PROJECT MANUAL

PROJECT: 95 ELIZABETH STREET
ALBANY, NY 12210

REHABILITATION OF EXISTING TWO-FAMILY RESIDENCE

CLIENT: Albany County Land Bank
69 State Street
Albany, NY 12207

DATE: August 30, 2018

PROJECT #: 184,003
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95 Elizabeth Street, Albany, New York is an existing vacant wood frame three-story residential building in a state of disrepair. Albany County Land Bank (ACLB), the owner of the building proposes to have the building gutted out and refitted to provide two apartments; one each on the first and second floors. The basement will hold a common laundry area, two tenant storage spaces and a mechanical room.

ACLB proposes that this project be substantially completed within five months of the contract signing.

A general description of the project is as follows:

- Structural stabilization
- Gutting of all deteriorated building components
- Demolition of existing wood frame attached structure in rear of building
- Exterior masonry repair, replacement and repointing of the foundation
- Provision of all new interior walls, doors, windows and finishes
- New residential equipment
- New HVAC and Plumbing including new water and gas service
- New electrical service and distribution throughout
- Other items noted on the plans and specifications but not listed above.
SPECIFICATIONS
SECTION 01 11 00

SUMMARY OF THE WORK

PART 1: GENERAL

1.01 WORK COVERED BY CONTRACT DOCUMENTS

A. The work is the renovation of exterior finishes and interior demolition (removal of framing, finishes and deteriorated materials) of an existing 3 story wood frame residence.

B. The title and location of the Work is printed on the cover of this Project Manual.

1.02 CONTRACTS

A. Type of Contract:

Contract shall be provided by the Owner.

1.03 PHYSICAL COMPLETION DATE

A. It is expected that the completion time is FIVE (5) months after start of construction. Proposed start and completion dates shall be submitted with the bid.

1.04 ITEMS NOT INCLUDED

A. The following items shown on the Drawing are not included in the Contract:

1. Items indicated "NIC" (Not in Contract)
2. Existing construction, except where such construction is to be removed, replaced, or altered.

1.05 DRAWINGS

The Contract Documents which accompany this Project Manual and form a part of the Contract Documents are listed on the Title Sheet of the Drawings.

1.06 CONSTRUCTION DOCUMENTS

After Contract award the Owner will furnish the contractor 1 set of the project Drawings, and 1 Project Manual and electronic copies.
1.07 CONTRACTOR USE OF PREMISES

A. Work hours shall be as permitted in the City of Albany.

B. The following items are not allowed on the site:

1. Firearms, ammunition, weapons, and dangerous instruments. (other than tools required for the work).
2. Alcoholic beverages and persons under the influence of the same.
3. Illegal controlled substances and persons under the influence of the same.

C. General Contractor shall identify staging area for materials on a site plan.

D. No smoking shall be allowed inside the building or on the Site.

E. Store materials and perform the Work so that pedestrian and vehicular traffic is not obstructed.

F. Furnish Owner with a telephone number or method to contact the supervisor for the Work in case of an emergency after work hours, including weekends and holidays.

G. Comply with applicable federal and State of New York Right-To-Know Law provisions and supply copies of the appropriate Material Safety Data Sheets (MSDS) to the Owner.

H. Report fire and other emergency situations to the Owner immediately.

1.08 REFERENCE SPECIFICATIONS AND STANDARDS

A. Comply with the requirements of the various specifications and standards referred to in these Specifications. Such reference specifications and standards shall be the date of latest revision in effect at the time of receiving bids.

1.09 LAYING OUT

A. Examine the Contract Documents thoroughly and promptly report any errors or discrepancies to the Owner before commencing the Work.
1.10 CONTRACTORS' MANAGEMENT

A. All Contracts:

1. Provide on-site project management and full time supervision for the Work, with staffing personnel that are employees of the Contractor.
2. The on-site supervisor shall have the authority to direct the Work, and make purchase and cost decisions on behalf of the Contractor.
3. Management Staffing Time Periods and Personnel:
   a. Initial Job Meeting to Substantial Completion: Maintain at the Site, a full time supervisor, while Work is in progress.
   b. Substantial Completion to Physical Completion: Maintain at the Site a full time supervisor while Work is in progress.

End - Summary of the Work
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SECTION 01 21 00

ALLOWANCES

PART 1 - GENERAL

1.01 DESCRIPTION

A. General:

The Contractor shall examine all portions of the Contract Documents to ensure the inclusion in the Contract Sum Base Bid of all allowances.

Allowances shall cover the actual cost to the Contractor of the materials and the equipment required by the allowance, and all applicable taxes.

Allowances do not include profit, overhead, delivery, unloading and handling on the site, receipt checking, storage, distribution, labor, or installation of allowance items, or other related costs. These costs shall be included in the Base Bid.

Whenever the cost of materials is more than or less than the allowance, the Contract Sum shall be adjusted accordingly by Change Order, the amount of which will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses.

B. Work Included:

1. Contractor shall include an amount in the contract price an allowance to remove and replace 200 square feet (SF) of deteriorated roof structure (including joists, roof decking, etc.) and replace with new roof joists and wood decking. In addition, contractor shall provide a square foot price for any additional roof structure removal over and above 200 SF.

2. Contractor shall include a price per joist for demolition, removal, and construction of new floor system including new floor joists and sub-floor.

End - Allowances
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SECTION 01 23 00

ALTERNATES

PART 1 - GENERAL

1.01 DESCRIPTION

A. General:

Alternates have been established in order to enable the Owner to compare costs where alternative materials and methods might be used.

If the Owner elects to proceed on the basis of one or more of the described alternates, make all modifications to the work required in furnishing and installing the selected alternative(s) at no additional cost to the Owner other than as proposed on the Bid Form.

B. Work Included:

There are no Alternates in this work.

End - Alternates
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PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included:

1. To enable orderly review of progress during construction and to provide for systematic discussions of problems, the Owner and General Contractor will conduct project meetings throughout the construction period. The Architect will attend when requested by the Owner.
2. In general, project meetings will be held bi-weekly at the job site in accordance with a mutually acceptable schedule.
3. The purpose of the project meetings is analysis of problems that might arise relative to execution of the Work.

B. Related Work Described Elsewhere:

The Contractor's relations with his sub-contractors and materials suppliers, and discussions relative thereto, are the Contractor's responsibility as described in the General Conditions and are not part of project meetings content.

1.02 QUALITY ASSURANCE:

Persons designated by the Contractor to attend and participate in project meetings shall have all required authority to commit the Contractor to solutions as agreed upon in the project meetings.

1.03 SUBMITTALS:

A. Agenda Items:

To the maximum extent possible, Owner and Contractor should create an agenda at least 24 hours in advance of the project meeting identifying all items to be discussed.

B. Minutes:

The Owner will compile minutes of each project meeting and will distribute copies to the Architect and the Contractor.
PART 2 - PRODUCTS

(No products are required in this Section.)

PART 3 - EXECUTION

3.01 MEETING SCHEDULE:

Coordinate with all parties as required to establish a mutually acceptable schedule for project meetings.

3.02 MEETING LOCATION:

To the maximum extent practicable, project meetings shall be held at the job site. Provide adequate space and facility including table, chair, and lighting for proper conduct of meeting.

3.03 ATTENDANCE:

To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout the construction period. Sub-Contractors, materials suppliers, and others may be invited to attend those project meetings in which their aspects of the Work are involved.

End - Project Meetings
SECTION 01 32 13

PROJECT SCHEDULING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

To ensure adequate planning and execution of the Work so that the Work is completed within the respective number of calendar days allowed in the Contract and to assist the Architect in appraising the reasonableness of the proposed schedule and evaluating the progress of the Work, prepare and maintain a construction schedule.

B. Related Work Described Elsewhere:

1. Requirements for Progress Schedule: General Conditions
2. Construction Period: Agreement
3. Timing of Submittals: Section 01 33 00

1.02 SUBMITTALS

A. Submittal Procedures:

Make all submittals and resubmittals in strict accordance with the provisions of Section 01 33 00 of these Specifications.

B. Preliminary Construction Schedule:

Within seven days of signing the Agreement submit a copy of the construction schedule.

PART 2 - PRODUCTS

2.01 CONSTRUCTION SCHEDULE

A. Diagram:

1. Graphically show the order and interdependence of all activities necessary to complete the Work, and the sequence in which each such activity is planned to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all Sub-Contractors whose work is shown on the diagram.
2. Activities shown on the diagram shall include, but are not necessarily limited to:

   a. Project Mobilization
   b. Submittal and Approval of Shop Drawings;
   c. Procurement of Equipment and Critical Materials;
   d. Fabrication of Special Equipment and Material, and their Installation and testing;
   e. Final Clean Up;
   f. Final Inspecting and Testing;
   g. All activities of the Owner and the Architect which affect progress and/or affect required dates for completion of all or part of the Work;

**PART 3 - EXECUTION**

**3.01 PREPARATION**

Prior to all work of this Section, thoroughly study the Construction Documents, as well as the scope of work prepared for this Work by the Owner or Architect.

**3.02 PRELIMINARY SCHEDULE**

A. Time of Completion shall be no later than FIVE months after signing of contract.

**3.03 CONSTRUCTION SCHEDULE**

A. Contents:

   In addition to data shown in the preliminary schedule show all data required in PART TWO of this Section.

B. Review:

   1. Participate in a review and evaluation of the proposed construction schedule at a time established by the Owner.
   2. If revisions are required as a result of this review, make all such required revisions and then resubmit to the Owner.
   3. The approved schedule shall then be the schedule to be used by the Contractor for planning, organizing, and directing the Work and for reporting progress.
3.04 REVISIONS TO APPROVED SCHEDULE

A. Method:

1. Following approval of the schedule, if the Contractor desires to make changes in his method of operating and scheduling, he shall notify the Owner, in writing, stating his reasons.

   End - Project Scheduling
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SECTION 01 33 00

SUBMITTALS AND SUBSTITUTIONS

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included:

1. Wherever possible throughout the Contact Documents, the minimum acceptable material and work quality has been defined either by manufacturer's name and catalog number or by reference to recognized industry standards.

2. To ensure that the specified products are furnished and installed in accordance with the design intent, procedures have been established for advance submittal of design data and for its review and approval or rejection by the Owner.

B. Related Work Described Elsewhere:

1. Contractual Requirements for Submittals:
   General Conditions & Supplementary Conditions.

2. Individual Submittals Required:
   Pertinent Sections of these Specifications.

1.02 PRODUCT HANDLING:

Make all submittals of Shop Drawings, samples, requests for substitution, and other similar items in strict accordance with the provisions of this Section of these Specifications.

PART 2 - PRODUCTS

2.01 APPLICABLE BUILDING STANDARDS:

A. Reference to building standards of various organizations is included in many parts of these Specifications, occasionally by abbreviation. Contractor is responsible for the contents of referred to building standards and shall make no claims for extra cost based on a failure to understand requirements thereof. If a conflict exists between a referred to standard and other descriptive information concerning a material or its application, the more stringent requirements of material and work quality shall be used in the consideration of the acceptance of a material or method of its application.

B. A few of the more common organizations and abbreviations for these organizations are listed below. This list in no way limits the reference to other organizations by abbreviation or otherwise.
2.02 SHOP DRAWINGS:

A. Scale Required:

Unless otherwise specifically directed by the Owner, make all Shop Drawings accurately to a scale sufficiently large to show all pertinent features of the item and its methods of connection to the Work.

B. Type and Number of Prints Required:

Contractor shall submit all Shop Drawings to the Owner in the form of clear hard copies of each sheet. Illegible submittals will not be accepted. Submit a minimum of three (5) copies plus the quantity the Contractor would like returned beyond one.

C. Distribution of Reviewed Shop Drawings:

1. Distribution of reviewed Shop Drawings will be the responsibility of the Contractor.

2. For rejected Shop Drawings, the Owner shall:
   a. Keep one copy for the Owner’s file and one for the Architect’s file;
   b. Return one copy, marked “Rejected”, to the Contractor.

3. For "approved" and "approved as noted" Shop Drawings, the Owner shall:
   a. Keep one copy for the Owner’s file;
   b. Keep one copy for the Architect’s file;
   c. Return one copy, marked “Approved” or “Approved as Noted,” to the Contractor. If more copies are desired, they shall be submitted with the
2.03  MANUFACTURER'S LITERATURE:

A. General:

Where contents of submitted literature from manufacturers includes data not pertinent to the submittal, clearly indicate which portion of the contents is being submitted for the Owner’s review.

B. Number of Copies Required:
Submit the number of copies which are required by Section 2.02 (B) above.

2.04  SAMPLES:

A. Accuracy of Sample:

Unless otherwise specifically directed by the Owner, all Samples shall be of the precise article proposed to be furnished.

B. Number of Samples Required:
Submit all Samples in the quantity which is required to be returned plus one which will be retained by the Owner.

2.05  COLORS:

A. General:

Unless the precise color and pattern is specifically described in the Contract Documents, whenever a choice of color or pattern is available in a specified product submit accurate color charts and pattern charts to the Owner for his/her review and selection.

B. Comparative Analysis:

Unless all available colors and patterns have identical wearing capabilities and are identically suited to the installation, completely describe the relative costs and capabilities of each.
2.06 **SUBSTITUTIONS:**

A. Owner’s or Architect's Approval Required:

1. The Contract is based on the materials, equipment and methods described in the Contract Documents.
2. The Owner or Architect will consider proposals for substitution of materials, equipment and methods only when such proposals are accompanied by full and complete technical data required by the Owner or Architect to evaluate the proposed substitution. Proposals shall include:
   a. Complete data substantiating compliance with Contract Documents.
   b. Product identification and description.
   c. Performance and test data.
   d. Reference standards.
   e. Itemized comparison of proposed equivalent with products or method specified.
   f. Accurate cost data on proposed equivalent in comparison with product or method specified.
3. Do not substitute materials, equipment, or methods unless such substitution has been specifically approved for this Work by the Owner.

B. "Or Equal":

1. Where the phrase "or equal" or "or equal as approved by the Owner or Architect" occurs in the Contract Documents, do not assume that material, equipment, or methods will be approved as equal by the Owner or Architect unless the item has been specifically approved for this Work by the Owner or Architect.
2. The decision of the Architect shall be final.

C. Availability of Specified Items:

1. Verify that all specified items will be available in time for installation during orderly and timely progress of the Work.
2. In the event specified item or items will not be so available, so notify the Owner.
3. Costs of delays because of non-availability of specified items, when such delays could have been avoided by the Contractor, will be back-charged as necessary and shall not be borne by the Owner.
2.07 MANUALS:

A. General:

Manuals are required to be submitted covering items included in this Work. Prepare such Manuals in durable plastic binders or suitable alternative approximately 8-1/2 by 11 inches in size and with at least the following:

1. Identification on, or readable through, the front cover stating general nature of the Manual.
2. Neatly typewritten index near the front of the Manual, furnishing immediate information as to location in the Manual of all emergency data regarding the installation.
3. Complete instructions regarding operation and maintenance of all equipment involved.
4. Complete nomenclature of all replaceable parts, their part numbers, current cost, and name and address of nearest vendor of parts.
5. Copy of all guaranties and warranties issued.
6. Copy of the approved Shop Drawings with all data concerning all changes made during construction.

B. Extraneous Data:

Where contents of Manuals include manufacturer's catalog pages, clearly indicate the precise items included in this installation and delete or otherwise clearly indicate all manufacturer's data with which this installation is not concerned.

C. Number of Copies Required:

Unless otherwise specifically directed by the Architect or stipulated in the pertinent Section of these Specifications, deliver two copies to the Architect.

PART 3 - EXECUTION

3.01 IDENTIFICATION OF SUBMITTALS:

A. General:

1. Consecutively number all submittals.
2. Accompany each submittal with a letter of transmittal showing the transmittal number, date of transmittal, Specification Section or Drawing number to which the submittal pertains, brief description of the material submitted, and the company name of the originator of the submittal.
B. Internal Identification:

On at least the first page of each copy of each submittal, indicate the transmittal number corresponding to the letter of transmittal by which the submittal was accompanied.

C. Resubmittals:

When material is resubmitted for any reason, transmit under a new letter of transmittal with a new number; indicate by reference to previous submittal that this is a resubmittal.

D. Submittal Log:

1. Maintain an accurate submittal log for the duration of the construction period, showing status of all submittals of all types.
2. Make the log available to the Architect for review upon request.

3.02 COORDINATION OF SUBMITTALS:

A. General:

Prior to submittal for Owner’s review, use all means necessary to fully coordinate all material, including the following procedures:

1. Determine and verify all field dimensions and conditions, catalog numbers, and similar data.
2. Coordinate as required with all trades and with all public agencies involved.
3. Secure all necessary approvals from public agencies and others; signify by stamp or other means that all required approvals have been obtained.
4. Clearly indicate all deviations from the Contract Documents.

B. Grouping of Submittals:

1. Unless otherwise specifically permitted by the Owner, make all submittals in groups containing all associated items.
2. The Owner may reject partial submittals as not complying with the provisions of the Contract Documents.
3.03 TIMING OF SUBMITTALS:

A. General:

1. Make all submittals far enough in advance of scheduled dates for installation to provide all required time for reviews, for securing necessary approvals, for possible revision and resubmittals, and for placing orders and securing delivery.

2. In scheduling, allow at least eight full working days for the Owner’s review following his/her receipt of the submittal.

End - Submittals and Substitutions
SECTION 01 41 00

REGULATORY REQUIREMENTS & CODES

PART 1 GENERAL

101 COMPLIANCE

A. Comply with applicable regulatory requirements

1.02 CODES

A. Comply with the requirements of the various codes referred to in these specifications. The referenced codes shall be the date of latest revision in effect at the time of receiving bids.

B. All materials, methods, assemblies, used in the Work of the Contract shall conform with the requirements of the following:

1. 2015 International Residential and/or Building Codes as supplemented by New York State in 2016;
2. 2015 International Energy Conservation Construction Code as supplemented by New York State in 2016;
4. Regulations of the City of Albany;


1.03 PERMITS AND INSPECTIONS

A. Obtain a Building Permit before commencing the work and a Certificate of Occupancy upon completion of the project from the City of Albany.

B. Obtain a New York Board of Fire Underwriters inspection and certificate.

1.04 LISTINGS

A. Equipment and materials for which Underwriters' Laboratories, Inc. (UL) provides product listing service, shall be listed and bear the listing.
1. Alternately, ETL Testing Laboratories, Inc. Product Safety Testing Listing is acceptable if the listed product has been tested to the applicable UL standard.

1.05 FIRE RESISTANT CONSTRUCTION MATERIALS AND ASSEMBLIES

A. Conform to the fire rating classifications based upon the test methods and acceptance criteria in the standard Fire Tests of Building Construction and Materials for which Underwriters' Laboratories, Inc. (UL) provides listings.

1. Materials and assemblies shall comply with the acceptance criteria, detailed description of the assembly, its performance in the fire test and other pertinent details such as specifications of materials, Classification coverage, and alternate assembly details.
2. Alternatively, fire resistance rating classifications by other issuing organizations listed in the 2015 International Building Code are acceptable.

1.06 COORDINATION WITH ELECTRICAL UTILITY COMPANY

A. The Owner will arrange for and pay the utility company's charges in connection with the installation of the new incoming service.

1.07 COORDINATION WITH GAS UTILITY COMPANY

A. The Owner will pay the utility company's charges in connection with the installation of the incoming service.

1.08 COORDINATION WITH MUNICIPALITY FOR WATER CONNECTIONS

A. Coordinate and comply with the municipal requirements for the connection of water lines to the municipal utility services. Connection to existing municipal water mains will be made by the municipal water department. Obtain necessary permits and pay the sewer department's charges for all connections.

1.09 COORDINATION WITH CITY FOR SANITARY SEWER CONNECTIONS

A. Coordinate and comply with the municipal requirements for the connection of sanitary sewer lines to municipal utility services. Connection to existing municipal sewers will be made by the municipal sewer department. Obtain necessary permits and pay the sewer department's charges for all connections.

End-Regulatory Requirements & Codes
SECTION 01 45 00
QUALITY CONTROL

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included:

   From time to time during progress of the Work, the Owner may require that testing be performed to determine that materials or site conditions provided for the Work meet the specified requirements.

B. Related Work Described Elsewhere:

   Requirements for testing may be described in various Sections of these Specifications. Where no testing requirements are described but the Owner decides that testing is required, the Owner may require testing to be performed under current pertinent standards for testing.

C. Work Not Included:

   1. Selection of Testing Laboratory: The Owner will select a pre-qualified independent testing laboratory.
   2. Payment for Initial Testing Services: The Owner will pay for all initial services of a testing laboratory as further described in Article 2.01 of this Section of these Specifications.

1.02 QUALITY ASSURANCE:

A. Qualifications of Testing Laboratory:

   The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E-329-70 "Recommended Practice for Inspection and Testing Agencies for Concrete and Steel Used in Construction".

B. Codes and Standards:

   Testing, when required, will be in accordance with all pertinent codes and regulations and with selected standards of the American Society for Testing and Materials.

1.03 PRODUCT HANDLING:

   Promptly process and distribute all required copies of test reports and related instructions to ensure all necessary retesting and/or replacement of materials with the least possible delay in progress of the Work.
PART 2 - PRODUCTS

2.01 PAYMENT FOR TESTING SERVICES:

A. Initial Services:

1. The Owner will pay for all initial testing services requested by the Owner.
2. When initial tests indicate non-compliance with the Contract Documents, the costs of initial tests associated with that noncompliance will be deducted by the Owner from the Contract Sum.

B. Re-Testing:

When initial tests indicate non-compliance with the Contract Documents, all subsequent retesting occasioned by the non-compliance shall be performed by the same testing laboratory and the costs thereof will be deducted by the Owner from the Contract Sum.

2.02 CODE COMPLIANCE TESTING:

Inspections and tests required by codes or ordinances, or by a plan approval authority, and made by a legally constituted authority, shall be the responsibility of and shall be paid for by the Contractor, unless otherwise provided in the Contract Documents.

2.03 CONTRACTOR’S CONVENIENCE TESTING:

Inspection or testing performed exclusively for the Contractor’s convenience shall be the sole responsibility of the Contractor.

PART 3 - EXECUTION

3.01 COOPERATION WITH TESTING LABORATORY:

Representatives of the testing laboratory shall have access to the Work at all times. Provide facilities for such access in order that the laboratory may properly perform its function.

3.02 SCHEDULES FOR TESTING:

A. Establishing Schedule:

1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.
2. Provide all required time within the construction schedule.
B. Revising Schedule:

When changes of construction schedule are necessary during construction, coordinate all such changes of schedule with the testing laboratory as required.

C. Adherence to Schedule:

When the testing laboratory is ready to test according to the determined schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra costs for testing attributable to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

3.03 TAKING SPECIMENS:

All specimens and samples for testing, unless otherwise provided in these Contract Documents, will be taken by the testing laboratory; and all deliveries of specimens and samples to the testing laboratory will be performed by the testing laboratory.

End - Quality Control
SECTION 01 50 00

TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included:

Temporary facilities and controls required for this Work include, but are not necessarily limited to:

1. Temporary utilities such as gas, water, electricity, telephone, & construction heat;
2. Field offices and sheds
3. Sanitary facilities;
4. Enclosures such as tarpaulins, barricades, and canopies;
5. Temporary fire protection.

B. Related Work Described Elsewhere:

1. Compliance with safety regulations:
   Compliance with all requirements of pertinent regulations is described in the General Conditions of the Contract.
2. Sub-Contractor Equipment:
   Except that equipment furnished by Sub-Contractors shall comply with all requirements of pertinent safety regulations, the ladders, hoists, planks, and similar items normally furnished by individual trades in execution of their own portions of the Work are not part of this Section of these Specifications.

1.02 PRODUCT HANDLING:

A. Protection:

Use all means necessary to maintain temporary facilities and controls in proper and safe condition throughout progress of the Work.

B. Replacement:

In the event of loss or damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.
PART 2 - PRODUCTS

2.01 UTILITIES:

A. Temporary Utilities:

1. General:
   Endeavor to use the utilities provided by the Owner efficiently.

2. Temporary Piping:
   a. Furnish and install all necessary temporary piping and upon completion of the
      Work, remove all such temporary piping.
   b. The plumbing contractor shall be responsible for any damage caused by leaky,
      defective or broken piping, connections or other appurtenances installed by
      him/her.

3. Temporary Electricity:
   a. Furnish and install all necessary temporary wiring and associated equipment.
   b. Furnish and install area distribution boxes so located that the individual trades
      may use their own construction-type extension cords to obtain proper power and
      artificial lighting at all points where required by inspectors and for safety.
   c. All temporary light and power services and equipment shall comply with the
   d. Following Contractor's substantial completion of the Work the Local Utility
      Company shall read the meter for Contractor's payment of temporary electric.
      The Owner shall assume responsibility for payment of utility costs after this
      reading.

B. Telephone:

All on-site supervisory personnel of the General Contractor shall provide the Owner
with a cell phone number, and shall be readily reached by the Owner.

C. Construction Heat:

1. COLD WEATHER PROTECTION:
   General Contractor shall be required to protect all of his/her work and that of all
   sub-contractors from freezing temperatures during construction until interim heat
   (if required) or permanent heating system is ready for use. Contractor shall use
   such means as he/she deems proper for this protection, such as the use of
   salamanders, stoves, temporary boilers, canvas enclosures, etc. Proper
   temperatures of not less than 50 degrees F. shall be maintained for execution of
   all parts of the Work, unless lower temperatures are approved by the Architect,
   and all attendance and all other costs of such protection shall be provided at no
   cost to the Owner. The Contractor shall provide the proper smoke pipes, flues, or
   other means to prevent smoke, fire, soot or carbon monoxide (CO) damage to the
   structure, the finishes, and the workers.
2. ENCLOSURE:
Contractor shall proceed with construction work using appropriate cold weather protection until the building is "enclosed". "Enclosure" shall consist of the completion of construction of all permanent exterior walls, floors, roofs, and all structural elements of the building envelope necessary for all Contractors concerned to complete the necessary installation of the permanent heating system. If finish materials of any kind are required to be installed prior to the installation of any heating or heating control components, these finish materials shall be installed before the building is regarded as "enclosed". Openings in exterior walls and roof may be enclosed with temporary enclosures if permanent enclosing materials are not available. Further, the Architect reserves the right to require the use of temporary enclosures if the installation of permanent enclosing materials is delayed to the extent that such delay prevents "enclosure" within a reasonable time. The Contractor shall indicate, in his/her Progress Schedule, the approval of the Progress Schedule. "Enclosure" can occur at any time of the year, whether or not a heating system is in progress. The procedure for declaring a building "enclosed" will not vary with the season of the year.

2.02 SANITARY FACILITIES:
Furnish and install all required temporary facilities with sanitary toilet for use by all personnel. Comply with all minimum requirements of all public agencies having jurisdiction. Maintain in a sanitary condition at all times.

2.03 ENCLOSURES:
A. The General Contractor shall provide and hang temporary doors and shall construct temporary enclosures so that the building may be secured from the exterior by locks and keys as soon as possible. He/she shall provide access to the Architect and Owner.

B. Furnish, install, and maintain for the duration of construction, all required scaffolds, tarpaulins, barricades, canopies, warning signs, steps, bridges, platforms, and other temporary construction necessary for proper completion of the Work in compliance with all pertinent safety and other regulations.

2.04 FIRE PROTECTION:
Furnish and install all required temporary fire protection equipment devices as required by all regulatory authorities.
2.05 LOSSES & DAMAGES:

The Contractor shall arrange for the safeguarding of materials, tools and work against damage, injury or loss during the execution of the Work under the Contract until completion and acceptance by the Owner, by standard means of temporary protection, barricades, locks, etc.

PART 3 - EXECUTION

3.01 REMOVAL:

Maintain all temporary facilities and controls as long as needed for the safe and proper completion of the Work. Remove all such temporary facilities and controls as rapidly as progress of the Work will permit or as directed by the Owner.

End - Temporary Facilities and Controls
SECTION 01 60 00

MATERIALS AND EQUIPMENT

PART 1 GENERAL

1.01 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

Specific requirements pertaining to materials and equipment specified elsewhere are additional to the provisions of this Section.

1.02 PRODUCT LABELS

When materials or equipment are specified to conform to ASTM, Federal or other reference specifications, the materials delivered to the site shall bear the manufacturer's printed labels stating that the materials meet the requirements of such specifications.

1.03 TRANSPORTATION AND HANDLING

A. Deliver factory packaged materials and equipment in the manufacturer's original containers.

B. Transport and handle materials and equipment in such a manner as to prevent their damage.

C. Arrange for delivery of materials and equipment during the agreed upon hours of the day.

D. Have workers available to receive and unload materials and equipment delivered to the site. Do not deliver, or have delivered, any materials and equipment to the site unless such forces are available.

E. Facility personnel are not authorized to sign for receipt of Contractor's material or equipment.

1.04 STORAGE AND PROTECTION

A. Neatly pile, store, protect, and secure materials and equipment in locations where directed. Protect materials and equipment subject to damage by temperature or other weather conditions.

B. Do not store volatile liquids in the building.

End-Materials and Equipment
SECTION 01 73 29

REMOVALS, CUTTING, AND PATCHING

PART I  GENERAL

1.01 RELATED WORK SPECIFIED ELSEWHERE

A. Cleaning: Section 01 74 00

1.02 PROJECT CONDITIONS

A. Existing Conditions: Do not disturb existing structures, construction, materials or equipment unless required by the Contract.

1. Do not cut, drill or remove structural members such as joists, beams or columns supporting construction that is to remain unless expressly required by the Contract Documents.

B. Items removed are to remain the property of the Owner unless otherwise noted for removal from the site.

PART 2  PRODUCTS

2.01 MATERIALS

A. Match the appearance and performance of existing corresponding materials as closely as practicable, unless otherwise indicated.

PART 3  EXECUTION

3.01 EXAMINATION

A. Prior to cutting, drilling, or removal, investigate both sides of the surface involved. Determine the exact location of structural members.

B. If unforeseen obstructions are encountered, take precautions necessary to prevent damage and obtain instructions from the Architect before proceeding with the Work.
3.02 PREPARATION

A. Provide temporary shoring and other supports necessary to prevent settlement or other damage to existing construction which is to remain.

B. Prepare existing surfaces properly to receive and, where required, bond with the Work.

3.03 REMOVALS, CUTTING, AND ALTERING

A. In addition to the items indicated to be removed on the Drawings, remove existing construction superseded by the Work except items such as pipe, conduits, recessed boxes, and ducts which are built into existing construction that is to remain. Cut off and conceal such items at face of remaining construction. Provide cover plates on recessed boxes.

B. Cut and alter existing materials as required to perform the Work. Limit cutting to the smallest amount necessary. Core drill round holes and saw cut other openings where possible.

C. Remove and alter existing construction as required to install and connect the Work to adjacent construction in an approved manner.

D. Perform cutting, drilling, and removals in a manner which will prevent damage to construction which is to remain.

E. Perform removal of items to remain property of the owner with such care as necessary to prevent damage to these items.

3.04 PATCHING

A. Patch existing construction and finishes defaced, damaged, or left incomplete due to alterations and removals. Patching, except as otherwise indicated, shall be limited to these areas which have been cut or altered. Finished patch surfaces to match existing adjacent surfaces as closely as practicable.

B. Perform patching around items penetrating existing construction in a manner that will maintain the water and fire resistive capability of the existing construction.

C. Paint patched areas to match existing adjacent surfaces as closely as practicable using the same type of paint. Painting, except as otherwise indicated, shall be limited to the areas which have been patched.
D. Where surfaces exposed by removals are to remain as exposed surfaces, paint such areas to match existing adjacent surfaces as closely as practicable using the same type of paint.

3.05 REINSTALLATION

A. Where reinstallation of removed items is indicated, reinstall them to a condition equal to or better than their condition before removal.

End-Removals, Cutting, and Patching
SECTION 01 74 00

CLEANING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Throughout the construction period, maintain the building and site in a standard of cleanliness as described in this Section.

B. Related Work Described Elsewhere:

In addition to standards described in this Section, comply with all requirements for cleaning up as described in various other Sections of these Specifications.

1.02 QUALITY ASSURANCE

A. Inspection:

Conduct daily inspection, and more often if necessary, to verify that requirements of cleanliness are being met.

B. Codes and Standards:

In addition to the standards described in this Section, comply with all pertinent requirements of governmental agencies having jurisdiction.

PART 2 - PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

Provide all required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

Use only the cleaning materials and equipment which are compatible with the surface being cleaned, as recommended by the manufacturer of the material or as approved by the Owner.
PART 3 – EXECUTION

3.01 PROGRESS CLEANING

A. General:

1. Retain all stored items in an orderly arrangement allowing maximum access, not impeding drainage or traffic, and providing the required protection of materials.
2. Do not allow the accumulation of scrap, debris, waste material, and other items not required for construction of this work.
3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.
4. Provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.

B. Site:

1. Daily and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.
2. Weekly, and more often if necessary, inspect all arrangements of materials stored on the site; restack, tidy, or otherwise service all arrangements to meet the requirements of Paragraph 3.01-A-1 above.
3. Maintain the site in a neat and orderly condition at all times to the approval of the Owner.

C. Structure:

1. Weekly and more often if necessary, inspect the structure and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.
2. Weekly and more often if necessary, sweep all interior spaces clean.
3. As required, preparatory to installation of succeeding materials, clean the structure or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using all equipment and materials required to achieve the required cleanliness.
4. Following the installation of finish floor materials, clean the finish floor at all times while work is being performed in the space in which finish materials have been installed. "Clean" for the purpose of this Sub-Paragraph, shall be interpreted as meaning free from all foreign material which, in the opinion of the Owner may be injurious to the finish floor material.

D. Graffiti:

As directed by the Owner, promptly remove all evidence of graffiti.
3.02 FINAL CLEANING

A. Definition:

Except as otherwise specifically provided, "clean" (for the purpose of this Article) shall be interpreted as meaning the level of cleanliness generally provided by commercial building maintenance subcontractors using commercial quality building maintenance equipment and materials.

B. General:

Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris and waste. Conduct final progress cleaning as described in Article 3.01 above.

C. Structures:

1. Exterior: Visually inspect all exterior surfaces and remove all traces of soil, waste material, and other foreign matter caused by the Contractor. Remove all traces of splashed materials from adjacent surfaces caused by the Contractor. In the event of stubborn stains not removable with water, the Architect may require other cleaning at no additional cost to the Owner.

2. Interior: Visually inspect all interior surfaces and remove all traces of soil, waste material, smudges, and other foreign matter. Remove all traces of splashed materials from adjacent surfaces. Remove all paint droppings, spots, stains, and dirt from finished surfaces. Use only the specified cleaning materials and equipment.

3. Glass: Clean all glass inside and outside.

4. Polished Surfaces: To all surfaces requiring the routine application of buffed polish, apply the specified polish as recommended by the manufacturer of the material being polished.

5. Lead Clearance: Prior to final acceptance, Contractor shall utilize the services of an EPA trained Professional or EPA Certified Renovator to perform analyses to determine that the building is lead free, using EPA's clearance standards for lead dust.

D. Timing:

Schedule final cleaning to enable the Owner to accept a completely clean project, on an individual building acceptance basis.

End- Cleaning
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SECTION 01 77 00

PROJECT CLOSEOUT

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

1. The funding source may have special requirements for Owner and Contractor to meet before final payments may be made, in addition to those included in the front section this Project Manual Requirements.

1.02 RELATED WORK DESCRIBED ELSEWHERE

A. General Conditions of the Contract.

PART 2 – PRODUCTS

2.01 REQUIRED DOCUMENTS LISTED

A. When a Request for Disbursement is submitted by a project recipient for final payment of the 10 percent retainage of construction funds withheld on a site, additional requirements for supporting documentation, beyond those for progress payments, must be met. All of the documentation requirements for a progress payment must be met, and, in addition, the following closeout documentation must be submitted:

1. Certificate of Compliance -- a document issued by the local authority certifying that the Leasing unit meets local building codes and is suitable for occupancy; a temporary Certificate of Compliance may be obtained and submitted for the contractor to receive final payment. A permanent Certificate of Compliance must be issued prior to release of the Contractor's final retainage.

2. Electrical Inspection Certificate -- issued by the New York State Board of Fire Underwriters or other fire underwriters' organization recognized by the local government jurisdiction certifying that electrical installations have been inspected and meet all state and/or local codes.

3. Certificate of Substantial Completion – a document issued by the Architect signed by the Owner, Contractor indicating that the work is sufficiently complete in accordance with the Contract Documents that the Owner can occupy the work for its intended purposes.
4. Waiver of Mechanics Liens -- The Contractor submits these affidavits with the final request for payments stating that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the owner might be responsible have been paid or otherwise satisfied. The form requires that the Contractor list specifically any indebtedness or known claims in connection with the construction contract which have not been paid or otherwise satisfied and to furnish a lien bond or indemnity bond to protect the Owner with respect to each exception. This is to be submitted by any general contractors or subcontractors.

5. General Release - From all contractors subcontractors and equipment and material suppliers over $1,000 a document releasing the Owner from all outstanding payments and insuring all required warrantees and guarantees. All forms shall be available from the Albany County Land Bank.

2.02 PROJECT RECORD DOCUMENTS

A. Maintain on site at all times, one (1) full set of the following record documents, and record actual revisions to the Work.

1. Contract Drawings
2. Project Manual
3. Addenda
4. Change orders and other modifications to the Contract.
5. Reviewed shop drawings, product data, and samples.

B. Store record documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Project Manual: Legibly mark and record in Part 2 of each Section of Specifications, a description of the actual products installed, including the following:

1. Manufacture's name and product model number.
2. Product substitutions or alternates utilized.
3. Changes made by Addenda and modifications.

E. Record documents and Shop Drawings: Legibly mark each item to record actual construction including:

1. Measured horizontal and vertical locations of known or new underground utilities and appurtenances referenced to permanent surface improvements.
2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
3. Field changes of dimension and detail.
4. Details not on original Contract Documents.
F. Upon Completion of the Work, turn over the project record documents to the Owner.

G. Applications for progress payments will not be approved if the record documents are not kept current. Application for final payment will not be approved until the project record documents are delivered to the Owner.

2.03 OPERATION AND MAINTENANCE DATA

A. Prepare 2 sets comprised of 8-1/2 x 11 inch text pages bound in capacity expansion binders with durable plastic covers identified with printed title “OPERATION AND MAINTENANCE INSTRUCTIONS", title of project, and subject matter of the binder when multiple binders are required. Prepare a printed table of contents for each volume, with each product or system description identified. Internally subdivide the binder contents with permanent page dividers, logically organized as described below, with tab titles clearly printed under reinforced laminated plastic tabs:

Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, Subcontractors, and major equipment suppliers.

Part 2: Operation and maintenance instructions arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of subcontractors, and suppliers. Identify the following:

1. Significant Design Criteria
2. List of equipment.
3. Parts list for each component.
4. Operating instructions.
5. Maintenance instructions for equipment and systems.
6. Maintenance instructions for finishes, including recommended cleaning methods and materials and special precautions identifying detrimental agents.

Part 3: Project documents and certificates, including the following:

1. Shop Drawings and data.
2. Certificates.
3. Photocopies of warranties.

B. Submit one copy of completed volumes in final inspection. Revise content of documents as required to final submittal.

C. Submit 2 volumes prior to final application for Payment.
2.04 WARRANTIES

A. Furnish copies of warranties, which extend beyond the one-year period required by the General Conditions. Warranties submitted without warranty certification will not be accepted.

1. Warranty Certification: Written certification from the warrantor that invoices for installation, service, supplies, and warranty fees have been paid in full to persons or firms due payment, and that the warranty is in effect and non-retractable due to any of the specified conditions.

B. Prepare printed Table of Contents and assemble warranty certifications and warranty copies in a binder with a durable plastic cover.

C. Deliver the binder to the Owner prior to final Application for Payment.

D. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within 10 days after acceptance as start of warranty period.

E. Application for final payment will not be approved until the warranty certification and warranty documents are delivered to the Owner.

PART 3 - CONTRACT CLOSEOUT INSPECTIONS

A. The following three inspections will be made in addition to the normal inspections to ensure that all Contract requirements are met and that the Work is complete and acceptable. The purpose of each of these inspections is to furnish the Contractor a written list of Contract exceptions, omissions, and incompletions so that the Work can be progressed to timely completion in accordance with the Contract Documents.

1. Detailed Inspection: The "Detailed Inspection" will be made when the Work is substantially complete. A copy of the detailed inspection list will be furnished to the Contractor. When this inspection progresses over any length of time, copies of the list will be furnished as the inspection progresses so that the Contractor may proceed with the required Work without delay.

2. Final Inspection: The Contractor will be advised by letter of the date and time of final inspection. A copy of the final inspection list containing all incomplete or unsatisfactory items and the time allowed to complete the Work will be furnished to the Contractor.
3. Joint Inspection for Physical Completion: The joint inspection for physical completion will be made to verify completion of the exception items listed on the final inspection list so that the physical completion date (defined in the General Conditions) may be established.

B. In addition, at its discretion the funding source may itself make a final site inspection as a prerequisite to release of the final payment.

End - Project Closeout
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SECTION 01 78 36

GUARANTEES

PART 1 - GENERAL

1.01 DESCRIPTION

A. The General Contractor shall guarantee all work performed under the contract against faulty materials or work quality and shall remedy any defects due thereto from, which shall appear within a period of one year or such longer period of time as may be the terms of any applicable special guarantee required by the Contract Documents from the Date of Substantial Completion.

B. In the case of work performed by Subcontractors when guarantees of one year or special guarantees or manufacturer's guarantees or warranties of more than one year are required, the General Contractor shall secure written guarantees, warranties from said Subcontractors and submit duplicate executed copies to the Architect with cover letter listing each name, coverage and extent of coverage. Lamps are excluded from the guarantee.

C. Guarantee shall include service by mechanical contractor on a design winter day to adjust the systems.

D. The Contractor, by signing of this contract, guarantees all work as outlined in A, B, and C above.

E. Underwriter's Certificate:

1. Deliver to Architect two (2) copies of New York State Board of Fire Underwriter's Certificate of Inspection and Approval, showing acceptability of work done under this Contract, for presentation to Owner.

End - Guarantees
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SECTION 02 41 00

DEMOLITION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Demolition required for this Work includes, but is not necessarily limited to:

1. Demolition and removal of 2-story wood frame rear addition as shown on plans;
2. Demolition and removal of interior partitions as noted in Drawings;
3. Demolition and removal of all finishes, doors and windows;
4. Removal of all debris;
5. Dust control;
6. Salvage and reinstallation of material noted.
7. Note there are asbestos containing materials in the work. See the hazardous materials report.

B. Related Work Described Elsewhere:

1. Clearing: Section 31 10 00
2. Excavating, Back-Filling, and Grading Section 31 23 00

1.02 QUALITY ASSURANCE

In addition to complying with all pertinent codes and regulations, comply with the requirements of all insurance carriers providing coverage for this work.

1.03 JOB CONDITIONS

A. Dust Control:

Use all means necessary to prevent spread of dust during performance of the work of this Section. Thoroughly moisten all surfaces as required to prevent being a nuisance to the public, neighbors and concurrent performance of other work on the site.

B. Burning: On-site burning will not be permitted.
C. Protection:

Use all means necessary to protect existing objects designated to remain and in the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect.

PART 2 - PRODUCTS

2.01 EXPLOSIVES

Do not use explosives on this work.

2.02 OTHER MATERIALS

All other materials, not specifically described, but required for proper completion of the work of this Section shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 PREPARATION

A. Notification:

Notify the Architect at least one (1) full working day prior to the commencing of the work of this Section.

B. Site Inspection:

Prior to all work of this Section, carefully inspect the entire site and all objects designated to be removed and to be preserved.

C. Clarification:

Before commencing the work of this Section, verify with the Architect all objects to be removed and all objects to be preserved.

D. Scheduling:

1. Schedule all work in a careful manner with all necessary considerations of neighbors and the public.
2. Avoid interference with the use of, and passage to and from, adjacent buildings and facilities.

E. Protection of Utilities:

Preserve in operating condition all active utilities traversing the site. Specifically: electrical, gas, water, sewer, or other.

F. Protection of Building:

1. Erect, maintain, and remove suitable supports, protective shelters, barricades, lights, and warning signs to safeguard the buildings, as well as users of all of the above. All such arrangements shall conform with OSHA Standards.
2. Do not obstruct traffic; install adequate shoring as necessary.

3.02 SHORING

In cutting for all demolition, install adequate shoring as necessary. See Structural Plans.

3.03 SALVAGE

1. Remove all debris, extraneous materials, and furnishings present at the beginning of the work, except that to be reused.
2. Other materials, where so scheduled, may be salvaged by the Contractor and removed promptly from the site.

3.04 ABOVE GRADE STRUCTURES

1. Where demolishing above grade structures, keep all debris out of cellar.
2. Demolish structure above each floor level before damaging supporting members on lower level.

3.05 REMOVALS

1. Remove all debris from the site immediately. Do not spill in buildings or on site or on streets.
2. After completion of Demolition Work, remove all protection tools materials, and rubbish; leave premises clean and neat.
3. Remove walks, slabs, pavements, and curbs to be removed as indicated on the Drawings.

END – Demolition
02 52 00

RADON MITIGATION PIPE

1.01 SUBMITTALS

A. Comply with Section 01330 - Submittal Procedures.
B. Product Data: Submit manufacturer's product data, including installation instructions.

1.02 PRODUCTS

A. PolyVinyl Chloride (PVC) Non pressure pipe for Drain and Radon mitigation applications
   - ASTM D2729
   - 3” Solvent Weld
   - Solid (for Radon Mitigation)-
   - Schedule 40

Nonwoven Geotextile Drainage Fabric by Typar or equal.

INSTALLATION

Excavate to depths noted on the plan. Do not over excavate. Provide gravel bed with no fines and drainage fabric. Pitch piping for positive drainage to structure. Use solid pipe as indicated. Backfill as necessary.

Passive radon piping shall be installed per RRNC 2.0 AARST-ANSI Standard. Piping to be labelled “radon”.

END -Radon Mitigation Pipe
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SECTION 03 30 00

CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mix design, placement procedures, and finishes.

1.3 SUBMITTALS

A. Product Date: For each manufactured material and product indicated.

B. Design Mixes: For each concrete mix indicated.

C. Submit material certificates certifying that each material complies with the specifications

1.4 QUALITY ASSURANCE

A. Comply with the latest edition of the following:

1. ACI 211.1 "Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete"

2. ACI 301 "Specifications for Structural Concrete for Buildings"

3. ACI 304R "Guide for Measuring, Mixing, Transporting, and Placing Concrete"

4. ACI 305R "Guide to Hot Weather Concreting"

5. ACI 306R "Guide to Cold Weather Concreting"

6. ACI 311.5 "Guide for Concrete Plant Inspection and Field Testing of Ready-Mixed Concrete"

7. ACI 315 "Details and Detailing of Concrete Reinforcement"
8. CRSI "Manual of Standard Practice"


B. For all concrete exposed to view in the completed project, all materials are to be obtained from the same source.

1.5 PRODUCT HANDLING

A. Store materials so as to ensure preservation of their quality and fitness for the Work. Store reinforcement and formwork in a manner to prevent damage and accumulation of dirt.

1.6 WORKMANSHIP

A. Contractor shall be responsible for correction of concrete work which does not conform to specified requirements, including strength, tolerances, and finishes. Correct deficient concrete as directed by Architect.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Formwork
   1. Forms for Unexposed Finish Concrete: Plywood, lumber, metal, or other acceptable material. Provide lumber dressed on at least two edges and one side for tight fit.

   2. Form Coatings: Provide commercial formulation form-coating compounds with a maximum VOC of 450 g/l that will not bond with, stain, nor adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces requiring bond or adhesion, nor impede wetting of surfaces to be cured with water or curing compound.

B. Reinforcing Materials

   1. Deformed bars: ASTM A 615, Grade 60; ties and stirrups, Grade 40.

   2. Plain Steel Wire: ASTM A 82, plain, cold-drawn steel.

   3. Supports for Reinforcement: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars in place. Use wire-bar-type supports complying with CRSI specifications. Concrete bricks may be used to support footing reinforcing; stagger brick locations. Do not use clay bricks.

C. Concrete Materials

1. Portland Cement: ASTM C 150, Type I or II.

2. Aggregates: ASTM C 33 (normal weight), one source, and as herein specified.
   a. Fine Aggregate: Clean, sharp, natural sand free from loam, clay, lumps and deleterious substances. For slabs less than 10 percent passing the #100 sieve and less than 3 percent passing the #200 sieve.
   b. Course Aggregate: Clean, uncoated, processed aggregate free from clay, mud, loam, or foreign matter.
      - Footings: ASTM C 33 Size 467. Coarse aggregate in pounds to be 1.25 to 1.50 times the quantity in pounds of fine aggregate.
      - Slabs-on-grade, structural slabs: Minimum 1800 pounds per cubic yard of concrete, clean, processed, crushed stone and free of flat or elongated particles ASTM C33 Size 57.

D. Admixtures


2. Water-Reducing Admixture: ASTM C 494, Type A.

3. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

4. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.

5. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.

6. Fly Ash: ASTM C 618, Type F with a loss on ignition of less than 4 percent.

7. High-Range, Water-Reducing Admixture (Superplasticizer): ASTM C 494, Type F or G.

8. Anti-Spalling Sealer: Euco-Guard 100 by Euclid Chemical Co.; Masterseal SL by Master Builders; Enviroseal 20 by Hydrozo, Inc.; or accepted equivalent.

E. Vapor Retarder: Multi-ply reinforced polyethylene sheet, ASTM E 1745, Class C, not less than 7.8 mils (0.18 min) thick; or polyethylene sheet ASTM D 4397, not less than 10 mils (0.25 mm) thick.

G. Curing Materials:


2. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf.


5. Clear, 100% Styrene acrylic Copolymer, Membrane-forming, Curing and Sealing Compound ASTM C 1315, Type 1, Class A. Minimum 30 percent solids. Kurseal AC 38 AIM by AHH Harris or equal, must be compatible with floor finish.

H. Related Materials

1. Horizontal Joint Sealants: Sonolastic SL2 by Sonneborn Building Products; Sikaflex-2c SL by Sika Corp.; Eucolastic 2 SL by Euclid Chemical Co.; or accepted equivalent.


3. Backer Rod: Sonofoam polyethylene closed-cell foam by Sonneborn Building Products or accepted equivalent.


5. Anchor Bolts and Leveling Plates: Furnished in Section 05100 and installed under this Section.

6. Non-Shrink Grout: Corp of Engineers CRD-C 621. Conspec 100 by Conspec Manufacturing Co.; Euco N-S Grout by Euclid Chemical Co.; SikaGrout 212 by Sika Corp.; Masterflow 928 or Set Grout by Master Builders, Inc.; Sonogrupt by Sonneborn Building Products; or accepted equivalent.

7. Bonding Compound: Strongbond by Conspec Manufacturing Co.; SBR Latex by Euclid Chemical Co.; Everbond by L&M Construction Chemicals, Inc.; Acryl-Set by Master Builders, Inc.; SikaLatex by Sika Corp.; Sonocrete by Sonneborn Building Products; or accepted equivalent.
2.2 CONCRETE MIXES

A. Comply with ACI 301 requirements for concrete mixtures.

B. Prepare design mixes, proportioned according to ACI 301, for normal-weight concrete determined by either laboratory trial mix or field test databases.

C. Fly ash may be substituted for cement in normal weight concrete at a maximum rate of 20 percent by weight.

D. Concrete Quality:

1. Footings all other below-grade concrete:
   - f'c (28 day strength) \( 3,000 \text{ psi} \)
   - Maximum water cement ratio \( .55 \)
   - Slump 3 to 5 inches
   - Air Entrainment 4-6%

2. Interior slabs-on-grade:
   - f'c (28 day strength) \( 4,000 \text{ psi} \)
   - Maximum water cement ratio \( .45 \)
   - Slump 4 inches max.
   - Air Entrainment non-air-entrained

3. Exterior slab-on-grade:
   - f'c (28 day strength) \( 4,000 \text{ psi} \)
   - Maximum water cement ratio \( .45 \)
   - Slump 4 inches max.
   - Air Entrainment 5-7%

E. Provide batch ticket for each batch discharged and used in the Work, indicating Project identification name and number, date, mix type, mix time, quantity, and amount of water added. Record approximate location of final deposit in structure.

2.3 REINFORCING FABRICATION

A. Fabricate bars to required lengths, shapes and bends. Do not re-bend or straighten reinforcement in a manner that shall weaken the material.
PART 3 - EXECUTION

3.1 JOB CONDITIONS

A. Examine conditions under which concrete shall be placed. Do not proceed with work until all unsatisfactory conditions are corrected.

3.2 INSTALLATION, GENERAL

A. Formwork: Design, construct, erect, shore, brace, and maintain formwork according to ACI 301.

1. Corners and joints shall be fitted with gaskets or taped to prevent leakage.

2. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses, and chases from trades providing such items. Accurately place and securely support items built into forms.

B. Vapor Retarder: Install, protect, and repair vapor retarder sheets according to ASTM E 1643; place sheets in position with longest dimension parallel with directions of pour.

1. Lap material over footings, lap joints 6 inches (150 mm) and seal with manufacturer's recommended tape. Seal all pipe penetrations.


1. Do not cut or puncture vapor retarder. Repair damage and reseal vapor retarder before placing concrete.

2. Accurately position, support, and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcement by metal chairs, runners, bolsters, spacers, or hangers, as required.

3. Place reinforcement to obtain at least the minimum coverages for concrete protection.

4. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

5. Lap bar splices as indicated. Stagger splices in adjacent bars. Wire-tie all splices.
6. Use of nails in forms and use of clay brick to support reinforcement are prohibited.

7. Splice reinforcement at joints of low stress.

D. Installation of Embedded Items

1. General: Set and build into work anchorage devices and other embedded items (including, but not limited to anchor bolts, leveling plates, and embedded plates and angles) required for other work that is attached to or supported by cast-in-place concrete.

3.3 JOINTS

A. General: Locate and install construction joints which are not shown on Drawings so as not to impair strength and appearance of structure, as acceptable to Owner.

1. Place construction joints perpendicular to main reinforcement. Continue reinforcement across construction joints except as otherwise indicated. Do not continue reinforcement through sides of strip placements.

2. Use bonding agent on existing concrete surfaces to be joined with fresh concrete.

B. Contraction Joints in Slabs-on-grade: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to at least one-fourth of the concrete thickness.

1. Use soft cut contraction joints. Depth of cut shall be 1/4 of the slab thickness with a minimum of one inch.

2. Saw cut joints as soon as possible after finishing, generally within 4 to 16 hours. Make sample cut.

C. Isolation Joints: Install joint-filler strips at junctions with slabs-on-grade and vertical surfaces, such as column pedestals, foundation walls, grade beams, and other locations, as indicated.

D. Fill all perimeter joints and control joints with polyurethane caulk.
3.4 CONCRETE PLACEMENT

A. Comply with recommendations in ACI 304R for measuring, mixing, transporting, and placing concrete.

1. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast in.

2. Notify other trades to permit installation of their work. Cooperate with other trades in setting such work, as required.

3. Deposit concrete continuously or in layers of such thickness that no concrete shall be placed on concrete which has hardened sufficiently to cause formation of seams or planes of weakness within section. Provide construction joints if section cannot be placed continuously.

4. Deposit concrete as nearly as practicable to its final location to avoid segregation caused by re-handling or flowing.

5. Maximum drop of concrete shall not exceed 5 feet. Use hopper and trunk for greater drops.


7. Contractor shall be responsible for controlling the proper placing of all embedded pipe, conduit, and other embedded items. ACI 318, Article 6.3, shall apply to all cases of embedded fixtures.

3.5 PLACING CONCRETE SLABS

A. A max. of 2-1/2 gallons per cubic yard of total mix design water can be added in field.

B. Use strip pour methods and mechanical vibratory screed whenever possible.

C. Deposit and consolidate concrete in continuous operation within limits of construction joints, until placing of panel or section is completed.

D. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

E. Bring slab surfaces to correct level with a straight-edge and strike off. Uniformly slope to drains. Use darbies to smooth surface, leaving it free of humps or hollows. Do not sprinkle water or portland cement on plastic surface. Do not disturb slab surfaces before beginning finishing operations.
F. Maintain reinforcement in proper position during concrete placement operations. See requirements for reinforcement placement.

G. Slab thicknesses shown on Drawings are the minimum allowable. Maximum allowable thickness shall be 1 inch greater than specified thickness.

3.6 CONSOLIDATION

A. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

B. Do not use vibrators to transport concrete inside formwork.

3.7 FINISHING UNFORMED SURFACES

A. General: Comply with ACI 302.1R for screeding, re-straightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

B. Screed surfaces with a straightedge and strike off. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb surfaces before starting finishing operations.

C. Float Finish: Apply float finish to surfaces to receive trowel finish.

D. Trowel Finish: Apply a hard trowel finish to surfaces indicated and to floor and slab surfaces exposed to view or to be covered with resilient flooring, carpet, paint, or another thin film-finish coating system.

E. Non-slip Broom Finish: Apply a non-slip broom finish to exterior concrete sidewalks. Immediately after float finishing, slightly roughen trafficked surface by browning with fiber-bristle broom perpendicular to main traffic route.

F. Apply Anti Spalling compound to exterior exposed slabs.

3.9 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection, and follow recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions occur before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete, but before float finishing.
C. Begin curing after finishing concrete, but not before free water has disappeared from concrete surface.

D. Cure formed and unformed concrete for at least seven days as follows:

1. Moisture Curing: Keep surfaces continuously moist with absorptive cover, water saturated and kept continuously wet.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.

3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.10 COLD WEATHER CONCRETING

A. Place concrete during cold weather in accordance with ACI 306.

3.11 HOT WEATHER CONCRETING

A. Place concrete during hot weather in accordance with ACI 305.

3.12 TOLERANCES

A. Comply with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

END – Cast-in-Place Concrete
SECTION 04 01 20

MASONRY RESTORATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Masonry restoration Work includes, but is not limited to:

1. Repairs to existing masonry foundation;
2. Brickwork to match existing;
3. Surface Bonding Cement Parging

1.02 QUALITY ASSURANCE

A. Qualifications of Workers:

1. Masonry restoration shall be undertaken only by a skilled Contractor with at least five years experience in masonry restoration. Provide the Owner with a list of three buildings recently completed with contact names, which may be used as references.
2. In acceptance or rejection of installed brick masonry, no allowance will be made for lack of skill on the part of the workers.
3. Provide one skilled mason who shall be present at all times during execution of the work of this Section and who shall personally direct the execution of this portion of the Work.

1.03 SUBMITTALS

A. Brick:

Within 35 days after award of Contract and before any brick masonry materials are delivered to the job site, submit a minimum of seven (7) bricks showing extremes of variation in color and texture to the Owner for approval in accordance with Section 01 33 00 of these Specifications.

Before any brick is installed, review with the Owner the compatibility of the salvaged brick and/or new brick for the specific location.
B. Work Quality and Mortar:

Provide mortar test “cookies” for each proposed mortar mix to be approved prior to producing test panel. The cookie should be indicative of color and hardness. No materials for restoration purposes are to be installed until a sample is approved by the Architect for color match. Consult the Owner for which area to match.

Provide a test panel approximately 3’ x 3’ in an inconspicuous yet readily accessible area. Allow ample time for curing. New mortar shall match the original in color, composition, texture, tooling, and joint size/profile. No materials for restoration purposes are to be installed until a sample is approved by the Owner for joint tooling and color match. Consult the Owner for which area to match.

1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 BRICKS

A. General: Use salvaged (from the site) or new brick to match existing. Use the best matching brick in the most visible areas, as directed by the Owner.

B. Select from salvaged brick to match color, size and texture of existing. Salvaged brick shall be clean and free of mortar. Only use full brick without chips or cracks.
C. New brick shall be sand-molded, common clay brick or pressed brick as appropriate to match color and size of original brick. Match brick to the area of the building depending on where the repair work will occur. Architect must approve brick selection. Recommended brickworks are Old Carolina Brick Co. and Redland Brick Co., Cushwa Plant or approved equal.

2.02 MORTAR

A. General: Historic mortar mix is required for existing soft bricks. Pre-packaged modern mortar mix is not permitted. See Part 3.04 for proper ratios of the following mortar materials.

1. Portland Cement: Standard American Brands, ASTM C150-68, white or grey as appropriate.
2. Sand: Shall comply with ASTM C144. Color and texture to match existing.
4. Water: Shall be clean and free of deleterious acids, alkalines, or organic material.

2.03 SURFACE BONDING CEMENT PARGING

Quikrete One Coat Fiberglass Reinforced Stucco (No. 1200-80). Alkali resistant fiberglass reinforced, Factory pre-blended mix

2.03 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation of brick masonry, shall be as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that brick masonry may be completed in strict accordance with all pertinent codes and regulations, the referenced standards, and the original design.
B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 COORDINATION

Carefully coordinate with all other trades to ensure proper and adequate interface of the work of other trades with the work of this Section.

3.03 COLD WEATHER WORK

A. General:

Masonry is required to be protected against freezing for at least 48 hours after being laid. Unless adequate precautions against freezing are taken, no masonry may be built when the temperature is below 32°F on a rising temperature, or below 40°F on a falling temperature, at the place where the work is in progress. No frozen material may be built upon.

B. Enclosures:

1. When air temperature is below 25°F, enclosures shall be erected and salamanders used for keeping the temperature above freezing, or as approved by the Architect.
2. The Contractor shall protect the masonry from inclement weather effects.

3.04 MIXING MORTAR

A. General Application:

1 part Portland cement
3 parts hydrated lime
6 parts sand, color to match original.
Pigment as required
B. Mixing:

1. Mix mortar at least three minutes after all materials have been added.
2. Mix only as much mortar as can be used in one hour after water has been first mixed into the batch.

C. Re-tempering:

Do not re-temper mortar.

D. Antifreeze:

Antifreeze materials shall not be used in the mortar without Architect's approval.

3.05 INSTALLATION

A. General:

1. All face brick shall be laid to match the existing bond. Bricks to be toothed in over the field of the foundation walls. Toothing in is not required at masonry opening infill work (window and door openings).
2. Do not use chipped or broken units if any such units are discovered in the finished wall; the Owner may require their immediate removal and replacement with new units at no additional cost to the Owner.

B. Dampening:

1. Clay or shale brick with high absorption rate shall be wetted. Bricks shall be in full bed of mortar, bottom and ends laid with a shoved joint. Unfilled furrowed joints shall not be permitted. Fill vertical joints and voids between masonry and other materials, except furring and structural wood framing solid with mortar as each course is laid.
2. Store all masonry units on the job so that they are kept off the ground and protected from the rain.
3. Wetting the units shall not be permitted except when hot and dry weather exists, causing the units to be warm to the touch, and then the surface only may be wetted with a light fog spray.

C. Laying Up:

1. Bricks shall be laid with shoved joints in full mortar beds and be thoroughly slushed up with mortar at every course.
2. Masonry shall be plumb, true to line with courses level, or made to match the adjacent coursing if not level.
3. Courses of face brick shall be laid out accurately, keeping bond plumb and level throughout. Variation is acceptable to match existing coursing. Variations in width of vertical joints shall be inconspicuous and made only as necessary to maintain bond.

4. Bond of face brick shall be laid out and adjusted to each wall so that no course shall finish at an external corner or jamb with a piece less than 3-3/4" long.

D. Reinforcement:

All metal items and anchors shall be built in as work progresses.

E. Tooling:

Match existing struck joints as per approved sample. If necessary, make appropriate tool for working narrow joints.

F. Raking:

Rake with hand tools joints to be repointed to a depth of 1/2". Remove any loose or disintegrated mortar beyond this depth.

G. Pointing:

1. Joints shall be thoroughly cleaned before repointing. Brick shall be dampened, but excessive dampness shall be avoided.
2. When mortar is thumbprint hard, the joint shall be tooled in a manner to match the appearance of the old mortar.
3. Remove excess mortar by brushing with a bristle brush.

H. Patches:

Patches shall match in size, joints and bond the existing work, unless otherwise specified. Existing loose or defective material in area to be rebuilt must be removed until sound brickwork is encountered.

I. Curing:

The Contractor shall provide for the moisture cure of all new joint mortar and restoration mortar immediately subsequent to their placement as specified, or as called for by manufacturer’s instructions.

J. Accessories: Install according to the manufacturer’s recommendations

3.06 CLEANING UP
A. Inspection and Adjustment:

Upon completion of the Work of this Section, make a thorough inspection of all installed brick masonry and verify that all units have been installed in accordance with the provisions of this Section. Make all necessary adjustments.

B. Cleaning:

1. Brick exposed in the finished work shall be cleaned on completion of the work. Use a stiff natural bristle or nylon brush after the mortar has dried, but before it is initially set (1-2 hours). Mortar that has hardened can be removed with a wooden paddle or, if necessary, a chisel. As a last resort use a mild cleanser. Both before and after applying the cleanser, rinse well with plenty of clean, fresh water.

2. Upon completion of all work of this Section, promptly move from the job site all mortar droppings, broken units, debris arising from the work of this Section, and all tools and equipment of this Section, leaving all areas in a neat and orderly condition to the approval of the Architect.

END - Masonry Restoration
SECTION 04 22 00

CONCRETE UNIT MASONRY

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Concrete masonry units as backing for brick at infill.

1.2 REFERENCES


1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

B. Store all materials above ground on a dry, level platform which permits air circulation under the stack.

C. Cover and protect units from weather, moisture, and damage. Keep all units free from soil, ice, and frost.

1.5 ENVIRONMENTAL REQUIREMENTS

A. Maintain materials and surrounding air temperature to minimum 40 degrees F prior to, during, and 48 hours after completion of masonry work.

B. Maintain materials and surrounding air temperature to maximum 90 degrees F prior to, during, and 48 hours after completion of masonry work.
PART 2 - PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. Concrete Block: Comply with referenced standards and as follows:

1. Size: Standard units with nominal face dimensions of 16 x 8 inches and nominal depths as indicated on the drawings for specific locations.

2. Load-Bearing Units: ASTM C 90, normal weight or lightweight.
   a. Hollow block.
   b. Type I: Moisture-controlled.
   c. Solid units where best suited.
   d. Average net compressive strength: 1,900 psi.

2.2 MORTAR AND GROUT MATERIALS

A. Mortar: Masonry cement mortar in accordance with ASTM C91.

   1. Load-bearing walls and shear walls: Type S.

B. Grout: Cementitious grout in accordance with ASTM C 476; 8-inch to 10-inch slump; 3,000 psi compressive strength.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that field conditions are acceptable and are ready to receive masonry.

3.2 PLACING AND BONDING

A. Lay hollow masonry units with face shell bedding on head and bed joints.

B. Bed all webs in mortar.

C. Remove excess mortar as work progresses.

3.3 THERMAL REQUIREMENTS
A. Hot Weather Conditions: Protect masonry construction from direct exposure to wind and sun when erected in a temperature greater than 80 degrees Fahrenheit.

B. Cold Weather Conditions: Comply with NCMA TEK Bulletins 16A and 71.

END – Concrete Unit Masonry
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PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

All miscellaneous metal and steel items not specifically described in other Sections of these Specifications but required for a complete and operable facility. May include columns, plates, anchors, roof flashing, coping.

B. Related Work Described Elsewhere:

1. Flashing and Sheet Metal: Section 07 60 00
2. Metal Clad Wood Windows: Section 08 52 13

1.02 QUALITY ASSURANCE

A. Qualifications of Welders:

Use only certified welders and the shielded arc process for all welding performed in connection with the work of this Section.

B. Codes and Standards:

In addition to complying with all pertinent codes and regulations, comply with:


C. Conflicting Requirements:

In the event of conflict between pertinent codes and regulations and the requirements of the referenced standards or these Specifications, the provisions of the more stringent shall govern.
1.03 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect miscellaneous metal before, during, and after installation and to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MISCELLANEOUS

A. Provide all necessary miscellaneous steel assemblies, as required, including but not limited to the following:

1. Provide all clips, bolts, masonry and concrete anchors necessary to complete the installation.

2.02 STEEL TUBING

All steel tubing shall be new, free from rust, and conforming with the requirements of ASTM A-501.

2.03 STEEL PLATE

All steel plate shall be new, free from rust, and conforming with the requirements of ASTM A-36.

2.03 CONNECTORS, BOLTS AND NUTS

All connectors, bolts and nuts shall be new, free from rust, and corrosion resistant. Connectors shall be the product of USP or Simpson. Bolts and nuts shall conform with the requirements of ASTM A-307.

2.04 ELECTRODES

All arc electrodes used shall be only those specifically recommended for the purpose by the American Welding Society.
2.05 PRIMER PAINT

All primer paint shall be compatible with the finish coats specified in Section 09900 of these Specifications.

2.06 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation of miscellaneous metal, shall be new, free from rust, best quality of their respective kinds, and subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where fabrication and installation of the work of this Section may properly commence.
2. Make all required measurements in the field to ensure proper and adequate fit of miscellaneous metal items.
3. Verify that miscellaneous metal may be fabricated and installed in strict accordance with the original design and the approved Shop Drawings.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with fabrication or installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 FABRICATION

A. Compliance:

Fabricate all miscellaneous metal in strict accordance with the approved Shop Drawings and the referenced standards.

B. Prefabrication:

Insofar as possible, shop prefabricate all items complete and ready for installation.
C. Welding:

1. Unless otherwise indicated on the Drawings, weld all shop connections.
2. Make all joints and intersections of metal tightly fitting and securely fastened.
3. Make all work square, plumb, straight, and true.

D. Riveting, Bolting, Screwing:

Unless otherwise indicated, rivet, bolt, or screw heads flat countersunk in exposed faces of work of ornamental or finish character, elsewhere as required. Cut off bolts, screws, etc. where exposed flush with nuts or other adjacent metal.

E. Exposed Fastenings:

Shall be materials, color, finish as metal to which they apply, unless otherwise required. Assemble ornaments with tap screws, with countersunk heads filled down neatly and made imperceptible.

F. Connections:

Make up threaded connections tightly so that threads will be entirely concealed by the fitting.

G. Anchorage:

Work to be built in with masonry or concrete of form required for anchorage, or be provided with suitable anchors, expansion shields, etc., as required to be set in concrete or masonry.

H. Supports:

Install all supporting members, fastenings, framing, hangers, bracings, brackets, straps, bolts, angles and the like required to set, connect work rigidly, properly to structural steel, masonry, other construction.

I. Attached Work:

Except where otherwise specified for particular work item, or where work is required to be built in, secure to masonry with expansion or toggle bolts. Fastenings to wood plugs in masonry is not permitted.
3.03 SHOP PAINTING

A. Preparation:

1. Thoroughly clean all metal as described in Section 09 91 00 of these Specifications.
2. Provide all required protection for metal to be encased in concrete to prevent accumulation of deleterious foreign material.

B. Painting:

Shop prime all steel except:

1. Steel to be encased in concrete;
2. Surfaces to be welded;
3. Contact surfaces to be high strength bolted; and
4. Steelwork which will be concealed by interior finish.

3.04 ERECTION

A. Coordination:

Coordinate installation schedule with the schedules of other trades to ensure orderly and timely progress of the total work.

B. Compliance:

Erect and install all miscellaneous metal in strict accordance with the Drawings, the approved Shop Drawings, and the referenced standards, aligning straight, plumb, and level with a tolerance of one in 200.

C. Touching-Up:

After the erection and installation are complete, touch-up all shop priming coats damaged during transportation and erection, using the priming paint specified for shop priming.

END - Miscellaneous Metal

Division 05 - 5
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SECTION 06 10 00

ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

A. The Work of this Section includes, but is not limited to, the following:

1. Wood Framing;
2. Wood supports;
3. Wood blocking and nailers;
4. Wood furring;
5. Plywood sheathing, subflooring and underlayment.

B. Related Work Specified Elsewhere:

1. Finish Carpentry Section 06 20 00
2. Joint Sealants Section 07 92 00

1.02 QUALITY ASSURANCE

A. Comply with the following:

2. AWPA Book of Standards, American Wood Preservers Association, Bethesda, Maryland (AWPA).
6. AWPA Book of Standards, American Wood Protection Association (AWPA).

1.03 SUBMITTALS

A. None required.
1.04 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber as well as plywood and other panels; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials. For lumber and plywood pressure treated with waterborne chemicals, sticker between each course to provide air circulation.

B. Keep all material clearly identified with all grade marks legible.

PART 2 – PRODUCTS

2.01 WOOD-PRESERVATIVE-TREATED MATERIALS

A. Preservative Treatment by Pressure Process: AWPA U1-17 (lumber).

B. Kiln-dry material after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.

C. Application: Treat items indicated on Drawings, and the following:

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing, UC2.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete, UC2.
3. Wood framing members with less than 18 inches clear above grade, UC2.
4. Wood floor plates that are installed over concrete slabs, UC2.

D. Wood treated with CCA or ammonia carriers, including ACZA, are not permitted.

2.02 DIMENSIONAL LUMBER

A. General: Lumber to be of grades indicated below. Grading to be consistent with the American Lumber Standard Committee’s (ALSC) “National Grading Rule” as executed by the grading agency indicated for each individual product.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Provide dry lumber with 19 percent moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

B. For framing SPF #2, unless otherwise noted.
2.03 MISCELLANEOUS LUMBER

A. Provide miscellaneous lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Cants.
4. Furring.

2.04 ENGINEERED WOOD PRODUCTS

A. Laminated-Veneer Lumber (LVL): Composite of wood veneers with grain primarily parallel to member lengths, manufactured with exterior-type adhesive complying with ASTM D 2559. Allowable design values determined according to ASTM D 5456.

1. Extreme Fiber Stress in Bending, Edgewise: 2,600 psi for 12-inch nominal-depth members.
2. Modulus of Elasticity, Edgewise: 1,900,000 psi (min.).

2.05 CONSTRUCTION PANELS, GENERAL

A. Comply with "U.S. Product Standard PS-1 Structural Plywood, U.S. Department of Commerce" for plywood construction panels and, for products not manufactured under PS 1 provisions, with APA PRP-108. Furnish construction panels that are each factory-marked with APA trademark evidencing compliance with grade requirements.

B. Where construction panels are indicated for the following concealed types of applications, provide APA Performance-Rated Panels complying with requirements designated under each application for grade designation, span rating, exposure durability classification, edge detail (where applicable), and thickness.

Sub-flooring: APA Rated Sheathing.

1. Exposure Durability Classification: Exposure 1.

Underlayment: APA Rated
A-C Plywood, ¼-inch minimum thickness, square edge or tongue-and-groove
Roof Sheathing: APA Rated Sheathing.

1. Exposure Durability Classification: Exposure 1.

2.06 FASTENERS

A. 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 A53/A53M.

B. Power-Driven Fasteners: ESR 1539.

C. Bolts: Steel bolts complying with ASTM A307, Grade A, with ASTM A563 hex nuts, and where indicated, flat washers.


E. Power-Driven Fasteners: ESR 1539.


G. Lag Screws: ASME B18.2.6.

H. Fasteners in contact with preservative treated lumber, including bolts and nails: Provide hot-dipped galvanized finish unless more restrictive material is recommended by the Preservative Treatment Manufacturer. Do not use zinc plated or other types of coated fasteners.

2.07 METAL FRAMING ANCHORS

A. Material: Metal framing anchors shall be made from hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 (Z180) coating designation.

B. Allowable Design Loads: Meet or exceed those indicated per manufacturer's published values determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Provide metal framing anchors of type, size, metal, and finish indicated that comply with requirements specified including the following:

1. Joist Hangers:
   a. Dimensional Lumber: 14 gauge, HU Heavy Duty Series by Simpson Strong-Tie Co. unless noted otherwise.
b. Laminated Veneer Lumber: 12 gauge, W Series by Simpson Strong-Tie Co. unless noted otherwise.

E. Metal framing anchors in contact with preservative treated wood: Provide Simpson ZMAX hot-dipped galvanized finish, G185 HDG per ASTM A653, unless more restrictive material is recommended by the Preservative Treatment Manufacturer.

2.08 ADHESIVES FOR FIELD GLUING PANELS TO FRAMING

A. Formulation shall comply with APA AFG-01 ASTM D 3498 and shall be approved for use with type of construction panel indicated by both adhesive and panel manufacturers.

B. Use Contech PL-400 or accepted equivalent for dry conditions of use. Use Contech PL-500 or accepted equivalent for treated lumber or wet conditions of use.

PART 3 - EXECUTION

3.01 DELIVERIES

A. General:

Deliver packaged materials to site in manufacturer's original unopened, labeled containers.

B. Stockpiling:

1. Stockpile all materials sufficiently in advance of need to ensure their availability in a timely manner for this Work.
2. Store to prevent damage to materials or structure. Store wood to prevent absorption of excessive moisture. Store glued materials in weathertight floored spaces.

3.02 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Apply field treatment complying with AWPA M4 to cut surfaces of preservative treated lumber and plywood.
C. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. Published requirements of metal framing anchor manufacturer.

D. Discard units of material with defects that impair quality of rough carpentry construction and that are too small to use in fabricating rough carpentry with minimum joints or optimum joint arrangement.

E. Fit rough carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.


H. Fastening Methods:

1. Sheathing: Nail to wood framing.
2. Plywood Backing Panels: Nail or screw to supports.
3. Additionally use glue, caulking or gasketing where required to establish air barrier at exterior walls.

I. Use common wire nails, unless otherwise indicated. Make tight connections between members. Install fasteners without splitting wood; pre-drill as required.

J. Pre-drill lead holes for lag screws and wood screws the same diameter as the roof of the thread. Enlarge the lead holes to the shank diameters for the lengths of the unthreaded shanks.

K. Insert all lag screws and wood screws by turning; do not drive with a hammer.

3.03 WOOD GROUNDS, NAILERS, BLOCKING, SLEEPERS, AND FURRING

A. Install wood grounds, nailers, blocking, and sleepers where shown and where required for screeding or attachment of other work. Form to shapes as shown and cut as required for true line and level of work to be attached. Coordinate location with other work involved.
3.04 WOOD FRAMING, GENERAL

A. Framing Standard: Comply with the 2015 International Residential Code as supplemented by NYS, unless otherwise indicated.

B. Install framing members of size and spacing indicated.

C. Anchor and nail as shown, and to comply with the following:

2. Published requirements of manufacturer of metal framing anchors.
3. "Recommended Nailing Schedule" of referenced framing standard and with the 2015 International Building Code as supplemented New York State

D. Do not splice structural members between supports.

E. Fire-stop concealed spaces of wood framed walls and partitions at each floor level and at the ceiling line of the top story. Where firestops are not automatically provided by the framing system used, use closely fitted wood blocks of nominal 2-inch-thick lumber of the same width as framing members.

3.05 STUD FRAMING

A. General: Arrange studs so that wide face of stud is perpendicular to direction of wall or partition and narrow face is parallel. Install single bottom plate and double top plates using 2-inch-thick members whose widths equal that of studs. Nail or anchor plates to supporting construction.

1. For load bearing partitions, install 2-inch by 4-inch wood studs spaced 16 inches on center, unless noted otherwise.

3.06 RAFTER AND JOIST FRAMING

A. General: Install joists with crown edge up and support ends of each member with not less than 1-1/2 inches of bearing on wood or metal, or 3 inches on masonry. Attach joists with metal joist hangers.
B. Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers where span of header exceeds 4 feet.

3.07 INSTALLATION OF CONSTRUCTION

A. General: Comply with applicable recommendations contained in "APA Design/Construction Guide - Residential & Commercial", for types of construction panels and applications indicated.

B. Fastening Methods: Fasten panels as indicated below:

1. Sub-flooring: Glue and nail to framing throughout.
2. Sheathing: Nail to framing.
3. Underlayment: Nail to sub-flooring.
   a. Fill and sand edge joints of underlayment receiving resilient flooring.
   b. Butt panel ends and edges to a close but not tight fit (allow 1/32inch space).
4. Plywood Backing Panels: Nail to supports.

C. Install with face grain across supports, using panels continuous over two or more spans with end joints between panels staggered and locate over center of supports.

D. Nail 6 inches on center along panel ends and 12 inches center to center at intermediate supports using 8d common nails for panels over 1/2 inch but less than 1 inch thick.

E. Provide support at unsupported long edges with "Plyclips" or wood blocking at spacing of 12 inches on center maximum.

F. Allow 1/8-inch open space between edge joints for expansion and contraction of panels.

G. Used plywood will not be acceptable material for sheathing purposes.

3.09 CLEAN UP

Upon completion of all Work of this Section, promptly remove from the job site all scrap materials, tools, equipment, and rubbish leaving all areas in a neat and orderly condition to the approval of the Architect.

END – Rough Carpentry
SECTION 06 20 00
FINISH CARPENTRY

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Installation of all wood trim and other items as indicated on Drawings and not specifically described as being installed under other Sections of these Specifications.

B. Related Work Described Elsewhere:

1. Rough Carpentry: Section 06 10 00
2. Wood Doors: Section 08 14 00
4. Metal Clad Wood Windows Section 08 52 13
4. Fiberglass Windows Section 08 54 13

1.02 QUALITY ASSURANCE

A. Qualifications of Workers:

For actual cutting and fitting of trim and finish material, use only qualified finish carpenters who are thoroughly trained and experienced in the skills required, who are completely familiar with the materials involved and the manufacturer's recommended methods of installation, and who are thoroughly familiar with the requirements of this Work.

B. Rejection:

In the acceptance or rejection of finish carpentry, no allowance will be made for lack of skill on the part of workers.

1.03 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.
B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.02 MATERIALS

A. General:

All Interior moldings and trim shall be select pine or poplar with no knots over \( \frac{1}{4} \)” in size (finger-jointed moldings are permitted).

Exterior wood to be trim PolyAsh or HardieBoard as noted on plans. Prime on all sides and cut ends.

B. Baseboard, Door and Window Casing:

1. 1x4 flat stock with routed top edge for base and rounded side edges for window and door trim, unless otherwise noted.
2. Install corner blocks at window trim.
3. Use shoe molding at all wood base.
4. 5/4” finger jointed wood sills at all windows.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that finish carpentry may be completed in strict accordance with the original design and all pertinent codes and regulations.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.
3.02 WORK QUALITY

A. General:

All finish carpentry shall produce joints true, tight, and well nailed with all members assembled in accordance with the Drawings.

B. Jointing:

1. Make all joints to conceal shrinkage; miter all exterior corners cope all interior corners, miter or scarf all end-to-end joints.
2. Install all trim in pieces as long as possible, jointing only where solid support is obtained.

C. Fastenings:

1. Install all items straight, true, level, plumb, and firmly anchored in place; where blocking or backing is required, coordinate as necessary with other trades to ensure placement of all required backing and blocking in a timely manner.
2. Nail trim with finish nails of proper dimension to hold the member firmly in place without splitting the wood.
3. Nail all exterior trim with galvanized nails, making all joints to exclude water and setting in waterproof glue or caulking.
4. On exposed finish work, set all nails for putty.
5. Screw, do not drive, all wood screws except that screws may be started by driving and then screwed home.

3.03 INSTALLATION OF OTHER ITEMS

Install all other items in strict accordance with the Drawings, and the published recommendations of the manufacturer of the item, anchoring firmly in place at the prescribed location, straight, plumb, level, and anchored for long life under hard use.

3.04 FINISHING

Sand-paper all finished wood surfaces thoroughly as required to produce a uniformly smooth surface, always sanding in the direction of the grain; no coarse grained sand-paper mark, hammer mark, or other imperfections will be accepted.

3.05 CLEANING

Upon completion of this portion of the Work, thoroughly broom clean all surfaces.

END - Finish Carpentry
SECTION 07 11 00

DAMP-PROOFING

PART I – GENERAL

1.01 DESCRIPTION

A. Work Included:

Damp-proofing required for this Work is indicated on the Drawings and includes, but is not necessarily limited to:

1. Below grade damp-proofing at rear addition removal.

B. Related Work Described Elsewhere:

1. Vapor Barrier Under Slabs (Cast-in-place Concrete): Section 03 30 00
2. Fluid-Applied Waterproofing Section 07 14 00
3. Backfilling against Structure (Excavating & Backfilling): Section 31 23 00

1.02 QUALITY ASSURANCE

A. Qualification of Installers:

Provide at least one person who shall be present at all times during execution of this portion of the Work and who shall be thoroughly experienced in installation of the specified products and shall direct all work performed under this Section.

1.03 SUBMITTALS

A. Materials List:

Within 35 days after award of the Contract, and before any damp-proofing materials are delivered to the job site, submit to the Architect a complete list of all materials proposed to be furnished and installed under this portion of the Work, making the submittal in accordance with the provisions of Section 01 33 00 of these Specifications.
1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect damp-proofing materials before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.05 DELIVERY

All other materials shall be delivered in sealed containers bearing manufacturer’s brand and name.

PART 2 – PRODUCTS

2.01 DAMP-PROOFING

Fibrated emulsion-based asphalt dampproofing shall be cold-applied type conforming to ASTM D 1227 Type IV, asbestos-free, manufactured of refined asphalt, emulsifiers and selected clay, fibrated with mineral fibers. For spray or brush application, emulsion shall contain a minimum of 59 percent solids by weight, 56 percent solids by volume. For trowel application, emulsion shall contain a minimum of 58 percent solids by weight, 55 percent solids by volume. Product shall be BASF Building Products: Hydrocide 700 or 700B or equal.

2.02 OTHER MATERIALS

All other materials not specifically described but required for a complete and proper installation of damp-proofing, shall be as selected by the Contractor subject to the approval of the Architect.
PART 3 – EXECUTION

3.01 INSTALLATION

a) Fill in crevices and grooves, providing continuous coating free from breaks and pinholes. Carry coating over exposed top and outside edge of footing. Spread around joints, grooves, and slots, and into chases, corners, reveals, and soffits. Bring coating to finished grade.

b. Place backfill at least 24 to 48 hours after application, but within 7 days. Do not rupture or damage film or displace coating or membranes

c. Installation shall be per manufacturer’s instructions. Surface to which it will be applied shall be dry and free of dew, frost, dirt, oils, and other debris.

END – Damp-proofing
SECTION 07 21 00

BUILDING INSULATION

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Building insulation required for this Work is implied or indicated on the Drawings and includes, but is not limited to:

1. Exterior wood-framed wall insulation;
2. Attic insulation;
3. Basement wall insulation
4. Sound insulation;
5. Vapor barrier/retarder for all insulation;
6. Miscellaneous insulation.

B. Related Work Described Elsewhere:

1. Plaster and Gypsum Board Assemblies Section 09 21 00

1.02 PRODUCT HANDLING

A. Protection:

1. Deliver materials to the job site and store in a safe dry place with all labels intact and legible at time of installation.
2. Use all means necessary to protect building insulation materials before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.
PART 2 - PRODUCTS

2.01 BUILDING INSULATION

A. General – Locations, thicknesses and R-values of various types of insulation are as noted on the Drawings.

B. Kraft-faced Fiberglass Batt insulation in exterior envelope shall be the product of Owens-Corning Fiberglass, Manville Fiberglass, or approved equal.

C. Unfaced Fiberglass Sound Batt insulation shall be the product of Owens-Corning Fiberglass, Johns Manville Fiberglass, or approved equal.

D. Extruded Polystyrene (XPS) insulation shall be Styrofoam Square Edge (“blue board”) as manufactured by Dow Chemical, or equal, with an R-4.92 per inch.

E. Polyisocyanurate closed cell rigid insulation by RMax or equal.

F. Miscellaneous Insulation: Provide low expanding spray foam in areas of possible outside air infiltration not otherwise sealed, such as at perimeter of windows, doors, pipe penetrations and other openings in exterior surfaces.

2.02 ADHESIVES

The adhesive shall be designed to be compatible, both in bond strength and chemical structure, with the specific rigid insulation used and with the stratum to which it is adhered.

2.03 VAPOR BARRIER/RETARDER

A. Vapor Retarder shall be the Kraft facing on batt insulation; no additional vapor barrier is permitted when Kraft facing is used. Mem-Brain vapor retarder may be used with unfaced batt.

B. Vapor Barrier:

1. 6 mil reinforced polyethylene for installation over dirt floor in basement, such as manufactured by Dura Skrim or equal. Reinforcing shall be polyester scrim or equivalent to improve tear resistance, and must meet or exceed ASTM E1745 Class C standard, for vapor barriers in contact with soil or granular fill.

C. Vapor barrier tape is to be compatible with the vapor barrier/retarder called for.
2.04 OTHER MATERIALS

All other materials such as fasteners and retainers, not specifically described, but required for a complete and proper installation of building insulation, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that building insulation may be installed in accordance with the original design and the manufacturer's recommendations.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.

3.02 INSTALLATION

A. General:

1. Except as otherwise specifically directed by the Architect, install all building insulation in accordance with the manufacturer's specifications.

B. Batt insulation:

1. Installation shall be installed as per the NAIMA Recommendations for Installation in Residential and Other Light-Frame Construction and shall also comply with RESNET Grade 1 installation.

2. FACED:
   Kraft facing shall always be toward the “warm in winter” side.
   a. Walls: Place the insulation in the cavity; completely filling the cavity, top to bottom and side to side. Press the insulation at the sides into the framing cavity, until the outside edge of the Kraft paper flange is flush with the face of the framing. Do not compress the insulation. Use enough staples to hold the insulation firmly in place and avoid gaps and “fishmouths” between flanges and framing. The flange of the faced insulation placed in the next cavity shall
overlap the previously stapled. When more than one batt is used, pieces must
be snugly butted not doubled over or compressed.

b. Floor/Ceilings: Place the insulation between framing members and check to
be sure it fits the cavity at both ends. Each batt shall be butted closely to the
next one before fastening.

3. UNFACED:
To install unfaced insulation, gently place the insulation into the cavity space
between framing members. Insulation is to be correctly sized for the cavity and fit
snugly at the sides and ends. No fastening is required if the insulation material is
held in place on all four sides, such as in a typical wall cavity, or if held in place
by a ceiling finish material in a floor/ceiling assembly.

4. WORKING AROUND OBSTRUCTIONS
At electrical boxes in exterior walls, install insulation between the rear of the box
and the sheathing or exterior wall surface. Place insulation behind the junction
box and if necessary, cut insulation to fit snugly around it. Where electrical
wiring passes through a stud cavity and is located close to the inside wall surface,
insulation should be pressed behind the wiring. When the wiring is in the center
of the cavity, either a shallow cut in the insulation may be used to allow the
wiring to pass through the insulation or it may be split lengthwise and the wiring
sandwiched within. Insulation should be placed between the piping in exterior
walls and the exterior wall sheathing. Sidewalls where plumbing fixtures are to be
placed must be insulated before the fixtures are installed. Batts must be split to fit
around bridging.

5. INTEGRAL VAPOR RETARDER (Kraft facing)
Repair damaged vapor retarders. Rips or tears in the vapor retarder facing may be
repaired by covering the damaged area with scrap vapor retarder material and
taping it in place or, in the case of small rips, by using duct tape or polyvinyl tape.
Ensure that all areas where loose insulation has been installed (around window
perimeters and narrow stud bays for example) that a vapor retarder such as
MemBrain is installed over the insulation.

C. XPS Insulation:
a. Using an all-purpose adhesive that is approved for Styrofoam products, glue the
rigid XPS panels directly to the brick walls. Walls must provide a relatively smooth,
flat plane for successful adherence. Butt panels tightly to each other. Cut foam
carefully around any penetrations for a snug fit. After all panels are adhered, tape all
joints between panels with a construction tape such as manufactured by Dow or
Tyvek that is approved for adhering to Styrofoam products. Seal the top and bottom
of the foam board, where it meets ceilings and floors, and around any penetrations,
with spray foam in a can, such as Great Stuff or equal.
Certificate:
A permanent certificate shall be posted on or in the electrical distribution panel. The certificate shall not cover or obstruct visibility of the circuit directory label, service disconnect label or other required labels. The certificate shall be completed by the builder. The certificate shall list the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation and ducts outside conditioned spaces; U-values for fenestration; and where requirements apply, duct leakage and whole-house air infiltration. The certificate shall list the type and efficiency of heating, cooling and service water heating equipment.

3.03 INSPECTION

Upon completion of the installation, the Architect shall visually inspect each insulated area and verify that all insulation is complete and properly installed before insulation is concealed by the work of subsequent trades.

3.04 CLEANING

Upon completion of all work of this Section, promptly remove from the job site all scrap, material, tools, equipment and rubbish leaving all area in a neat and orderly condition to the approval of the Architect.

END- Building Insulation
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PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

The aluminum siding for this Work is indicated on the drawings and includes labor, material and equipment necessary to furnish, deliver and install the aluminum siding, aluminum trim, aluminum siding accessories, soffit panels, fascia panels, etc.

1.02 QUALITY ASSURANCE

A. Qualifications of Installers:

For actual installation of aluminum siding use only personnel who are thoroughly trained and experienced in the skills required and who are completely familiar with the manufacturer’s current recommended method of installation as well as the requirements of this work.

1.03 SUBMITTALS

Within 30 days after award of contract and before any aluminum siding materials are delivered to the job site, submit a sample of the aluminum siding in all of the different colors available to the Architect for approval in accordance with Section 01 33 00 of these specifications.

1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed materials of all other trades.

B. Store products in original packaging, on flat surface under cover, stacked no more than 12 boxes high.

C. In the event of damage, immediately make all repairs and replacement necessary to the approval of the Architect and at no additional cost to the Owner.
PART 2 - PRODUCTS

2.01 ALUMINUM SIDING

All aluminum siding shall be .024” nominal thick, with Alumalure 2000 paint finish, as manufactured by Alcoa or approved equal. Profile and finish shall be; [choose one]

[other brands to check: Revere, Reynolds]

Double 5” wood grain, “Envoy Horizon”, or Double 4” wood grain, “Envoy Rustic”, or 8” smooth “Envoy Traditional Select” (white only)

Color to be selected by Architect.

2.02 ACCESSORIES

Accessories shall be manufactured by the siding manufacturer unless otherwise note, and include, but are not limited to:

a. Starter strips;
b. J channel; depth as required;
c. Outside corner posts;
d. Inside corner posts;
e. Utility trim;
f. V-Groove Soffit panels; nominal .019” thick; vented and non-vented per Drawings;
g. Fasteners; aluminum siding nails of sufficient length to penetrate studs 1”.

2.03 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation of aluminum siding shall be as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. General:

1. Prior to all work of this Section, inspect the substrate and installed work of other trades and verify that all such work is complete to the point where this installation may properly commence.

2. Verify that aluminum siding may be completed in strict accordance with the referenced standards and the original design.
3. Do not proceed with installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

A. Installation of air infiltration barrier is specified in Section 07 27 00.

B. The field application of the siding and trim members shall be in accordance with the manufacturer’s printed installation instructions.

C. Attach panels to substrate interlocked and lapped for weathertight installation, nails concealed. Install horizontal components true to level and vertical components true to plumb.

D. Special care shall be taken to allow for thermal expansion of the siding. Do not nail siding tightly. Space siding nails at 16 inches (406.4 mm) on center; center nails in nailing slots without binding to allow for thermal movement. Leave clearance at ends as recommended by manufacturer.

E. Care must be exercised in placing aluminum in contact with dissimilar materials. Aluminum shall not be installed in contact with materials such as dissimilar metals, concrete, stucco, asbestos siding, pressure treated/pre-treated lumber, masonry, or corrosive non-metallic materials which might become repeatedly wet. Paint or otherwise protect dissimilar metals in contact.

F. No siding panels shorter than 32” shall be used.

G. Installation of joint sealers is specified in Section 07 92 00.

3.03 CLEANING, PROTECTION AND REPAIR

Upon completion of all work of this Section, promptly remove from the job site all scrap, material, tools, equipment and rubbish leaving all area in a neat and orderly condition to the approval of the Architect. Clean aluminum siding and related components as recommended by the manufacturer to present a "like new" appearance.

END - Aluminum Siding
SECTION 07 46 46
FIBER-CEMENT SIDING

PART 1 - GENERAL

1.01 DESCRIPTION

The fiber-cement siding for this Work is indicated on the drawings and includes labor, material and equipment necessary to furnish, deliver and install the fiber-cement siding, trim, siding accessories, soffit panels, fascia panels, etc.

1.02 RELATED WORK

A. Rough Carpentry Section 06 10 00
B. Joint Sealants Section 07 92 00

1.03 QUALITY ASSURANCE

A. Qualifications of Installers:

For actual installation of fiber-cement siding use only personnel who are thoroughly trained and experienced in the skills required and who are completely familiar with the manufacturer's current recommended method of installation as well as the requirements of this work.

1.04 SUBMITTALS

Within 30 days after award of contract and before any fiber-cement siding materials are delivered to the job site, submit a sample of the fiber-cement siding to the Architect for approval in accordance with Section 01 33 00 of these specifications.

1.05 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed materials of all other trades. Store fiber-cement siding flat, off the ground, and covered, to protect from rain and moisture.

B. In the event of damage, immediately make all repairs and replacement necessary to the approval of the Architect and at no additional cost to the Owner.
PART 2 - PRODUCTS

2.01 FIBER-CEMENT SIDING AND TRIM

A. All fiber-cement siding shall be 5/16” x 7.25” HardiePlank Lap Siding by James Hardie, or approved equal, installed with a 6” exposure. Siding texture shall be smooth. Siding shall be factory primed and painted. Color to be selected by Architect. Siding shall have a 30-year limited warranty; factory paint finish shall have a 15-year warranty.

B. All exterior window and door trim shall be 5/4” x 4” poly-ash, TruExterior Trim by Boral Composites, Inc. or approved equal. Trim texture shall be smooth. Trim boards shall be factory primed and field painted. Color to be selected by Architect. Trim boards shall have a 20-year limited warranty.

2.02 FASTENERS

All fasteners shall be double hot-dipped galvanized or stainless-steel siding nails (0.09" shank x 0.221" HD x 2" long, min) of sufficient length to penetrate studs 1-1/4” minimum.

2.03 OTHER MATERIALS

All other materials not specifically described but required for a complete and proper installation of fiber-cement siding shall be as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

Prior to all work of this Section, inspect the installed work of other trades and verify that all such work is complete to the point where this installation may properly commence. Verify that fiber-cement siding may be completed in strict accordance with the referenced standards and the original design.

3.02 INSTALLATION

A. General:

1. The field application of the siding and trim members shall be in accordance with the best practice, with all joint members true and plumb. Nailing shall be blind nailing.
2. Fiber-cement siding, trim, and accessories shall be installed in accordance with the manufacturer’s installation instructions. Pay particular attention to best cutting and nailing practices, clearances, butt joints, flashing, use of sealants, etc.

3. Special care shall be taken to allow for thermal expansion of the siding. Do not nail siding tightly. Leave clearance at ends as recommended by manufacturer.

4. No siding panels shorter than 32" shall be used.

5. Siding and trim shall be installed over an air-infiltration barrier such as HardieWrap Weather Barrier, Tyvek, or approved equal.

6. Spacing for the lap siding should be laid out beforehand. The number of board spaces between the soffit and bottom of the lowest piece of siding at the foundation should be such that the overlap is at least 1”.

7. Butt joints between boards should be staggered and made on studs. Fit siding snugly (not tightly) to other pieces and to trim

3.03 CLEANING, PROTECTION AND REPAIR

Upon completion of all work of this Section, promptly remove from the job site all scrap, material, tools, equipment and rubbish leaving all area in a neat and orderly condition to the approval of the Architect. Clean fiber-cement siding and related components as recommended by the manufacturer to present a "like new" appearance.

END – Fiber-Cement Siding
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SECTION 07 60 00

FLASHING AND SHEET METAL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Furnish and install all flashing and sheet metal not specifically called for or described in other Sections of these Specifications, but required to prevent penetration of water through exterior shell of this building and may include, but is not necessarily limited to:

1. Flashing at opening in brick wall
2. Flashing at roof intersections with walls
3. Metal coping

B. Related Work Described Elsewhere:

1. Masonry Restoration Section 04 01 20
2. Rough Carpentry Section 06 10 00

1.02 QUALITY ASSURANCE

A. Qualification of Installers:

Provide at least one person who shall be present at all times during execution of the Work of this Section and who shall be thoroughly trained and experienced in the materials and methods required and who shall direct the entire flashing and sheet metal fabrication and installation.

B. Codes and Standards:

1.03 SUBMITTALS

Within 35 days after award of Contract, and before any flashing and sheet metal is delivered to the job site, submit complete Shop Drawings of all flashing and sheet metal proposed to be furnished and installed to the Owner for their review in accordance with Section 01 33 00 of these Specifications.

1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect flashing and sheet metal materials before, during, and after installation and to protect the installed work and materials of all other trade.

B. Replacement:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MATERIALS AND GAUGES

Where sheet metal is required and no material or gauge is indicated on the Drawings, furnish and install the highest quality and gauge commensurate with the referenced standards.

2.02 FLASHING

A. Aluminum Flashing:

Use 3003-H-14, alloy, sheet aluminum, thickness, .042, as required or as noted on Drawings with Kynar 500 finish; color to be selected by the Architect. *Do not use aluminum flashing in contact with ACQ pressure-treated lumber.*

B. Flashing in Contact with ACQ Pressure-Treated Lumber:

Use copper, stainless steel, or UV-stabilized plastic (PVC) flashings, such as “Ledge Flash” by Advanced Building Products, “Dura Bend” by Pro Trim, “Dura Flash” by P&G Solutions, or approved equal. Color to be selected by the Architect.
2.03 NAILS, RIVETS, AND FASTENERS

A. General: *Do not use these fasteners in contact with ACQ pressure-treated lumber.*

1. Use only soft iron rivets having rust-resistant coatings, galvanized nails, and cadmium plated screws and washers in connection with galvanized iron and steel.
2. Use aluminum nails & screws with aluminum flashing.

B. Fasteners in Contact with ACQ Pressure-Treated Lumber:

Use only hot-dipped galvanized fasteners labeled G-185, or stainless steel. *Do not use galvanized fasteners labeled G-60 or G-90, or fasteners labeled “electro-galvanized.”*

2.04 FLUX

All flux used for galvanized iron or steel shall be raw muriatic acid.

2.05 SOLDER

All solder used on galvanized sheet steel shall conform with the current ASTM B-32.

2.06 OTHER MATERIALS

All other materials, not specifically described, but required for a complete and proper installation of flashing and sheet metal, shall be new, first quality of their respective kinds, and subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspections:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that flashing and sheet metal may be installed in accordance with the original design, all pertinent codes and regulations, the referenced standards, and the approved Shop Drawings.
B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 WORK QUALITY

A. General:

1. Form all sheet metal accurately to the dimensions and shapes required, finishing all molded and broken surfaces with true, sharp and straight lines and angles and, where intercepting other members, coping to an accurate fit and soldering securely.
2. Unless otherwise specifically permitted by the Architect, turn all exposed edges back 1/2 inch.

B. Expansion:

Form, fabricate, and install all sheet metal so as to adequately provide for expansion and contraction in the finished work.

C. Weatherproofing:

1. Finish watertight and weathertight where so required.
2. Make all lock seam work flat and true to line of solder.
3. Make all lap seams at least 1/2 inch wide.
4. Where lap seams are not soldered, lap according to pitch but in no case less than three inches.
5. Make all flat and lap seams in direction of floor.

D. Joints:

1. Join parts with rivets or sheet metal screws where necessary for strength or stiffness.
2. Provide suitable watertight expansion joints for all runs of more than 40 feet, except where closer spacing is indicated on the Drawings or required for proper installation.

E. Nailing:

1. Whenever possible, secure metal by means of clips or cleats without nailing through the metal.
2. In general, space all nails, rivets, and screws not more than eight inches apart, and where exposed to the weather, use lead washers.
3. For nailing into wood, use barbed roofing nails 1-1/4 inch long by eleven gage.
4. For nailing into concrete, use drilled plugholes and plugs.

### 3.03 INSTALLATION OF FLASHING

A. Flashing shall be installed at roof surface intersections, valleys, hips and at intersections of roof surface with other parts of the building.

B. Pipes projecting through roof shall be flashed with one piece sheet metal forming a flange which extends at least 6” on all sides.

### 3.04 TESTS

Upon request of the Architect, demonstrate by hose or standing water that all flashing and sheet metal is completely watertight.

**END - Flashing and Sheet Metal**
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SECTION 07 80 00
ATTIC VENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this section includes the installation of attic intake and exhaust vents and curbs where indicated on the drawings.

1.02 RELATED WORK DESCRIBED ELSEWHERE

A. Finish Carpentry Section 06 20 00
B. Single Ply Roofing Section 07 50 00

PART 2 - PRODUCTS

2.01 MATERIALS

Roof intake vents: Pop Vent by Active Ventilation Products, #PV-10-C12 with collar,
Roof exhaust vents: AuraVent by Active Ventilation Products, #AV-10-C12 with collar.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Attic vents shall be installed per manufacturer’s requirements. Flanges shall be firmly attached to the building structure. Provide necessary blocking, fasteners, etc. Patch existing roofing membrane using like material with method(s) consistent with membrane manufacturer’s requirements to provide a water and weathertight seal.

End - Attic Vents
SECTION 07 84 00

FIRESTOPPING

PART I – GENERAL

1.01 REFERENCES

A. UL 1479 Fire Tests of Through-Penetration Firestops.

B. ASTM E 814 Method of Fire Tests of Through-Penetration Fire Stops.

1.02 DESIGN REQUIREMENTS

A. Devices and materials shall meet the hourly fire resistance ratings required by the Project as determined by UL 1479, or ASTM E 814 and be listed and detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.

1. Exception: Where no listed designs exist that meet the requirements of a specific project condition, submit details and manufacturer’s written recommendations for a design meeting the requirements. Include evidence of engineering judgement and extrapolation from listed designs.

1.03 QUALITY ASSURANCE

A. Installer Qualifications:

The persons installing the firestopping and their supervisor shall be personally experienced in firestop work and shall have been regularly employed by a company installing firestopping for a minimum of three years.

B. Container/Package Labels:

Include manufacturer’s name and identifying product number, date of manufacturer, lot number, shelf life (if applicable), qualified testing and inspecting agency classification marking, curing time, and mixing instructions for multi-component materials.
1.04 DELIVERY, STORAGE, AND HANDLING

A. Deliver firestopping materials to the Site in original, new unopened containers or packages bearing manufacturer’s printed labels.

B. Store and handle firestopping materials to prevent deterioration or damage due to moisture, temperature changes, contaminants, etc.

1.05 PROJECT CONDITIONS

A. Environmental Requirements:

1. Temperature: Do not install firestopping material when ambient or substrate temperatures are outside limits permitted by manufacturer of firestopping materials.

2. Humidity and Moisture: Do not install the Work of this Section under conditions that are detrimental to the application, curing and performance of the materials.

3. Ventilation: Provide sufficient ventilation wherever firestopping materials are installed in enclosed spaces. Follow manufacturer’s recommendations.

1.06 SEQUENCING AND SCHEDULING

A. Leave exposed those firestopping installations that are to be concealed behind other construction until the Owner’s Representative has examined each installation.

PART 2 – PRODUCTS

2.01 FIRESTOPPING – GENERAL


1. For firestopping exposed to moisture, furnish products that do not deteriorate when exposed to this condition.

2. For firestopping systems exposed to view, furnish products with flame-spread values of less than 25 and smoke developed values less than 50, as determined per ASTM E 84.

3. For penetrations for piping services below ambient temperature, furnish moisture-resistant through-penetration firestop systems.

4. For penetrations involving insulated piping, furnish through-penetration firestop systems not requiring removal of insulation.
B. Accessories:

Components required to install fill materials as recommended by the firestopping manufacturer for particular approved fire rated system.

PART 3 – EXECUTION

3.01 PREPARATION

A. Clean out openings immediately before installation of through-penetration firestopping. Comply with recommendation of firestopping manufacturer and the following requirements:

1. Remove foreign materials from surfaces of openings, and from penetrating items that could interfere with adhesion of firestopping.
2. Clean opening and penetrating items to produce clean, sound surfaces capable of developing optimum bond with firestopping. Remove loose particles remaining from cleaning operation.

B. Protection:

1. Protect surfaces adjacent to through-penetration firestops with non-staining removable masking tape or other suitable covering to prevent firestopping from contacting adjoining surfaces that will remain exposed upon completion of Work that would otherwise be permanently stained or damaged by such contact or that would be caused by cleaning methods used to remove smears from firestopping materials.

C. Substrate Priming:

1. Prime substrates in accordance with the firestopping manufacturer’s printed installation instructions using recommended products and methods.
2. Do not allow primer to spill or migrate onto adjoining exposed surfaces.

3.02 INSTALLATION OF THROUGH-PENETRATION FIRESTOPS

A. Use through-penetration firestop devices, forming materials, and fill, void or cavity materials to form through-penetration firestops to prevent the passage of flame, and limit temperature rise of the unexposed surface as detailed in the UL Fire Resistance Directory, Inchcape Directory of Listed Products, Factory Mutual Approval Guide, or the Omega Point Laboratories Listings Directory.
3.03 CLEANING

A. Clean off excess fill materials and sealants adjacent to penetrations by methods and cleaning materials by manufacturers of firestopping products and of products in which penetrations occur.

B. Remove masking tape as soon as practical so as not to disturb the firestopping’s bond with substrate.

C. Protect firestopping during and after curing period from contact with contaminating substances, or damage resulting from adjacent Work.

D. Cut out and remove damaged or deteriorated firestopping immediately, and install new materials as specified in firestopping schedule.

END - Firestopping
PART 1 - GENERAL

1.01 SUMMARY

A. The purpose of sealing in this Work is to provide a positive barrier against penetration of air and moisture at joints between items where caulking is essential to continued integrity of the barrier, and includes, but is not limited to:

1. Perimeter joints of exterior door and window frames and sills;
2. Penetrations in exterior building walls for passage of mechanical, ventilating, and electrical items;
3. Joints between dissimilar materials;
4. Concrete joints;
5. Sealing as part of the exterior wall Air Barrier (including framing of walls and installation of gypsum board)

B. Related Work Specified Elsewhere:

1. Rough Carpentry          Section 06 10 00
2. Finish Carpentry         Section 06 20 00
3. Firestopping            Section 07 84 00
4. Metal Clad Windows       Section 08 14 00
5. Fiberglass Windows       Section 08 54 13
6. Plaster and Gypsum Board Assemblies Section 09 21 00
7. Painting                Section 09 91 00
8. Plumbing                Section 22 00 00
9. HVAC                    Section 23 00 00
10. Ventilating            Section 23 84 16
11. Electrical             Section 26 00 00
12. Portland Cement Concrete Paving: Section 32 13 00

1.02 ENVIRONMENTAL CONDITIONS

A. Temperature:

Unless otherwise approved or recommended in writing by the sealant manufacturer, do not install sealants at temperatures below 40 degrees F or above 85 degrees F.
B. Humidity and Moisture:

Do not install the Work under this Section under conditions that are detrimental to the application, curing and performance of the specified materials.

1.03 PROTECTION

A. Protect all surfaces adjacent to sealants with non-staining removable tape or other

PART 2 - PRODUCTS

2.01 MATERIALS

A. Sealants:

1. Type 1A Sealant (pavement, sidewalks): Elastomeric, two-part silicone or polyurethane sealant complying with Federal Spec TT-S-00230c.
   a. For horizontal joints: self-leveling grade, such as Sika “Sikaflex 2C-SL”, or approved equal.
   b. For vertical joints: non-sag grade, such as Sika “Sikaflex 2C-NS” or equal.
2. Caulk for general use: One part, non-sag, paintable acrylic latex caulk meeting ASTM C-834, such as DAP “ALEX Painter’s Caulk”, Pecora “AC-20”, or approved equal.
3. Caulk for areas of high moisture: One-part, mildew-resistant, silicone neutral curing sealant as manufactured by DAP, GE, Pecora, or approved equal.
4. Air infiltration sealant: Expanding polyurethane spray foam such as Polycell or approved equal.
5. Sealant for interior concrete slab joints to be polyurethane.

B. Joint Primer/Sealer/Conditioner:

As recommended by the sealant manufacturer for the particular joint surface materials and/or conditions.

C. Sealant Backer Rod:

All filler materials shall be non-oily, non-staining, backup filler such as polyethylene foam backer rod, expanded polyurethane, neoprene or other filler completely compatible with the caulking material. Verify the compatibility of filler material with caulking before installation.
D. Bond Breaker Tape:

Polyethylene or other plastic tape as recommended by the sealant manufacturer; non-bonding to sealant.

E. Cleaning Solvents:

Oil free solvents as recommended by the sealant manufacturer. Do not use re-claimed solvents.

F. Masking Tape:

Removable paper or fiber tape, self-adhesive, non-staining.

PART 3 - EXECUTION

3.01 JOINT FILLER INSTALLATION

A. Set joint fillers at proper depth and position as required for installation of bond breakers, backer rods and sealants. Do not leave voids or gaps between the ends of joint filler units.

1. Smooth Edged Joints: For joints between two concrete slabs or where new concrete abuts smooth edged materials use either filler as specified.

2. Irregular Edged Joints: For joints where new concrete abuts granite curbs or other irregular edges use closed cell polyurethane joint filler.

3.02 PREPARATION OF SURFACES

A. Clean joint surfaces immediately before installation of sealant and other materials specified in this Section.

1. Remove all loose materials, dirt, dust, rust, oils and other foreign matter that will impair the performance of materials installed under this Section. When necessary or when directed, wire brush, grind, or acid etch to thoroughly clean joint surfaces.

3.03 BACKER ROD

A. Provide backer rod of sufficient size to fill the joint width at all points in a compressed state. Compress backer rod at the widest part of the joint by a minimum of 25 percent. Do not cut or puncture the surface skin of the rod.
3.04 SEALANT INSTALLATION

A. Except as shown or specified otherwise, install sealants in accordance with the manufacturer's printed instructions. Do not caulk under weather conditions or sun conditions potentially harmful to the set and curing of the caulking material.

B. Prime joint surfaces which are to receive Type 1A Sealant. Do not allow the primer to spill or migrate onto adjoining surfaces.

C. Apply sealant with ratchet hand gun or other approved mechanical gun. Where gun application is impractical, apply sealant by knife or by pouring as applicable.

D. Finishing:
   1. Tool all sealants so as to compress the sealant and eliminate air voids. Provide a neat smoothly finished joint with a slightly concave surface unless otherwise indicated or recommended by the manufacturer.
   2. Use tool wetting agents as recommended by the sealant manufacturer.

3.05 AIR BARRIER SEALING

A. The framed exterior walls, ceiling below attic, and gypsum board serve as an air barrier per the NYS Energy Code.
   1. Where new bottom plates of exterior frame walls sits on the subfloor, seal with a continuous bead of caulk or a gasket.
   2. Where framed exterior walls intersect or butt to perpendicular walls, apply a continuous bead of caulk along the intersection.
   3. Where interior partition walls intersect exterior walls, seal both sides of the stud nearest the intersection, including where that stud meets its bottom and top plate.
   4. At all penetrations through the top and bottom plates of both exterior walls and interior partitions, seal around the penetrating object with caulk or spray foam.
   5. At windows and doors, fill the gap between window frame and rough opening framing with low-expanding foam, backer rod and caulk, or gaskets.
   6. On exterior walls, install airtight electrical boxes with integral flange and/or gasket.
   7. At GWB perimeter, use a continuous bead of polyurethane caulk or special drywall gaskets along top and bottom plates of exterior walls, along top plates of interior partition walls under insulated ceilings, and around the perimeter of all rough openings.
   8. At all penetrations through the GWB, seal around the penetrating object with caulk.
   9. Caulk window and door casings to the drywall.
   10. At foundation walls, seal all penetrations with urethane sealant.
3.06 CLEANING

A. Immediately remove misapplied sealant and drippings from metal surfaces with solvents and wiping clothes. On other materials, remove misapplied sealant and droppings by methods and materials recommended in writing by the manufacturer of the sealant material.

B. After sealants are applied and tooled and before skin begins to form on sealant, remove all masking and other protection and clean up any remaining defacement caused by the Work.

END - Joint Sealants
SECTION 08 11 00
METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

The metal doors and frames required for this Work are indicated in the Door Schedule, on the Drawings, and include labeled and non-labeled hollow metal doors and frames, basement hatches.

B. Related Work Described Elsewhere:

1. Furnishing Finish Hardware: Section 08 70 00
2. Finish Painting: Section 09 91 00

1.02 QUALITY ASSURANCE

A. Qualification of Installers:

For actual installation of metal doors and frames, and installation of finish hardware on metal doors and frames, use only personnel who are thoroughly trained and experienced in the skills required and who are completely familiar with the manufacturer's current recommended methods of installation as well as the requirements of this Work.

B. Codes and Standards:

In addition to complying with all pertinent codes and regulations:

1. Manufacture all labeled doors in strict accordance with the specifications and procedures of Underwriter's Laboratories, Inc.

1.03 SUBMITTALS

Within 35 days after award of contract, and before any metal doors and frames are delivered to the job site, submit Shop Drawings of all metal doors and frames to the Architect for review in accordance with the provisions of Section 01 33 00 of these Specifications.
1.04 PRODUCT HANDLING

A. Protection:

1. Deliver, store, and handle all metal doors and frames in a manner to prevent damage and deterioration.

2. Provide packaging such as cardboard or other containers, separators, banding, spreaders, and paper wrappings as required to completely protect all metal doors and frames during transportation and storage.

3. Store doors upright, in a protected dry area, at least one inch off the ground and with at least 1/4" air space between individual pieces; protect all prefinished and hardware surfaces as required.

4. Use all means necessary to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacement necessary to the approval of the Owner and at no additional cost.

PART 2 - PRODUCTS

2.01 METAL DOORS

A. General:

All metal doors specified on the Door Schedule in the Work write-up shall be as manufactured by Steelkraft Manufacturing Co., Kewanee Corp., VERSADOOR by Ceco Corp. Make submittals in accordance with Section 01 33 00 of these Specifications.

B. Finishes:

Pre-clean and shop prime each door for finish paintings which will be performed at the job site under Section 09 91 00 of these Specifications.

C. Glazing:

Provide thermal-pane glazing in all Metal Doors with glazing.
D. Finish Hardware:

Secure templates from the finish hardware supplier and accurately install, or make provisions for, all finish hardware at the factory.

2.02 METAL FRAMES

A. General:

All metal frames shall be accurately fabricated to match the doors to be installed in them.

B. Type and Design:

All metal frames shall be the types and sizes shown on the Door Schedule and shall be properly reinforced for the finish hardware described in Section 08 70 00 of these Specifications.

C. Finishes:

Pre-clean and shop prime each frame for finish painting which will be performed at the job site under Section 09 91 00 of these Specifications.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to installation of metal doors and frames, carefully inspect the installed work of all other trades and verify that such work is complete to the point where this installation may properly commence.

2. Verify that metal doors and frames may be installed in strict accordance with all pertinent codes and regulations, the original design, approved Shop Drawings, and manufacturer's recommendations.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.

2. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.
3.02 INSTALLATION

A. Metal Doors and Frames:

1. General:

   Install all metal doors and frames in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the manufacturer's recommendations, anchoring all components firmly in position for long life under hard use.

2. Masonry Construction:

   Frames in masonry construction shall be backfilled with mortar. When field conditions require approved additions in the mortar, frame shall be field coated on inside with asphalt emulsion.

B. Finish Hardware:

   Install all finish hardware in strict accordance with the manufacturer's recommendations, eliminating all hinge bound conditions and making all items smoothly operating and firmly anchored into position.

END - Metal Doors and Frames
SECTION 08 12 00
METAL SLOPED WALL BASEMENT DOOR

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Steel basement access doors required for this Work are indicated on the Drawings.

B. Related Work Described Elsewhere:

1. Masonry: Section 04 22 00
2. Painting: Section 09 91 00

1.02 QUALITY ASSURANCE

A. Qualification of Installers:

For actual installation of basement door, and installation of finish hardware, use only skilled workers who are completely familiar with the recommended methods of installation and the requirements of this Work.

1.03 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect steel basement doors before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacement:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 DOOR and FRAME
A. General:
   Sloped Wall Basement Door with Extension by BILCO, or approved equal) Classic Product Type SLW, with Extension, size per drawings. Basement Door assembly shall be constructed of .090 - .100 thickness steel with Torsion Cam Lift System. Basement Door and extension shall have flow-coated and baked-on factory prime finish and shall be furnished complete with hardware assembly bolts and anchors for securing to masonry. Door shall withstand a minimum 200 lb live load.

B. Finishes:

   Pre-clean, shop prime and paint each door inside and outside per Section 09 91 00 of these Specifications. Color to be selected.

PART 3 - EXECUTION

3.02 INSTALLATION

A. Surface Conditions:

   1. Prior to installation of wood doors, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

   2. Verify that wood doors may be installed in accordance with the original design, the referenced standards, and all pertinent codes and regulations.

   3. In the event of discrepancy, immediately notify the Architect.

   4. Do not proceed with installation in areas of discrepancies until all such discrepancies have been fully resolved.

B. Installation:

   1. Install all wood doors in strict accordance with all pertinent codes and regulations, the original design, and the referenced standards hanging square, plumb, straight and firmly anchored into position for long life under hard use.

   2. Install all finish hardware in strict accordance with the manufacturer's recommendations, eliminating all hingebound conditions and making all items smoothly operating and firmly anchored into position.

C. Touching Up:
1. Using fine-grained sandpaper, completely eliminate all scratches and abrasions in finished wood surfaces.

2. Set all nails and fasteners for putty. Firmly putty all holes. Leave all finished wood surfaces ready for painting.

End - Metal Sloped Wall Basement Door
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SECTION 08 14 23.19

MOULDED MDO DOORS AND FRAMES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

The moulded MDO doors and frames required for this Work are indicated in the Door Schedule, on the Drawings.

B. Related Work Described Elsewhere:

1. Finish Hardware: Section 08 70 00
2. Finish Painting: Section 09 91 00

1.02 QUALITY ASSURANCE

A. Qualification of Installers:

For actual installation of MDO doors and frames, and installation of finish hardware on MDO doors and frames, use only personnel who are thoroughly trained and experienced in the skills required and who are completely familiar with the manufacturer's current recommended methods of installation as well as the requirements of this Work.

1.03 SUBMITTALS

Within 35 days after award of contract, and before any MDO doors and frames are delivered to the job site, submit Shop Drawings of all MDO doors and frames to the Architect for review in accordance with the provisions of Section 01 33 00 of these Specifications.

1.04 PRODUCT HANDLING

A. Protection:

1. Deliver, store, and handle all MDO doors and frames in a manner to prevent damage and deterioration.
2. Provide packaging such as cardboard or other containers, separators, banding, spreaders, and paper wrappings as required to completely protect all MDO doors and frames during transportation and storage.

3. Store doors upright, in a protected dry area, at least one inch off the ground and with at least 1/4" air space between individual pieces; protect all prefinished and hardware surfaces as required.

4. Use all means necessary to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacement necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 MDO DOORS

A. Shall be as manufactured by Jeld Wen Doors or approved equal

B. Description:
   Type: Jeld Wen Coventry Smooth Series MDO Doors, pre-hung
   Size and Panel Types: See Drawings
   Stile Thickness: 1-3/8”.
   Finish: Factory primed.
   Profiles and dimensions shall be Jeld Wen standards unless otherwise noted in the drawings and elevations.

C. Factory Prefitting and Machining
   1. Machine doors for hardware requiring cutting of doors.
   2. Comply with accepted hardware schedules and with hardware templates to ensure proper fit of doors and hardware.
   3. Tolerances: Comply with WDMA tolerance requirements for prefitting and prehanging.

D. Finishes:

   Pre-clean and shop prime each door for finish paintings which will be performed at the job site under Section 09 91 00 of these Specifications.
2.02 WOOD FRAMES

A. General:

All wood frames shall be accurately fabricated to match the doors to be installed in them.

B. Type and Design:

All wood frames shall be as provided by the MDO door manufacturer and shall be properly reinforced for the finish hardware described in Section 08 70 00 of these Specifications.

C. Finishes:

Pre-clean and shop prime each frame for finish painting which will be performed at the job site under Section 09 91 00 of these Specifications.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to installation of doors and frames, carefully inspect the installed work of all other trades and verify that such work is complete to the point where this installation may properly commence.
2. Verify that doors and frames may be installed in strict accordance with all pertinent codes and regulations, the original design, approved Shop Drawings, and manufacturer's recommendations.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until such discrepancies have been fully resolved.
3.02 INSTALLATION

A. MDO Doors and Frames:

   1. General:

   Install all MDO doors and frames in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the manufacturer's recommendations, anchoring all components firmly in position for long life under hard use.

B. Finish Hardware:

   Install all finish hardware in strict accordance with the manufacturer's recommendations, eliminating all hinge bound conditions and making all items smoothly operating and firmly anchored into position.

END - Moulded MDO Doors and Frames
SECTION 08 52 13

CLAD WOOD WINDOWS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Replacement windows required for this work are indicated on the Drawings and include, but are not necessarily limited to:

1. Double-hung replacement units
2. Double Hung full frame window units.

B. Related Work Described Elsewhere:

1. Joint Sealants
2. Air Barriers: Water Resistant barrier

1.02 QUALITY ASSURANCE

A. Qualification of Workers:

1. For the installation of windows use only skilled workers thoroughly experienced with the materials and methods specified and thoroughly familiar with the design requirements.
2. In acceptance or rejection of installed clad wood windows, no allowance will be made for lack of skill on the part of the workers.
3. Provide one skilled and experienced worker who shall be present at all times during execution of the Work of this Section and who shall personally direct the execution of this portion of the Work.

1.03 SUBMITTALS

A. Samples:

Within 35 days after award of Contract, and before any materials are delivered to the job site, submit one sample of each proposed window unit to the Owner for approval in accordance with Section 01 33 00 of these Specifications.
1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.05 WARRANTY

The manufacture shall provide a wood window limited lifetime warranty. This warranty is to be presented to the Owner at the completion of the job.

PART 2 - PRODUCTS

2.01 WINDOWS

All aluminum clad wood window units are to be double-hung windows with simulated divided lights as noted in the Window Schedule, E-Series by Andersen, or approved equal with primed interiors.

1. Window size must fill original opening fully.
2. Cladding color to be selected by the Owner from the manufacturer’s standard colors.

2.02 GLAZING

Insulating glass shall be Low-E with argon, U-.32 max.

2.03 SCREENS

Full screens with high-transparency fiberglass fabric.

2.05 HARDWARE

Color to be determined by the Owner from the standard colors offered.

2.06 ALUMINUM EXTERIOR TRIM

Aluminum Frame Expander and Receptor, as provided by the window manufacturer, flat profile, to match the color of window cladding.
2.07 INSTALLATION ACCESSORIES: Jamb Extensions, installation screws, etc. as necessary.

2.08 OTHER MATERIALS

All other materials not specifically described, but required for a complete and proper installation of Fiberglass window units shall be as selected by the Contractor, subject to the approval of the Owner.

PART 3 - EXECUTION

3.01 SURFACE CONDITION

A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Owner.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 COORDINATION

Carefully coordinate with all other trades to insure proper and adequate interface of the work of other trades with the work of this Section.

3.03 INSTALLATION

A. General:

Installation of all windows shall be in strict accordance with the manufacturer's recommendations to insure a secure operable weather-proof window.

B. Frames:

1. Frames shall be set plumb, level and square within clearance limits of the respective openings.
2. Frames shall be fastened securely to the wall masonry or wall framing. For windows use anchors or clips as directed by the manufacturer.
3. Wood frames shall be treated with water repellent preservative.
C. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.

D. Seal window to exterior wall with sealant and related backing materials at perimeter of assembly.

E. Protection:

Window frames and other installation materials shall be handled carefully at all times and shall be protected from all possible sources of damage such as dampness, dirt, mortar, etc. Windows shall be stacked standing on edge on wood strips to prevent contact with ground.

3.04 CLEANING UP

A. Inspection and Adjustment:

Upon completion of the Work of this Section, make a thorough inspection of all installed windows and verify that all units have been installed in accordance with the provisions of this Section of these Specifications. Make all necessary adjustments.

B. Cleaning:

1. All installed windows shall be left clean, free from dirt or fingerprints.
2. Upon completion of all Work of this Section, promptly remove from the job site all tools, equipment and debris leaving all areas in a neat and orderly condition to the approval of the Architect.

END - Clad Wood Windows
SECTION 08 54 13

FIBERGLASS WINDOWS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work required for this section includes the installation of new double hung and casement fiberglass window units as described on the Drawings.

B. Related Work Described Elsewhere:

   1. Joint Sealants     Section 07 92 00
   2. Air Barriers: Water Resistant barrier   Section 07 19 50

1.02 QUALITY ASSURANCE

A. Qualification of Workers:

   1. For the installation of windows use only skilled workers who are thoroughly experienced with the materials and methods specified and thoroughly familiar with the design requirements.

   2. Provide one skilled and experienced workers who shall be present at all times during execution of the Work of this Section and who shall personally direct the execution of this portion of the Work.

1.03 SUBMITTALS

A. Samples:

   Within 35 days after award of Contract, and before any materials are delivered to the job site, submit one sample of each proposed fiberglass window unit to the Owner for approval in accordance with Section 01 33 00 of these Specifications.

1.04 PRODUCT HANDLING

A. Protection:

   Use all means necessary to protect the materials of this Section before, during, and after installation and to protect the installed work and materials of all other trades.
B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

1.05 WARRANTY

The manufacturer shall provide its standard limited lifetime warranty and fiberglass-resin 20/10 limited warranty. These warranties shall be presented to the Owner at the completion of the job.

PART 2 - PRODUCTS

2.03 WINDOWS

All fiberglass window units are to be Traditional, double-hung or casement (see drawings for locations) Renewal by Andersen, Pella® Impervia, or approved equal with prefinished interiors.

3. Window size must fill original opening fully.
4. Color to be selected by the Architect from the manufacturer’s standard colors.

2.04 GLAZING

Insulating glass shall be Low-E with argon, U .32 max.

2.05 SCREENS

Full screens with conventional fiberglass screen cloth

2.06 HARDWARE

Color to be determined by the Owner.

2.07 INSTALLATION ACCESSORIES:  Jamb Extensions, installation screws, etc. as necessary.

2.08 OTHER MATERIALS

All other materials not specifically described, but required for a complete and proper installation of Fiberglass window units shall be as selected by the Contractor, subject to the approval of the Owner.
PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Owner.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 COORDINATION

Carefully coordinate with all other trades to insure proper and adequate interface of the work of other trades with the work of this Section.

3.03 INSTALLATION

A. General:

Installation of all new windows shall be in strict accordance with good standard construction practice to insure a secure operable weather-proof window.

B. Frames

1. Frames shall be set plumb, level and square within clearance limits of the respective openings.
2. Frames shall be fastened securely to the wall.

A. Place interior seal around window perimeter to maintain continuity of building thermal and air barrier using insulating-foam sealant.

D. Seal window to exterior wall with sealant and related backing materials at perimeter of assembly.
3.04 CLEANING UP

A. Inspection and Adjustment:

Upon completion of the Work of this Section, make a thorough inspection of all installed windows and verify that all units have been installed in accordance with the provisions of this Section of these Specifications. Make all necessary adjustments.

B. Cleaning:

1. All installed windows shall be left clean, free from dirt or fingerprints.
2. Upon completion of all Work of this Section, promptly remove from the job site all tools, equipment and debris leaving all areas in a neat and orderly condition to the approval of the Architect.

END - Fiberglass Windows
SECTION 08 70 00
FINISH HARDWARE

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

1. Finish hardware required for this Work includes but is not necessarily limited to:
   a. Passage and privacy lever sets;
   b. Keyed-entry locksets and dead-bolts;
   c. Door stops and hinges, and one-way viewers.

2. Unless otherwise approved by the Architect, furnish all finish hardware described in this Section and all other finish hardware not described but required for a complete and operable facility.

B. Related Work Described Elsewhere:

   1. Installation of Stile and Rail MDO Doors & Frames: Section 08 14 23.19
   2. Installation of Metal Clad Wood Doors and Frames: Section 08 21 00
   3. Installation of Metal Doors and Frames: Section 08 11 00

1.02 QUALITY ASSURANCE

All hardware installation shall be in accordance with standards established by the American Society of Hardware Consultants.

1.03 SUBMITTALS

A. Materials List:

   1. Within 35 days after award of Contract and before any finish hardware is ordered or purchased for this Work, submit to the Architect for his approval a complete list of all finish hardware proposed to be furnished for this Work, giving manufacturer's name and catalog number for each item.

   2. This shall in no way be construed as permitting substitution of items for the items specified.

   3. Make all submittals, and resubmittals if necessary, in accordance with the provisions of Section 01 30 00 of these Specifications.
B. Manufacturer's Recommendations:

Prior to installation, deliver to all installing personnel complete recommendations from the manufacturer's regarding installation methods.

1.04 PRODUCT HANDLING

A. Packaging:

1. Furnish all finish hardware with each unit clearly marked or numbered in accordance with the Hardware Schedule.
2. Pack each item complete with all necessary pieces and fasteners.
3. Properly wrap and cushion each item to prevent scratches during delivery and storage.

B. Delivery:

Deliver all finish hardware to the installers in a timely manner to ensure orderly progress of the total work.

PART 2 - PRODUCTS

2.01 FASTENERS

A. General:

1. Furnish all finish hardware with all necessary screws, bolts, sex bolts, and other fasteners of suitable size and type to anchor the hardware in position for long life under hard use.
2. Furnish fasteners where necessary with expansion shields and other anchors approved by the Architect, according to the material to which the hardware is to be applied and the recommendations of the hardware manufacturer.

B. Design:

All fastenings shall harmonize with the hardware as to material and finish.
2.02  **TYPICAL HARDWARE SETS**

New hardware shall be Schlage, or approved equal, as follows:

- Closets: Schlage F10 MNH Manhattan Passage Lever Set
- Bathrooms and Bedrooms: Schlage F40-MNH Manhattan Privacy Lever Set
- Entry doors: Schlage F51-MNH Manhattan Keyed Entry Lever Set
- Deadbolts: Schlage B60 Single Cylinder Grade 1 Deadbolt
- Auto Closers: Norton 8301

2.03  **KEY SYSTEM**

All locksets to be master keyed with key hierarchy to be determined with Owner.

2.04  **DOOR STOPS**

1. All base-mounted door stops shall be 3 3/4" long rigid, such as Ives #60 Base Door Stop or approved equal.
2. All hinge-mounted stops shall be Ives #69 hinge pin door stop. Provide two per door, one at top hinge and one at bottom hinge.

2.05  **ONE-WAY VIEWERS**

All one-way viewers shall be Schlage 698B3 or equal, installed in accordance with manufacturer’s requirements.

2.06  **FINISHES**

The finish of all hardware shall match the finish of the locksets and shall be brushed chrome/satin nickel. Special care shall be taken to coordinate all the various manufactured items furnished on this Work, to ensure an acceptable uniform finish.

2.07  **OTHER MATERIALS**

All other materials, not specifically described, but required for a complete and proper finish hardware installation, shall be as selected by the Contractor, subject to the approval of the Architect.
PART 3 - EXECUTION

3.01 DELIVERIES

Stockpile all items sufficiently in advance to ensure their availability and make all necessary deliveries in a timely manner to ensure orderly progress of the total work.

3.02 INSTALLATION

A. Install hardware called for as recommended by the manufacturer.

B. Make adjustments as necessary to ensure that all finished hardware furnished under this Section has been installed and is in optimum working condition.

C. Hardware marred, scratched, or otherwise damaged by the Contractor in the process of the installation shall be replaced by him at no additional cost to the Owner.

END - Finish Hardware
SECTION 09 21 00

PLASTER and GYPSUM BOARD

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

   New gypsum drywall and plaster repair/replacement, on interior wall and ceiling surfaces as indicated on the Drawings. The Gypsum Drywall will serve as an air barrier per the requirements of the NYS Energy Code.

B. Related Work Described Elsewhere:

   1. Rough Carpentry     Section 06 10 00
   2. Building Insulation     Section 07 21 00
   3. Joint Sealants     Section 07 92 00
   4. Painting:     Section 09 91 00

1.02 QUALITY ASSURANCE

A. Qualifications of Installers:

   1. Use only skilled and experienced plasterers and gypsum drywall installers for repairs and for laying up the gypsum board, fastening, taping, and finishing.
   2. Helpers and apprentices used for such work shall be under full and constant supervision at all times by thoroughly skilled plasterers and gypsum drywall installers.
   3. In the acceptance or rejection of repaired and installed gypsum drywall and plaster, no allowances will be made for lack of skill on the part of installers.

B. Manufacturer's Recommendations:

   The manufacturer's recommended methods of installation, when approved by the Architect, shall be the basis for acceptance or rejection of actual installation methods used in this Work.
1.03 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect plaster and gypsum drywall materials before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 INTERIOR GYPSUM PANELS

A. General:

All interior gypsum panels shall be the product of one manufacturer, shall be tapered edged of the flowing thicknesses:

1. Unrated Walls: 1/2"
2. 1-Hour Fire-rated Walls: 5/8” Type-X Fire Code
3. 1-Hour Fire-rated Ceilings: 5/8” Type-X Fire Code
   Unrated Ceilings: 5/8"

2.02 JOINT SYSTEM

A. General:

All joint systems, including tape and compounds, shall be a system recommended by the manufacturer of the gypsum panels used as compatible with the gypsum panels.

B. Components:

A single compound may be used for embedment of tape, skim coatings, and finishing if the compound is recommended for that purpose by the manufacturer of the gypsum panels being used.
C. Wallboard Accessories Installation:

1. Resilient furring channel: resilient furring channel by Clark Dietrich or equal complying with ASTM C 645.
2. Perf-A-Tape or Durabond Joint System or approved equal shall be used on all face board joints and internal angles formed by the intersections of walls and ceilings.
3. Laminating Material shall be Perf-A-Tape Joint Compound (embedding type) mixed according to manufacturer's directions spread to provide adhesive beads 1/2" high and 5/16" wide at the base and spaced 4-1/2" o.c., or USG Laminating Adhesive applied in strips 2' o.c., running continuously from floor to ceiling. Each strip shall consist of four beads 1/2" high and 3/8" wide at the base and spaced 1-1/2" to 2" o.c.
4. Metal Corner Bead shall be securely installed at all external corners and shall be in single lengths where the length of the corners does not exceed standard stock lengths. At least two (2) coats of joint compound shall be applied over beads and each coat feathered out onto panel faces.

2.03 WATER

All water used in joint system shall be clean, fresh, and free from deleterious amounts of foreign material.

2.04 OTHER MATERIALS

All other materials, not specifically described but required for a complete and proper installation of gypsum drywall, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 GENERAL

All drywall finishes on walls and ceilings shall be left in a condition ready for painting by others.
3.02 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that gypsum drywall may be installed in accordance with the original design, all pertinent codes and regulations, and the manufacturer's recommendations as approved by the Architect.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with the installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.05 GYPSUM BOARD INSTALLATION

A. Install in accordance with manufacturer's recommendations. Installation shall comply with the following ASTM standards: C754 (Metal Framing), C1280 (Gypsum Sheathing Board), C840 (Gypsum board and Joint Treatment). Finish in accordance with GA-214 level 4 unless otherwise noted. Screw apply all gypsum drywall. Make all angles and corners clean, true, plumb and square; walls plumb, flat and straight, ceilings flat and level.

B. PERF-A-TAPE or Durabond joint system or approved equal shall be used on all face board joints and internal angles formed by the intersections of wall and ceilings. Metal corner bead shall be securely installed at all external corners and shall be in single lengths where the length of the corners does not exceed standard stock lengths. At least two (2) coats of joint compound shall be applied over beads and each coat feathered out onto panel faces slip bead shall be installed at all free ends of sheetrock or butt joints with dissimilar materials.

C. For the installation of fire rated assemblies use only materials and methods conforming to the requirements of the indicated UL Design.

D. Maintain uniform building temperature within 55 to 70 degrees F. range for 24 hours before, during and after gypsum drywall application and joint treatment.
3.06 **GYPSUM BOARD AS PART OF AN AIR BARRIER SYSTEM**

A. The framed exterior walls, ceiling below attic, and gypsum board serve as an air barrier per the NYS Energy Code. The gypsum board must be sealed to the framing and at all penetrations, and framing gaps must be sealed as well.

1. At windows and doors, fill the gap between window frame and rough opening framing with low-expanding foam, backer rod and caulk, or gaskets.
2. On exterior walls, install airtight electrical boxes with integral flange and/or gasket, or seal existing boxes with caulk.
3. At GWB perimeter, use a continuous bead of polyurethane caulk or special drywall gaskets along top and bottom plates of exterior walls, along top plates of interior partition walls under insulated ceilings, and around the perimeter of all rough openings.
4. At all penetrations through the GWB, seal around the penetrating object with caulk.
5. Caulk window and door casings to the drywall.

3.07 **CLEAN UP**

Upon completion of all Work of this Section, promptly remove from the job site all scrap materials, tools, equipment, and rubbish leaving all areas in a neat and orderly condition to the approval of the Architect.

**END - Plaster and Gypsum Board**
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SECTION 09 65 16

RESILIENT SHEET FLOORING

Part 1 - GENERAL

1.01 DESCRIPTION

A. Work included: The work of this section includes vinyl flooring in the bathrooms and all required trim strips, floor prep, etc.

B. Related Work Described Elsewhere:

   Rough carpentry (Subfloor) Section 06 10 00

1.02 QUALITY ASSURANCE:

A. Qualifications of Workmen:
   1. For the actual cutting, seaming and installation of vinyl flooring, use only qualified workmen who are thoroughly experienced with the materials and methods specified and thoroughly familiar with the design requirements.

   2. In acceptance or rejection of vinyl flooring, no allowance will be made for lack of skill on the part of the workmen.

1.03 SUBMITTALS

A. Samples:
   Within 35 days after award of Contract and before any vinyl flooring materials are delivered to the job site, submit a sample of the flooring in all of the different colors and patterns to the Architect for approval in accordance with Section 01 33 00 of these Specifications.

1.04 PRODUCT HANDLING

A. Protection:
   Use all means necessary to protect the materials of this Section before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements:
   In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.
PART 2 - PRODUCTS

2.01 MATERIALS:

All sheet vinyl flooring is to be CushionStep Good Residential grade sheet vinyl by Armstrong or approved equal. Color and pattern to be selected by Owner from manufacturer's standard list. A maximum of 2 colors may be selected.

Provide rubber transition strip at all places where carpet meets vinyl flooring. Metal transition strips will not be accepted.

Vinyl cove base to be minimum 4” high by 1/8” thick, standard toe base as manufactured by ROPPE Rubber Corporation or equal. Color to be selected by Owner. Adhesives shall be as recommended by manufacturer.

PART 3 - EXECUTION

3.01 Installation of Sheet Vinyl:

Install shoe molding at all areas where flooring intersects with wood base molding.

All subsurfaces shall be free of all conditions that may affect the quality of the finished work. Cracks, depressions, voids and joints shall be filled, sanded or otherwise made smooth. All dirt, dust, oil, and other matter injurious to bond must be removed and surfaces dry immediately prior to the application of the adhesive. Provide ¼” lauan plywood underlayment as required to provide appropriate floor surface as recommended by manufacturer. Floor level shall match adjacent floors.

Installation of sheet vinyl flooring shall be in accordance with manufacturer's approved specifications. Seams (if necessary) shall be heat welded with Weld Rods.

3.06 CLEANING UP

A. Inspection and Adjustments:

Upon completion of the work of this Section, make a thorough inspection of all installed vinyl flooring and verify that all flooring has been installed in accordance with the provisions of this Section.
Cleaning:

Upon completion of all work of this Section, promptly remove from the job site all scrap, materials, tools, equipment, and rubbish, leaving all areas in a neat and orderly condition to the approval of the Architect. Clean vinyl flooring as recommended by manufacturer.

3.07 PROTECTION

A. Provide a temporary non-staining pathway in the direction of traffic to protect the installed flooring.

B. Remove temporary coverings on completion of project.

3.08 WARRANTY:

Follow manufacturer’s instruction to qualify for 10-year Limited Residential Warranty as appropriate for the use.

END - Resilient Sheet Flooring
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SECTION 09 68 00

CARPET

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included:

Furnish and install carpet shown on Drawings and specified herein.

B. Related Work:

Rough carpentry 06 10 00

1.02 QUALITY ASSURANCE:

Refer to Supplementary General Conditions.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Carpet and pad

1. Manufacturer: Shaw Industries, Olefin (PET Polyester), loop carpet, 29.2 oz per sq yd., with 10-year warranty, over 6 lb. density bonded foam pad. Carpet to have Scotchgard Stain Release, or equal.

B. Nonmetallic Edge Guard

Tan vinyl or rubber of size and profile require for installation.

C. Installation Adhesive

Water-resistant carpet adhesive of type recommended by carpet mill.

D. Seaming Cement

Hot-melt type recommended by mill.
E. Miscellaneous Materials

Adhesives, tapes, thread, nails, staples, and similar products of type recommended by mill and installer.

PART 3 - EXECUTION

3.01 Installation of Carpeting:

A. Clean wood or concrete surfaces to be carpeted; scrape up cementitious and resinous deposits; vacuum; apply sealer on concrete surfaces, adequate to prevent dusting.

B. Pre-plan installation for uniform direction of pattern and lay of pile, and proper sequencing with other work. Locate seams properly, centered under doors and without seams in direction of traffic at doorways and similar traffic patterns. Extend carpet under removable obstructions and into closets and alcoves. Scribe the carpet accurately to vertical surfaces. Align the line of carpet as woven using no fill strips less than 6 inches wide laying all carpeting in the same direction unless specifically directed otherwise by the Architect.

C. Clean adhesive and cement from face of carpet promptly; replace carpet which cannot be cleaned.

D. Provide a heavy, non-staining paper or plastic walkway as required over carpeting in direction of traffic, maintaining intact until carpeted space is accepted by the Owner.

E. Save carpet scraps, defined as mill ends less than 9' long and pieces, larger than 3 sq. ft. in area and wider than 8", and deliver to owner's storage space as directed. Dispose of smaller pieces.

F. Vacuum completed carpet installation with beater-in-nozzle type commercial vacuum cleaner. Remove any protruding face yarn with sharp scissors.

END - CARPET
PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Work of this section includes all interior and exterior painting. The type of material to be used and the number of coats to be applied are listed in the "Painting Schedule" in Part 3.10 of this Section of these Specifications.

B. Related Work Described Elsewhere:

1. Pre-finishing:
   Shop priming and factory pre-finishing are required on some, but not all, of the items described in other Sections of these Specifications.

2. Caulking:
   Basic requirements for caulking are described in Section 07 92 00.

C. Definitions:

The term "paint", as used herein, includes enamels, paints, sealers, fillers, emulsions, and other coatings, whether used as prime, intermediate, or finish coats.

1.02 QUALITY ASSURANCE

A. Qualifications of Painters:

Use only qualified journeyman painters for the mixing and application of paint on exposed surfaces; in the acceptance or rejection of installed painting, no allowance will be made for lack of skill on the part of painters.

B. Codes and Standards:

In addition to complying with all codes and regulations and the Master Painters Institute Architectural Painting Specification Manual, comply with:

2. **EPA’s Lead-Based Paint Renovation, Repair, and Painting Program.**
   a. subcontractors disturbing lead-based paint are to be trained, certified and conform to lead paint safe practices when conducting the work.
   b. subcontractors shall submit copies of ‘individual’ and ‘firm’ certificates before commencement of the work
   c. subcontractors are responsible for documenting compliance with requirements of the Program and all record-keeping.

C. **Lead Paint Hazard Removal Certificate:**

   Property at __________________________________________

   We do hereby certify that to our knowledge the work at this Property has adhered to the Construction Documents dated ___________ and EPA guideline for the Removal of Lead Paint Hazard.

   At completion of project, signed by:

   ________________________________         __________________________
   Owner or Construction Manager                 Painting Contractor

   _______________________________            __________________________
   Name                Date                           Name               Date

1.03 **SUBMITTALS**

A. Materials List:

   1. Within 35 days after award of Contract, and before any paint materials are delivered to the job site, submit to the Architect in accordance with the provisions of Section 01 33 00 of these Specifications a complete list of all materials proposed to be furnished and installed under this portion of the Work.

   2. This shall in no way be construed as permitting substitution of materials for those specified or approved for this Work by the Architect.

B. Samples:

   1. Accompanying the materials list, submit to the Architect two copies of the full range of colors available in each of the proposed products.
2. Upon direction of the Architect, prepare and deliver to the Architect two identical sets of Samples of each of the selected colors and glosses painted onto 8-1/2"x11"x1/4" thick material; whenever possible, the material for Samples shall be the same materials as that on which coating will be applied in the Work.

C. Manufacturer's Recommendations:

In each case where material proposed is not the material specified or specifically described as an acceptable alternate in this Section of these Specifications, submit for the Architect's review the current recommended method of application published by the manufacturer of the proposed material.

### 1.04 PRODUCT HANDLING

A. Delivery:

 Deliver all paint materials to the job site in their original unopened containers with all labels intact and legible at time of use.

B. Protection:

1. Store only the approved materials at the job site, and store materials and related equipment only in a suitable and designated area restricted to the storage of paint

2. Use all means necessary to ensure the safe storage and use of paint materials and the prompt and safe disposal of waste.

3. Use all means necessary to protect paint materials before, during and after application and to protect the installed work and materials of all other trades.

C. Replacements:

 In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

### 1.05 EXTRA STOCK

Upon completion of this portion of the Work, deliver to the Owner an extra stock of paint equaling 3% of all common hall colors, 1% of all other colors and glosses with a minimum of 1 gallon each color and gloss, with all such extra stock tightly sealed in clearly labeled containers.
PART 2 - PRODUCTS

2.01 PAINT MATERIALS

A. Manufacturer:

   1. All paint materials selected for coating systems for each type of surface shall be the product of a single manufacturer.

   2. Paint materials listed herein, unless otherwise designated in the "Painting Schedule", are the product of Pratt & Lambert or Sherwin Williams and require no further approval as to manufacturer or catalog number.

   3. Equivalent products of other major paint manufacturers may be used subject to approval by the Architect of the materials list and manufacturers' recommendations required to be submitted under Article 1.03 above.

B. Compatibility:

   1. All paint materials and equipment shall be compatible in use; finish coats shall be compatible with prime coats; prime coats shall be compatible with the surface to be coated; all tools and equipment shall be compatible with the coating to be applied.

   2. Thinners, when used, shall be only those thinners recommended for that purpose by the manufacturer of the material to be thinned.

C. Colors and Glosses:

   All colors and glosses shall be as selected by the Owner and will be limited to not more than three paint colors on the exterior not more than two paint colors and two paint glosses in any one room and to not more than five paint colors and three paint glosses in the total work.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

   1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that paint finishes may be applied in strict accordance with all pertinent codes and regulations and the requirements of these Specifications.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION OF SURFACE - GENERAL

A. Protection:

Prior to all surface preparation and painting operations, completely mask, remove, or otherwise adequately protect all hardware, accessories, machined surfaces, plates, lighting fixtures, and similar items in contact with painted surfaces, but not scheduled to receive paint. In addition, protect floor and ground surfaces (such as stairs, landings, sidewalks) with drop cloths.

B. Priming:

1. Spot prime all exposed nails and other metals which are to be painted with emulsion paints, using a primer recommended by the manufacturer of the coating system.
2. All exterior woodwork shall receive the prime coat before being put in place, with the exception of pressure treated wood.

C. Cleaning:

1. Before applying paint or other surface treatment, thoroughly clean all surfaces involved.
2. Schedule all cleaning and painting so that dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.
3. If woodwork, metal or any other surface to be finished cannot be put in proper conditions for finishing by customary cleaning, sanding, puttying operations, notify the Architect in writing, or assume responsibility for and rectify any unsatisfactory finish resulting.

3.03 PREPARATION OF WOOD SURFACES

A. Cleaning:

Clean all wood surfaces until they are free from dirt, oil, and all other foreign substance.
B. Smoothing:

1. Where so required, use varying degrees of coarseness in sand paper to produce uniformly smooth and unmarred wood surfaces.

C. Knots:

1. On small, dry, seasoned knots, thoroughly scrape and clean the surface and apply one coat of good quality knot-sealer before application of the priming coat.
2. On large, open, unseasoned knots, scrape off all pitch and thoroughly clean the area, followed by an application of one coat of good quality knot-sealer.
3. Remove and treat all pitch surfaces as required for large knots.

D. Dryness:

Unless specifically approved by the Architect, do not proceed with the painting of wood surfaces until the moisture content of the wood is 12% or less as measured by a moisture-meter approved by the Owner.

3.04 PAINT APPLICATION

A. General:

1. Apply all paint with brush or roller. Spray painting will be permitted only if "backrolled."
2. Paint all surfaces, except glass, flat concrete, and similar items, not pre-finished and not called out as unfinished.
3. Paint all grilles and other pre-finished items where the factory pre-finish is not in accordance with the Painting Schedule and color selection.

B. Drying:

1. Allow sufficient drying time between coats.
2. Modify the period as recommended by the material manufacturer to suit adverse weather conditions.

3. Oil-based and oleo-resinous solvent-type paints shall be considered dry for recoating when the paint feels firm, does not deform or feel sticky under moderate pressure of the thumb, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

C. Environmental Conditions:

No painting shall be done under conditions unsuitable for producing good results.
Primer and paint shall not be applied when the surface and/or air temperature is below 40 degrees Fahrenheit unless noted otherwise by manufacturer. Temperature must be 40 degrees and rising when applying and must remain above 32 degrees throughout the entire drying time of that coat.

When applying primer/paint to masonry surfaces allow the following minimum waiting periods after completion of masonry repairs before priming/painting: repointing of existing - 7 calendar days, new or rebuilding of existing - 30 days.

D. Number of Coats:

One coat primer and a minimum number of two (2) coats of all paints will be required. Additional coats may be required to produce an acceptable finish.

E. Defects:

Sand and dust between coats to remove all defects visible to the unaided eye from a distance of five feet.

3.05 INSPECTION

A. When the work is considered complete, arrange for the Owner to do a thorough inspection. Make any corrections noted.

3.06 CLEANING UP

A. General:

1. During the progress of the Work, do not allow the accumulation of empty containers or other excess items except in areas specifically set aside for that purpose.

2. Prevent accidental spilling of paint materials, in event of such spill, immediately remove all spilled material and the waste or other equipment used to clean up the spill, and wash with surfaces to their original undamaged condition, all at no additional cost to the Owner.

B. Prior to Final Inspection:

Upon completion of this portion of the Work, visually inspect all surfaces and remove all paint and traces of paint from surfaces which are not to be painted.

3.07 PAINTING SCHEDULE

A. Painting coats, as specified, are intended to cover the surfaces uniformly, properly and completely. Additional coats shall be applied, by the Contractor, without
additional cost to the Owner, if in the opinion of the Architect improper coverage is due to faulty workmanship by the contractor.

B. Apply the following finishes to the areas designated. All areas designated below are to receive finishes as scheduled wherever they occur throughout the Project. Apply finishes as scheduled to all such areas throughout the Project. Paints specified as manufactured by Sherwin Williams (SW) or approved equal.

All paint called for below is the product of Sherwin Williams.

1. Unpainted Wood - Exterior:
   a. Prime - one coat: A100 Exterior Stain Blocking Primer (Y24W820)
   b. Paint - two coats: Duration Exterior Coating: Satin (K33W100)

2. Metal – Exterior Doors:
   a. Prime - one coat: All Surface Enamel Primer (A41W210)
   b. Paint - two coats: All Surface Latex Enamel Paint (A41 series)

3. Brick and Parge Coat - Exterior:
   a. Prime - one coat: Masonry Conditioner (A5V2)
   b. Paint - two coats: A100 Gloss Latex House and Trim (A8W series)

4. Metal – Interior Doors:
   New doors to be shop primed.
   a. Prime - one coat: All Surface Enamel Primer (A41W210)
   b. Paint - two coats: PRO MAR 400 Latex Semi-Gloss Enamel (B31W4451)

5. Gypsum Wallboard - All Bathrooms and Kitchens:
   a. Prime - one coat: PRO MAR 400 Latex Wall Primer (B28W400)
   b. Paint - two coats: PRO MAR 400 Latex Semi-Gloss Enamel (B31W4451)

6. Gypsum Wallboard - All Other Spaces:
   a. Prime - one coat: PRO MAR 400 Latex Wall Primer (B28W400)
   b. Paint - two coats: PRO MAR 400 Latex Egg-Shell Enamel (B20W4451)

7. Interior Wood Trim and Doors:
   a. Prime - one coat: Prep Rite Classic Primer (B28W101)
   b. Paint - two coats: PRO MAR 400 Latex Semi-Gloss Enamel (B31W4451)
8. Interior Wood Decking and Stairs:

a. Prime - one coat: PrepRite Classic Primer (B28W101)
b. Paint - two coats: High performance Floor Enamel (A32W51)

END – Painting
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SECTION 10 14 55

KITCHEN AND BATH CABINETS and COUNTERTOPS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Furnish and install kitchen and bath cabinets shown on Drawings and specified herein.

B. Furnish and install kitchen and vanity countertops.

1.03 SUBMITTALS

A. Submit catalog cuts of cabinetry

B. Submit color samples for approval of cabinetry, postformed countertop and wall laminate.

1.04 RELATED WORK DESCRIBED ELSEWHERE

A. Finish Hardware 08 70 00
B. Kitchen equipment (provided by Owner)
C. Plumbing 22 00 00

PART 2 - PRODUCTS

2.01 MATERIALS

A. Kitchen cabinetry kitchens shall be Oakland select grade flat panel oak cabinetry in Natural finish by Aristokraft or equal. Doors stiles and rails shall be of solid wood construction. Drawer boxes shall be dovetail joined and shelving shall be ¾” thick.

C. Vanities shall be Oakland select grade flat panel oak cabinetry in Wheat finish by Aristokraft or equal. Doors stiles and rails shall be of solid wood construction. Drawer boxes shall be dovetail joined and shelving shall be ¾” thick.
D. Countertops: Postformed countertops shall be fabricated with high pressure decorative laminate conforming with NEMA PF 42 standards, postforming horizontal purpose grade, 0.042: +/- 0.003". Laminate shall be applied by Wilsonart, Formica or equal, with heat and pressure, inside and outside radii shall not exceed manufacturer's minimum recommendations. The bullnose, cove molding and backsplash shall be built up MDF or plywood, the flat substrate shall be high quality particleboard. Laminate color to be selected by Owner from supplier's standard list.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Furnish and install kitchen cabinets, vanities and countertops shown on Drawings and specified herein including all necessary filler panels, end caps/panels, hardware, etc. for a complete and proper installation.

Installation shall be by finish carpenters skilled in this work. Verify dimensions for proper fit. Align cabinets and scribe cabinets and countertops to fit walls. Adjust doors and drawers, if required, to assure smooth, easy operation.

Cabinets shall comply with ANSI A161.1, "Recommended Minimum Construction and Performance Standards for Kitchen and Vanity Cabinets". All cabinets shall bear the manufacturer's label indicating compliance with any applicable standards.

B. Install countertops in accordance with manufacturer's specifications. Miter inside corners, use waterproofing sealant and mechanical metal fasteners. Provide end caps at all exposed ends, use a water-resistant adhesive. Caulk joints with walls.

END - Kitchen and Bath Cabinets

SECTION 10 20 00

Division 10 - 2
MAILBOXES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work included:

Furnish and install metal mailbox, post, attachment and mounting hardware.

B. Related Work:

| Rough carpentry       | 06 10 00 |
| Aluminum Siding       | 07 46 00 |

1.02 QUALITY ASSURANCE:

Refer to Supplementary General Conditions.

PART 2 - PRODUCTS

2.01 MATERIALS:

A. Woodlands Wall Mount Mailbox by Gibraltar Industries, Black. Model #L4010WB0. Made from heavy-duty galvanized steel Textured rust resistant powder-coated finish.

B. Miscellaneous Materials for complete attachment to wall using manufacturer’s recommended hardware

PART 3 - EXECUTION

3.01 INSTALLATION:

A. Permanently mount on siding per manufacturer’s instructions. Ensure that any openings, screw holes, etc., are sealed to prevent water from infiltrating through the rear of the box. Provide 4” high brass address numbers.

END - Mailboxes
SECTION 10 24 00

WINDOW GUARDS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this section includes the installation of adjustable window guards as shown on the Drawings and specified herein.

1.02 RELATED WORK DESCRIBED ELSEWHERE

A. Finish Carpentry       Section 06 20 00
B. Fiberglass Windows     Section 08 54 13

PART 2 - PRODUCTS

2.01 MATERIALS

A. Window guards shall be constructed of solid steel bars which telescope and adjust in width to fit various window openings, such as Guardian Angel II Window Guards. Steel shall have a lead-free baked-on powder coat finish; color to be as selected by Owner. Steel bars shall be spaced 4” or less apart; overall unit height shall be 21 3/8”. Substitutions shall be as approved by Architect

PART 3 - EXECUTION

3.01 INSTALLATION

A. Steel bars shall be spaced 4” or less apart; overall unit height shall be 21 3/8”.

B. Window Guard shall be securely anchored to the framing.

End - Window Guards

SECTION 10 67 00

Division 10 - 4
STORAGE SHELVING SYSTEMS

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this section includes the installation of adjustable closet storage systems as shown on the Drawings and specified herein.

1.02 RELATED WORK DESCRIBED ELSEWHERE

A. Finish Carpentry Section 06 20 00

PART 2 - PRODUCTS

2.01 MATERIALS

A. Closet systems shall be as manufactured by Easy Track Closet (www.easytrack.com), Model #RB1448 Basic Closet Starter Kit, adjustable width 4 - 8 ft., color to be white. The adjustable, wall-mounted track system has multiple levels of shelving and hanging rods with a capacity of holding up to 150 lbs. per lineal foot. Material: Composite material.
B. Any substitutions shall be as approved by the Owner.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Closet systems shall be mounted as per manufacturer’s requirements and firmly anchored to the structure. Provide necessary blocking. Molly bolts will not be acceptable.

End - Storage Shelving Systems
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SECTION 10 80 00

TOILET AND BATH ACCESSORIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work of this section includes the installation of bathroom accessories as noted on the plans and firm anchoring to the structure.

1.02 RELATED WORK DESCRIBED ELSEWHERE

A. Finish Carpentry Section 06 20 00
B. Plumbing Section 22 00 00
C. Ventilating Section 23 84 16
D. Electrical Section 26 00 00

PART 2 - PRODUCTS

2.01 MATERIALS

Provide chrome bath accessories, Moen or approved equal as follows:

Towel Bar, 24” long Moen 5324CH
Toilet Paper Holder Moen BP5308CH
Shower Curtain Rod (screw installation) Moen CSR2166CH
Medicine Cabinet, Recessed 20” x 26” w/mirror Kohler

PART 3 - EXECUTION

3.01 INSTALLATION

Toilet and bath accessories shall be mounted as per manufacturer’s requirements and as shown on the drawings. Provide solid wood backing for all accessories.

End - Toilet and Bath Accessories
This page intentionally left blank.
SECTION 22 00 00

PLUMBING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

This Work includes a new water and natural gas services, the rough and finish plumbing for all cold-water distribution, domestic water heating and distribution, vents and wastes, roof drainage, natural gas piping and distribution, plumbing fixtures and trim as noted, and all other plumbing items indicated on the Drawings or described in these Specifications, plus all other plumbing items needed for a complete and proper installation.

B. Related Work Described Elsewhere:

The following are described in the indicated other Sections of these Specifications. Cooperate as required with all other trades to ensure proper and adequate interface of their work with the work of this Section.

1. Earthwork Section 31 20 00

1.02 QUALITY ASSURANCE

Codes and Standards:

1. All work shall conform to the International Residential Construction Code as supplemented by New York State, applicable Codes of the City of Albany and the requirements of the local Building Department and National Grid USA Service Company, Inc. Use licensed plumbers in the execution of this portion of the work to ensure proper and adequate installation throughout. In the acceptance or rejection of installed plumbing, no allowance will be made for lack of skill on the part of workers.

2. In addition to complying with all codes and regulations, comply with all pertinent requirements of the Local Building Department with respect to requirements applicable to work in the public right-of-way.

3. Permits are to be obtained for all work in the public right-of-way.

4. Contact the Local Building Department 48 hours in advance of all work done in the public right-of-way.
5. Where provisions of pertinent codes and standards conflict with this Section, the more stringent provisions shall govern except that the requirements of the Local Building Department shall govern in the public right-of-way.

1.03 SUBMITTALS

A. Proof of Compliance:

1. Whenever required during progress of the Work and after completion of construction, immediately furnish proof acceptable to the Architect that all items of plumbing installed equal or exceed the requirements specified for this Work.
2. In the event such proof is not available, or is not acceptable to the Owner, the Owner may require the Contractor to remove the item or items and replace with items meeting the specified requirements and to repair all damage caused in the removal and replacement, all at no additional cost to the Owner.

B. Record Drawings:

1. During progress of the Work, maintain an accurate record of the plumbing installation locating each pipe, valve, fixture, and all other plumbing items precisely by dimension and listing all invert elevations, rates of fall, and other pertinent plumbing data.
2. Upon completion of the plumbing installation, and as a condition of its acceptance, transfer all record data to a printed copy of the Plumbing Drawings.

1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the work and materials of this Section before, during and after installation and to protect the work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.
PART 2 – PRODUCTS

2.01 PIPE

A. Soil, Waste and Vents in Buildings:

1. Except for fixture connections, above ground waste and vent piping, all pipe and fittings shall be no hub cast iron or type DWV copper water tube. PVC, DWV-Schedule 40 piping may be substituted for the above where permitted by State and Local Codes.

2. All pipe and fittings shall conform to the requirements of ASME/ANSI B16 Standards for Pipe and Fittings, ASTM D2665 and shall conform to HUD UM Bulletin 79a.

B. Soil and Waste, Exterior & Underground:

All underground waste to be XH Cast Iron laid with a minimum 1/8" per foot pitch or any material approved by the City.

C. Domestic Water Piping:

1. All hot and cold water piping, unless otherwise shown on the Drawings, shall be Type L copper with solder joint fittings. PEX piping may be substituted for the above where permitted by State and Local Codes.

2. Below-grade and below-slab copper piping shall be type K, minimum installation depth outside of building to be 4'-6" below grade.

D. Water Meters:

Each unit shall be individually metered. Provide and install water meter; which shall be purchased from the City of Albany Water Dept.

E. Gas Piping:

1. Install all gas piping according to NFPA 54.

2. All gas piping shall be schedule 40 black iron pipe with screwed malleable iron fittings.

3. Use joint compound specifically designed for gas service.

4. Install gas meter in accordance with National Grid requirements.

2.02 PIPE INSULATION

A. Insulation: Closed cell polyethylene pipe cover insulation shall be used on hot and cold water piping by WJ Dennis or equal.
B. Adhesive: Tape seam of the closed cell polyethylene pipe cover insulation with aluminum faced foam pipe wrap by WJ Dennis or equal.

2.03 ESCUTCHEONS

All pipe penetrations in finished areas shall have satin chrome plated wall or floor escutcheons. Escutcheons shall be properly fit to the pipe diameter.

2.04 PIPE FLASHING at ROOF PENETRATIONS

Flashing at each pipe penetration through the roof shall equal or exceed the quality of "Semco" No. 1100-2 flashing and counterflushing.

2.05 SHOCK ABSORBERS

All shock absorbers (water hammer arresters) shall equal or exceed the quality of "Hydrotrol" and shall be in the sizes and shapes required.

2.06 CLEANOUTS

A. All cleanouts in visible areas shall equal or exceed the quality of the following:

1. Wall Cleanouts: "Tee" fitting with chrome plated access cover, such as J.R. Smith No. 4550 series.
2. Grade Cleanouts: heavy duty cleanout, round, with bronze cover, as manufactured by J.R.Smith.

B. All cleanouts in non-finished areas shall be selected by the contractor and approved by the Architect.

2.07 SHUT-OFFS

Provide all shut-offs required by Code, as well as shut-offs to each water closet, lavatory, kitchen sink, dishwasher, washing machine, boiler and water heater.

2.08 ACCESS PLATES

All access plates shall equal or exceed the quality of "Smith No.4760", prime coated steel for painted walls, and shall have Allen key locking devices.
2.09 FIXTURES, FITTINGS & EQUIPMENT

A. General:

1. All fixtures shall be white in color.

B. Bathtub/Shower:

1. Tub/shower unit shall be a one-piece unit with integral surround on 3 sides, acrylic or fiberglass, such as manufactured by Aquatic, Lasco, or approved equal. Size shall be 60” long x 32” wide x 72” min. tall. Surround shall have integral molded shelves.

C. Lavatory Sinks: Countertop Lavatory, American Standard Model #0476.028.020. 8” centers.


E. Kitchen Sinks: Single bowl, 4-hole, stainless steel sink by Moen, 2000 Series, Model #G201964BQ with strainer basket assemblies.

F. Lavatory Faucets: Moen 8” center, Model #T6420 Eva Chrome two-handle high arc bathroom faucet with metal drain assembly and lift rod.

G. Kitchen Faucets: 8” center, Model #7434 Chateau, one-handle, low arc with sprayer

2.10 WATER HEATERS:

Water heaters shall be natural gas-fired direct vent with Energy Star rating as manufactured by Rheem, A.O. Smith or approved equal. Water heater size shall be minimum 40 gallon tank. Provide drainage for Pressure Relief Valve to exterior of building or approved plumbing connection. Water heater shall have minimum limited 6-year warranty on tank and parts.

2.11 HOSE BIBB:

Hose Bibbs shall be frost proof type as manufactured by Arrowhead or Woodford or equal. Provide stop and waste valve and anti-siphon backflow preventer 9D by Watts.
2.12 WASHING MACHINE HOOK-UPS:

Washing Machine Outlet Box – OxBox Outlet Box by Sioux Chief 696-2313XF (or approved equal). Washing machine hook-ups to be provided with vacuum breakers (arresters).

Provide solid wood blocking for washing machine outlet box.

2.13 WATER METER:

Water meter to be purchased from the City of Albany Water Department and installed by the GC.

2.14 OTHER MATERIALS:

All other materials, not specifically described, but required for a complete and operating plumbing installation, shall be new, first quality of their respective kinds, and as selected by the Contractor, subject to the approval of the Architect.

PART 3 – EXECUTION

3.01 SURFACE CONDITIONS:

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of adjacent trades and verify that all such work is complete the point where this installation may properly commence.
2. Verify that plumbing may be installed in strict accordance with pertinent codes and standards and with the requirements of all the Contract Documents.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with the work in areas of discrepancy until all such discrepancies have been fully resolved.
3.02 PLUMBING SYSTEM LAYOUT:

A. Supply sizes (hot and cold water to each fixture) shall be as indicated on the Drawings. Lay out the plumbing system in careful coordination with the Drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system. Follow the general layout on the Drawings in all cases, except where other work may interfere. Lay out all pipes to fall within partition, wall, or roof cavities of the heated spaces, and to not require furring other than as shown on the Drawings.

B. Each fixture group or individual remote fixture shall be provided with a vent through the roof. Provide self-flashing roof sleeves at all roof penetrations.

3.03 TRENCHING & BACKFILLING:

A. General:

1. Provide a minimum trench width of 16 inches for main soil and drainage pipe, and minimum depth of 24 inches cover below finished grade wherever conditions will permit.
2. Where field conditions require variance from the minimums, secure the Owner’s approval before proceeding with the variance. Perform all such variances at no additional cost.

B. Backfilling:

1. Backfill promptly upon receipt of all necessary approvals, using stockpile material excavated from the trench or using other material approved by the Architect.
2. All backfill material shall be free from rocks, large clods, roots, and other foreign matter, and shall be compacted in 6 inch layers to a minimum of 95% compaction.
3. Jetting of backfill will not be permitted.
4. Promptly remove all excess excavated material from the site.

3.04 INSTALLATION:

A. General:

1. Install all piping properly, capping or plugging all open ends.
2. Install all piping generally level and plumb, free from traps, and in a manner to conserve space for other work.
3. Cushion all traps and bearings to minimize transfer of sound. Firmly anchor all pipes in position. Provide complete isolation of all dissimilar metals.
4. Provide uniform pitch of at least 1/4 inch per foot for all horizontal waste and soil piping within the building.
5. Pitch all vents for proper drainage. Install vent piping with each bend 45 degrees minimum from horizontal wherever structural conditions will permit.
6. Provide air chambers at all fixtures. All air chambers shall be 16 inches minimum length.
7. Conceal all piping unless otherwise shown on the Drawings.
8. Inspect each piece of pipe, tubing, fittings and equipment for defects and obstructions. Properly remove all defective material from site.

B. Water Meters:

Install in accordance with the requirements of the Water Department.

C. Interferences:

Install pipes to clear all beams and obstructions. Do not cut into or reduce the size of any load-carrying members without the prior approval of the Architect.

3.05 JOINTS & CONNECTIONS:

A. Preparation:

Properly ream all cut pipe. Cut all threads straight and true. Apply best quality teflon tape to all male pipe threads, but not to inside the fittings. Use graphite on all cleanout plugs.

B. Packing:

Pack all joints in cast iron soil and waste pipe and fittings using oakum and securing with 1 inch deep caulking or lead. Fully and properly caulk and finish. Note that compression-type neoprene joints may be used in accordance with Paragraph 2.01, A above.

C. Copper:

Make all joints in copper tubing with 95-5 tin-antimony solder applied in strict accordance with the manufacturer's recommendations.
3.06 HANGERS & SUPPORTS:

A. Spacing: Do not exceed the following spacing, on centers:

<table>
<thead>
<tr>
<th>Pipe Type</th>
<th>Pipe Size</th>
<th>Support Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas supply (steel)</td>
<td>1/2&quot;</td>
<td>6 ft.</td>
</tr>
<tr>
<td></td>
<td>3/4&quot;-1&quot;</td>
<td>8 ft.</td>
</tr>
<tr>
<td>Water supply (cooper)</td>
<td>2&quot; &amp; larger</td>
<td>10 ft.</td>
</tr>
<tr>
<td></td>
<td>less than 2&quot;</td>
<td>6 ft.</td>
</tr>
<tr>
<td>Cast iron waste</td>
<td>all sizes</td>
<td>5 ft.</td>
</tr>
<tr>
<td>Plastic waste</td>
<td>2&quot; &amp; larger</td>
<td>4 ft.</td>
</tr>
<tr>
<td></td>
<td>less than 2&quot;</td>
<td>3 ft.</td>
</tr>
</tbody>
</table>

B. Supporting:

Use a separate hanger for each branch. Support vertical risers at the floor with extension pipe clamps approved by the Architect. Wherever insulated pipe is supported by rise hangers, the rings shall pass freely around the insulation. Protect the insulation at point of contact with saddles approved by the Architect.

3.07 CLOSING IN UNINSPECTED WORK:

Do not cover up or enclose work until it has been properly and completely inspected and approved. Should any of the work be covered up or enclosed prior to all required inspections and approvals, uncover the work as required and, after it has been completely inspected and approved, make all repairs and replacements with such materials and work quality at no additional cost to the Owner.

3.08 TESTING:

A. General:

Furnish all test pumps, gages, equipment, and personnel required and test as necessary to demonstrate the integrity of the finished plumbing installation to the approval of all pertinent authorities and the Architect.

B. Soil & Waste:

Unless otherwise directed, plug all openings and fill with water to a height equal to the lowest vent. All to stand one hour or longer as required. Re-caulk leaking joints as directed and then re-test.
C. Water Lines:

Test and make tight at 100 psi air gage. Retain for four hours. Repair all leaking joints as directed and then retest.

D. Valves:

Test all valves bonnets for tightness. Tests operate all valves at least once from closed-to-open-to-closed position while valve is under test pressure. Test all automatic valves for proper operation at the settings indicated. Test pressure relief valves at least three times.

E. Piping Specialties:

Test all piping specialties for proper operation. Test all air vent points to insure that air has been vented.

3.09 CLEAN UP

Upon completion of all Work of this Section, promptly remove from the job site all scrap materials, tools, equipment, and rubbish leaving all areas in a neat and orderly condition to the approval of the Architect.

END – Plumbing
SECTION 23 00 00

HVAC

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

The heating work of this contract includes all work necessary for installation of new gas fired hot water heating systems. This work includes, but is not necessarily limited to the following:

1. Design of the heating system and distribution.

2. Installation of new exhaust venting for boilers.

3. Installation of new gas fired boilers and all necessary gas, water, supply and return piping and controls, wiring and pumps as indicated.

4. Installation of new heating pipes as needed to connect new boilers to existing cast iron radiators, and installation of one salvaged radiator in new location.

B. Related Work Described Elsewhere:

1. Plumbing: Section 22 00 00
2. Electrical: Section 26 00 00

1.02 QUALITY ASSURANCE

A. All work shall conform to 2015 International Residential Code as supplemented by 2016 New York State and Codes of the City of Albany. Use skilled workers in the execution of this portion of the work to ensure proper and adequate installation throughout. In the acceptance or rejection of installed heating, no allowance will be made for lack of skill on the part of workers.

B. All work is to be in accordance with the latest edition of the National Fuel Gas Code and the recommendations of the manufacturer.
1.03 SUBMITTALS

A. All submittals shall be made in accordance with the provisions of Section 01 33 00 of these Specifications.

B. Submit Shop Drawings indicating the layout and special details to be used. Clearly indicate the size and location of the proposed piping and radiation units. If soffits or chases are required, bring that to the attention of the Owner on the shop drawings.

C. Submit calculations for unit sizing and radiation sizing.

PART 2 - PRODUCTS

2.01 GAS-FIRED BOILERS

Install one boiler for each apartment. Heating hot water boiler shall be as manufactured by Burnham, HB Smith, Weil-McLain Corp. or approved equal with the following features:

- Cast iron sectional
- Gas fired
- Minimum net IBR output: 37,000 BTUH
- Fully jacketed
- Complete control package including electronic spark ignition; White Rodgers indoor/outdoor boiler water temperature reset; manual reset high limit control.
- Complete accessories including pressure gauge and temperature gauge; pressure relief valve; combination make up water pressure reducing/relief valve; pneumatic compression tank (to match system capacity); two (2) 120 volt, one phase in line circulating pump rated at 12 GPM @ 25 FT head.
- Control sequence as follows: boiler operate at all outdoor temperatures below 60 degrees F (adjustable); boiler water temperature set by indoor/outdoor controller; each pump operated by its respective unit thermostat.
- System shall include an automatic or readily accessible manual switch that can turn off the hot water circulating pump when the system is not in use.
2.02 PIPE

A. Heating Hot Water Pipe: Type M copper with solder joints, Pex with Oxygen Barrier or Pex-Al-Pex.

B. Gas Pipe: SCH 40 Steel with threaded joints.

2.04 PIPE INSULATION

B. All new heating hot water lines shall be wrapped with self-adhering closed-cell elastomeric thermal insulation as manufactured by Armacell, LLC, K-Flex USA, or approved equal. Seams shall be sealed using manufacturer-supplied low VAC air-drying, solvent-based contact adhesive. Internal diameter of pipe insulation to match the outside diameter of the pipe receiving the wrap. R-value of insulation to be R-3 minimum.

2.05 BASEBOARD RADIATION

Fine/Line #30, or where necessary due to space limitations, Multi/Pak 80, by SLANT-FIN

2.06 DIGITAL SETBACK THERMOSTAT

Each dwelling unit shall have one thermostat capable of automatically adjusting the space temperature set point. The thermostat for each unit is to be an Economy Single Stage 5+2 Day Programmable Thermostat, 70 Series, by White Rogers or approved equal.

2.07 DEHUMIDIFIER:

Permanently installed dehumidifier with drain line, capable of removing up to 90 pints per day, such as the “Advance 90” dehumidifier with basement package and ducting capability, as manufactured by Santa Fe, or the approved equal as manufactured by Therm-Stor or Sani-Dry.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS:

A. Inspection:
1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

2. Verify that the work of this Section may be completed in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the manufacturer's recommendations.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Owner.
2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 INSTALLATION OF EQUIPMENT:

A. Layout:

Lay out the heating system in careful coordination with the Drawings, determining proper elevations for all components of the system and using only the minimum number of bends to produce a satisfactorily functioning system. Follow the general layout shown on the Architect-approved shop drawings in all cases except where other work may interfere.

B. Locations:

Install all equipment in the locations shown on the approved Shop Drawings, except where specifically otherwise approved on the job by the Architect.

C. Interferences:

Avoid interference with structure and with work of other trades, preserving adequate headroom and clearing all doors and passageways to the approval of the Architect.

D. Inspection:

Check each piece of equipment in the system for defects, verifying that all parts are properly furnished and installed, that all items function properly, and all adjustments have been made.

3.03 INSTALLATION of HOT WATER PIPING:

A. General:

1. Install all piping promptly, capping or plugging all open ends.

2. Install all piping generally level and plumb, free from traps, and in a manner to conserve space for other work.
3. Cushion all traps and bearings to minimize transfer of sound. Firmly anchor all pipes in position. Provide complete isolation of all dissimilar metals.

4. Inspect each piece of pipe, tubing, fittings, and equipment for defects and obstructions. Promptly remove all defective material from the site.

B. Interferences:

Install pipes to clear all beams and obstructions. Do not cut into or reduce the size of any load carrying members without the prior approval of the Architect.

3.04 JOINTS AND CONNECTIONS

A. Preparations:

Properly ream all cut pipe. Cut all threads straight and true. Apply best quality teflon tape to all male pipe threads but not to inside the fittings.

B. Copper:

Make all joints in copper tubing with 95-5 tin-antimony solder applied in strict accordance with the manufacturer’s recommendations.

3.05 HANGERS AND SUPPORTS

A. Spacing:

Do not exceed the following spacing, on centers:

<table>
<thead>
<tr>
<th>TYPE OF PIPE</th>
<th>SPACING:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper or steel</td>
<td>1-1/2 inch &amp; smaller</td>
</tr>
<tr>
<td>Pex</td>
<td>6’ across joists, 32” alongside joists, 4-6’ vertically</td>
</tr>
</tbody>
</table>

B. Supporting:

Use a separate hanger for each branch. Support vertical risers at the floor with extension pipe clamps approved by the Architect. Wherever insulated pipe is supported by ring hangers, the rings shall pass freely around the insulation. Protect the insulation at point of contact with saddles approved by the Architect.
3.06 ELECTRICAL WIRING

Provide and install all electrical wiring according to manufacturer's printed instructions for gas fired circulated hot water boiler.

3.07 TESTING

A. General:

Furnish all test pumps, gauges, equipment, and personnel required and test as necessary to demonstrate the integrity of the finished heating installation to the approval of all pertinent authorities and the Architect.

B. Water Lines:

Test and make tight at 100 psi air gauge. Retain for four hours. Soap test if the pressure drops. Repair all leaks and then re-test.

C. Gas:

Air test to pressure equal to 100 psi. Retain for four hours. Soap test if the pressure drops. Repair all leaks and then re-test.

D. Valves:

Test all valve bonnets for tightness. Test operate all valves at least once from closed-to-open-to-closed position while valve is under test pressure. Test all automatic valves for proper operation at the settings indicated. Test pressure relief valves at least three times.

E. Piping Specialties:

Test all piping specialties for proper operation. Test all air vent points to ensure that air has been vented.

3.06 CLOSING-IN OF UNINSPECTED WORK

A. General:

Do not allow or cause any of the work of this Section to be covered up or enclosed until it has been inspected, tested, and approved by the Architect and by all other authorities having jurisdiction.
B. Uncovering:

Should any of the work of this Section be covered up or enclosed before it has been completely inspected, tested, and approved, do all things necessary to uncover all such work. After the work has been completely inspected, tested and approved, provide all materials and labor necessary and make all repairs necessary to restore the work to its original and proper condition at no additional cost to the Owner.

END – HVAC
SECTION 23 84 16

VENTILATING

PART 1 - GENERAL

1.01 DESCRIPTION:

A. Work Included:

Ventilating required for this Work is indicated on the Drawings and work write-ups and includes, but is not necessarily limited to:

1. Exhaust fans;
2. Controls;
3. Ducts for dryers and range hoods;
4. All other items required for a complete and operating system.

B. Related Work Described Elsewhere:

1. Plumbing: Section 22 00 00
2. Heating Section 23 00 00
3. Electrical Section 26 00 00

1.02 QUALITY ASSURANCE:

A. Qualifications of Installers:

1. For the actual fabrication, installation and testing of work under this Section, use only thoroughly trained and experienced workers completely familiar with the items required and the manufacturer's current recommended methods of installation.
2. In acceptance or rejection of installed work, the Architect will make no allowance for lack of skill on the part of the workers.

B. Codes and Standards:

In addition to complying with all pertinent codes and regulations, comply with all pertinent recommendations contained in "Duct Manual and Sheet Metal Construction for Ventilating and Air Conditioning Systems", latest edition, as published by the Sheet Metal and Air Conditioning Contractor's National Association.
1.03 SUBMITTALS:

Submit all materials proposed to be furnished and installed, giving the manufacturer's name and catalog number for each item, per Section 01 33 00 of these Specifications.

1.04 PRODUCT HANDLING:

A. Protection:

Use all means necessary to protect the materials of this Section before, during and after the installation and to protect the Work and materials of all other trades.

B. Replacements:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 EQUIPMENT:

A. General:

For the ease of maintenance and parts replacement, to the maximum extent possible, use equipment of a single manufacturer, to be approved by the Architect.

B. Bathroom Fan/Light:

WhisperGreen-Lite 130 CFM, FV-13VKML3, by Panasonic or approved equal.

C. Wall Cap:

4” and 6” round white or brown (color to be selected by Owner) aluminum wall caps with gravity damper as manufactured by Broan, Master-Flow or equal. Size to be as required for the fixture/duct being vented.

2.02 METAL DUCTS:

Rigid metal ducts are required for the venting of all products called for.
1.03 OTHER MATERIALS:

All other materials, not specifically described but required for a complete and proper installation, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS:

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that the work of this Section may be completed in strict accordance with all pertinent codes and regulations, the approved Shop Drawings, and the manufacturer's recommendations.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 INSTALLATION OF EQUIPMENT:

A. Locations:

Install all equipment in the locations shown on the approved Shop Drawings, except where specifically otherwise approved on the job by the Architect.

B. Interferences:

Avoid interference with structure and with work of other trades, preserving adequate headroom and clearing all doors and passageways to the approval of the Architect.

C. Inspection:

Check each piece of equipment in the system for defects, verifying that all parts are properly furnished and installed, that all items function properly, and all adjustments have been made.
3.03 INSTALLATION OF DUCTWORK:

A. General:

1. Fabricate and install all ductwork in strict accordance with the approved Shop Drawings and the referenced standards.
2. All joints, seams and connections shall be securely fastened and sealed with welds, gaskets, mastics or tapes as permitted by Code.
3. Vent fans to exterior in as direct path as possible. Vent termination point to be approved by the owner (this is a Historic building; bath fans shall not be vented to a prominent façade unless approved by Owner).

3.04 CLOSING-IN OF UNINSPECTED WORK:

A. General:

Do not allow or cause any of the work of this Section to be covered up or enclosed until it has been inspected, tested, and approved by the Owner and by all other authorities having jurisdiction.

B. Uncovering:

Should any of the work of this Section be covered up or enclosed before it has been completely inspected, tested, and approved, do all things necessary to uncover all such work. After the work has been completely inspected, tested and approved, provide all materials and labor necessary and make all repairs necessary to restore the work to its original and proper condition at no additional cost to the Owner.

3.05 COOPERATION WITH OTHER TRADES:

Do all things necessary to cooperate with other trades in order that all systems in the Work may be installed in the best arrangement. Coordinate as required with all other trades to share space in common areas and to provide the maximum of access to each system.

END - Ventilating
SECTION 26 00 00

ELECTRICAL

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

The electrical system required for this Work includes all labor and materials, equipment, services and other items necessary to complete the installation of all electrical items indicated on the Drawings, specified herein, and needed for a complete and operable facility but not specifically described in any other Section of these Specifications. Among the items required are:

1. Electric service, complete, to point of connection with the utility company's facilities at building.
2. Main distribution panel with metering equipment and feeder switches or circuit breakers.
3. Complete feeder system to power panels and branch circuit panels.
4. Branch circuit panels for power and lighting.
5. Complete branch circuit wiring system for lighting, receptacles, junction boxes, and similar uses.
6. Electrical boxes, wall switches, receptacles, bathroom fans, and similar items.
7. Wiring up to and including safety switches.
8. Wiring to, and connection of, switches, receptacles, and new equipment.
9. Cover plates for junction boxes, switches, receptacles
12. Hard wired and interconnected Heat Detectors
13. Provide and install Lighting Fixtures.

B. Related Work Described Elsewhere:

Provide all required electrical connections and service to items described in all other Sections of these Specifications.
1.02 QUALITY ASSURANCE

A. Qualifications of Installers:

For the actual installation, use only licensed electricians who are completely familiar with the items required and with the manufacturer's recommended methods of installation. In acceptance or rejection of the installed work, no allowance will be made for lack of skill on the part of workmen.

B. Codes and Standards:

In addition to complying with all pertinent codes and regulations, comply with all pertinent portions of:

1. National Electrical Code, edition referenced by the Building Code;
2. New York State Board of Fire Underwriter's Code;
3. Local utility company regulations.

1.03 SUBMITTALS

A. Materials List:

Within 35 days after award of Contract, and before any materials of this Section have been delivered to the job site, submit to the Architect in accordance with the provisions of Section 01 33 00 of these Specifications a complete list of all materials proposed to be furnished and installed under this Section. This shall in no way be construed as permitting substitution, except as provided for under Section 01 33 00.

B. Record Drawings:

During progress of the Work, maintain an accurate record of the installation of all items, locating each circuit precisely by dimension. Upon completion of the installation, transfer all record data to blue-line prints of the original Drawings.

1.04 PRODUCT HANDLING

A. Protection:

Use all means necessary to protect the work and materials of this Section before, during and after installation and to protect the work and materials of all other trades.
B. Replacement:

In the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.01 SERVICE ENTRANCE EQUIPMENT AND MAIN DISTRIBUTION PANEL

A. Main Distribution Panel:

1. Contractor shall determine & install service size as required to meet the demands of the building. Contractor shall make all arrangements with the utility company (National Grid) for providing service and pay all costs involved.
2. The main distribution panel board shall be factory assembled dead front, braced for the indicated ampere rms symmetrical equipment, bussing connections, current limiting fuses, circuit breakers, and all similar components required for proper completion.
3. Identify all components by means of permanent labels.

2.02 ELECTRICAL DISTRIBUTION SYSTEM

A. Apartment and House Subfeeds:

Provide subfeeds to a house panel, located in the basement, and to each of the two apartments. Apartment panels to be individual breaker panels located within each apartment as shown on the Electrical Plans.

B. Apartment and House Distribution Panels:

Furnish and install local distribution panel boards with surface or flush covers as required. Panels shall be 120/240 volt, single phased, three wire service and shall be of the load center type design as manufactured by Square D, Cutler-Hammer, or approved equal. Amperage of panels is shown on Drawings. Breakers shall have trip rating indicated and shall have minimum 10,000 A/C capacity. Panel directories shall be accurately filled in by Electrician.

2.03 ELECTRICAL BOXES

The gypsum wallboard and the wood framing are the air barriers. Wherever there are electrical boxes that penetrate the exterior wall or ceiling, air sealed boxes by AirFoil or equal are required. Spray foam the provided chamber after wiring fixture or outlet.
2.04 LIGHTING FIXTURES

A. General:

1. All lighting fixtures shall be complete with all required suspension accessories, canopies, casings, sockets, holders, reflectors, and other items and shall be completely wired and assembled.
2. Wire all Fixtures with fixture wiring of at least 150 degrees C 302 F rating.
3. All light fixtures installed in an insulated cavity shall be IC rated.
4. See drawings for fixture type and location.

2.05 SWITCHES & RECEPTACLES

Switches and receptacles shall be G.E., Leviton, Hubbell or approved equal specific grade receptacles and switches rated for this service to which they are to be applied. All boxes in the building envelope shall be air sealed.

2.06 SMOKE & CARBON-MONOXIDE DETECTORS

The smoke and fire detection system components shall be FIRELITE. All equipment, to the extent possible, shall be from that manufacturer. Detectors shall be direct wired with battery back-up.

Smoke Detectors: Model SD 355(A) - photoelectric
Carbon Monoxide Detector: System Sensor Model CO1224T - in full compliance with UL 2075

2.07 HEAT DETECTORS

Shall be hard wired, fully interconnected throughout the building.

Thermal Detectors: Model 355(A) Heat Detector - 135 degree F fixed temperature

2.08 BRANCH CIRCUITS:

Unless otherwise indicated on the Drawings, all wires used for branch circuits shall be number 12, with 75 degrees C class insulation, protected by 15 or 20 ampere circuit breakers, or as indicated on the Drawings. Install wires where necessary to limit voltage drop. All conductors must be copper. Romex wire may be used where permitted by Codes.
2.09 OTHER MATERIALS

All other materials not specifically described on the Drawings or in these Specifications, but required for a complete and operable facility shall be as selected by the Contractor subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Prior to all work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.
2. Verify that the work of this Section may be performed in strict accordance with all pertinent codes and regulations, the original design and the manufacturer's recommended installation methods.

B. Discrepancies:

1. In the event of discrepancy, immediately notify the Architect.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.02 PREPARATION

A. Coordination:

1. Schedules: coordinate the installation of electrical items with the schedules for work of other trades to prevent unnecessary delays in the total work.
2. Locations: where lighting fixtures and other electrical items are shown in conflict with locations of structural members and mechanicals or other equipment, furnish and install all required supports and wiring to clear the encroachment.

B. Accuracy of Data:

The data indicated on the Drawings and in these Specifications are as exact as could be secured, but their absolute accuracy is not guaranteed. Exact locations, distances, levels, and other conditions will be governed by the building. Use the Drawings and these Specifications for guidance. Actual locations to be determined based on capacity of equipment and referenced standards.
C. Measurements:

Verify all measurements at the site. No extra compensation will be allowed because of differences between locations shown on the Drawings and measurements at the building.

3.03 INSTALLATION OF RACEWAYS AND FITTINGS

A. Concealment:

Conceal all conduit in walls or ceiling spaces unless otherwise specifically approved by the Architect. Where conduit is allowed to be exposed, install the conduit parallel with or at right angles to structural members, walls, and lines of the building.

B. Installation:

1. Keep all conduits at least 6 inches away from the covering on hot water pipes.
2. Keep ends of conduit closed with approved conduit seals during construction of the building. Use conduit unions where union joints are required. Do not use running threads.
3. Where conduit is installed in concrete slabs, on the ground, underground, or exposed to the weather, make all joints liquid tight and gas tight. Bury all underground conduit to a depth of 2 feet below finished grade unless otherwise shown on the Drawings.

3.04 INSTALLATION OF LIGHTING FIXTURES

A. General:

1. Install all lighting fixtures complete and ready for service, in accordance with the Drawings.
2. Wire all fixtures with fixture wiring of at least 150 degrees C rating. Conductors in wiring channels of fixtures mounted in rows shall be the same size as the circuit wires supplying the rows.

3.05 INSTALLATION OF PANELS

A. Installation:

Unless otherwise indicated on the Drawings, install all panels with the top of the trim 6'-3" above the finished floor. Panels to be located as shown on the Drawings.
B. Directories:

Mount a typewritten directory behind glass or plastic on the inside of each panel door. On the directory show the circuit number and complete description of all outlets on each circuit.

3.06 INSTALLATION OF SMOKE, THERMAL, CARBON-MONOXIDE DETECTORS

Combination smoke and carbon monoxide detectors shall be permitted as approved by the Architect.

Smoke and carbon monoxide alarms within individual apartment units shall be interconnected in such a manner that the actuation of one alarm will activate all of the alarms in the individual unit.

3.07 TESTING

A. General:

1. Upon completion of this portion of the Work, test all parts of the electrical system in the presence of the Architect.
2. Demonstrate that all equipment furnished, installed, and/or connected under this Section of these Specifications functions electrically in the required manner.

B. Test Requirements:

1. All systems shall test free from short circuits and grounds, shall be free from mechanical and electrical defects, and shall show an insulation resistance between phase conductors and ground of not less than that required by the National Electrical Code.
2. Test all circuits for proper neutral connections.

END – Electrical
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SECTION 31 10 00

CLEARING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included: Clearing required for this Work includes, but is not necessarily limited to:

1. Removal of miscellaneous items;
2. Felling and/or trimming of trees and removal of stumps, limbs, roots, and tree debris;
3. Clearing and grubbing of miscellaneous vegetation.
4. Dust control;
5. Removal of all debris (rubble, garbage, stone).

B. Related Work Described Elsewhere:

1. Earthwork: Section 31 20 00
2. Demolition Section 31 41 00

C. Definition:

The term "clearing" as used herein, includes the removal of all existing objects (except for those objects designated to remain) down to the existing ground level, plus such other work as is described in this Section of these Specifications.

1.02 QUALITY ASSURANCE

In addition to complying with all pertinent codes and regulations, comply with the requirements of all insurance carriers providing coverage for this Work.
1.03 JOB CONDITIONS

A. Dust Control:

Use all means necessary to prevent spread of dust during performance of the Work of this Section. Thoroughly moisten all surfaces as required to prevent dust being a nuisance to the public, neighbors, and concurrent performance of other work on the site.

B. Burning: On-site burning will not be permitted.

C. Protection: Use all means necessary to protect existing objects designed to remain and, in the event of damage, immediately make all repairs and replacements necessary to the approval of the Architect.

PART 2 - PRODUCTS

2.01 EXPLOSIVES

Do not use explosives on this Work.

2.02 OTHER MATERIALS

All other materials, not specifically described but required for proper completion of the Work of this Section, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 PREPARATION

A. Site Inspection:

1. Prior to all work of this Section, carefully inspect the entire site and identify all objects designated to be removed and to be preserved.

2. Locate all existing utility lines to be terminated and determine all requirements for disconnecting and capping.

3. Locate all existing active utility lines traversing the site and determine the requirements for their protection.
B. Clarification:

1. The Drawings do not purport to show all objects existing on the site.

2. Before commencing the work of this Section, verify with the Architect all objects to be removed and all objects to be preserved.

C. Scheduling:

1. Schedule all work in a careful manner with all necessary consideration for neighbors and the public.

2. Avoid interference with the use of and passage to and from adjacent buildings and facilities.

D. Protection of Utilities:

Preserve in operating condition all, if any, active utilities traversing the site. Specifically: electrical, gas, water, sewer, or other.

3.02 CLEARING AND GRUBBING;

A. Tree Removal:

1. Remove designated trees and stumps, together with the bulk of the roots, to a minimum depth of three feet below the existing grade or finish grade, whichever is lower within a radius of eight feet beyond perimeter of trunk at ground line.

2. In all holes created by tree removal, fill with clean soil and then compact.

3. Do not backfill holes until inspected and approved by the Architect.

B. Grubbing:

Remove all surface rocks and all stumps, roots, grass, weeds, and other vegetation, and all debris within the limits of construction.

3.03 REMOVAL OF DEBRIS

Remove all debris, unless designated otherwise, from the site and dispose of all removed material legally. Leave the site in a neat and orderly condition to the approval of the Architect.

END - Clearing
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SECTION 31 20 00

EARTHWORK

PART 1 - GENERAL

1.01 DESCRIPTION

A. Work Included:

Excavating, filling and grading required for this Work may include, but is not necessarily limited to:

1. Filling and back-filling to attain indicated grades after removal of existing rear addition;

2. Trenching and trench back-filling for utilities;

3. Rough and finish grading of the site;

4. Furnishing and installing granular cushion under concrete slabs on grade;

5. Pumping and drainage as required to maintain dry excavations;

6. Protection of properly existing construction and utilities below and above grade.

B. Related Work Described Elsewhere:

1. Clearing: Section 31 10 00

1.02 JOB CONDITIONS

A. Dust Control:

1. Use all means necessary to control dust on and near the Work and on and near all off-site borrow areas if such dust is caused by the Contractor's operations during performance of the Work or if resulting from the conditions in which the Contractor leaves the site.

2. In the event of damage, immediately make all repairs and replacements necessary to the approval of the Owner and at no additional cost to the Owner.
1.03 SUBMITTALS

A. Samples:

Furnish pit location and current D.O.T. acceptance number with each sample for:

1. Select granular material, 40-50 pounds.

2. Granular cushion, 40-50 pounds.

B. Product Data:

Follow Manufacturer's specifications, performance standards, characteristics, and operating instructions for compaction equipment.

PART 2 - PRODUCTS

2.01 ON-SITE FILL MATERIAL

All on-site fill material shall be natural or man-made mineral (inorganic) soil or soil-rock mixture which is free from organic matter and other deleterious substance. It shall contain no rocks or lumps over four inches in greatest dimension.

2.02 IMPORTED FILL MATERIAL

All imported fill material shall meet the requirements of Article 2.01 above and shall, in addition, be of granular nature with sufficient binder to form a firm and stable unyielding subgrade. All imported fill material shall be subject to approval of the Architect.

2.03 TRENCHING & STRUCTURAL BACKFILL

A. Backfill to be clean, hard, durable, well-graded sand and gravel as follows:

1. Three-inch sieve size: 100% passing by weight.
2. No. 40 sieve size: 0 - 70% passing by weight.
3. No. 200 sieve size: 0 - 10% passing by weight.

B. Do not reuse excavated material.
2.04 OTHER MATERIALS

All other materials, not specifically described but required for proper completion of the Work of this Section, shall be as selected by the Contractor, subject to the approval of the Architect.

PART 3 - EXECUTION

3.01 GENERAL

A. Familiarization:

Prior to all work of this Section, become thoroughly familiar with the site, site conditions, and all portions of the work falling within this Section.

B. Backfilling:

1. Do not allow or cause any of the Work performed or installed to be covered up or enclosed by work of this Section prior to all required inspections, tests, and approvals.
2. Should any of the work be so enclosed or covered up before it has been approved, uncover all such work at no additional cost to the Owner.
3. After the work has been completely inspected, tested, and approved, make all repairs and replacements necessary to restore the work to the condition in which it was found at the time of uncovering, all at no additional cost to the Owner.
4. Place backfill and fill materials in layers, not more than 9" in loose depth. Before compaction, moisten or aerate each layer as necessary to facilitate compaction to the required density. Do not place backfill or fill material on surfaces that are muddy, frozen or contain frost or ice.
5. If the fill does not meet the minimum density requirements, remove and/or recompact the fill to the required density at the Contractor's expense.
6. Subsoil which is otherwise solid, but which becomes mucky or otherwise unsuitable on top because of construction operations, shall be removed down to suitable material.
7. If soft pumping subgrade is encountered Contractor shall install a 6-oz. minimum geotextile fabric and bed of crushed stone. Contractor must contact Architect to schedule a site visit and review of the soil conditions of the area in question before he proceeds with the installation.
3.02 REOVALS

A. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of protection during earth work operations.

B. If uncharted, or incorrectly charted piping or other utilities are encountered during excavation, consult Owner immediately for directions. Repair damaged utilities to satisfaction of Owner.

3.03 PROJECT SAFETY

A. The Contractor is responsible for initiating, maintaining, and supervising all safety precautions and programs in conjunction with the project.

B. Some utilities are visible within the building area. Additional utilities are possible and excavation should proceed with caution at all times. All utility companies should be contacted before excavation begins.

3.04 EXCAVATING

Examine all substrates and conditions under which work is to be installed. Do not proceed with work until all unsatisfactory conditions are corrected.

A. Depressions Resulting from Removal of Obstruction:

Where depressions result from, or have resulted from, the removal of surface or subsurface obstructions, open the depression to equipment working width and remove all debris and soft material as directed by the Owner.

3.05 EXCESS WATER CONTROL

A. Provide all necessary pumping and drainage required to maintain dry excavation at all times.

B. Conduct or drain water away from the building area in an acceptable manner. As building construction proceeds, provide temporary devices to prevent water from entering enclosed portions of the work. Immediately remove water that does enter.

C. Unfavorable Weather:

Do not place, spread or roll any fill material during unfavorable weather conditions.
D. Softened Subgrade:

Where soil has been softened or eroded by flooding or placement during unfavorable weather, remove all damaged areas and re-compact as specified for fill and compaction below.

3.06 FILL AND COMPACTION

A. Fill - General:

1. Provide on-site fill material or imported material where additional material is required to complete fill areas.
2. Landscaped areas: provide fill where required consisting of on-site or imported fill.

B. Compaction - General:

1. Compact each soil layer; repeat compaction process until plan grade is attained.
2. Degree of compaction requirements:
   a. Percentage of compaction shall be that percentage of maximum dry density obtainable by the ASTM designation D1557 method of compaction.
   b. Lawn or unpaved areas: 90%.
   c. Pavements: 95%.
3. Each layer of backfill, while being compacted to contain the moisture content necessary for the required compaction. If necessary, add water immediately prior to compacting to achieve the required moisture content.
4. Perform compaction in restricted areas with suitable manually-operated vibratory compactors. Place backfill against foundation and retaining walls evenly on each side to prevent any displacement of construction.
5. Compact soil at all new footings with a mechanical tamper.

3.07 GRADING

A. General:

Except as otherwise directed by the Architect, perform all rough and finish grading required to attain the intended pitches indicated on the Drawings or Details.

B. Grading:

1. Rough grading: trim and grade excavations required by this contract to a level of 3" below the finish grade unless otherwise specified. Provide uniform smooth transition to adjacent areas.
2. Finish grading: finished surfaces free from irregular surfaces changes:
a. Paved areas including concrete pads, plus or minus 0.1 foot.
b. Grassed areas: finish areas to receive topsoil to within not more than 0.10 feet above or below the required subgrade surface elevation.

3. Spread approved topsoil directly upon prepared subgrade surface to a depth measuring 3" after natural settlement of the topsoil has occurred in areas to be seeded. Provide greater depth to adjust grades when directed by the Architect. Approved existing topsoil may be used. Provide additional topsoil from outside source as required.

C. Treatment After Completion of Grading:

1. After grading is completed, permit no further excavation, filling or grading except with the approval of and inspection of the Architect.
2. Transport waste and excess materials, trash, debris, stumps off the site.
3. Use all means necessary to prevent the erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.

3.08 TRENCHING

A. General:

1. Perform all trenching required for the installation of items for which the trenching is not specifically described in other Sections of these Specifications.
2. Make all trenches open vertical construction with sufficient width to provide free working space at both sides of the trench and around the installed item as required for forming caulking, joining, backfilling, and compaction.

B. Depth:

1. Trench depth shall be determined in the field.

C. Correction of Faulty Grades:

Where trench excavation is inadvertently carried below proper elevation, backfill with approved fill material and then compact to provide a firm and unyielding subgrade and/or foundation to the approval of the Architect and at no additional cost to the Owner.

D. Trench Bracing:

1. Properly support all trenches in strict accordance with all pertinent rules and regulations.
2. Brace, sheet, and support trench walls in such a manner that they will be safe and that the ground alongside the excavation will not slide or settle, and that all existing improvements of every kind, whether on public or private property, will be fully protected from damage.

3. In the event of damage to such improvements, immediately make all repairs and replacements necessary to the approval of the Architect and at no additional cost to the Owner.

4. Arrange all bracing, sheeting, and shoring so as to not place stress on any portion of the completed work until the general construction thereof has proceeded far enough to provide sufficient strength.

E. Removal of Trenching Bracing:

Exercise care in the drawing and removal of sheeting, shoring, bracing, and timbering to prevent collapse or caving of the excavation faces being supported.

F. Grading & Stockpiling of Trenched Material:

1. Control the stockpiling of trenched material in a manner to prevent water running into the excavation.

2. Do not obstruct the surface drainage but provide means whereby storm and waste waters are diverted into existing gutters, other temporary drains, or surface drains.

END - Earthwork
SECTION 31 92 00

TOPSOIL

PART 1 - GENERAL

1.01 QUALITY ASSURANCE

A. Secure approval before stripping topsoil or delivering topsoil to the project site.

PART 2 - PRODUCTS

2.01 TOPSOIL

A. Source:

Strip existing on site topsoil and stockpile in areas designated on the Drawings in a neat compact pile not higher than 6’. Topsoil shall not be taken below the depth at which a color change is evident.

B. Provide Topsoil Conforming to the Following:

1. Original loam topsoil, well drained homogeneous texture and of uniform grade, without the admixture of subsoil material and entirely free of dense material, hardpan, sod or any other objectionable foreign material.

2. Containing not less than 4% nor more than 20% organic matter in that portion of a sample passing a 1/4" sieve when determined by the wet combustion method on a sample dried at 105 degrees C.

3. Containing a pH value within the range of 4.5 to 7 on that portion of the sample which passes a 1/4" sieve.

4. Containing the following gradation:

<table>
<thead>
<tr>
<th>SIEVE DESIGNATION</th>
<th>% PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>100</td>
</tr>
<tr>
<td>1/4&quot;</td>
<td>97-100</td>
</tr>
<tr>
<td>NO. 200</td>
<td>20-64 (of the 1/4&quot; sieve)</td>
</tr>
</tbody>
</table>

2.02 LIMESTONE
A. Provide ground limestone in the producer's standard bags containing not less than 90% of the calcium and magnesium carbonates equivalent to not less than 45% of the mixed oxides of calcium and magnesium and conforming to the following gradations:

<table>
<thead>
<tr>
<th>SIEVE DESIGNATION</th>
<th>% PASSING</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO. 100</td>
<td>50-100</td>
</tr>
<tr>
<td>NO. 20</td>
<td>100</td>
</tr>
</tbody>
</table>

**PART 3 - EXECUTION**

**3.01 PREPARATION**

A. Grub out and remove all vegetation in the area of the approved topsoil source.

**3.02 SPREADING TOPSOIL**

A. Perform topsoil spreading operations only during dry weather.

B. To insure a proper bond with the topsoil, harrow or otherwise loosen the sub-grade to a depth of 3" before spreading topsoil.

C. Spread topsoil directly upon prepared sub-grade to a minimum depth measuring 3" after natural settlement in areas to be seeded. Smooth out unsightly variations, bumps, ridges, and depressions which will hold water. Remove stones, litter, or other objectionable material. Finished surfaces shall conform to the contour lines and elevations indicated on the Drawings or fixed by the Architect.

**3.03 SPREADING LIMESTONE**

A. Spread ground limestone evenly over the topsoil surface. Incorporate limestone within the top 2" of soil prior to finish raking.

B. Apply limestone at the following rate per 1000 square feet of topsoil area, corresponding to the hydrogen ion concentration (pH) shown by the soil chemical analysis:

<table>
<thead>
<tr>
<th>pH:</th>
<th>RATE POUNDS:</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.5 to 5.0</td>
<td>150</td>
</tr>
<tr>
<td>5.0 to 5.5</td>
<td>100</td>
</tr>
<tr>
<td>pH Range</td>
<td>Tons</td>
</tr>
<tr>
<td>------------</td>
<td>------</td>
</tr>
<tr>
<td>5.5 to 6.0</td>
<td>50</td>
</tr>
<tr>
<td>6.0 to 6.8</td>
<td>25</td>
</tr>
<tr>
<td>over 6.8</td>
<td>0</td>
</tr>
</tbody>
</table>

END - Topsoil
SECTION 31 93 30

SEEDING

PART 1 - GENERAL

1.01 SUBMITTALS

A. Sample:

One pound of seed in vendor's unopened package with label and seed analysis.

1.02 QUALITY ASSURANCE

A. Provide prepackaged seed readily available to the public with quality and purity equal to product of O. M. Scotts and Son, Marysville, OH. On-the-job or made-to-order mixes will not be accepted.

B. Time for Seeding:

Sow grass seed between March 15th and May 15th or between August 15th and October 1st, except as otherwise approved in writing by the Architect.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver fertilizer in standard size bags showing weight, analysis and the name of the manufacturer. Store as approved by Architect.

B. Deliver seeds, three (3) days in advance of anticipated use, in vendor's unopened packages bearing labels showing vendor's name and seed analysis by weight.

PART 2 - PRODUCTS

2.01 FERTILIZER

A. Fertilizer:

Commercial (5-10-5) inorganic, or organic, containing not less than 5 percent nitrogen, 10 percent available phosphoric acid and 5 percent water soluble potash.

B. Other fertilizers with 1-2-1 ratio such as 10-20-10 or 6-12-6 may be substituted for above.

2.02 SEED
A. Furnish fresh, clean, new-crop seed mixed in the proportions specified for species and variety, and conforming to Federal and State Standards.

B. Acceptable material in a seed mixture other than pure live seed consists of nonviable seed, chaff, hulls, live seed of crop plants and inert matter. The percentage of weed seed shall not exceed 0.1 percent by weight.

C. All seed will be rejected if the label or test analysis indicates any of the following contaminates: Timothy, Orchard Grass, Sheep Fescue, Meadow Fescue, Canada Blue Grass, Alta Fescue, Kentucky 31 Fescue, and Bent Grass.

D. Provide the following seed mixture.

STANDARD MIXTURE

<table>
<thead>
<tr>
<th>Amount by Weight</th>
<th>Species or Variety</th>
<th>Purity</th>
<th>Germination</th>
</tr>
</thead>
<tbody>
<tr>
<td>in Mixture</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 percent (Min)</td>
<td>Kentucky Bluegrass Blend*</td>
<td>95 percent</td>
<td>80 percent</td>
</tr>
<tr>
<td>25 percent (Min)</td>
<td>Red Fescue</td>
<td>97 percent</td>
<td>80 percent</td>
</tr>
<tr>
<td>20 percent (Max)</td>
<td>Perennial Rye**</td>
<td>98 percent</td>
<td>85 percent</td>
</tr>
<tr>
<td>100 percent</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Approximately equal proportions of two (2) or more improved Bluegrass varieties as listed in the Cornell Recommendations for Turfgrass.

** One or more of the improved Ryegrass varieties as listed in the Cornell Recommendations for Turfgrass.

2.03 MULCH

A. Straw:
Stalks of oats, wheat, rye or other approved crops which are free of noxious weed seeds. Weight shall be based on a 15 percent moisture content.

PART 3 - EXECUTION

3.01 GENERAL

A. Assume all risks when seed is sowed before approval of seed analysis.

3.02 PREPARATION OF SEED BED
A. Scarify soil to a depth of 2 inches in compacted areas. Smooth out unsightly variations, bumps, ridges, and depressions which will hold water. Remove stones, litter, or other objectionable material.

3.03 FERTILIZING

A. Apply 5-10-5 fertilizer evenly at the rate of 40 pounds per 1000 square feet or 2 pounds of nitrogen per 1000 square feet.

3.04 SEEDING

A. Sow seeds evenly by hand or approved machine on dry or moderately dry soil. Do not seed when wind velocity exceeds 5 miles per hour.

Standard Mixture: 3 pounds per 1000 square feet.

3.05 MULCHING

A. Within three (3) days after seeding, cover the seeded areas with a uniform blanket of straw mulch at the rate of 100 pounds per 1000 square feet of seeded area.

3.06 FINAL ACCEPTANCE

A. Final acceptance of lawn areas will be granted when a uniform stand of acceptable grass is obtained, with a minimum of 95 percent coverage. Portions of the lawn areas may be accepted at various times at the discretion of the Architect.

B. Unacceptable lawn areas shall be reseeded as specified and fertilized at one-half the specified rate.

C. Once accepted, the Owner will assume all maintenance responsibilities.

END - Seeding
APPENDIX
September 23, 2015

Amanda Wyckoff
Property and Development Manager
Albany County Land Bank
255 Orange Street
Albany, New York 12210

RE: 95 Elizabeth Street, Roof/Roof Drain Replacement
ALECS File No: 15-08005

Dear Mrs. Wyckoff,

Pursuant to our agreement, ALEC Services, LLC has conducted asbestos sampling of the roof system and any suspect asbestos materials in the area of the roof drain that will be repaired or replaced at 95 Elizabeth Street in Albany, New York. This asbestos sampling was conducted on September 17, 2015. ALEC Services, LLC collected samples from these materials and the results are as follows:

**ACM MATERIAL:**

- None

**NON-ACM MATERIALS:**

- Drywall Board
- Joint Compound
- Silver Roof Paint
- Asphalt Roof Tar
- Felt & Tar Under Asphalt Roof

If you have any further questions or comments, feel free to contact me at 518-590-2008 or Jason.teagle@alecsllc.com. Your consideration is appreciated.

Jason Teagle
Field Services Manager
ASBESTOS HANDLING LICENSE

Alec Services, LLC.
185 3rd St
Troy, NY 12180

FILE NUMBER: 12-66512
LICENSE NUMBER: 66512
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 07/31/2015
EXPIRATION DATE: 07/31/2016

Duly Authorized Representative – Donald Alford, Jr.:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

Eileen M. Franko, Director
For the Commissioner of Labor
JASON R. TEAGLE
CLASS (EXPIRES)
C ATEC (01/16) D INSPI (01/16)
H PM (01/16)

MUST BE CARRIED ON ASBESTOS PROJECTS
CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

DR. THOMAS R. MCKEE
AMERISCI RICHMOND
13635 GENITO RD
MIDLOTHIAN, VA 23112

NY Lab Id No: 10984

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

**Miscellaneous**

<table>
<thead>
<tr>
<th>Analyte</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Asbestos in Friable Material</td>
<td>Item 198.1 of Manual</td>
</tr>
<tr>
<td></td>
<td>EPA 600/M4/82/020</td>
</tr>
<tr>
<td>Asbestos in Non-Friable Material-PLM</td>
<td>Item 198.6 of Manual (NOB by PLM)</td>
</tr>
<tr>
<td>Asbestos in Non-Friable Material-TEM</td>
<td>Item 198.4 of Manual</td>
</tr>
</tbody>
</table>

Serial No.: 52221

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.
PLM Bulk Asbestos Report

ALEC Services LLC
Attn: Donald Alford, Jr.
185 Third Street
Troy, NY 12180

<table>
<thead>
<tr>
<th>Client No. / HGA</th>
<th>Lab No.</th>
<th>Asbestos Present</th>
<th>Total % Asbestos</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-01</td>
<td>115091771-01</td>
<td>No</td>
<td>NAD (by NYS ELAP 198.1) by Beverly A. Schrage on 09/21/15</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>01-02</td>
<td>115091771-02</td>
<td>No</td>
<td>NAD (by NYS ELAP 198.1) by Beverly A. Schrage on 09/21/15</td>
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<td></td>
</tr>
<tr>
<td>02-03</td>
<td>115091771-03</td>
<td>No</td>
<td>NAD (by NYS ELAP 198.1) by Beverly A. Schrage on 09/21/15</td>
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</tr>
<tr>
<td>02-04</td>
<td>115091771-04</td>
<td>No</td>
<td>NAD (by NYS ELAP 198.1) by Beverly A. Schrage on 09/21/15</td>
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<td></td>
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</tr>
<tr>
<td>03-05</td>
<td>115091771-05</td>
<td>No</td>
<td>NAD (by NYS ELAP 198.6) by Beverly A. Schrage on 09/21/15</td>
</tr>
<tr>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

**Analyst Description:** Beige/Gray, Heterogeneous, Non-Fibrous, Bulk Material

**Asbestos Types:**
- Other Material: Cellulose 15 %, Non-Asbestos 85 %

**Location:** Drywall Board; 2nd Floor Bathroom, From Chase

See Reporting notes on last page
# PLM Bulk Asbestos Report

15-08005; 95 Elizabeth St Albany, NY; Roof & Roof Drain

<table>
<thead>
<tr>
<th>Client No. / HGA</th>
<th>Lab No.</th>
<th>Asbestos Present</th>
<th>Total % Asbestos</th>
</tr>
</thead>
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<td>115091771-06</td>
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<td>NAD (by NYS ELAP 198.6) by Beverly A. Schrage on 09/21/15</td>
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<td>3</td>
<td>Location: Silver Roof Paint; Roof SW Corner, By Drain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Analyst Description:</strong> Gray/Black, Heterogeneous, Non-Fibrous, Bulk Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Asbestos Types:</strong> Non-Asbestos 56.7 %</td>
<td></td>
<td></td>
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<tr>
<td>04-07</td>
<td>115091771-07</td>
<td>No</td>
<td>NAD (by NYS ELAP 198.6) by Beverly A. Schrage on 09/21/15</td>
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<tr>
<td>4</td>
<td>Location: Asphalt Roof Tar; Roof SW Corner, By Drain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Analyst Description:</strong> Black, Heterogeneous, Non-Fibrous, Bulk Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Asbestos Types:</strong> Non-Asbestos 1.8 %</td>
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<tr>
<td>04-08</td>
<td>115091771-08</td>
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<td>4</td>
<td>Location: Asphalt Roof Tar; Roof SW Corner, By Drain</td>
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<td><strong>Analyst Description:</strong> Black, Heterogeneous, Non-Fibrous, Bulk Material</td>
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<td></td>
<td><strong>Asbestos Types:</strong> Non-Asbestos 0.9 %</td>
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<td>05-09</td>
<td>115091771-09</td>
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<td>NAD (by NYS ELAP 198.6) by Beverly A. Schrage on 09/21/15</td>
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<tr>
<td>5</td>
<td>Location: Felt &amp; Tar Under Asphalt Roof; Roof SW Corner, By Drain</td>
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<td><strong>Analyst Description:</strong> Black, Heterogeneous, Non-Fibrous, Bulk Material</td>
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<td></td>
<td><strong>Asbestos Types:</strong> Non-Asbestos 1.6 %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>05-10</td>
<td>115091771-10</td>
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<td>NAD (by NYS ELAP 198.6) by Beverly A. Schrage on 09/21/15</td>
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<td></td>
<td><strong>Asbestos Types:</strong> Non-Asbestos 2.2 %</td>
<td></td>
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</tbody>
</table>

See Reporting notes on last page
# Table I
Summary of Bulk Asbestos Analysis Results
15-08005; 95 Elizabeth St Albany, NY; Roof & Roof Drain

<table>
<thead>
<tr>
<th>AmeriSci Sample #</th>
<th>Client Sample#</th>
<th>HG Area</th>
<th>Sample Weight (gram)</th>
<th>Heat Sensitive Organic %</th>
<th>Acid Soluble Inorganic %</th>
<th>Insoluble Non-Asbestos Inorganic %</th>
<th>** Asbestos % by PLM/DS</th>
<th>** Asbestos % by TEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>01-01</td>
<td>1</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Location: Drywall Board; 2nd Floor Bathroom, From Chase</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>01-02</td>
<td>1</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>NA</td>
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<tr>
<td>Location: Drywall Board, 2nd Floor Bathroom, From Chase</td>
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</tr>
<tr>
<td>03</td>
<td>02-03</td>
<td>2</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Location: Joint Compound; 2nd Floor Bathroom, From Chase</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>04</td>
<td>02-04</td>
<td>2</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Location: Joint Compound; 2nd Floor Bathroom, From Chase</td>
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<td>05</td>
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<td>3</td>
<td>0.356</td>
<td>41.9</td>
<td>6.3</td>
<td>51.8</td>
<td>NAD</td>
<td>NA</td>
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<td>06</td>
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<td>56.6</td>
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<td>Chrysotile Trace</td>
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<td>07</td>
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<td>4</td>
<td>0.445</td>
<td>75.2</td>
<td>23.0</td>
<td>1.8</td>
<td>NAD</td>
<td>NAD</td>
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<td>Location: Asphalt Roof Tar; Roof SW Corner, By Drain</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>08</td>
<td>04-08</td>
<td>4</td>
<td>0.301</td>
<td>75.3</td>
<td>23.8</td>
<td>0.9</td>
<td>NAD</td>
<td>NAD</td>
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<tr>
<td>09</td>
<td>05-09</td>
<td>5</td>
<td>0.322</td>
<td>76.2</td>
<td>22.2</td>
<td>1.6</td>
<td>NAD</td>
<td>NAD</td>
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<tr>
<td>Location: Felt &amp; Tar Under Asphalt Roof; Roof SW Corner, By Drain</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>05-10</td>
<td>5</td>
<td>0.295</td>
<td>76.0</td>
<td>21.6</td>
<td>2.2</td>
<td>NAD</td>
<td>NAD</td>
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<td></td>
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<td></td>
</tr>
</tbody>
</table>

Reviewed by: [Signature]  Date Reviewed: 9/22/12  Analyzed By: T. Brian Keith [Signature]  Date Analyzed: 9/22/2015

Semi-Quantitative Analysis: NAD = no asbestos detected; NA = not analyzed; NA/PS = not analyzed due to positive stop; Trace = <1%.
PLM analysis by EPA 600/R-93/116 per 40 CFR 763 (NVLAP Lab Code 101904-0) or NY ELAP 198.1 for New York friable samples which includes quantitation of any vermiculite observed (198.6 for NOB samples) or EPA 400 pt ct by EPA 600/M4-82-020 (NY ELAP Lab # 10984);
TEM analysis by EPA 600/R-93/116 (not covered by NVLAP Bulk accreditation); or NY ELAP 198.4 for New York NOB samples (NY ELAP Lab # 10984);

** Warning Notes: Consider PLM fiber diameter limitation, only TEM will resolve fibers <0.25 micrometers in diameter. TEM bulk analysis is representative of the fine grained matrix material and may not be representative of non-uniformly dispersed debris, soils or other heterogeneous materials for which a combination PLM/TEM evaluation is recommended; Quantitation for beginning weights of <0.1 grams should be considered as qualitative only.
# Chain of Custody Form

**Client:** Albany County Land Bank  
255 Orange Street  
Albany, NY 12210

**Site:** 95 Elizabeth St.  
Albany, NY

**Project Name:** Asbestos Site Res. Survey  
**Project No:** 15-08005  
**Laboratory:** AmeriSci VA

**Date Collected:** 17-Sep-15  
**Samples Collected:** 10  
**Courier:** FedEx

**Condition of Package:** Intact/Non-Intact/Not Applicable (Circle one)

**Condition of Custody Seal:** Intact/Non-Intact/Not Applicable (Circle one)

<table>
<thead>
<tr>
<th>Sample Id</th>
<th>Lab Id</th>
<th>Sample Matrix</th>
<th>Sample Description</th>
<th>Other Description</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-01</td>
<td></td>
<td></td>
<td>Drywall Board</td>
<td>2nd Floor Bathroom, from chase</td>
<td>✔</td>
</tr>
<tr>
<td>01-02</td>
<td></td>
<td></td>
<td>Joint Compound</td>
<td>2nd Floor Bathroom, from chase</td>
<td>✔</td>
</tr>
<tr>
<td>02-03</td>
<td></td>
<td></td>
<td>Silver Roof Paint</td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
<tr>
<td>03-05</td>
<td></td>
<td></td>
<td>Asphalt Roof Tar</td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
<tr>
<td>03-06</td>
<td></td>
<td></td>
<td></td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
<tr>
<td>04-07</td>
<td></td>
<td></td>
<td></td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
<tr>
<td>04-08</td>
<td></td>
<td></td>
<td></td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
<tr>
<td>05-09</td>
<td></td>
<td></td>
<td>Felt &amp; Tape Under Asphalt Roof</td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
<tr>
<td>05-10</td>
<td></td>
<td></td>
<td></td>
<td>Roof S.W. Corner, by drain</td>
<td>✔</td>
</tr>
</tbody>
</table>

**Comments:**

1st Positive Stop/ 5 Day Turn Around Time

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**Custody Record**

I attest that the proper field sampling procedures were used during the collection of these samples:

**Sampled By:** John Teagle  
**Signature:**  
**Date:** 17-Sep-15

**Relinquished By:**  
**Received By:**