool joints concave.

3.4 CLEANING

A. Clean work under provisions of 017000.
B. Clean adjacent soiled surfaces.

3.5 PROTECTION OF FINISHED WORK

A. Protect finished installation under provisions of Section 015000.
B. Protect sealants until cured.

3.6 SCHEDULE

| Location | Type | Color |
|---|---|---|
| A. Masonry | B | As Selected |
| B. Window Perimeter | B | As Selected |
| C. Metal Roofing | B | As Selected |
| D. Door Frame/Walls | B | As Selected |
| E. Under Thresholds | B | As Selected |
| F. General Interior Use | A | As Selected |
| G. Exterior Uses | B | As Selected |
| H. Acoustical Barriers | C | Charcoal Gray |

END OF SECTION

**SECTION 092900 - GYPSUM BOARD**

**PART 1 - GENERAL**

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

**PART 2 - PRODUCTS**

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

2.2 PANEL PRODUCTS

A. Provide in maximum lengths available to minimize end-to-end butt joints.

B. Interior Gypsum Board: ASTM C 36/C 36M or ASTM C 1396/C 1396M, 1/2-inch in thickness unless otherwise indicated on Drawings, with manufacturer's standard edges. Type X where indicated; Sag-resistant type for ceiling surfaces.

C. Exterior Gypsum Sheathing: ASTM C 1177, 5/8-inch in thickness unless otherwise indicated on Drawings. Type X where required for fire-resistance-rated assemblies and where indicated.

1. Product: FIBEROCK Aqua-Tough Sheathing by USG Corporation.

2.3 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet.

1. Provide corner-bead at outside corners unless otherwise indicated.
2. Provide LC-bead (J-bead) at exposed panel edges.
3. Provide control joints where indicated.

B. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
2. Joint Compounds: Drying-type, ready-mixed, all-purpose compounds.
3. Skim Coat: For final coat of Level 5 finish, use drying-type, all-purpose compound.
4. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.

C. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.

D. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

## PART 3 - EXECUTION

3.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840.

1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers and face layer separately to supports with screws.

B. Install cementitious backer units to comply with ANSI A108.11.

C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

D. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
2. At substrates for ceramic tile and acoustical ceiling tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.
4. Where indicated, provide Level 5 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges. Apply skim coat to entire surface.

**END OF SECTION 092900**

**SECTION 096500 RESILIENT FLOORING**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

A. Luxury Vinyl Tile (U/T)
B. Resilient rubber base.

1.2 REFERENCES

A. ASTM E84 - Surface Burning Characteristics of Building Materials
B. ASTM F1700 – Class III Printed Film Plank Type B.
C. FS SS-W-40 - Wall Base: Rubber and Vinyl Plastic

1.3 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame/fuel/smoke rating requirements in accordance with ASTM E84.

1.4 SUBMITTALS

A. Submit shop drawings and product data under provisions of Division 1.
B. Provide product data on specified products, describing physical and performance characteristics, sizes, patterns, and colors available.
C. Submit one sample 2 x 2 inches in size, illustrating color and pattern for each floor materials specified.
D. Submit manufacturer's installation instructions.

1.5 OPERATION AND MAINTENANCE DATA

A. Submit cleaning and maintenance data under provisions of Division 1.
B. Maintain ambient temperature required by adhesive manufacturer three days prior to, during, and 24 hours after installation of materials.

1.6 ENVIRONMENTAL REQUIREMENTS

A. Store materials for three days prior to installation in area of installation to achieve temperature stability.
B. Maintain ambient temperature required by adhesive manufacturer three days prior to, during and 24 hours after installation of materials.

**PART 2 PRODUCTS**

2.1 MANUFACTURERS – LUXURY VINYL TILE

A. SHAW CONTRACT, SOLITUDE (Color to be selected from Manufacturer’s full range.)

2.2 ACCEPTABLE MANUFACTURERS - BASE MATERIALS

A. Johnsonite - colors as selected by Architect.

2.3 BASE MATERIALS

1. Base: Type I rubber; 4 inch high; 1/8 inch thick; top set coved; premolded external corners.
2. Base Accessories: Premolded end stops and external corners, of same material, size, and color as base.

2.4 ACCESSORIES

A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
B. Primers and Adhesives: Waterproof; types recommended by flooring manufacturer.
C. Edge Strips: Flooring material.
D. Sealer and Wax: Types recommended by flooring manufacturer.
E. Engineered Wood Underlayment: Minimum Thickness ¼" as recommended by the flooring manufacturer.

**PART 3 EXECUTION**

3.1 EXAMINATION

A. Verify that surfaces are smooth and flat with maximum variation of 1/8 inch in 10 ft and are ready to receive Work.
B. Beginning of installation means acceptance of existing substrate and site conditions.

3.2 PREPARATION

A. Remove sub-floor ridges and bumps. Install ¼" underlayment throughout. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.
B. Apply, trowel, and float filler to leave a smooth, flat, hard surface.
C. Prohibit traffic from area until filler is cured.
D. Vacuum clean substrate.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

3.4 PROTECTION

A. Prohibit traffic on floor finish for 48 hours after installation.

3.5 CLEANING

A. Remove excess adhesive from floor, base, and wall surfaces without damage.
B. Clean, seal, and wax floor and base surfaces in accordance with manufacturer's instructions.

3.6 SCHEDULE

A. Refer to Finish Schedule on Drawing for locations of materials. Patterns and layout, if not shown on Drawings, will be provided by Architect.

**END OF SECTION 0965**

**SECTION 099100 PAINTING**

**PART 1 - GENERAL**

1.1 SUMMARY

A. Section Includes:
1. Surface preparation and field painting of exposed exterior and interior items and surfaces.

1.2 SUBMITTALS

A. Product Data: For each product indicated.
B. Samples: For each type of finish-coat material indicated.

1.3 QUALITY ASSURANCE

A. Samples (Mockups): Provide a full-coat finish sample for each type of coating and substrate required. Comply with procedures specified in PDCA P5.
1. Wall Surfaces: Provide samples on at least 100 sq. ft.
2. Small Areas and Items: Architect will designate items or areas required.
3. Finals approval of colors will be from samples.

1.4 PROJECT CONDITIONS

A. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain storage containers in a clean condition, free of foreign materials and residue.
B. Apply waterborne paints only when temperatures of surfaces to be painted and surrounding air are between 50 and 90 deg F.
C. Apply solvent-thinned paints only when temperatures of surfaces to be painted and surrounding air are between 45 and 95 deg F.
D. Do not apply paint in snow, rain, fog, or mist; or when relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1.5 EXTRA MATERIALS

A. Furnish extra paint materials from the same production run as the materials applied and in the quantities described below. Package with protective covering for storage and identify with labels describing contents. Deliver extra materials to Owner.
1. Quantity: 5 percent, but not less than 1 gal. or 1 case, as appropriates, of each material and color applied.

**PART 2 - PRODUCTS**

2.1 MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the products listed in other Part 2 articles.
B. Approved Manufacturers:
1. Sherwin-Williams Co.

2.2 PAINT MATERIALS, GENERAL

A. Materials Compatibility: Provide black fillers, primers, and finish-coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
B. Material Quality: Provide manufacturer's best-quality paint materials of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint material containers not displaying manufacturer's product identification will not be acceptable.
C. Colors: As selected from manufacturer's full range.

2.3 PREPARATORY COATS

A. Concrete Unit Masonry Block Filler: High-performance latex block filler of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
B. Exterior Primer: Exterior alkyd or latex-based primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
   1. Ferrous-Metal and Aluminum Substrates: Rust-inhibitive metal primer.
   2. Zinc-coated metal substrates: Galvanized metal primer.
   3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.
C. Interior Primer: Interior latex-based or alkyd primer of finish coat manufacturer and recommended in writing by manufacturer for use with finish coat and on substrate indicated.
   1. Ferrous-Metal Substrates: Quick drying, Rust-inhibitive metal primer.
   2. Zinc-coated metal substrates: Galvanized metal primer.
   3. Where manufacturer does not recommend a separate primer formulation on substrate indicated, use paint specified for finish coat.

2.4 EXTERIOR FINISH COATS

A. Exterior Low-Luster Acrylic Paint:
   1. Sherwin-Williams; A-100 Exterior Latex Satin House & Trim Paint A82 Series.
B. Exterior Semigloss Acrylic Enamel:
   1. Sherwin-Williams; A-100 Latex Gloss A8 Series.
C. Exterior Full-Gloss Acrylic Enamel for Concrete, Masonry, and Wood:
   1. Sherwin-Williams; SuperPaint Exterior High Gloss Latex Enamel A85 Series.
D. Exterior Full-Gloss Acrylic Enamel for Ferrous and Other Metals:
   1. Sherwin-Williams; DTM Acrylic Coating Gloss (Waterborne) B66W100 Series.

2.5 INTERIOR FINISH COATS

A. Interior Low-Luster Acrylic Enamel:
   1. Sherwin-Williams; "Super Paint" Acrylic Latex Enamel.
B. Interior Semigloss Acrylic Enamel:
   1. Sherwin-Williams; "Super Paint" Acrylic Latex Enamel.
C. Interior Full-Gloss Acrylic Enamel:
   1. Sherwin-Williams; "Super Paint" Acrylic Latex Enamel.

**PART 3 - EXECUTION**

3.1 APPLICATION

A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements

for paint application.

B. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.

C. Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of size or weight of the items, provide surface-applied protection before surface preparation and painting.
   1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved.

D. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instruction for each particular substrate condition and as specified.
   1. Provide barrier coats over incompatible primers or remove and reprime.
   2. Cementations Materials: Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
   3. Wood: Clean surfaces of dirt, oil, and other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sand surfaces exposed to view smooth and dust off.
      a. Scrape and clean small, dry, seasoned knots, and apply a thin coat of white shellac or other recommended knot sealer before applying primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sand smooth when dried.
      b. Prime, Stain, or seal wood to be painted immediately on delivery. Prime edges, ends, faces, undersides, and back sides of wood, including cabinets, counters, cases, and paneling.
      c. If transparent finish is required, back prime with spar varnish.
      d. Back prime paneling on interior partitions where masonry, plaster, or other wet wall construction occurs on backside.
      e. Seal tops, bottoms, and cutouts of unprimed wood doors with a heavy coat of varnish or sealer immediately on delivery.
   4. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with SSPC's recommendations.
      a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire brush, clean with solvents recommended by paint manufacturer, and touch up with same primer as the shop coat.
   5. Galvanized Surfaces: Clean galvanized surfaces with nonpetroleum-based solvents so surface is free and surface contaminants. Remove pretreatment from galvanized sheet metal fabricated from stock by mechanical methods.

E. Material Preparation:
   1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
   2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.

F. Exposed Surfaces: Include areas visible when permanent or built-in fixtures, grilles, convector covers, covers for finned-tube radiation and similar components are in place. Extend coatings in these areas, as required, to maintain system integrity and provide desired protection.
   1. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
   2. Paint interior surfaces of ducts with a flat, nonspecular black paint where visible through registers or grilles.
   3. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
   4. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.

5. Finish interior of wall and base cabinets and similar field-finished casework to match exterior.

G. Sand lightly between each succeeding enamel or varnish coat.

H. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
   1. Omit primer over metal surfaces that have been shop primed and touchup painted.
   2. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance.

I. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to to manufacturer's written instructions.

J. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide total dry film thickness of the entire system as recommended by manufacturer.

K. Mechanical and Electrical Work: Painting of mechanical and electrical work is limited to items exposed in equipment rooms and occupied spaces.

L. Block Fillers: Apply block fillers to concrete masonry block at a rate to ensure complete coverage with pores filled.

M. Prime Coats: Before applying finish coats, apply a prime coat, as recommended by manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots of unsealed areas in first coat appears, to ensure a finish-coat with no burn-through or other defects due to insufficient sealing.

N. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

O. Stipple Enamel Finish: Roll and redistribute paint to an even and fine texture. Leave no evidence of rolling, such as laps, irregularity in texture, skid marks, or other surface imperfections.

## 3.2 CLEANING AND PROTECTING

A. At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from Project site.

B. Protect work of other trades, whether being painted or not, against damage from painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Architect.

C. Provide "Wet Paint" signs to protect newly painted finishes. After completing painting operations, remove temporary protective wrappings provided by other to protect their work.
   1. After work of other trades is complete, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PCDA P1.

## 3.3 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal:
   1. Acrylic Finish: Two finish coats over a rust-inhibitive primer.
      a. Primer: Exterior ferrous-metal primer (not required on shop primed items).
      b. Finish Coats: Exterior full-gloss acrylic enamel for ferrous and other metals.

B. Zinc-Coated Metal:
   1. Acrylic Finish: Two finish coats over a galvanized metal primer.
      a. Primer: Exterior galvanized metal primer.
      b. Finish Coats: Exterior full-gloss acrylic enamel for ferrous and other metals.

## 3.4 INTERIOR PAINT SCHEDULE

A. Concrete Unit Masonry:
   1. Acrylic Finish: Two finish coats over a block filler.

a. Block Filler: Concrete unit masonry block filler.
b. Finish Coats: Interior semigloss acrylic enamel.

B. Gypsum Board:
1. Acrylic Enamel Finish: Two finish coats over a primer.
a. Primer: Interior gypsum board primer.
b. Finish Coats: Interior semigloss acrylic enamel.

C. Wood and Hardboard:
1. Acrylic-Enamel Finish: Two finish coats over a primer.
a. Primer: Interior wood primer for acrylic-enamel and semigloss alkyd enamel finishes.
b. Finish Coats: Interior semigloss acrylic enamel.

D. Ferrous Metal:
1. Acrylic Finish: Two finish coats over a primer.
a. Primer: Interior ferrous-metal primer.
b. Finish Coats: Interior semigloss acrylic enamel.

E. Zinc-Coated Metal:
1. Acrylic Finish: Two finish coats over a primer.
a. Primer: Interior zinc-coated metal primer.
b. Finish Coats: Interior semigloss acrylic enamel.

**END OF SECTION 099100**

# SECTION 231000 - MECHANICAL MATERIALS AND METHODS

## PART 1- GENERAL

1.1 SPECIAL NOTICE

A. Each Contractor shall read all relevant documents, become familiar with the job, the scope of work type of general construction architectural, structural, mechanical and electrical drawings and the specifications. Each Contractor shall also familiarize himself with the purpose for which these documents have been prepared and shall become cognizant of all the details involved. Each Contractor shall coordinate his work with that of others to the end that unnecessary delays be avoided.

B. The term "Contractor" used in this section of the specification shall mean the Contractor whose work is covered by this section.

C. When the term "Engineer" is used in this section of the specification, it shall mean the consulting mechanical engineer.

1.2 FLAME SPREAD PROPERTIES OF MATERIALS

A. All materials and adhesives used for acoustical linings, jackets and insulation shall comply with requirements of NFPA 90A and 90B and UL. 40 V.8.15. Products exceeding a flame spread rating of 25, or a smoke developed rating of 50, as determined by ASTM Test Method E-84 are prohibited. Adhesives and sealers shall be fire retardant and fire resistant when dry. Flame proofing treatments which are subject to decomposition, deterioration, or the effects of moisture are prohibited.

## PART 1 - PRODUCTS

2.1 PIPE HANGERS AND SUPPORTS

A. All horizontal runs of piping shall be suspended from the structural members above by means of approved hangers spaced as scheduled. Supports and hangers shall be installed to permit free expansion and contraction. The piping shall be guided and firmly anchored. No piping shall be self-supporting, nor shall it be supported from the equipment connections or the suspension system furnished for suspended ceilings.

B. All hangers shall be properly sized to fit the pipe or the insulation around the pipe which they are supporting. All hangers shall bear the name of the manufacturer by whom they are made. Pipe hangers shall be formed steel clevis type hanger with adjustable attachment to hanger rod. Hangers shall be properly sized to support weight of piping under operating conditions as recommended in the manufacturers' published literature. For uninsulated copper or brass piping, use hangers as specified above except that they shall be copper plated or plastic sheathed wherever they will be in contact with the copper pipe.

C. Hangers shall be fastened to the construction by the use of malleable iron adjustable clamps, properly designed and sized for steel encountered and installed with lock nuts or bolts securely tightened. Hangers, rollers, inserts, beam clamps and riser clamps shall be standard products of the same recognized manufacturer.

D. All miscellaneous steel necessary for supporting the pipe systems from pipe hangers shall be included as part of this section of the work. Necessary trapeze, rods, bolts and accessories, clamps, weld clips, angle iron brackets or other approved means shall be used for attaching supporting steel to the building construction. Where additional steel members are required for hanging the lines in areas with special conditions, the steel work shall be provided as part of this contract.

E. Each fitting and length of cast iron pipe shall be separately supported by installing the pipe hanger immediately behind the hub. Generally, hangers shall be on 5 foot centers, but if 10 foot length of cast iron pipe is used, hangers may be spaced 10 foot on centers

F. All plastic piping systems such PVC, polypropylene and fiberglass reinforced epoxy unless otherwise specified or detailed shall be supported in full accordance with the manufacturer's published instructions. Installation bulletins shall be submitted with shop drawings.

2.2 FLOOR AND CEILING PLATES

A. In each finished space, furnish a chromium plated sectional escutcheon on each pipe or hanger rod penetrating a wall, floor or ceiling. Escutcheons shall be sized to fit snugly to all lines and where the lines are insulated, the escutcheons shall be fit snugly over the insulation. Where required, these plates shall be provided with set screws so that they shall fit snugly against the finished surface. Furnish a galvanized or aluminum collar and flange on all ducts passing through floors, walls or ceilings.

2.3 ACCESS DOORS

A. Each subcontractor, under the mechanical sections of the work, shall furnish and turn over to the General Contractor for installation access doors as required to operate and service all equipment and valves furnished and installed by him. Access doors shall be of the size indicated on the drawings or required for proper access to equipment. See Section 09280 – Gypsum Board Assemblies for details.

B. Approved Manufacturers: Milcor, Zurn, Wade, and Josam.

2.4 VALVES AND COCKS

A. Valves and cocks shall be furnished and installed in all branches serving more than one piece of equipment such as pumps, tanks, coils, etc. for shut-off branch mains, eliminating the necessity of interrupting service to the entire building structure for maintenance purposes and where indicated. Valves shall be installed with the best workmanship and appearance and grouping so that all parts are easily accessible. Manufacturer's figure numbers are specified to indicate type and quality and construction and products of approved manufacturers may be substituted for those specific numbers shown. Valves for similar service shall be of the same manufacturer. Pressure rating specified for valves are steam working pressure regardless of the services for which used except where noted as WWP.

B. All materials herein shall comply with ANSI 61, Drinking Water System Components

C. Sizes:
2½" and Smaller
Gate 125 # Crane Co. #428
Valve BB, Screwed
Globe 300# Crane Co. #7
Valves BB, Union Bonnet
Check 125# Crane Co. #34
Valves BB, Screwed
PVC Valves to be true union ball valves

D. Valves for PEX piping systems shall be 2-piece, full port, lead free brass with PEX ends for use in PEX piping systems with forged lead free brass body and adapter as manufactured per the ASTM F1807 standard.

Sizes:
1" and Smaller
Watts LFFBV-PEX

E. Hose Bibbs
Nibco QT56X12 – ½" copper sweat or male thread.

F. Approved Manufacturers: Crane, Homestead, Kennedy, Rockwell, Walworth, Nibco, Watts, Wolverine and Hammond.

2.5 COMBINATION TEMPERATURE AND PRESSURE RELIEF VALVES

A. Combination temperature and pressure relief valves shall be furnished and installed on all hot water tanks and heaters. Valves shall be constructed and rated in accordance with ASME standards. Valves shall have cast iron bodies, shall be of the diaphragm type, constructed with stainless steel spring. All units shall be field adjustable set to relieve above the operating pressure of the system, but not higher than the design pressure of the tank. Relief connections shall be piped to the nearest floor drain.

B. Approved Manufacturers: Bell & Gossett, Taco, Watts, Spence, McDonnell and Miller.

2.6 UNIONS

A. Unions shall be installed on each side of each piece of equipment and each automatic control valve in locations that will permit easy removal of equipment or valve for service. Unions shall not be located in concealed spaces.

B. Approved Manufacturers: Crane, Rockwell and Walworth.

C. Connection of pipes of different metallic construction shall utilize the proper dielectric union to prevent electrolytic corrosion.

2.7 STRAINERS

A. Strainers shall be of the basket or wye type in sizes as indicated on the drawings and shall be provided with 1/2 inch valved drain and unless the strainer design is devoid of air pockets, a 1/4 inch air vent cock.

B. All strainers shall have cast iron or bronze bodies of ample strength for the pressure to which they shall be subjected, removable cylindrical or conical screens of nickel, copper or brass and suitable flanges or tappings to connect with the piping they serve. Strainers 2½ inches and larger shall be provided with flanged covers.

C. The free area of each screen shall not be less than three times the area of the strainer inlet and the mesh size shall be suitable for the service intended.

D. Approved Manufacturers: Armstrong, Cash, Crane, Keckley, McAlear, Mueller, and Sarco.

2.8 WATER HAMMER ARRESTORS

A. Water hammer arrestors shall be installed in this project at the discretion of the project engineer. Install one water hammer arrestor on each hot water and each cold water pipe to each plumbing fixture or behind each group of plumbing fixtures. Water hammer arrestors shall be constructed from copper or stainless steel and installed in accordance with manufacturer's specifications. Arrestors shall be installed as close as possible to quick-acting valves and conform to ASSE 1010.

B. Approved Manufacturers: Watts.

2.9 COMBUSTION AIR PASSIVE INTAKE

A. Combustion air intake shall be provided at all utility rooms serving fuel fired hot water and/or laundry equipment. Passive intake shall be minimum 6", thru wall type as manufactured by Dayton or equal.

2.10 IDENTIFICATION AND LABELING

A. General: Make it possible for the personnel operating and maintaining the equipment and systems in this project to readily be able to identify the various pieces of equipment, valves, piping, etc., by marking them. All items of equipment such as fans, pumps, etc., shall be clearly, marked using engraved nameplates as here-in-after specified.

B. Equipment Nameplates: All items of mechanical and electrical equipment shall be identified by the attachment of engraved nameplates constructed form laminated phenolic plastic, at least 1/16" thick, 3-ply, with black surfaces and white core. Engraving shall be condensed gothic, at least 1/2" high, appropriately spaced. Nomenclature on the label shall include the name of the item, its mark number, area, space, or equipment served, and other pertinent information.

C. Valve Tags: Provide and install identification tags sequentially numbered. These tags are to be affixed to only those valves of which the functions are not obvious. For example, it would not be expected that valves at a pump in a machine room would be tagged. These tags shall be 1/8" thick brass discs, 1½" in diameter. Each tag shall be attached to its valve with copper clad annealed iron wire or other approved material. Valves above the ceilings shall have a red, 1/2" round or square, press tape marking on the ceiling access panel or the tee bar at lift-out ceiling panel access.

D. Pipe Identification Markers: In addition, pipe runs throughout the building including those lift-out ceilings, under floor, and those exposed to view when access doors or access panels are opened, shall be identified by means of Brady Markers. Concealed areas, for purposes of this identification section, are those areas which cannot be seen except by demolition of the building elements. Markers shall be made of laminated plastics and shall have acrylic plastic over coating to shed dirt, grease, and, moisture. In addition to the pipe markers, arrow markers shall be used to indicate the direction of flow. The following specific instruction shall apply to the application of these markers.
   1. Provide a pipe marker at each valve to indicate proper identification of pipe contents. Where several valves exist on one header, it is necessary to mark only the header.
   2. Provide an arrow marker with each pipe marker pointing away from the pipe marker to indicate direction of flow.
   3. Provide a double-ended arrow marker when flow can be in either or both directions.
   4. Provide a pipe marker and arrow marker at every point of pipe entry or exit where the lines go through a wall or service column.
   5. Provide pipe markers and arrow markers at intervals not exceeding 5 feet.
   6. Markers shall be located on the two lower quarters of the pipe where view is unobstructed.
   7. Use Brady Marker with 2" letter height on pipes with outside diameters (including insulation) of 3" or more. Use 1" letter height on all pipes with outside diameters less than 3".
   8. Brady Markers shall conform to ASA A-13 "Scheme for the Identification of Piping Systems." Arrow markers must have the same ASA background colors as their companion pipe markers.
   9. Brady Markers shall have a 3/4" pressure sensitive adhesive strip on the inside edge of each marker to seal the marker to itself.

**PART 2 - EXECUTION**

3.1 EQUIPMENT FOUNDATIONS

A. All concrete equipment foundations and bases required for the installation of mechanical work hereinafter specified will be furnished and installed by the General Contractor. Each subcontractor shall be responsible for the proper coordination of his equipment with these bases. He shall furnish all anchor bolts and other accessories required for casting bases and setting of all sleeves and/or anchor bolts.

B. After equipment is set on concrete bases, the equipment shall be fully grouted to the base filing all void spaces with a non-shrinking grout.

C. All roof top equipment shall be properly bolted or fastened to the structural steel framework to prevent movement under high wind and adverse weather conditions.

D. Curbs shall be installed around the perimeter of roof top equipment.

3.2 EXCAVATION AND BACKFILL

A. All necessary excavation and backfill for the installation of the mechanical work shall be accomplished by each subcontractor under his phase of the work. All such work shall be included regardless of the type of materials encountered in the excavation. All excavation on this project shall be performed in accordance with applicable sections of Division 2 of the specifications or this article of the specification, whichever is the most stringent.

B. Trenches for all underground piping shall be excavated to the required depths. The bottoms of the trenches shall be tamped hard and graded to secure maximum fall. Bell holes shall be excavated to assure the pipes resting for its entire length on solid ground. Should rock be encountered, it shall be excavated to a depth of 6 inches below the bottom of the pipe and before laying the pipe, the space between the bottom of the pipe and rock surface shall be filled with gravel and thoroughly tamped. Pipe laid in trenches dug in fill shall be supported down to load bearing undisturbed soil. After the pipes have been tested, inspected and approved by the Engineer and the local inspection authorities, the trenches shall be backfilled with clean dirt as follows:

C. Backfill shall be installed in layers 12 inches deep, adequately tamped and wetted down or flushed before the second layer of earth is laid in place. This process shall be continued until the trenches are filled. No roots, rocks or foreign material of any description shall be used for backfill by this subcontractor, and any excess materials and debris shall be removed from the site by this subcontractor. Any special backfill material shall be provided as hereinafter specified and as shown on the drawings.

D. All excavating and backfilling shall be done in a manner so as not to disturb adjacent structure and any shoring required shall be furnished.

3.3 OPENING AND RECLOSING OF CONCRETE FLOORS AND WALKS

A. Where excavation requires the opening of existing concrete floors, walks, or other paved areas, the pavement shall be cut as required to install new lines and make connections to existing lines. The size of the cut shall be held to a minimum consistent with the work to be accomplished. After the installation of the new work is completed, the excavation shall be properly backfilled to the level required for the replacement of paving. All concrete work for the finishing of these openings will be performed by the General Contractor.

3.4 SCAFFOLDING, RIGGING AND HOISTING

A. Each Contractor shall furnish all scaffolding as required for the installation of his work. He shall either arrange with the General Contractor for servicing in connection with any rigging and hoisting required to provide his own equipment to hoist apparatus to be installed by him into place. Each Contractor shall see that any equipment too large to permit passage through normal doorways and access ways is brought to the job and set in place before the mechanical spaces are enclosed. All apparatus not delivered in this manner shall be disassembled and reassembled in the proper location. Equipment specified to be factory assembled and tested prior to shipment not be disassembled for shipment to an installation into the building.

3.5 JOINING OF PIPING SYSTEMS

A. Cast iron piping systems shall be joined with lead and oakum, pre-formed neoprene joints or no-hub connectors at the subcontractor's option, as allowed by code. If caulked joints are used, spigots

shall be placed in the bell and properly centered and lined in piping before packing starts. Joints shall then be properly packed with dry oakum and then caulked with not less than one pound of lead for each one inch pipe diameter. Lead shall be poured and caulked in layers and then faced flush with hub. Piping shall be carefully handled after joint is made to ensure that jointing and material are not damaged.

B. Copper piping systems shall be joined with solder joints except that water distribution systems buried below building slabs shall be joined with compression type fittings. For solder type joints, the tubing shall be cut smooth and square and all burrs removed with a reamer and when necessary, tubing shall be rounded out with a sizing tool. All surfaces shall be properly cleaned by polishing both cup of fitting and the tube end with steel wool or fine sand cloth. After cleaning, flux shall be applied evenly to male end of tubing and shall be inserted into the fitting, revolving the fitting once or twice on the tubing end to spread the flux evenly. After inserting tubing in cup of fitting, apply flame to outside of cup only. Do not apply solder until after the fitting and pipe have reached proper heat. After connection is made, remove excess solder with brush and wipe clean. Solder shall be recommended by the manufacturer for the pressures involved, but shall generally be 95 - 5 hard solder. Refrigerant piping shall be joined as hereinafter specified for that particular application.

C. Threaded and coupled piping systems shall be joined with properly lubricated screwed joints. Pipe shall be cut smooth and square and all burrs shall be removed with a reamer. Tapered threads shall be properly cut on the male end of the pipe and shall be a sufficient number so that when the pipe is pulled up tight in the coupling, at least three full threads remain exposed. Joints shall be made tight with graphite and oil applied to the pipe threads only and not to the fittings. No pipe thread caulking compound shall be used. Where chromium plated piping and fittings are involved, they shall be made tight using strap wrench. Completed chromium plated piping shall not show any wrench marks on piping or fittings. All piping so marred shall be removed and replaced before acceptance of the job. On galvanized piping systems after the piping has been fully assembled and tested, all exposed threads shall be painted with a heavy coat of red lead or other rust inhibitor paint.

D. All mechanical, no-hub and no-ring type sockets shall be installed in full accordance with manufacturer's published directions, whose instructions shall be submitted to the Engineer for approval before proceeding with the installation. Engineer's approval of this data will not absolve the subcontractor from any guarantees and required tests.

E. Plastic piping systems, PVC, polyethylene, ABS, or polypropylene shall be joined by the use of socket type plastic fittings of the same material with either solvent cement and/or heat of fusion type joints. All piping shall be cut smooth and square, all burrs removed, and all surfaces properly cleaned. Solvent cement shall be of the type as recommended by the pipe manufacturer and all procedures shall be in accordance with manufacturer's published directions.

F. RO water pipe systems shall be pressure tested for leak detection using bottled dry nitrogen. DO NOT use compressed air! The system shall be pressurized to 50 psig and left overnight. Any discernable pressure decay will call for a joint-by-joint leak inspection and repair of any faults detected. The repaired system will then be tested again to assure a leak-proof installation.

3.6 VIBRATION ISOLATION

A. Transmission of vibration or structural borne noise to occupied areas by equipment installed by the Contractor will not be permitted. Contractor shall furnish for approval, data showing disturbing frequency, supported weight, static deflection, efficiency and calculations supporting same for

each isolator he proposes to use. Equipment shall be manufactured by Amber-Booth, Korfund, Mason Industries, Vibration Eliminator, Vibration Mounting, or Consolidated Kinetics Corporation.

B. All isolators shall be selected and certified, using published data, to limit vibration transmission to 10% for equipment located on floors in direct contact with grade ad 5% for equipment located other then the above. Should any noise or vibrations be objectionable to the Engineer and/or Owner, field instrumentation tests and measurements shall be made by the isolator manufacturer or his representative to determine the source and cause of such disturbance. Any non-compliance with these specifications shall be corrected by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Architect, Engineer or Owner.

**END OF SECTION**

# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

## Attachment D
## Davis Bacon Wage Decision

"General Decision Number: PA20220012 02/25/2022

Superseded General Decision Number: PA20210012

State: Pennsylvania

Construction Type: Residential

County: Allegheny County in Pennsylvania.

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

| | |
|---|---|
| If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022: | . Executive Order 14026 generally applies to the contract.<br>. The contractor must pay all covered workers at least $15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022. |
| If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022: | . Executive Order 13658 generally applies to the contract.<br>. The contractor must pay all covered workers at least $11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022. |

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at https://www.dol.gov/agencies/whd/government-contracts.

| Modification Number | Publication Date |
|---|---|
| 0 | 01/07/2022 |
| 1 | 01/14/2022 |

2 02/25/2022

BRPA0009-039 12/01/2020

| | Rates | Fringes |
|---|---|---|
| BRICKLAYER | $ 34.50 | 23.31 |

CARP0142-004 06/01/2018

| | Rates | Fringes |
|---|---|---|
| CARPENTER (Including Drywall Hanging and Asphalt Roofing) | $ 28.02 | 12.59 |

CARP1759-007 06/01/2017

| | Rates | Fringes |
|---|---|---|
| SOFT FLOOR LAYER | $ 33.01 | 16.45 |

ELEC0005-013 12/24/2021

| | Rates | Fringes |
|---|---|---|
| ELECTRICIAN | $ 27.05 | 16.88 |

ELEV0006-004 01/01/2022

| | Rates | Fringes |
|---|---|---|
| ELEVATOR MECHANIC | $ 53.80 | 36.885+a+b |

FOOTNOTE:

A. Employer contributes 8% of regular hourly rate as vacation pay credit for employees with more than 5 years of service, and 6% for 6 months to 5 years of service.

B. Eight Paid Holidays (provided employee has worked 5 consecutive days before and the working day after the holiday): New Years's Day; Memorial Day; Independence Day; Labor Day; Veteran's Day; Thanksgiving Day and the Friday after Thanksgiving Day, and Christmas Day.

IRON0003-006 06/01/2021

| | Rates | Fringes |
|---|---|---|
| IRONWORKER, ORNAMENTAL | $ 37.79 | 33.14 |

PLUM0027-005 06/01/2021

| | Rates | Fringes |
|---|---|---|
| PLUMBER | $ 44.45 | 24.57 |

SHEE0012-006 07/01/2018

| | Rates | Fringes |
|---|---|---|
| Sheet metal worker Excluding HVAC Duct Work | $ 19.49 | 10.08 |

* SUPA2003-001 10/31/2003

| | Rates | Fringes |
|---|---|---|
| Drywall Finishers | $ 15.08 | 3.40 |
| Laborers, Unskilled | $ 12.70 ** | 2.12 |
| PAINTER (Brush and Roller) | $ 15.90 | 4.35 |
| PLASTERER | $ 18.20 | 5.16 |
| Power equipment operators: (Backhoe) | $ 17.34 | 4.06 |
| Roofer (Excluding Asphalt Roofing) | $ 18.70 | 5.19 |
| Sheet Metal Worker (HVAC Duct Only) | $ 16.00 | 3.08 |

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 ($15.00) or 13658 ($11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular

rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISIO"

# Quote Request

## Homewood North Building #11 Unit#1302 Restoration

## Attachment E
## Payment and Performance Bonds

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

# PERFORMANCE BOND

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PAYMENT BOND IN FAVOR OF THE AUTHORITY CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
*(Insert name and address of contractor exactly as it appears on Form of Agreement)*

_____, as Sureties, are held and firmly bound unto the **Housing Authority of the City of Pittsburgh**, its certain attorney, successors, or assigns (the Obligee, hereinafter called the "Authority") in the penal sum of

_____Dollars ($_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal heretofore has submitted to the said Authority a certain bid, dated

_____, 20_____ (the "Bid"), for construction of
*(Insert date of bid)*

_____
*(Insert name of project exactly as it appears on Form of Agreement)*
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB"); and

WHEREAS, the said Authority is a "Contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors' Bond Law of 1967" (8 P.S. 191-202) (the "Act"); and

WHEREAS, the Act, in Section 3 (a), requires that, before an award shall be made to the Principal shall furnish this Bond to the said Authority, with this Bond to become binding upon the award of a Contract to the Principal by the said Authority in accordance with the Bid; and

WHEREAS, it also is a condition of the IFB that this Bond shall be furnished by the Principal to the said Authority; and

WHEREAS, Under the Invitation for Bids, it is provided, inter alia, that if the Principal shall furnish this Bond to the said Authority, and if the said Authority shall make an award to the Principal in accordance with the Bid, then the Principal and the said Authority shall enter into a contract with respect to performance of such work (the "Contract"), the Form of Agreement for which is set forth in the IFB.

NOW, therefore, THE CONDITION OF THIS OBLIGATION IS SUCH, that if the principal shall faithfully perform the Contract on his part as of the time and in the manner therein provided and satisfy all claims and demands incurred in or for the same, or growing out of the same, or for injury or damages to persons or property in the performance thereof, and shall fully indemnify and save harmless the said Authority from any and all cost and damage which the said Authority may suffer by reason of the principal's failure to do so, and shall fully reimburse and repay the said Authority any and all outlay and expense which it incurs by reason of any such default, then this obligation shall be null and void, otherwise it shall remain in full force and virtue.

It is further understood and agreed that the principal shall guarantee for a period of one (1) year from completion date of the contract against defects in workmanship or materials in accordance with the terms of the Contract.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder or the Specifications accompanying the same shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS
*(2 required by Authority)*

this _____ day of _____ 20_____.

---

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

| | |
|---|---|
| _____ | _____ |
| *(Printed or Typed Name)* | *(Printed or Typed Name)* |
| *Witness* | *Principal* |
| { | { |
| _____ | _____ |
| *(Signature and Date)* | *(Signature and Date)* |

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

| | | | |
|---|---|---|---|
| | _____ *(Printed or Typed Name)* | | _____ *(Printed or Typed Name)* |
| *Witness* | | *Partner** | |
| | { | | { |
| | _____ *(Signature and Date)* | | _____ *(Signature and Date)* |
| | _____ *(Printed or Typed Name)* | | _____ *(Printed or Typed Name)* |
| *Witness* | | *Partner** | |
| | { | | { |
| | _____ *(Signature and Date)* | | _____ *(Signature and Date)* |

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

*(CORPORATE SEAL)*

_____
*(Corporate Name)*

| | | | |
|---|---|---|---|
| _____ | | _____ | |
| *(Printed or Typed Name)* | | *(Printed or Typed Name)* | |
| *Witness* | | *President* | |
| { | | *V.P.*** | { |
| _____ | | _____ | |
| *(Signature and Date)* | | *(Signature and Date)* | |
| _____ | | _____ | |
| *(Corporate Title)* | | *(Corporate Title)* | |

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal below must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the
**Secretary/Assistant Secretary** of the Corporation named a Bidder herein; that
*(Circle one)*
_____ who signed this Bid on behalf of the

Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

*(CORPORATE SEAL)*

_____
*(Signature and Date)*

SURETY SIGN HERE

*(SURETY SEAL)*

_____
*(Printed or Typed Name)*

_____
*(Printed or Typed Name)*

*Attest*
{
_____
*(Signature and Date)*

*Surety* ***
{
_____
*(Signature and Date)*

***Power of attorney must be attached to this Bid Bond.

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The rate of premium charged is $_____ per thousand.
*(To be filled in by Surety)*

The total amount of premium charged is $_____
*(To be filled in by Surety)*

HOUSING AUTHORITY OF THE CITY OF PITTSBURGH

# PAYMENT BOND
# (Labor and Materialmen's Bond)

THIS BOND IS ISSUED SIMULTANEOUSLY WITH PERFORMANCE BOND IN FAVOR OF THE AUTHORITY CONDITIONED ON THE FULL AND FAITHFUL PERFORMANCE OF THE CONTRACT.

KNOW ALL MEN BY THESE PRESENTS, that we,

_____, as Principal, and
*(Insert name and address of Contractor exactly as it appears on Form of Agreement)*

_____, as Sureties, are held and firmly bound unto the **Housing Authority of the City of Pittsburgh**, its certain attorney, successors, or assigns (the Obligee, hereinafter called the "Authority") in the penal sum of

_____Dollars ($_____)

lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally, firmly by these presents:

WHEREAS, the Principal heretofore has submitted to the said Obligee a certain bid, dated

_____, 20_____ (the "Bid"), for construction of
*(Insert date of bid)*

_____
*(Insert name of project exactly as it appears on Form of Agreement)*
pursuant to specifications, drawings and other related documents constituting the Invitation for Bids (the "IFB"); and

WHEREAS, the said Authority is a "Contracting body" under provisions of Act No. 385 of the General Assembly of the Commonwealth of Pennsylvania, approved by the Governor on December 20, 1967, known and cited as the "Public Works Contractors' Bond Law of 1967" (8 P.S. 191-202) (the "Act"); and

WHEREAS, the Act, in Section 3 (a), requires that, before an award shall be made to the Principal shall furnish this Bond to the said Authority, with this Bond to become binding upon the award of a Contract to the Principal by the said Authority in accordance with the Bid; and

WHEREAS, it also is a condition of the IFB that this Bond shall be furnished by the Principal to the said Authority; and

WHEREAS, Under the Invitation for Bids, it is provided, inter alia, that if the Principal shall furnish this Bond to the said Authority, and if the said Authority shall make an award to the Principal in accordance with the Bid, then the Principal and the said Authority shall enter into a contract with respect to performance of such work (the "Contract"), the Form of Agreement for which is set forth in the IFB.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH that if said principal and all subcontractors to whom any portion of the work provided for in said contract is sublet and all assignees of said principal and of such subcontractors shall promptly make payment for all material furnished, labor supplied or performed, rental for equipment employed, and services rendered by public utilities in or in connection with the prosecution of the work, whether or not the said material, labor, equipment or services enter into and become component parts of the work or improvement contemplated in said contract, or in any amendment or extension of or addition to said Contract, then the above obligation shall be void; otherwise to remain in full force and effect. PROVIDED, however, that this bond is subject to the following conditions and limitations.

(a) All persons who have performed labor, rendered services or furnished materials or machinery, shall have direct right of action against the principal and surety on this bond, which right of action shall be asserted in proceedings instituted in the State in which such labor was performed, services rendered or materials furnished (or where labor has been performed, services rendered or materials furnished under said Contract is more than one State, then in any such State). Insofar as permitted by the laws of such State, such right of action shall be asserted in a proceeding instituting such action and any or all other persons having claims hereunder, and any other person having a claim hereunder shall have the right to be made a party to such proceeding (but not later than one year after the complete performance of said Contract and final settlement thereof) and to have such claim adjudicated in such action and judgment rendered thereon.

(b) The surety shall not be liable hereunder for any damages or compensation recoverable under any workmen's compensation or employer's liability statute.

(c) In no event shall the surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later than one year after the complete performance of said contract and final settlement thereof.

(d) As used herein: The term "person" refers to any individual, firm or corporation who have furnished materials or machinery or public utility services to be used on or incorporated in the work or the prosecution thereof provided for in said Contract or in any amendment or extension of or addition to said Contract, and/or to any person engaged in the prosecution of the work provided for in said Contract or in any amendment or extension of or addition to said Contract, who is an agent, servant or employee of the principal, or of any subcontractor, or of any assignee of said principal or of any subcontractor and also anyone so engaged who performs the work of a laborer or of a mechanic regardless of any contractual relationship between the principal, or any sub-contractor, or any assignee of said principal or of said subcontractor, and such laborer or mechanic, but shall not include office employees not regularly stationed at the site of the work.

The said surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder or the Specifications accompanying the same, shall in any wise affect its obligations on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work or to the Specifications.

SIGNED, SEALED AND DELIVERED IN _____ ORIGINAL COUNTERPARTS
*(2 required by Authority)*

this _____ day of _____ 20_____.

---

IF THE PRINCIPAL IS AN INDIVIDUAL, SIGN HERE

| | |
|---|---|
| _____ | _____ |
| *(Printed or Typed Name)* | *(Printed or Typed Name)* |
| *Witness* | *Principal* |
| { | { |
| _____ | _____ |
| *(Signature and Date)* | *(Signature and Date)* |

IF THE PRINCIPAL IS A PARTNERSHIP, SIGN HERE

| | |
|---|---|
| _____ | _____ |
| *(Printed or Typed Name)* | *(Printed or Typed Name)* |
| *Witness* | *Partner** |
| { | { |
| _____ | _____ |
| *(Signature and Date)* | *(Signature and Date)* |
| _____ | _____ |
| *(Printed or Typed Name)* | *(Printed or Typed Name)* |
| *Witness* | *Partner** |
| { | { |
| _____ | _____ |
| *(Signature and Date)* | *(Signature and Date)* |

* If the Bidder is a partnership, the Bond must be signed in the name of the partnership by at least two general partners, whose names and addresses must be listed on the certificate on page BF-3-P of the Bid.

IF THE PRINCIPAL IS A CORPORATION, SIGN HERE

*(CORPORATE SEAL)*

_____
*(Corporate Name)*

| | | | |
|---|---|---|---|
| _____ | | _____ | |
| *(Printed or Typed Name)* | | *(Printed or Typed Name)* | |
| *Witness* | | *President V.P.*** | |
| { | | { | |
| _____ | | _____ | |
| *(Signature and Date)* | | *(Signature and Date)* | |
| _____ | | _____ | |
| *(Corporate Title)* | | *(Corporate Title)* | |

** If the bidder is a corporation, the Bond must be executed in the Corporation's correct corporate name by its President or Vice President and attested to by its Secretary or Assistant Secretary or Treasurer or Assistant Treasurer, and the Certification of Corporate Principal (Doc. 00625) must be executed by the Secretary or Assistant Secretary.

CERTIFICATE AS TO CORPORATE PRINCIPAL

I, _____, certify that I am the **Secretary/Assistant Secretary** of the Corporation named a Bidder herein; that *(Circle one)* _____ who signed this Bid on behalf of the Corporation was then _____ of said Corporation that I know his signature and his signature thereto is genuine; and that said Bid was duly signed, sealed and attested in behalf of said Corporation by authority of its governing body.

*(CORPORATE SEAL)*

_____
*(Signature and Date)*

SURETY SIGN HERE

*(SURETY SEAL)*

| | | | |
|---|---|---|---|
| | _____ *(Printed or Typed Name)* | | _____ *(Printed or Typed Name)* |
| *Attest* | | *Surety* | |
| | { | | { |
| | _____ *(Signature and Date)* | | _____ *(Signature and Date)* |

The rate of premium charged is $_____ per thousand.
*(To be filled in by Surety)*

The total amount of premium charged is $_____
*(To be filled in by Surety)*