A D D E N D U M  No. 1

DATE:       May 15, 2018
TO:         All Bidders
FROM:       Michael Squires
PROJECT:    Levi Wetherbee Farmhouse Stabilization
CBI JOB NO.:  17146

Bidders are hereby informed that Plans and Specifications for the above-referenced project are modified, corrected and/or supplemented by this Addendum, which shall become a part of the Contract Documents prepared by CBI Consulting, LLC. (CBI), a Vidaris company. All General Bidders are instructed to acknowledge all the Addenda issued in paragraph B on the Form for General Bid and all Filed Sub Bidders are instructed to acknowledge all the Addenda issued in paragraph B on the Form for Sub Bid. **Failure to do so may result in the rejection of your bid.**

GENERAL:

1. **Pre-Bid Walkthrough** – Please see attached sign-in sheets for your information.

SPECIFICATIONS:

2. **TABLE OF CONTENTS:** ADD division section 26 00 00 ELECTRICAL; 14 pages.

3. **INSERT** Division section 26 00 00 ELECTRICAL into technical specifications, attached (14 pages, 8 1/2 x 11)

DRAWINGS:

4. **D1-01:** Drawing 3 ATTIC PLAN-DEMO CLARIFICATION existing brick masonry chimney to be reviewed by the architect/engineer in field, prior to demolition after existing parge coating is removed.

5. **A5-03:** DELETE A5-03 in its entirety, and **REPLACE** with sheet A5-03R, attached (1 page, 24x36).

**END OF ADDENDUM No. 1**
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<td>1</td>
<td>Chris Roca</td>
<td>The Allison Co., LLC</td>
<td>978-609-7525</td>
<td><a href="mailto:ChrisA@AllisonLLC.com">ChrisA@AllisonLLC.com</a></td>
</tr>
<tr>
<td>2</td>
<td>Mike Abraham</td>
<td>Classic Construction</td>
<td>978-334-5480</td>
<td><a href="mailto:ClassicE@comcast.net">ClassicE@comcast.net</a></td>
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<td>Moss Hist Comm.</td>
<td>617 273 5770</td>
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<td>Ed Whitcomb</td>
<td>SFAC</td>
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<td>Bruce Houston</td>
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17146 Walkthrough Sign-in Sheet 05-8-18.xlsx
SECTION 260000 – ELECTRICAL

PART 1 GENERAL

1.0 BIDS REQUIREMENTS

A. The BIDDING REQUIREMENTS, CONTRACT FORMS, and Contract Conditions as listed in the Table of Contents, and applicable parts of Division 01 – GENERAL REQUIREMENTS, shall be included in and made a part of this Section.

B. Work of this Section requires Bids and is governed by the provisions of the Massachusetts General Laws (MGL), Public Bidding Law – Chapter 149, Sections 44A to 44J inclusive, as amended, and applicable Sections of the MGL, Public Contract Law – Chapter 30.

C. The work to be completed by the Bidder for the work of this section as described in Sections 260000 and is shown on the following listed Drawings: E-0.1, E1.0.

1. Examine all Drawings and Specifications for requirements therein affecting the work. The listing of Contract Drawings above does not limit contractor’s responsibility to determine full extent of work as required by all Drawings listed in the Drawing List on the Drawing Title Sheet.

D. Bids for work under this Section shall be for the complete work and shall be filed in a sealed envelope with the Awarding Authority at a time and place as stipulated in Advertisement to Bid and Instructions to Bidders.

1. The following shall appear on the upper left hand corner of the envelope:

NAME OF BIDDER: ____________________

BID FOR TRADE: ELECTRICAL

2. Each Bid submittal for work shall be on forms furnished by Awarding Authority, as bound herein, accompanied with the required bid deposit in compliance with MGL Chapter 149 Section 44B in the amount of 5 percent of Bid.

1.1 SCOPE OF WORK

A. As used in this Section, “provide” means “furnish and install”. “Furnish” means “to purchase and deliver to the project site complete with every necessary appurtenance and support,” and “Install” means “to unload at the delivery point at the site and perform every operation necessary to establish secure mounting and correct operation at the proper location in the project.”
B. Perform work and provide material and equipment as shown on Drawings and as specified or indicated in this Section of the Specifications. Provide a complete and fully functional installation. Drawings and Specifications form complimentary requirements; provide work specified and not shown, and work shown and not specified as though explicitly required by both. Although work is not specifically shown or specified, provide supplementary or miscellaneous items, appurtenances, devices and materials obviously necessary for a sound, secure and complete installation. Remove all debris caused by contractors’ work.

C. Drawings are diagrammatic and indicate general arrangement of systems and work included in Contract. It is not intended to specify or to show every offset, fitting or component; however, Contract Documents require components and materials whether or not indicated or specified as necessary to make the installation complete and operational.

D. Perform work strictly as required by rules, regulations, standards, codes, ordinances, and laws of local, state, and federal government, and other authorities that have lawful jurisdiction.

E. Give notices, file plans, obtain permits and licenses, pay fees and obtain necessary approvals from authorities that have jurisdiction.

F. Work shall include, but shall not be limited to, the following:

1. Circuit breakers for existing Siemens panelboard.
2. Conduit and raceways.
3. Wire and cable.
5. All cores required for electrical equipment and conduit shall be provided by the electrical contractor.
7. Conventional fire alarm system and Radio Master Box
8. Testing.
9. Operating and maintenance instructions and manuals.

1.2 CONTRACT DOCUMENTS

A. Work to be performed under this Section is shown on the Electrical Drawings.

B. Except where modified by a specific notation to the contrary, it shall be understood that the indication and/or description of any item, in the drawings or specifications or both, carries with it the instruction to furnish and install the item, regardless of whether or not this instruction is explicitly stated as part of the indication or description.
C. Items referred to in singular number in Contract Documents shall be provided in quantities necessary to complete work.

D. Drawings are diagrammatic. They are not intended to be absolutely precise; they are not intended to specify or to show every offset, fitting, and component. The purpose of the drawings is to indicate a systems concept, the main components of the systems, and the approximate geometrical relationships. Based on the systems concept, the main components, and the approximate geometrical relationships, the contractor shall provide all other components and materials necessary to make the systems fully complete and operational.

E. Information and components shown on riser diagrams, but not shown on plans, and vice versa, shall apply or be provided as if expressly required on both.

1.3 DISCREPANCIES IN DOCUMENTS
A. Address questions regarding drawings to Engineer in writing before award of contract; otherwise, Engineer’s interpretation of meaning and intent of drawings shall be final.

1.4 SITE VISIT
A. Before submitting bid, visit and carefully examine site to identify existing conditions and difficulties that will affect work of this Section. No extra payment will be allowed for additional work caused by unfamiliarity with site conditions that are visible or readily construed by experienced observer.

1.5 CODES, STANDARDS, AUTHORITIES AND PERMITS
A. Perform work in strict accordance with the rules, regulations, standards, codes, ordinances, and laws of local, state and federal governments and other authorities having legal jurisdiction over the site.

B. Underwriters’ Laboratories (UL) shall list material and equipment.

C. Give notices, file plans, obtain permits and licenses, pay fees and obtain necessary approvals from authorities that have jurisdiction. There are no anticipated utility backcharges for this project.

1.6 GUARANTEE AND 24 HOUR SERVICE
A. Guarantee work in writing for one year from date of final acceptance. Repair or replace defective materials or installation at no cost to Owner. Correct damage caused in making necessary repairs and replacements under guarantee at no cost to Owner.
B. Submit guarantee to Architect before final payment.

C. Statement of guarantee requirements shall not be interpreted to limit Owner’s rights under law and this contract.

1.7 SUBMITTALS

A. Submit shop drawings and product data within 30 days after award of contract. Check, stamp and mark with project name submittals before transmitting to Architect. Indicate deviations from contract documents.

B. Deviations from contract documents or proposed substitution of materials or equipment for those specified shall be requested in separate letter whether deviations are due to field conditions, standard shop practice, or other cause.

C. Within four weeks (except as noted otherwise) after award of contract and before ordering materials or equipment, submit list of proposed materials and equipment and indicate manufacturer’s names, addresses and identifying data. No consideration will be given to partial lists submitted out of sequence.

D. Schedule at least ten working days, exclusive of transmittal time for submittal review.

E. Material and equipment requiring Shop Drawing and Product Data submittal shall include but shall not be limited to:

1. Circuit breakers.
2. Conduit and raceways.
3. Wire and cable.
4. Fire alarm System including battery calculations

1.8 CUTTING AND PATCHING

A. All cutting and patching for the proper installation of work to be performed shall be performed by this Contractor.

B. Confine the cutting to the smallest extent possible consistent with the work to be done. In no case shall piers or structural members be cut without the approval of the Engineer.

C. Carefully fit around, close up, repair, patch, and point around the work specified herein to the entire satisfaction of the Engineer.

D. All of this work shall be carefully done by workmen competent to do such work and with the proper and smallest tools applicable.
1.9 FINAL ACCEPTANCE

A. Final acceptance of Ownership of the Electrical system installed within this scope of work shall be contingent on passing a satisfactory fire alarm test, to determine that the system will perform according to the contract requirements. The above test shall be witnessed by the Engineer and the Fire Department.

PART 2 - PRODUCTS

2.1 RACEWAYS

A. Electrical metallic tubing (EMT) shall be zinc-coated steel that conforms to industry standards, by Republic Steel, Allied Tube and Conduit, Triangle/PWC or approved equal.

B. Wireways shall be sheet steel with hinged spring-latched covers, galvanized or painted to protect against corrosion. Provide necessary bends, couplings, connectors and other appurtenances. Interior parts shall be smooth and free of sharp edges and burrs. Wireways shall be by Square D or approved equal.

C. Flexible metallic conduit shall be galvanized, spiral wrapped metallic conduit (Greenfield) or liquid-tight flexible metallic conduit as specified for specific equipment.

D. Provide water-tight gland sealing assemblies with pressure bushings as required for penetrations.

2.2 OUTLET BOXES

A. Outlet boxes for exposed conduit work shall be cast aluminum alloy with cast aluminum alloy covers.

B. Outlet boxes shall be by Steel City Electric Company, Appleton Electric Company, National Electric Products Company or approved equal.

C. Outlet boxes for various systems and components shall be as required by manufacturer.

D. Waterproof boxes shall be Condulet Cast Boxes with water-proof devices and covers. Provide hot-dipped galvanized corrosion-resistant epoxy enamel finish or PVC-coated products, where noted on Drawings.

E. Provide screw-joint outlet boxes, with gasketed weatherproof covers in exterior locations, where exposed to moisture, next to water or steam connections, and where indicated as weatherproof on Drawings.
2.3 WIRE AND CABLE (600 V INSULATION)

A. Provide single-conductor, annealed copper wire and cable with insulation rated 600 V, of sizes specified and scheduled on Drawings, by General Electric, Rome, Okonite or approved equal, for branch and system wiring. Wire insulated for 300 V may be used where voltage is less than 100 V, if isolated from higher voltages. Wire sizes shown and specified are American Wire Gauge for copper.

B. Armored cable shall be Type AC 600 V copper with full-sized insulated ground conductor. Minimum size shall be #12 AWG unless specified otherwise.

C. Wire and cable shall have THWN-THHN or XHHW insulation.

D. Splices and Terminations

1. Make splices in branch circuit wiring with UL-listed, solderless connectors rated 600 V, of sizes and types required by manufacturer’s recommendations with temperature ratings equal to those of wires. Splice connectors shall be screw-on. Insulate splices with integral covers or with plastic or rubber friction tape to preserve characteristics of wire and cable insulation.

2. Provide standard bolt-on lugs with hex screws to attach copper wire and cable to panelboards, switchboards, disconnect switches and electrical equipment.

3. Ampacity of splices and connectors shall be equal to those of associated wires and cables.

2.4 FEEDER IDENTIFICATION

A. Provide nonferrous identifying tags or pressure-sensitive labels for power circuits in pull boxes and at cable terminations.

2.5 COLOR CODING

A. Color code branch circuit conductors as follows:

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<td>Black</td>
<td>A</td>
</tr>
<tr>
<td>Red</td>
<td>B</td>
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<td>C</td>
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<td>White</td>
<td>Neutral</td>
</tr>
<tr>
<td>Green</td>
<td>Ground</td>
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</table>

B. Colors shall be factory-applied entire length of conductors by one of the following methods except as noted and limited below:
1. solid color compound,
2. solid color coating,
3. colored stripping (2 stripes 180 degrees apart),
4. colored bands or hash marks with maximum spacing of 18",
5. colored fibrous covering, or
6. surface printing every 12", maximum spacing of 18".

C. Branch circuit conductors #12 and #10 shall have solid color compound, solid color coating. Neutrals and equipment grounds shall have solid compound or solid color coating (white, gray and green), except that neutrals with colored stripe shall be used where required by NEC.

2.6 PANELBOARDS

A. Panelboard is an existing Siemens panel, and shall be reused. Provide necessary circuit breakers as shown on the plans, compatible with the existing panel.

B. Provide molded case, bolt-on, thermal-magnetic trip, single pole branch circuit breakers as shown on Drawings.

C. Update the typed panel directory.

2.7 FIRE ALARM SYSTEM

A. Scope

1. Provide complete zoned conventional fire detection, alarm and control system in compliance with all specifications and drawings. The system shall provide general evacuation signaling. Panel shall be Simplex 4006-9101 within an Safety Technology International cabinet Catalog No. STI-7560AH. FACP shall be provided with a 150 watt heater.

2. General System Functionality:

   a. All initiating and signal loops shall be class A or B style.

3. AC power feed: The AC circuit providing power shall only power equipment associated with the fire alarm system and shall be provided with a circuit breaker lock.

   a. Evacuation notification shall consist of temporal-3 evacuation tone and visual (strobe) signaling. The system shall be provided and installed in accordance with applicable code.

   b. Provide manual, closed circuit, fire alarm system in accordance with the contract documents, to be wired, connected and left in first class operating condition.
c. Final connections, testing, and adjustment of the system shall be done under the direct supervision of the system supplier. Provide NICET certified (level 3) and factory trained technicians to supervise the system installation, make all additional adjustments to the system operation as required by the Owner's Representative and Local Authority Having Jurisdiction, and demonstrate the system to the satisfaction of the Owner's Representatives.

d. Systems shall be provided by SimplexGrinnell, Division of Tyco Fire and Security. This constitutes the supplier qualifications, and quality and performance characteristics of the equipment and system to be furnished.

e. The system design and installation shall conform to the following standards:

1) All equipment shall be UL listed for its intended purpose, including UL 864 (UOJZ, UOXX, UOQY), 1480 and 1971.
2) NFPA standards 70, 72, 90A, 92A, and 101.
4) Current editions of the State Building Code.
5) The Americans with Disabilities Act (ADA).
6) All legal requirements of the local authorities having jurisdiction.

f. Submit electronic PDF sets of shop drawings to include:

1) Complete point-to-point riser diagram showing all equipment and size, type and number of all conductors and devices.
2) Original catalog data sheets for all items to assure compliance with these specifications. This equipment shall be subject to approval, and no equipment shall be ordered without prior approval.
3) Detailed system narrative and sequence of operation that accurately reflects compliance with the project requirements.
4) Provide calculations to support the size of standby batteries notification circuits and power supplies submitted. Calculations shall demonstrate proper current draw, voltage drop, wire size considerations and spare capacity allowances.
5) Provide a copy of the Original Manufacturer’s Warranty Statement.


g. Conform to all UL and NFPA standards for testing and provide an NFPA 72-compliant Record of Completion by the system supplier.

4. Sequence of Operation
a. The operation of a manual station or activation of any automatic alarm initiating device (system heat detector) shall initiate a system-wide response as follows:

1) Initiate the transmission of the alarm to the Municipal Fire Department via the Radio Masterbox.
2) Sound a code 3 temporal evacuation signal throughout the building.
3) Flash all visual signals throughout the building. Visual notification shall be synchronous in accordance with NFPA 72 guidelines.
4) Flash an alarm LED and sound an audible signal at the FACP. Upon Acknowledgment, the alarm LED shall light steadily and the audible shall silence. Subsequent alarms shall re-initiate this sequence. These conditions shall remain until the condition is resolved and the system is reset.
5) Visually indicate the alarm initiating device type, status and location via the LCD display located at the FACP.

b. Activate the exterior weatherproof beacon.

c. In the event of any System Trouble condition such as a device removed, loss of AC Power or wiring fault, a system Trouble condition shall occur as follows:

1) Flash a Trouble LED and sound an audible tone at the FACP.
2) Visually annunciate the type of initiating device and its zone.

B. General Requirements

1. The fire alarm system shall be designed and UL and FM approved for Fire Alarm.
2. The system shall be supported by standby batteries. In the event of a loss of primary power, batteries shall support 24 hours of full supervisory operation followed by 10 minutes of alarm.
3. All equipment shall be new and unused. All components and systems shall be designed for uninterrupted duty. All equipment, materials and accessories covered by these requirements shall be provided by a single manufacturer.
4. All control equipment must have transient protection devices to comply with UL 864 requirements.
5. Circuiting Guidelines. All wiring shall be as follows:
6. **System Components:**
   
a. Fire Alarm Network Control Panel
b. Provide and install Simplex 4006-9101 series Fire Alarm Control System. The system shall consist of the required Fire Alarm control panel. The panel shall be installed in a safety Technology International metal protective cabinet, Model No. STI-7560AH. The panel shall provide the following functions:
   
   1) Report the event to the fire alarm network, annunciate the alarmed device and initiate the audio/visual evacuation signaling and control sequences as described herein.
   
c. Control Configuration: All fire alarm control portions of the system shall be housed in red, locking, semi-flush mounted enclosures. All panel initiating and control status indicators shall be visible through a clear Lexan window. Access to the control panel shall be by keys issued to the Fire Department and authorized personnel.

d. System Power Supplies: Integral system power supplies shall provide a minimum of 3 amps of 24VDC operating and emergency power to the panel.

7. **System Devices:** Provide conventional system devices where shown and required. Devices shall be weatherproof and be able to function properly in up to -10 degree temperatures.
   
a. Heat Detectors: Provide conventional fixed temperature, weatherproof heat detectors rated 135 degrees. monitored via an Analog Duct Smoke Detector:

b. Manual Pull Stations: Provide conventional manual stations where shown. The station shall be double action type with screw terminals, toggle switch. The station shall be constructed of red Lexan with white raised letters and a key reset switch. The station shall be keyed alike to the FACP. Conventional weatherproof pull stations shall be used.

8. **Notification Appliances:** Provide surface mounted combination Audio/Visual signaling appliances. The contractor shall provide surface
mount backboxes and outdoor-rated appliances. Specific audible and visual characteristics shall be as follows:

a. Visual Signals: Furnish and install multi-candela, synchronized xenon strobes in compliance with NFPA 72 chapter 4 and rated per UL 1971 testing. Strobes shall have an effective intensity rating of 15 candela in corridors and areas up to 20’ x 20’, 75 candela in areas up to 40’ x 40’ and 110 candela in areas up to 50’ x 50’ or larger.

b. Wall-mounted Speakers: Provide multi-tapped cone speakers with square grille with red finish where shown or required. Each speaker shall have selective ¼, ½, 1, or 2 watt taps. Each speaker shall produce a sound output level of 84dbA at 10’ (1 watt setting). Provide re-entrant-type speaker grilles for devices.

9. System Accessories


C. Installation

1. Installation shall be supervised and tested by the system supplier. The work shall be performed by skilled technicians under the direction of experienced engineers, all of whom are properly trained and qualified.

D. Wiring

1. All wiring for the system shall be in accordance with Articles 760, 725, and 800 of the National Electrical Code and local electrical codes.

2. Provide complete wiring all equipment. All devices shall be mounted upon and splices made in UL listed boxes. Wiring splices and transposing or changing of colors shall not be permitted.

3. All junction boxes shall be painted red and labeled as ‘Fire Alarm System’ with decal or approved markings

4. Fire Alarm control systems and equipment shall be connected to separate dedicated branch circuits, sized as required for proper service. Circuits shall be labeled 'FIRE ALARM'.

5. All wiring shall be installed surface mounted using red FLRP wire.

E. Final Tests / Warranty

1. The system shall be fully tested by a UL certified testing company, in accordance with UL guidelines and NFPA standards. Each and every device shall be tested, and reports shall be provided in accordance with NFPA and Local Code requirements.
2. A copy of the final test report Record of Completion shall be submitted indicating proper functioning of the system and conformance to the specifications. The test shall be performed by UL certified and factory-trained qualified technicians. Each and every device shall be tested, and standalone operation of remote panels shall be verified. Final testing shall be performed by the same company that shall hold and execute the Test and Inspection contract.

3. The manufacturer shall guarantee all system equipment for a minimum of one year from the date of final acceptance.

4. The contractor shall guarantee all wiring to be free from inherent mechanical or electrical defects for one (1) year from the date of final acceptance of the system.

5. Control power shall be from the engine start battery.

PART 3 - MATERIALS AND WORKMANSHIP

A. Work shall be executed in workmanlike manner and shall present neat, rectilinear and mechanical appearance when completed. Material and equipment shall be new and installed according to manufacturer’s recommended best practice so that completed installation shall operate safely and efficiently.

3.2 SPECIAL RESPONSIBILITIES

A. Coordinate work of this Section with work of other Sections.

1. Provide information about items furnished under this Section to be installed under other Sections, as necessary.

2. Obtain detailed information from manufacturers of equipment provided under this Section as to proper methods of installation.

3. Obtain final roughing dimensions and other information as needed for complete installation of items furnished under other Sections or by Owner.

4. Keep fully informed of shape, size and position of openings required for material and equipment provided under this and other Sections. Ensure that openings required for work of this Section are coordinated with work of other Sections. Provide cutting and patching as necessary.

3.3 TESTING, INSPECTION AND CLEANING

A. Test and inspect work provided under this Section and authorities that have jurisdiction, to satisfaction of Engineer. Notify Engineer and authorities at least 48 hours before testing or inspection.
B. Furnish Engineer with certificates of testing and inspection for electrical systems, indicating approval of authorities that have jurisdiction and conformance with requirements of Contract Documents.

C. Test wiring and connections for continuity and grounds before fixtures are connected.

D. Failure or defects in workmanship or materials revealed by tests or inspection shall be corrected promptly and retested. Replace defective material.

3.4 WIRING METHODS

A. Install wire and cable surface mounted as approved by authorities that have jurisdiction.

B. Wire from point of service connection to fire alarm control panel, as shown on Drawings.

C. Conductors #10 and smaller in branch circuit panelboards, signal cabinets, signal control boards, switchboards and motor control centers shall be bundled.

D. Follow homerun circuit numbers shown on Drawings to connect circuits to panelboard.

E. Electrical metallic tubing may be used generally. If set-screw connectors are used, tighten to imbed screws in conduit.

F. Run EMT in as direct lines as possible with minimum number of bends of longest possible radius. Run exposed conduit and EMT parallel to or at right angles to building lines. Ends shall be free from dents or flattening.

G. Conduit and EMT runs shall be mechanically and electrically continuous from service entrance to outlets. Conduit shall enter and be secured to cabinet, junction box, pull box or outlet box with locknut outside and bushing inside, or with liquid-tight, threaded, self-locking, cold-weld wedge adapter. Provide additional locknut for rigid conduit and wrench-tighten locknut for EMT or flexible conduit where circuit voltage exceeds 250 V. Locknuts and bushings or self-locking adapters will not be required where conduits are screwed into tapped connections. EMT and flexible metallic conduit as required by NEC except as specified or shown on Drawings otherwise.

H. Check raceway sizes to determine that green equipment ground conductor fits in same raceway with phase and neutral conductors to meet NEC percentage of fill requirements. Increase duct, conduit, tubing and raceway sizes shown or specified as required to accommodate conductors.
I. Conduit shall be run exposed.

J. Install conduit systems complete before drawing in conductors. Blow through and swab after plaster is finished and dry, and before conductors are installed.

3.5 GROUNDING

A. Provide equipment grounding system as shown on Drawings. Equipment grounding system shall be designed so metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, portable equipment and other conductive items in close proximity with electrical circuits operate continuously at ground potential and provide low impedance path for possible ground fault currents.

1. System shall meet NEC requirements, modified as shown on Drawings and as specified.

B. Provide separate green insulated equipment grounding conductor for each branch circuit. Install grounding conductor in common conduit with related phase or neutral conductors, or both. Determine numbers and sizes of screw terminals for equipment grounding bars in panelboards and other electrical equipment. Provide screw terminals for active circuits, spares and spaces.

C. Provide green insulated grounding conductor in same raceway with associated phase conductors.

END OF SECTION 26 00 00
DOCUMENTS AND SPECIFICATIONS

FOR

LEVI WETHERBEE FARMHOUSE

PHASE ONE:

EXTERIOR REPAIRS AND

STABILIZATION

BOXBOROUGH, MA

TOWN OF BOXBOROUGH

May 3, 2018

Bidding Documents

Prepared by

CBI Consulting, LLC

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Boston, Massachusetts 02127

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cbi@cbiconsultingllc.com

CBI FILE NUMBER 17146 SPEC1
# LEVI WETHERBEE FARMHOUSE STABILIZATION
## BOXBOROUGH, MASSACHUSETTS

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## DIVISION 01 - GENERAL REQUIREMENTS

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TOWN OF BOXBOROUGH  
LEVI WETHERBEE FARMHOUSE EXTERIOR REPAIRS AND STABILIZATION

Pursuant to M.G.L. c. 149 and c. 30 §39M, the Town of Boxborough, through its Chief Procurement Officer, is soliciting sealed bids from qualified contractors for Phase I of the exterior repairs and stabilization of the Levi Wetherbee Farmhouse.

All work must meet the Secretary of the Interior’s Standards for the Treatment of Historic Properties.

Bid specifications may be obtained from the town’s website: www.boxborough-ma.gov, commencing at 10:00 AM on May 3, 2018. Bidders downloading information from the town’s website are solely responsible for obtaining any addenda prior to the bid opening. The bid packet will list notification requirements.

All bids shall be submitted to the Chief Procurement Officer, Boxborough Town Hall, 29 Middle Road, Boxborough, MA 01719 in a sealed envelope clearly marked “Sealed Bids – Levi Wetherbee Farmhouse - Phase I: Exterior Repairs and Stabilization” by 10:00 AM local time on May 23, 2018, at which time bids will be publicly opened and read. All bids shall have the name of the bidder clearly marked on the outside of the bid envelope. Each General Bidder must submit with their bid, both a current Certificate of Eligibility as issued by DCAMM and an Update Statement current as of the bid date. Category of Work is General Building Construction. Bids shall not be accepted by fax or e-mail. Late bids will not be accepted.

A pre-bid site inspection and meeting will be held on Tuesday, May 8, 2018, at 10:00 AM. All Bidders are requested to meet at the Levi Wetherbee Farmhouse located at 484 Middle Road, Boxborough, MA.

This contract is subject to the schedule of prevailing wage rates as determined by the Department of Labor and Industries as specified in MGL c149, §§26-27 inclusive. Certification of OSHA training, as well as work in harmony, non-collusion and tax compliance are also required.

Each General Bid shall be accompanied by Bid Security equal to five (5) percent of the total possible Bid amount, including all alternates in the form of a Bid Bond, Certified Treasurer’s or Cashier’s Check issued by a responsible U.S. bank or Trust Company, payable to the Town of Boxborough. Each Bidder shall attach the required Bid Bond or Check to their Bid Form. The Bid Securities of all General Bidders, except those of the three lowest responsible and eligible General Bidders, will be returned within five (5) days, Saturdays, Sundays, and legal holidays excluded, after the opening of General Bids.

The Awarding Authority reserves the right to waive any informalities and to reject any or all General Bids not deemed to be in the best interest of the Town.

The successful General Bidder will be required to furnish a Performance Bond in the amount of one hundred percent (100%) of the total bid, and a Labor and Materials Payment Bond in the amount of one hundred percent (100%) of the total bid.

Per Order

Selina Shaw, MCPPO

Town Administrator
CERTIFICATIONS REQUIRED BY LAW FOR PUBLIC CONSTRUCTION CONTRACTS

You must COMPLETE and SIGN the following certifications. You must also print the name of the contractor for whom these certifications are submitted.

TAX COMPLIANCE
Pursuant to Chapter 62C of the Massachusetts General Laws, Section 49A(b), I, the undersigned, authorized signatory for the below named contractor, do hereby certify under the pains and penalties of perjury that said contractor has complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.

NON-COLLUSION
The undersigned certifies under the penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As used in this subsection the word "person" shall mean any natural person, joint venture, partnership, corporation or other business or legal entity.

PUBLIC CONTRACTOR DEBARMENT
The undersigned certifies under penalty of perjury that the below named contractor is not presently debarred from doing public construction work in the commonwealth under the provisions of section twenty-nine F of chapter twenty-nine, or any other applicable debarment provisions of any other chapter of the General Laws or any rule or regulation promulgated thereunder.

LABOR HARMONY
The undersigned certifies under the penalties of perjury the below named contractor shall be able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work.

OSHA TRAINING
Pursuant to G.L. c. 30, §39S, the Contractor hereby certifies under penalties of perjury as follows:

1. Contractor is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work;
2. All employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration at the time the employee begins work and they shall furnish documentation of successful completion of said course with the first certified payroll report for each employee; and
3. All employees to be employed in the work subject to this contract have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration that is at least 10 hours in duration.

COMPLETE AND SIGN BELOW:

Authorized Person’s Signature

Date

Print Name & Title of Signatory

Name of Contractor

Levi Wetherbee Farmhouse
SECTION 00 21 13 INSTRUCTION TO BIDDERS

PART 1 - GENERAL

1.1 SCHEDULE OF DATES

A. Deadline for advertisement for Bid in Central Register - Thursday, April 26, 2018, 4:00 P.M.

B. Advertisement appears in Central Register, Plans and Specifications ready for Bidders on Thursday, May 3, 2018, after 10:00 A.M. on the Town’s website, www.boxborough-ma.gov.

C. Pre-bid walkthrough and conference May 8, 2018, at 10:00 A.M. at the Levi Wetherbee Farmhouse, 484 Middle Road, Boxborough, MA 01719.

D. Questions and requests for interpretations may be submitted in writing via facsimile (617-464-2971) or email (wlawson@cbiconsultingllc.com) by the General Bidders, deadline for questions: May 14, 2018, 12:00 P.M.

E. Addenda will be issued with interpretations as determined by CBI Consulting, LLC.

F. General Bids Deadline: 10:00 A.M. on May 23, 2018, in the OFFICE OF THE TOWN ADMINISTRATOR, Boxborough Town Offices, 29 Middle Road, Boxborough, MA 01719, Attn: Selina Shaw, Town Administrator, where the bids will be publicly open and read.

1.2 BIDDING PROCEDURE

A. Bids for the work are subject to the provisions of General Laws, Chapter 149, Sections 44A-44L inclusive, as amended. Regulations governing the bidding procedures as set forth in the above mentioned amended General Laws must be followed.

B. In the event of any inconsistencies between any of the provisions of these Contract Documents and of the cited statute, anything herein to the contrary notwithstanding, the provisions of the said statute shall control.

1.3 No General Bid received by the Awarding Authority after the time respectively established herein for the opening of General Bids will be considered, regardless of the cause for the delay in the receipt of any such bid.

WITHDRAWAL OF BIDS

A. Bids may be withdrawn prior to the time respectively established for the opening of Bids only on written request to the Awarding Authority.

1.4 INTERPRETATION OF CONTRACT DOCUMENTS
A. No oral interpretation will be made to any bidder. All questions or requests for interpretations must be made in writing to the Consultant.

B. Every interpretation made to a bidder will be in the form of an Addendum, to the drawings and/or specifications, which will be made available to all persons to whom Contract Documents have been issued.

C. Failure of the Awarding Authority to send, or of any bidder to receive any such addendum shall not relieve any bidder from obligation under his bid as submitted.

D. All such addenda shall become a part of the Contract Documents.

1.5 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

A. Each bidder shall visit the site of the proposed work and fully acquaint himself with conditions as they exist, and shall also thoroughly examine the Contract Documents. Failure of any bidder to visit the site and acquaint himself with the Contract Documents shall not relieve any bidder from any obligation with respect to his bid.

B. By submitting a bid, the bidder agrees that the Contract Documents are adequate and that the required result can be produced. The successful bidder shall furnish any and all labor, materials, insurance, permits and all other items needed to produce the required result to the satisfaction of the Awarding Authority.

1.6 BID SECURITY

A. The General Contractor's bids must be accompanied by bid security in the amount of five percent (5%) of the bid.

B. At the option of the bidder, the security may be bid bond, cash, certified, treasurer's or cashier's check issued by a responsible bank or trust company. No other type of bid security is acceptable.

Bid Bonds shall be issued by a Surety Company qualified to do business under the laws of the Commonwealth of Massachusetts.

C. Certified, Treasurer's or Cashier's check shall be made payable to the Town of Boxborough, Massachusetts.

D. The bid security shall secure the execution of the Contract and the furnishing of a Performance and Payment Bond by the successful General Bidder.

E. Should any General Bidder to whom an award is made fail to enter into a contract therefore within five (5) days, Saturdays, Sundays and Legal Holidays, excluded, after notice of award has been mailed to him or fail within such time to furnish a
Performance Bond and also a Labor and Materials or Payment Bond as required, the amount so received from such General Bidder through his Bid Bond, Cash, Certified, Treasurer's or Cashier's check as bid deposit shall become the property of the Town of Boxborough, Massachusetts as liquidated damages; provided that, the amount of the bid deposit which becomes the property of the Town of Boxborough, Massachusetts shall not in any event exceed the difference between his bid price and the bid price of the next lowest responsible and eligible bidder; and provided further that, in case of death, disability, bona fide clerical error or mechanical error of a substantial nature, or other unforeseen circumstances affecting the General Bidder, his deposit shall be returned to him.

1.7 BID FORM

A. General Bids shall be submitted on the "FORM FOR GENERAL BID" enclosed. Erasures or other changes must be explained or noted over the signature of the bidder.

B. Bid forms must be completely filled in. Bids which are incomplete, conditional, or obscure, or which contain additions not called for will be rejected.

C. General Bidders shall submit one set of executed bid forms to the Awarding Authority.

1.8 SUBMISSION OF BIDS AND BID SECURITIES

A. Each bid submitted by a General Contractor shall be enclosed in a sealed envelope which shall be placed with the bid security in an outer envelope. The outer envelope shall be sealed and clearly marked as follows:

(Firm Name): 
General Bid and Bid Security for:
Levi Wetherbee Farmhouse Stabilization
Boxborough, Massachusetts

B. All bidders must demonstrate past successful experience with work on at least three (3) historic buildings (buildings listed on the State Register of Historic Places) with similar conditions in the last ten years that feature Historic Stone Masonry Restoration and historic carpentry restoration. For each project, list the property address, contact information for Designer and Owner, approximate value of the work, date of completion of the work, and a brief description of the scope of work.

1.9 AWARD OF CONTRACT

A. The Contract shall be awarded to the lowest responsible and eligible General Bidder on the basis of competitive bids in accordance with the procedure set forth
in the provision of Section 44B-44L inclusive, as amended or inserted, by Chapter 149 of the General Laws of the Commonwealth of Massachusetts.

B. If the bidder selected as the General Contractor fails to perform his agreement to execute a contract in accordance with the terms of his General Bid, and furnish a Performance Bond and also a Labor and Materials or Payment Bond, as stated in his General Bid in accordance with Section 44F, an award shall be made to the next lowest responsible and eligible bidder.

C. The words "lowest responsible and eligible bidder" shall be the bidder whose name is the lowest of those bidders possessing the skill, ability and integrity necessary to the faithful performance of the work and who shall certify that he is able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, on the work. Essential information in regard to such qualifications shall be submitted in such form as the Awarding Authority may require.

D. Action on the award will be taken within thirty (30) days, Saturdays, Sundays and Legal Holidays excluded after the opening of the bids.

1.10 SECURITY FOR FAITHFUL PERFORMANCE

A. The successful bidder must deliver to the Awarding Authority simultaneously with his delivery of the executed contract, an executed Performance Bond, and also a Labor and Materials or Payment Bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of One Hundred Percent (100%) of the Contract Price, as surety for the faithful performance of his contract, and for the payment of all persons performing labor or furnishing materials in connection therewith. Said bonds shall provide that, if the General Contractor fails or refuses to complete the Contract, the Surety Company will be obligated to do so.

B. Premiums are to be paid by the General Contractor, and are to be included in the Contract Price.

1.11 EQUALITY

A. Except where otherwise specifically provided to the contrary, the words "or equal" are hereby inserted immediately following the name or description of each article, assembly, system, or any component part thereof, in the Contract Documents. It is the contractor's responsibility to provide all the research and documentation that would prove a product or assembly is "equal". Failure to provide research or documentation does not alleviate the contractor's responsibility to meet the schedule.

1.12 INTENT OF THE DETAILS
INSTRUCTION TO BIDDERS

A. It is the intent of the design of the new work to, in many cases, exceed the minimum requirements of the manufacturer. The assembly and details shall be bid and installed, as detailed. All work must meet the Secretary of the Interior’s Standard for the Treatment of Historic Properties.

1.13 SCHEDULE

A. The work of the Contract shall begin on or before June 18, 2018. All work shall be completed by December 1, 2018.

1.14 LIQUIDATED DAMAGES

A. By submitting a bid, bidders agree that the time for completion of the Work described herein is a reasonable time for the completion of the same, taking into consideration the average climatic range and usual industrial and/or residential conditions prevailing in this locality. If the said Contractor shall neglect, fail or refuse to complete the Work within the times specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner $1,500.00, not as a penalty but as liquidated damages for such breach of contract, for each and every calendar day that the Contractor shall be in default after the time stipulated for completing the Work.

1.15 WEEKLY JOB MEETINGS

A. There will be a weekly job meeting at the site on the same agreed upon day and time to discuss and view the progress of the work and to answer questions. The Contractor's job superintendent and Project Manager shall attend each meeting.

1.16 PROJECT SUPERINTENDENT

A. The Contractor shall provide the same person as Superintendent for the entire duration of the project. Failure to maintain the same person in this position shall result in a $1,000 penalty (per incident) which shall cover the Consultant's time to re-orient new personnel.

1.17 AWARD

A. The awarding authority reserves the right to reject any or all bids, if it be in the public interest to do so, and to act upon the bids and make its award in any lawful manner.
1.18 MINIMUM WAGE SCHEDULE

A. Bids shall be made on the basis of the Minimum Wage Schedule, as determined by the Commissioner of Labor and Industries, pursuant to the provision of Chapter 149, Section 26 to 27D inclusive, of the Massachusetts General Laws.

1.19 CONFLICT OF INTEREST

A. A bidder filing a proposal thereby certifies that the proposal is made in good faith, without fraud, collusion, or connection of any kind with any other bidder for the same work, and that the bidder is completing solely on its own behalf without connection with, or obligation to, any undisclosed person or firm.

1.20 PROCEED ORDERS

A. No bidder is to proceed without a proceed order as set out in the contract.

1.21 CONSTRUCTION BARRICADES

A. The General Contractor shall provide all barricades to enclose the work area to prevent unauthorized access to the site.

1. The barricades shall provide enough room for all construction activities to be performed while separated from pedestrians, students, and staff on site.

2. Safety is the sole responsibility of the Contractor and any barricades necessary to protect the work and the public shall be provided.

1.22 COMPLETE BID FORMS

A. Please Note: Each bidder must fill in all the blanks on all the bid forms, even if the information is “zero dollars” or “not applicable”. Also, please acknowledge all Addendums even if they do not pertain to your trade.

1.23 INSURANCE

A. The contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.

B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen’s compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such
operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:

1. Statutory Worker’s Compensation and Employer’s Liability

   The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker’s Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

   Minimum bodily injury limits of $1,000,000 per person and $1,000,000 per accident, and property damage limits of $1,000,000 per accident and $1,000,000 aggregate during any 12 month period, shall include the following:
   a. Public liability (bodily injury and property damage)
   b. X.C.U. (explosion, collapse, and underground utilities)
   c. Independent contractor’s protective liability.
   d. Products and completed operations.
   e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

3. Comprehensive All Risk Motor Vehicle Liability Insurance

   Minimum bodily injury limits of $1,000,000 per person, $1,000,000 per accident, and property damage limit of $1,000,000 per accident.

4. All Risk Insurance covering all Contractor’s equipment with a provision for Waiver of Subrogation against the Owner.

5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of $2,000,000.

6. The Town of Boxborough and CBI Consulting, LLC shall be listed as Additional Insured with a Waiver of Subrogation on the insurance policy for this project.

END OF SECTION
SECTION 00 30 00 FORM FOR GENERAL BID

LEVI WETHERBEE FARMHOUSE
PHASE 1: EXTERIOR REPAIRS AND STABILIZATION
BOXBOROUGH, MASSACHUSETTS

May 23, 2018

Selina Shaw
Town Administrator
Boxborough Town Offices
29 Middle Road
Boxborough, Massachusetts 01719

Ms. Shaw:

A. BASIC PRICE

The undersigned, having visited the site of the above project and having familiarized myself with the local conditions affecting the cost of the work and with the contract documents, including Amendments and Addenda Nos.__________________ , hereby proposes to furnish all labor, materials, tools, equipment, insurance, permits and taxes, and to do and lawfully perform all things as provided in the specifications, all in accordance with the contract documents, for the sum of:

______________________________ Dollars, $______________________________

B. The undersigned agrees that, if s/he is selected as general contractor, s/he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the contract price, the premiums for which are to be paid by the general contractor and are included in the contract price.

C. ALTERNATES:

1. Add Alternate #1: Remove and replace existing asphalt shingle roofing, re-point brick chimney, and rake repairs.

______________________________ dollars ($______________________________).

D. UNIT PRICES

1. The payment shall be as indicated in the Contract Documents.
2. Prior to commencing removal or placement of materials set forth in the Contract Documents, the Contractor shall notify the Architect/Engineer in sufficient time to permit proper measurements to be taken on behalf of the Owner. Only quantities which have been approved in writing by the Architect/Engineer will be considered in the determination of adjustments to the Contract Sum.

3. Performance of Work which is not required under the Contract Documents or which is not authorized by Change Order, whether or not such Work item is set forth hereunder as a Unit Price item, shall not be considered cause for extra payment. The Contractor will be held fully responsible for such unauthorized work, including the performance of all corrective measures required by the Architect/Engineer.

4. The Unit Prices as requested herein shall include their pro rate share of all costs for general conditions, staging, access, demolition, disposal, insurance, permits, taxes, overhead, profit, bond, labor, materials, and equipment of every kind, for the Contractor and Subcontractors.

5. Schedule of Unit Prices

<table>
<thead>
<tr>
<th>#</th>
<th>DESCRIPTION OF WORK</th>
<th>BASE BID QUANTITY</th>
<th>ADD / DEDUCT PRICE</th>
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<tbody>
<tr>
<td>1</td>
<td>Alternate #1: Replace damaged or deteriorated wood roof deck with plywood deck.</td>
<td>25 SF</td>
<td></td>
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<tr>
<td>2</td>
<td>Alternate #1: Remove and replace portions of existing rake.</td>
<td>50 LF</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Alternate #1: Remove and replace portions of gable end trim.</td>
<td>50 LF</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Replace damaged or deteriorated wood sill above foundation wall.</td>
<td>25 LF*</td>
<td></td>
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*Indicates that the quantity listed is in addition to all the scope areas noted on the plans.

E. The undersigned agrees that, if s/he is selected as general contractor, he will within five days, Saturdays, Sundays and legal holidays excluded, after presentation thereof by the Awarding Authority, execute a contract in accordance with the terms of this bid and furnish a performance bond and also a labor and materials or payment bond, each of a surety company qualified to do business under the laws of the Commonwealth and satisfactory to the Awarding Authority and each in the sum of the contract price, the
premiums for which are to be paid by the general contractor and are included in the contract price.

F. The undersigned certifies that s/he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed in the work and that s/he will comply fully with all laws and regulations applicable to awards made subject to section forty-four A

G. The undersigned as Bidder certifies that if this proposal is accepted, s/he will furnish to the Town of Boxborough with the invoice for the material or equipment supplied two copies of any and all Material Safety Data Sheets applicable to such material or equipment, as required by M.G.L. Chapter 111F, so called "Right to Know Law".

H. The undersigned certifies under penalties of perjury that this bid is in all respects bona fide, fair and made without collusion or fraud with any other person. As under in this section, the work "person" shall mean any natural person, joint venture, partnership, corporation, or other business or legal entity.

I. Completion

Final completion to be by December 1, 2018.

Sincerely,

__________________________
(Bidder)

__________________________
(Address of Bidder)

By: __________________________
(Title - Owner*, Partner*)

(Seal, if Corporation)

By: __________________________
(If Corporation - Name and Office)

If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.

J. BIDDER’S CERTIFICATION REGARDING PAYMENT OF PREVAILING WAGE RATES

The undersigned bidder hereby certifies, under the pains and penalties of perjury, that the foregoing bid is based upon the payment to laborers to be employed on the project of wages in an amount no less than the applicable prevailing wage rates established for the project by the Massachusetts Department of Labor and Industries. The undersigned bidder agrees to indemnify the Awarding Authority for, from and against any loss, expense, damages, actions or claims, including any expense incurred in connection with any delay or stoppage of the project work, arising out of or as a result of (1) the failure of
the said bid to be based upon the payment of the said applicable prevailing wage rates or
(2) the failure of the bidder, if selected as the contractor, to pay laborers employed on the
project the said applicable prevailing wage rates.

DATED: ________________ NAME OF BIDDER: ______________________

BY: ________________________________

NAME: ________________________________

TITLE: ________________________________

Acknowledgment of Principal, if a Corporation

State of _____________ )

County of _____________ )

On this ________ day of ______ 20__

before me personally came __________________ to me known, who, being by me duly
sworn, did depose and say that he/she resides

at __________________, that he/she is the ___________ of __________ the

 corporation described herein and which executed the foregoing instrument; that he/she knows
the seal of said corporation; that one of the seals affixed to said instrument is such seal; that it
was so affixed by order of the directors of said corporation, and that he/she signed his/her
name thereto by like order.

(Notary Public)

____________________________________

Acknowledgment of Principal, if a Partnership

State of _____________ )

County of _____________ )

On this ________ day of ______ 20__

before me personally came __________________ to me known, and known to me to be one of
the members of the firm of

____________________________________ who executed the foregoing instrument and he/she
acknowledged to me that he/she executed the same as and for the act of said firm.
Levi Wetherbee Farmhouse
Phase One: Exterior Repairs and Stabilization
Boxborough, Massachusetts
CBI Project No.: 17146

CBI Consulting, LLC
Boston, Massachusetts
Tel: (617) 268-8977
Fax: (617) 464-2971

(Notary Public)

FORM FOR GENERAL BID
00 30 00 - 5
Acknowledgment of Principal, if an Individual

State of ____________

County of ____________

On this ____________ day of ________ 20__

before me personally came ____________________, to me known, and known to me to be the person described herein and who executed the foregoing instrument and he/she acknowledged to me that he/she executed the same.

(Notary Public)

(If bidder is a partnership, state here the name and residence of each member thereof)

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(If bidder is a corporation, state here the title, name, and residence of each member thereof)

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Organized under the laws of the state of ____________

Date: ________________________
K. In accordance with M.G.L., the undersigned certifies that all employees to be employed at the worksite will have successfully completed a course in construction safety and health approved by OSHA that is at least 10 hours in duration at the time the employee begins work and shall furnish documentation of successful completion of said course with the first certified payroll report for each employee.

Sincerely,

________________________________________________________________________
(Bidder)

________________________________________________________________________
(Address of Bidder)

By: ______________________________________________________________________
(Title - Owner*, Partner*)

By: ______________________________________________________________________
(Seal, if Corporation)

By: ______________________________________________________________________
(If Corporation - Name and Office)

* If the business owned by the individual or partnership is conducted under a trade or assumed name, a certified copy of doing business under an assumed name should be annexed.
CONTRACT DOCUMENTS
Awarding Authority: Town of Boxborough
Contract Number: 17146
City/Town: BOXBOROUGH

Description of Work: Levi Wetherbee Farmhouse Phase One - Replace roof, exterior repairs, perimeter trench drain, new bulkhead door, brick masonry & pointing work. Stabilize foundation walls with steel bracing & concrete

Job Location: 484 Middle Rd, Boxborough, MA 01719

Information about Prevailing Wage Schedules for Awarding Authorities and Contractors

- This wage schedule applies only to the specific project referenced at the top of this page and uniquely identified by the “Wage Request Number” on all pages of this schedule.
- An Awarding Authority must request an updated wage schedule from the Department of Labor Standards (“DLS”) if it has not opened bids or selected a contractor within 90 days of the date of issuance of the wage schedule. For CM AT RISK projects (bid pursuant to G.L. c.149A), the earlier of: (a) the execution date of the GMP Amendment, or (b) the bid for the first construction scope of work must be within 90-days of the wage schedule issuance date.
- The wage schedule shall be incorporated in any advertisement or call for bids for the project as required by M.G.L. c. 149, § 27. The wage schedule shall be made a part of the contract awarded for the project. The wage schedule must be posted in a conspicuous place at the work site for the life of the project in accordance with M.G.L. c. 149 § 27. The wages listed on the wage schedule must be paid to employees performing construction work on the project whether they are employed by the prime contractor, a filed sub-bidder, or any sub-contractor.
- All apprentices working on the project are required to be registered with the Massachusetts Department of Labor Standards, Division of Apprentice Standards (DLS/DAS). Apprentice must keep his/her apprentice identification card on his/her person during all work hours on the project. Any apprentice registered with DAS may be paid the lower apprentice wage rate at the applicable step as provided on the prevailing wage schedule. Any apprentice not registered with DLS/DAS regardless of whether or not they are registered with any other federal, state, local, or private agency must be paid the journeyworker's rate for the trade.
- The wage rates will remain in effect for the duration of the project, except in the case of multi-year public construction projects. For construction projects lasting longer than one year, awarding authorities must request an updated wage schedule. Awarding authorities are required to request these updates no later than two weeks before the anniversary of the date the contract was executed by the awarding authority and the general contractor. For multi-year CM AT RISK projects, awarding authority must request an annual update no later than two weeks before the anniversary date, determined as the earlier of: (a) the execution date of the GMP Amendment, or (b) the execution date of the first amendment to permit procurement of construction services. Contractors are required to obtain the wage schedules from awarding authorities, and to pay no less than these rates to covered workers. The annual update requirement is not applicable to 27F “rental of equipment” contracts.
- Every contractor or subcontractor which performs construction work on the project is required to submit weekly payroll reports and a Statement of Compliance directly to the awarding authority by mail or email and keep them on file for three years. Each weekly payroll report must contain: the employee’s name, address, occupational classification, hours worked, and wages paid. Do not submit weekly payroll reports to DLS. A sample of a payroll reporting form may be obtained at http://www.mass.gov/dols/pw.
- Contractors with questions about the wage rates or classifications included on the wage schedule have an affirmative obligation to inquire with DLS at (617) 626-6953.
- Employees not receiving the prevailing wage rate set forth on the wage schedule may report the violation to the Fair Labor Division of the office of the Attorney General at (617) 727-3465.
- Failure of a contractor or subcontractor to pay the prevailing wage rates listed on the wage schedule to all employees who perform construction work on the project is a violation of the law and subjects the contractor or subcontractor to civil and
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For apprentice rates see "Apprentice- PILE DRIVER"

For apprentice rates see "Apprentice- LABORER"

For apprentice rates see "Apprentice- OPERATING ENGINEERS"
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**Notes:**

Apprentice to Journeyworker Ratio: 1:5
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**Apprentice - BRICK/PLASTER/CEMENT MASON - Local 3 Lowell**

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**Notes:**

Apprentice to Journeyworker Ratio: 1:5

**BULLDOZER/GRADER/SCRAPER OPERATING ENGINEERS LOCAL 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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For apprentice rates see "Apprentice- LABORER"
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| For apprentice rates see "Apprentice- LABORER*"
| CARBIDE CORE DRILL OPERATOR                         |                |           |        |         |                           |            |
| LABORERS - ZONE 2                                    |                |           |        |         |                           |            |
|                                                       | 12/01/2017     | $33.08    | $7.70  | $13.60  | $0.00                      | $54.38     |
|                                                       | 06/01/2018     | $33.92    | $7.70  | $13.60  | $0.00                      | $55.22     |
|                                                       | 12/01/2018     | $34.76    | $7.70  | $13.60  | $0.00                      | $56.06     |
|                                                       | 06/01/2019     | $35.63    | $7.70  | $13.60  | $0.00                      | $56.93     |
|                                                       | 12/01/2019     | $36.49    | $7.70  | $13.60  | $0.00                      | $57.79     |
|                                                       | 06/01/2020     | $37.38    | $7.70  | $13.60  | $0.00                      | $58.68     |
|                                                       | 12/01/2020     | $38.27    | $7.70  | $13.60  | $0.00                      | $59.57     |
|                                                       | 06/01/2021     | $39.19    | $7.70  | $13.60  | $0.00                      | $60.49     |
|                                                       | 12/01/2021     | $40.10    | $7.70  | $13.60  | $0.00                      | $61.40     |
| For apprentice rates see "Apprentice- LABORER*"
| CARPENTER                                            |                |           |        |         |                           |            |
| CARPENTERS-ZONE 2 (Eastern Massachusetts)             |                |           |        |         |                           |            |
|                                                       | 03/01/2018     | $40.28    | $9.90  | $17.50  | $0.00                      | $67.68     |
|                                                       | 09/01/2018     | $41.32    | $9.90  | $17.50  | $0.00                      | $68.72     |
|                                                       | 03/01/2019     | $42.35    | $9.90  | $17.50  | $0.00                      | $69.75     |
## Apprentice - CARPENTER - Zone 2 Eastern MA

Effective Date - 03/01/2018

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Notes:

- % Indentured After 10/1/17; 45/45/55/55/70/70/80/80
- Step 1&2 $29.76/ 3&4 $35.45/ 5&6 $52.14/ 7&8 $57.89
- Apprentice to Journeyworker Ratio: 1:5

CARPENTER WOOD FRAME

CARPENTERS - ZONE 2 (Wood Frame)

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As of 9/1/09 Carpentry work on wood-frame WEATHERIZATION projects shall be paid the WOOD FRAME CARPENTER rate.
### Apprentice  -  CARPENTER (Wood Frame) - Zone 2

#### Effective Date -  04/01/2018

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#### Notes:
- % Indentured After 10/1/17; 45/45/55/55/70/70/80/80
- Step 1&2 $19.07/ 3&4 $26.49/ 5&6 $33.60/ 7&8 $36.27
- Apprentice to Journeyworker Ratio:1:5

### CARPENTER WOOD FRAME (All Other Work)

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**Notes:**
- Steps 3,4 are 500 hrs. All other steps are 1,000 hrs.
- Apprentice to Journeyworker Ratio: 1:3

#### CHAIN SAW OPERATOR
**LABORERS - ZONE 2**
- 12/01/2017: $33.08, $7.70, $13.60, $0.00, $54.38
- 06/01/2018: $33.92, $7.70, $13.60, $0.00, $55.22
- 12/01/2018: $34.76, $7.70, $13.60, $0.00, $56.06
- 06/01/2019: $35.63, $7.70, $13.60, $0.00, $56.93
- 12/01/2019: $36.49, $7.70, $13.60, $0.00, $57.79
- 06/01/2020: $37.38, $7.70, $13.60, $0.00, $58.68
- 12/01/2020: $38.27, $7.70, $13.60, $0.00, $59.57
- 06/01/2021: $39.19, $7.70, $13.60, $0.00, $60.49
- 12/01/2021: $40.10, $7.70, $13.60, $0.00, $61.40

For apprentice rates see "Apprentice- LABORER"

#### CLAM SHELLS/SLURRY BUCKETS/HEADING MACHINES
**OPERATING ENGINEERS LOCAL 4**
- 12/01/2017: $47.63, $10.50, $15.50, $0.00, $73.63

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

#### COMPRESSOR OPERATOR
**OPERATING ENGINEERS LOCAL 4**
- 12/01/2017: $31.80, $10.50, $15.50, $0.00, $57.80

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

#### DELEADER (BRIDGE)
**PAINTERS LOCAL 35 - ZONE 2**
- 01/01/2017: $51.41, $7.85, $16.10, $0.00, $75.36
### PAINTER Local 35 - BRIDGES/TANKS

**Effective Date:** 01/01/2017

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**Notes:**
Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1

For apprentice rates see "Apprentice- LABORER"
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**Notes:**
- App Prior 1/1/03; 30/35/40/45/50/55/65/70/75/80
- Apprentice to Journeyworker Ratio: 2:3***

### ELEVATOR CONSTRUCTOR
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**Issue Date:** 04/10/2018  **Wage Request Number:** 20180410-097  **Page 11 of 35**
### Apprentice - ELEVATOR CONSTRUCTOR - Local 4

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**Notes:**
- Steps 1-2 are 6 mos.; Steps 3-5 are 1 year

---

### ELEVATOR CONSTRUCTOR HELPER

#### ELEVATOR CONSTRUCTORS LOCAL 4

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For apprentice rates see "Apprentice - ELEVATOR CONSTRUCTOR"

### FENCE & GUARD RAIL ERECTOR

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For apprentice rates see "Apprentice- LABORER"

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

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Notes: Steps are 750 hrs.
% After 09/1/17; 45/45/55/55/70/70/80/80 (1500hr Steps)
Step 1&2 $30.55/ 3&4 $36.49/ 5&6 $53.33/ 7&8 $59.33

Apprentice to Journeyworker Ratio: 1:1

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## GLAZIER (GLASS PLANK/AIR BARRIER/INTERIOR SYSTEMS)

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### GLAZIER - Local 35 Zone 2

#### Apprentice - 01/01/2017

#### Effective Date - 01/01/2017

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### Notes:

- Steps are 750 hrs.
- Apprentice to Journeyworker Ratio: 1:1

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### HOISTING ENGINEER/CRANES/GRADALLS

#### Apprentice - OPERATING ENGINEERS - Local 4

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### Notes:

- Apprentice to Journeyworker Ratio: 1:6
- For apprentice rates see "Apprentice- SHEET METAL WORKER"

## HVAC (DUCTWORK)

**SHEETMETAL WORKERS LOCAL 17 - A**

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For apprentice rates see "Apprentice- SHEET METAL WORKER"

## HVAC (ELECTRICAL CONTROLS)

**ELECTRICIANS LOCAL 103**

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For apprentice rates see "Apprentice- ELECTRICIAN"
### HVAC (TESTING AND BALANCING - AIR)

**Sheetmetal Workers Local 17 - A**

- **Effective Date:** 02/01/2018
- **Base Wage:** $44.11
- **Health:** $12.20
- **Pension:** $24.12
- **Supplemental Unemployment:** $2.41
- **Total Rate:** $82.84

For apprentice rates see "Apprentice- sheet metal worker"

### HVAC (TESTING AND BALANCING - WATER)

**Pipefitters Local 537**

- **Effective Date:** 03/01/2017
- **Base Wage:** $51.19
- **Health:** $9.70
- **Pension:** $18.14
- **Supplemental Unemployment:** $0.00
- **Total Rate:** $79.03

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

### HVAC MECHANIC

**Pipefitters Local 537**

- **Effective Date:** 03/01/2017
- **Base Wage:** $51.19
- **Health:** $9.70
- **Pension:** $18.14
- **Supplemental Unemployment:** $0.00
- **Total Rate:** $79.03

For apprentice rates see "Apprentice- PIPEFITTER" or "PLUMBER/PIPEFITTER"

### HYDRAULIC DRILLS

**Laborers - Zone 2**

- **Effective Date:** 12/01/2017
- **Base Wage:** $33.58
  - 06/01/2018: $34.42
  - 12/01/2018: $35.26
  - 06/01/2019: $36.13
  - 12/01/2019: $36.99
  - 06/01/2020: $37.87
  - 12/01/2020: $38.77
  - 06/01/2021: $39.69
  - 12/01/2021: $40.60
- **Health:** $7.70
- **Pension:** $13.60
- **Supplemental Unemployment:** $0.00
- **Total Rate:** $54.88

For apprentice rates see "Apprentice- LABORER"

### INSULATOR (PIPES & TANKS)

**Heat & Frost Insulators Local 6 (Boston)**

- **Effective Date:** 09/01/2017
- **Base Wage:** $47.09
  - 09/01/2018: $49.34
  - 09/01/2019: $51.84
- **Health:** $11.75
- **Pension:** $14.20
- **Supplemental Unemployment:** $0.00
- **Total Rate:** $73.04

### Apprentice - ASBESTOS INSULATOR (Pipes & Tanks) - Local 6 Boston

#### Effective Date - 09/01/2017

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Notes:

- Steps are 1 year

Apprentice to Journeyworker Ratio: 1:4

### IRONWORKER/WELDER

**Ironworkers Local 7 (Worcester Area)**

- **Effective Date:** 03/16/2017
- **Base Wage:** $44.35
- **Health:** $7.80
- **Pension:** $20.85
- **Supplemental Unemployment:** $0.00
- **Total Rate:** $73.00

---

**Issue Date:** 04/10/2018  **Wage Request Number:** 20180410-097  **Page 15 of 35**
### Apprentice - IRONWORKER - Local 7 Worcester

**Effective Date** - 03/16/2017

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**Notes:**
- Structural 1:6; Ornamental 1:4

**Apprentice to Journeyworker Ratio:**

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For apprentice rates see "Apprentice- LABORER"

**LABORER**

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:5

**LABORER: CARPENTER TENDER**
- 12/01/2017: $32.83, Health: $7.70, Pension: $13.60, Total: $54.13
- 06/01/2018: $33.67, Health: $7.70, Pension: $13.60, Total: $54.97
- 12/01/2018: $34.51, Health: $7.70, Pension: $13.60, Total: $55.81
- 06/01/2019: $35.38, Health: $7.70, Pension: $13.60, Total: $56.68
- 12/01/2019: $36.24, Health: $7.70, Pension: $13.60, Total: $57.54
- 06/01/2020: $37.13, Health: $7.70, Pension: $13.60, Total: $58.43
- 12/01/2020: $38.02, Health: $7.70, Pension: $13.60, Total: $59.32
- 06/01/2021: $38.94, Health: $7.70, Pension: $13.60, Total: $60.24
- 12/01/2021: $39.85, Health: $7.70, Pension: $13.60, Total: $61.15

For apprentice rates see "Apprentice- LABORER"

**LABORER: CEMENT FINISHER TENDER**
- 12/01/2017: $32.83, Health: $7.70, Pension: $13.60, Total: $54.13
- 06/01/2018: $33.67, Health: $7.70, Pension: $13.60, Total: $54.97
- 12/01/2018: $34.51, Health: $7.70, Pension: $13.60, Total: $55.81
- 06/01/2019: $35.38, Health: $7.70, Pension: $13.60, Total: $56.68
- 12/01/2019: $36.24, Health: $7.70, Pension: $13.60, Total: $57.54
- 06/01/2020: $37.13, Health: $7.70, Pension: $13.60, Total: $58.43
- 12/01/2020: $38.02, Health: $7.70, Pension: $13.60, Total: $59.32
- 06/01/2021: $38.94, Health: $7.70, Pension: $13.60, Total: $60.24
- 12/01/2021: $39.85, Health: $7.70, Pension: $13.60, Total: $61.15

For apprentice rates see "Apprentice- LABORER"

**LABORER: HAZARDOUS WASTE/ASBESTOS REMOVER**
- 12/01/2017: $33.03, Health: $7.70, Pension: $13.55, Total: $54.28
- 06/01/2018: $33.87, Health: $7.70, Pension: $13.55, Total: $55.12
- 12/01/2018: $34.71, Health: $7.70, Pension: $13.55, Total: $55.96
- 06/01/2019: $35.58, Health: $7.70, Pension: $13.55, Total: $56.83
- 12/01/2019: $36.44, Health: $7.70, Pension: $13.55, Total: $57.69

For apprentice rates see "Apprentice- LABORER"
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| LABORER: MULTI-TRADE TENDER    | 12/01/2017     | $32.83    | $7.70  | $13.60  | $0.00                     | $54.13     |
| LABORERS - ZONE 2              | 06/01/2018     | $33.67    | $7.70  | $13.60  | $0.00                     | $54.97     |
|                                | 12/01/2018     | $34.51    | $7.70  | $13.60  | $0.00                     | $55.81     |
|                                | 06/01/2019     | $35.38    | $7.70  | $13.60  | $0.00                     | $56.68     |
|                                | 12/01/2019     | $36.24    | $7.70  | $13.60  | $0.00                     | $57.54     |
|                                | 06/01/2020     | $37.13    | $7.70  | $13.60  | $0.00                     | $58.43     |
|                                | 12/01/2020     | $38.02    | $7.70  | $13.60  | $0.00                     | $59.32     |
|                                | 06/01/2021     | $38.94    | $7.70  | $13.60  | $0.00                     | $60.24     |
|                                | 12/01/2021     | $39.85    | $7.70  | $13.60  | $0.00                     | $61.15     |
| For apprentice rates see "Apprentice- LABORER* |

| LABORER: TREE REMOVER          | 12/01/2017     | $32.83    | $7.70  | $13.60  | $0.00                     | $54.13     |
| LABORERS - ZONE 2              | 06/01/2018     | $33.67    | $7.70  | $13.60  | $0.00                     | $54.97     |
|                                | 12/01/2018     | $34.51    | $7.70  | $13.60  | $0.00                     | $55.81     |
|                                | 06/01/2019     | $35.38    | $7.70  | $13.60  | $0.00                     | $56.68     |
|                                | 12/01/2019     | $36.24    | $7.70  | $13.60  | $0.00                     | $57.54     |
|                                | 06/01/2020     | $37.13    | $7.70  | $13.60  | $0.00                     | $58.43     |
|                                | 12/01/2020     | $38.02    | $7.70  | $13.60  | $0.00                     | $59.32     |
|                                | 06/01/2021     | $38.94    | $7.70  | $13.60  | $0.00                     | $60.24     |
|                                | 12/01/2021     | $39.85    | $7.70  | $13.60  | $0.00                     | $61.15     |
| This classification applies to all tree work associated with the removal of standing trees, and trimming and removal of branches and limbs when the work is not done for a utility company for the purpose of operation, maintenance or repair of utility company equipment. For apprentice rates see "Apprentice- LABORER* |

| LASER BEAM OPERATOR            | 12/01/2017     | $33.08    | $7.70  | $13.60  | $0.00                     | $54.38     |
| LABORERS - ZONE 2              | 06/01/2018     | $33.92    | $7.70  | $13.60  | $0.00                     | $55.22     |
|                                | 12/01/2018     | $34.76    | $7.70  | $13.60  | $0.00                     | $56.06     |
|                                | 06/01/2019     | $35.63    | $7.70  | $13.60  | $0.00                     | $56.93     |
|                                | 12/01/2019     | $36.49    | $7.70  | $13.60  | $0.00                     | $57.79     |
|                                | 06/01/2020     | $37.38    | $7.70  | $13.60  | $0.00                     | $58.68     |
|                                | 12/01/2020     | $38.27    | $7.70  | $13.60  | $0.00                     | $59.57     |
|                                | 06/01/2021     | $39.19    | $7.70  | $13.60  | $0.00                     | $60.49     |
|                                | 12/01/2021     | $40.10    | $7.70  | $13.60  | $0.00                     | $61.40     |
| For apprentice rates see "Apprentice- LABORER* |
### MARBLE & TILE FINISHERS - Local 3 Marble & Tile

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#### Apprentice - MARBLE & TILE FINISHER - Local 3 Marble & Tile

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**Notes:**

- Apprentice to Journeyworker Ratio: 1:3

### MARBLE MASON, TILELAYERS & TERRAZZO MECHANICAL - Local 3 Marble & Tile

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**Notes:**

- Apprentice to Journeyworker Ratio: 1:5

**MECH. SWEEPER OPERATOR (ON CONST. SITES)**

**Operating Engineers Local 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**MECHANICS MAINTENANCE**

**Operating Engineers Local 4**

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

**MILLWRIGHT (Zone 2)**

**MILLWRIGHTS LOCAL 1121 - Zone 2**

04/01/2018 $37.17 $9.90 $18.50 $0.00 $65.57

10/01/2018 $38.02 $9.90 $18.50 $0.00 $66.42

04/01/2019 $38.87 $9.90 $18.50 $0.00 $67.27

### Apprentice - MILLWRIGHT - Local 1121 Zone 2

**Effective Date** - 04/01/2018

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**Notes:**

- Steps are 2,000 hours

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For apprentice rates see "Apprentice- LABORER"

OILER (OTHER THAN TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OILER (TRUCK CRANES, GRADALLS) OPERATING ENGINEERS LOCAL 4

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

OTHER POWER DRIVEN EQUIPMENT - CLASS II OPERATING ENGINEERS LOCAL 4

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

PAINTER (BRIDGES/TANKS) PAINTERS LOCAL 35 - ZONE 2

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Apprentice - PAINTER LOCAL 35 - BRIDGES/TANKS

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Notes:
- Steps are 750 hrs.

Apprentice to Journeyworker Ratio: 1:1

PAINTER (SPRAY OR SANDBLAST, NEW) *

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* If 30% or more of surfaces to be painted are new construction, NEW paint rate shall be used. PAINTERS LOCAL 35 - ZONE 2
### Apprentice - PAINTER Local 35 Zone 2 - Spray/Sandblast - New

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.

### Apprentice to Journeyworker Ratio: 1:1

#### PAINTER (SPRAY OR SANDBLAST, REPAINT)

**PAINTERS LOCAL 35 - ZONE 2**

01/01/2017 - $64.32

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The Apprentice to Journeyworker Ratio is 1:1.

#### PAINTER (TRAFFIC MARKINGS)

**LABORERS - ZONE 2**

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For Apprentice rates see "Apprentice - LABORER"
### Apprentice - PAINTER - Local 35 Zone 2 - BRUSH NEW

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1

### Apprentice - PAINTER Local 35 Zone 2 - BRUSH REPAINT

**Effective Date:** 01/01/2017

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**Notes:**
- Steps are 750 hrs.

**Apprentice to Journeyworker Ratio:** 1:1

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### PANEL & PICKUP TRUCKS DRIVER

**Teamsters Joint Council No. 10 Zone B**

**Effective Date:** 12/01/2012

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### PIER AND DOCK CONSTRUCTOR (UNDERPINNING AND DECK)

**Teamsters Local 36 (Zone 1)**

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For apprentice rates see "Apprentice- PILE DRIVER"
### PILE DRIVER

**PILE DRIVER LOCAL 56 (ZONE 1)**

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#### Apprentice - PILE DRIVER - Local 56 Zone 1

**Effective Date:** 08/01/2017

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**Notes:**

**Apprentice to Journeyworker Ratio:** 1:5

### PIPEFITTER & STEAMFITTER

**PIPEFITTERS LOCAL 537**

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**Effective Date:** 03/01/2017

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**Notes:**
- **1:3; 3:15; 1:10 thereafter / Steps are 1 yr.
- **Apprentice to Journeyworker Ratio:**

**PLIPERAYER**

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For apprentice rates see "Apprentice- LABORER"

### PLUMBERS & GASFITTERS

**PLUMBERS & GASFITTERS LOCAL 12**

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**Notes:**

**1:** 2:6; 3:10; 4:14; 5:19/Steps are 1 yr

Step 4 with lic $61.00, Step 5 with lic $67.99

**Apprentice to Journeyworker Ratio:**

---

**PNEUMATIC CONTROLS (TEMP.)**

*PIPEFITTERS LOCAL 537*

03/01/2017  $51.19  $9.70  $18.14  $0.00  $79.03

For apprentice rates see "Apprentice- PIPEFITTER** or "PLUMBER/PIPEFITTER*

**PNEUMATIC DRILL/TOOL OPERATOR**

*LABORERS - ZONE 2*

12/01/2017  $33.08  $7.70  $13.60  $0.00  $54.38
06/01/2018  $33.92  $7.70  $13.60  $0.00  $55.22
12/01/2018  $34.76  $7.70  $13.60  $0.00  $56.06
06/01/2019  $35.63  $7.70  $13.60  $0.00  $56.93
12/01/2019  $36.49  $7.70  $13.60  $0.00  $57.79
06/01/2020  $37.38  $7.70  $13.60  $0.00  $58.68
12/01/2020  $38.27  $7.70  $13.60  $0.00  $59.57
06/01/2021  $39.19  $7.70  $13.60  $0.00  $60.49
12/01/2021  $40.10  $7.70  $13.60  $0.00  $61.40

For apprentice rates see "Apprentice- LABORER*

**POWDERMAN & BLASTER**

*LABORERS - ZONE 2*

12/01/2017  $33.83  $7.70  $13.60  $0.00  $55.13
06/01/2018  $34.67  $7.70  $13.60  $0.00  $55.97
12/01/2018  $35.51  $7.70  $13.60  $0.00  $56.81
06/01/2019  $36.38  $7.70  $13.60  $0.00  $57.68
12/01/2019  $37.24  $7.70  $13.60  $0.00  $58.54
06/01/2020  $38.13  $7.70  $13.60  $0.00  $59.43
12/01/2020  $39.02  $7.70  $13.60  $0.00  $60.32
06/01/2021  $39.94  $7.70  $13.60  $0.00  $61.24
12/01/2021  $40.85  $7.70  $13.60  $0.00  $62.15

For apprentice rates see "Apprentice- LABORER*

**POWER SHOVEL/DERRICK/TRENCHING MACHINE**

*OPERATING ENGINEERS LOCAL 4*

12/01/2017  $46.63  $10.50  $15.50  $0.00  $72.63

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**Issue Date:** 04/10/2018  **Wage Request Number:** 20180410-097
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**Issue Date:** 04/10/2018  **Wage Request Number:** 20180410-097  **Page 27 of 35**
### Apprentice - ROOFER - Local 33

#### Effective Date - 02/01/2018

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**Notes:**
1. 1:5, 2:6-10, the 1:10; Reroofing: 1:4, then 1:1
2. Step 1 is 2000 hrs.; Steps 2-5 are 1000 hrs.
3. (Hot Pitch Mechanics’ receive $1.00 hr. above ROOFER)

### Apprentice to Journeyworker Ratio:
**ROOFER SLATE / TILE / PRECAST CONCRETE**

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For apprentice rates see "Apprentice- ROOFER"

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#### Effective Date: 02/01/2018

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**Notes:**
- Steps are 6 mos.

**Apprentice to Journeyworker Ratio:** 1:4

### Classification: SIGN ERECTOR - Local 35 Zone 2

#### Effective Date: 06/01/2013

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**Notes:**
- Steps are 4 mos.

**Apprentice to Journeyworker Ratio:** 1:1

### Classification: SPECIALIZED EARTH MOVING EQUIP < 35 TONS

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**Notes:** Apprentice entered prior 9/30/10: 40/45/50/55/60/65/70/75/80/85
Steps are 850 hours

**Apprentice to Journeyworker Ratio: 1:3**

### STEAM BOILER OPERATOR

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"

### TAMPERs, SELF-PROPELLED OR TRACTOR DRAWN

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For apprentice rates see "Apprentice- OPERATING ENGINEERS"
### TELECOMMUNICATION TECHNICIAN

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**Apprentice to Journeyworker Ratio:** 1:1

### Bricklayers Local 3 - Marble & Tile

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### Apprentice - TERRAZZO FINISHER - Local 3 Marble & Tile

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**Notes:**
- Apprentice to Journeyworker Ratio: 1:3

For apprentice rates see "Apprentice - LABORER"

### TEST BORING DRILLER

**LABORERS - FOUNDATION AND MARINE**

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For apprentice rates see "Apprentice - LABORER"

### TEST BORING DRILLER HELPER

**LABORERS - FOUNDATION AND MARINE**

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For apprentice rates see "Apprentice - LABORER"

### TEST BORING LABORER

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For apprentice rates see "Apprentice - LABORER"

### TRACTORS/PORTABLE STEAM GENERATORS

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**Issue Date:** 04/10/2018  **Wage Request Number:** 20180410-097  **Page 32 of 35**
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For apprentice rates see "Apprentice- LABORER".

| TUNNEL WORK - COMPRESSED AIR (HAZ. WASTE) | 12/01/2017 | $51.73 | $7.70 | $15.35 | $0.00 | $74.78 |
| | 06/01/2018 | $52.68 | $7.70 | $15.35 | $0.00 | $75.73 |
| | 12/01/2018 | $53.63 | $7.70 | $15.35 | $0.00 | $76.68 |
| | 06/01/2019 | $54.63 | $7.70 | $15.35 | $0.00 | $77.68 |
| | 12/01/2019 | $55.63 | $7.70 | $15.35 | $0.00 | $78.68 |
| | 06/01/2020 | $56.62 | $7.70 | $15.35 | $0.00 | $79.67 |
| | 12/01/2020 | $57.60 | $7.70 | $15.35 | $0.00 | $80.65 |
| | 06/01/2021 | $58.62 | $7.70 | $15.35 | $0.00 | $81.67 |
| | 12/01/2021 | $59.63 | $7.70 | $15.35 | $0.00 | $82.68 |

For apprentice rates see "Apprentice- LABORER".

| TUNNEL WORK - FREE AIR | 12/01/2017 | $41.80 | $7.70 | $15.35 | $0.00 | $64.85 |
| | 06/01/2018 | $42.75 | $7.70 | $15.35 | $0.00 | $65.80 |
| | 12/01/2018 | $43.70 | $7.70 | $15.35 | $0.00 | $66.75 |
| | 06/01/2019 | $44.70 | $7.70 | $15.35 | $0.00 | $67.75 |
| | 12/01/2019 | $45.70 | $7.70 | $15.35 | $0.00 | $68.75 |
| | 06/01/2020 | $46.69 | $7.70 | $15.35 | $0.00 | $69.74 |
| | 12/01/2020 | $47.67 | $7.70 | $15.35 | $0.00 | $70.72 |
| | 06/01/2021 | $48.69 | $7.70 | $15.35 | $0.00 | $71.74 |
| | 12/01/2021 | $49.70 | $7.70 | $15.35 | $0.00 | $72.75 |

For apprentice rates see "Apprentice- LABORER".

| TUNNEL WORK - FREE AIR (HAZ. WASTE) | 12/01/2017 | $43.80 | $7.70 | $15.35 | $0.00 | $66.85 |
| | 06/01/2018 | $44.75 | $7.70 | $15.35 | $0.00 | $67.80 |
| | 12/01/2018 | $45.70 | $7.70 | $15.35 | $0.00 | $68.75 |
| | 06/01/2019 | $46.70 | $7.70 | $15.35 | $0.00 | $69.75 |
| | 12/01/2019 | $47.70 | $7.70 | $15.35 | $0.00 | $70.75 |
| | 06/01/2020 | $48.69 | $7.70 | $15.35 | $0.00 | $71.74 |
| | 12/01/2020 | $49.67 | $7.70 | $15.35 | $0.00 | $72.72 |
| | 06/01/2021 | $50.69 | $7.70 | $15.35 | $0.00 | $73.74 |
| | 12/01/2021 | $51.70 | $7.70 | $15.35 | $0.00 | $74.75 |

For apprentice rates see "Apprentice- LABORER".

| VAC-HAUL | 12/01/2016 | $32.44 | $10.91 | $10.89 | $0.00 | $54.24 |

For apprentice rates see "Apprentice- OPERATING ENGINEERS".

For apprentice rates see "Apprentice- LABORER".
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For apprentice rates see "Apprentice- LABORER"

| WASTE WATER PUMP OPERATOR            | 12/01/2017 | $46.63 | $10.50 | $15.50 | $0.00 | $72.63 |

For apprentice rates see "Apprentice- OPERATING ENGINEERS"

| WATER METER INSTALLER                | 03/01/2018 | $54.69 | $11.57 | $15.76 | $0.00 | $82.02 |
| PLUMBERS & GASFITTERS LOCAL 12      | 09/01/2018 | $56.19 | $11.57 | $15.76 | $0.00 | $83.52 |
|                                     | 03/01/2019 | $57.69 | $11.57 | $15.76 | $0.00 | $85.02 |
|                                     | 09/01/2019 | $59.19 | $11.57 | $15.76 | $0.00 | $86.52 |
|                                     | 03/01/2020 | $60.69 | $11.57 | $15.76 | $0.00 | $88.02 |
|                                     | 09/01/2020 | $62.19 | $11.57 | $15.76 | $0.00 | $89.52 |
|                                     | 03/01/2021 | $63.69 | $11.57 | $15.76 | $0.00 | $91.02 |

For apprentice rates see "Apprentice- PLUMBER PIPEFITTER" or "PLUMBER/GASFITTER"

| Outside Electrical - East            |           |         |        |        |              |            |
| CABLE TECHNICIAN (Power Zone)        | 09/03/2017| $27.14  | $7.75  | $1.81  | $0.00        | $36.70     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| CABLEMAN (Underground Ducts & Cables)| 09/03/2017| $38.45  | $7.75  | $9.53  | $0.00        | $55.73     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| DRIVER / GROUNDMAN CDL              | 09/03/2017| $31.66  | $7.75  | $9.44  | $0.00        | $48.85     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| DRIVER / GROUNDMAN -Inexperienced (<2000 Hrs.) | 09/03/2017| $24.88  | $7.75  | $1.75  | $0.00        | $34.38     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| EQUIPMENT OPERATOR (Class A CDL)    | 09/03/2017| $38.45  | $7.75  | $13.61 | $0.00        | $59.81     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| EQUIPMENT OPERATOR (Class B CDL)    | 09/03/2017| $33.92  | $7.75  | $10.21 | $0.00        | $51.88     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| GROUNDMAN                          | 09/03/2017| $24.88  | $7.75  | $1.75  | $0.00        | $34.38     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| GROUNDMAN -Inexperienced (<2000 Hrs.) | 09/03/2017| $20.35  | $7.75  | $1.61  | $0.00        | $29.71     |
| OUTSIDE ELECTRICAL WORKERS - EAST LOCAL 104 | For apprentice rates see "Apprentice- LINEMAN"
| JOURNEYMAN LINEMAN                 | 09/03/2017| $45.23  | $7.75  | $16.61 | $0.00        | $69.59     |

| Issue Date: | 04/10/2018 | Wage Request Number: | 20180410-097 | Page 34 of 35 |
### Apprentice - LINEMAN (Outside Electrical) - East Local 104

**Effective Date:** 09/03/2017

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### Notes:

- Apprentice to Journeyworker Ratio: 1:2

### Additional Apprentice Information:

Minimum wage rates for apprentices employed on public works projects are listed above as a percentage of the pre-determined hourly wage rate established by the Commissioner under the provisions of the M.G.L. c. 149, ss. 26-27D. Apprentice ratios are established by the Division of Apprenticeship Training pursuant to M.G.L. c. 23, ss. 11E-11L.

All apprentices must be registered with the Division of Apprenticeship Training in accordance with M.G.L. c. 23, ss. 11E-11L.

All steps are six months (1000 hours.)

Ratios are expressed in allowable number of apprentices to journeymen or fraction thereof, unless otherwise specified.

** Multiple ratios are listed in the comment field.

*** APP to JM; 1:1, 1:2, 2:2, 3:3, 4:4, 5:5, 7:7, 7:6, 5:6, 6:6, 7:7, 7:6, 8:8, 7:7, 8:8, 9:9, 10:10, etc.

**** APP to JM; 1:1, 1:2, 2:2, 3:3, 5:5, 7:7, 8:8, 9:9, 10:10, etc.
NOTICE OF AWARD

TO: ________________________________  
______________________________  
______________________________  

PROJECT TITLE: ___________________________________________________________

The Town has considered the Bid submitted by you for the above described work in response to its Advertisements for Bids and Information for Bidders. You are hereby notified that your Bid in the amount $ _________________ has been accepted, provided you furnish the Town with the required Certificates, Affidavits, Contractor's Performance and Payments Bonds and Certificate of Insurance within ten (10) days receipt of this notice to execute the Agreement. In case of failure to execute said Agreement and to furnish said bonds and documents as stipulated in the Bid Documents within ten (10) days from the date of receipt of this Notice, the Town will be entitled to consider all your rights arising out of the Town’s acceptance of your Bid as abandoned and as a forfeiture of your bid bond. The Town will also be entitled to such other rights as may be granted by law. You are required to return an acknowledged copy of the Notice of Award to the Town.

Dated this the _____ day of _________________, 2018.

BY:  
_______________________________________  
Procurement Officer

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged by:

_______________________________________  
(Company Name)

Signature: ________________________________  Date: ________________________________

Print Name: ________________________________  Title: ________________________________
OWNER-CONTRACTOR AGREEMENT
by and between
The Town of Boxborough
and

____________________________________________________________________________________________

THIS AGREEMENT made this_______day of_______in the year 2018, between__________ with a usual place of business at____________________, hereinafter called the CONTRACTOR, and the Town of Boxborough, a municipal corporation duly organized and existing under the laws of the Commonwealth of Massachusetts, acting by and through its Town Administrator, on behalf of Board of Selectmen with a usual place of business at 29 Middle Road, Boxborough, MA 01719, hereinafter called the OWNER.

The CONTRACTOR and the OWNER, for the consideration hereinafter named, agree as follows:

1. Scope of Work

The Contractor shall furnish all labor, services, materials, equipment, machinery, apparatus, appliances, tools and supplies necessary to perform all work required for the completion of each item of the Work specified in the IFB for the Phase I Exterior Repairs and Stabilization of Levi Wetherbee Farmhouse, 484 Middle Road. The said Documents, Specifications, Drawings and any GENERAL SUPPLEMENTARY CONDITIONS are incorporated herein by reference and are made a part of this Agreement.

2. Contract Price

The Owner shall pay the Contractor for the performance of this Agreement, subject to additions and deductions provided herein, in current funds, the sum of ________________________________.

3. Commencement and Completion of Work and Liquidated Damages

It is agreed that time is of the essence of this Agreement. The Contractor shall commence and prosecute the work under this Agreement upon execution hereof and shall complete the work on or before August 1, 2018, unless mutually agreed to extend. A time extension may be granted due to permitting delays, access to town buildings or other situations not in control of the Contractor.

A. Definition of Term: The Term "Substantial completion" shall mean the date certified by the Owner when construction is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the project, or designated portion(s) thereof, for the use for which it is intended.

B. Time as Essential Condition: It is understood and agreed that the commencement of and substantial completion of the work are essential conditions of this Agreement. It is further agreed that time is of the essence for each and every portion of the Contract Documents wherein a definite and certain length of time is fixed for the performance of any act whatsoever; and where under the Contract Documents any additional time is allowed for the completion of any work, the new time fixed by such extension shall be of the essence of this Agreement. It is understood and agreed that the times for the completion of the work are reasonable, taking into consideration the average climatic range and usual industrial conditions prevailing in this locality.

C. Progress and Completion: Contractor shall commence work promptly upon execution of this Agreement and shall prosecute and complete the work regularly, diligently and uninterruptedly at such a rate of
progress as will insure Substantial Completion within the stipulated number of calendar days.

D. Liquidated Damages: It is expressly agreed between the Contractor and the Owner that the Contractor will be responsible for all damages which may arise due to the Contractor's failure to substantially complete the work within the above specified time. If the Contractor shall neglect, fail or refuse to complete the work within the specified number of days, or any extension thereof authorized by the Owner, Contractor agrees, as a part of the consideration for the execution of this Contract by the Owner, to pay the Owner the amount specified herein, not as a penalty, but as liquidated damages for such breach of contract as hereinafter set forth, for each and every calendar day, excluding Saturdays, Sundays and legal Holidays, that the Contractor shall be in default of Substantial completion after the date specified in the Agreement. Due to the impracticability and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, said amount is agreed to be the amount of damages which the Owner would sustain, and said amount shall be retained from time to time by the Owner from current periodic estimates. The amount of liquidated damages shall be $1000 per day.

4. Performance of the Work

A. Direction of the Work: The Contractor shall supervise and direct the Work, using his best skills and attention which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty and location. The Contractor shall maintain adequate supervisory personnel at the project site during the performance of the Work. He shall be solely responsible for all construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Agreement.

B. Responsibility for the Work:
   (1) The Contractor shall be responsible to the Owner for the acts and omissions of his employees, Subcontractors and their agents and employees, and other persons performing any of the Work under a contract with the Contractor. This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the work.

   (2) The Contractor shall not be relieved from his obligations to perform the Work in accordance with the Contract Documents either by the activities or duties of the Owner in its administration of the Agreement, or by inspections, tests or approvals required or performed by persons other than the Contractor.

C. Notices, Compliance with Laws:
   (1) The Contractor shall give all notices and comply with all federal, state and local laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the performance of the Work. The Contractor shall provide the Owner with reproductions of all permits, licenses and receipts for any fees paid. The Owner represents that it has disclosed to the Contractor all orders and requirements known to the Owner of any public authority particular to this Agreement.

   (2) If the Contractor observes that any of the Contract Documents are at variance with applicable laws, statutes, codes and regulations in any respect, he shall promptly notify the Owner in writing, and any necessary changes shall be accomplished by appropriate modification.

   (3) If the Contractor performs any Work which he knows or should know is contrary to such laws, ordinances, rules and regulations, and without such notice to the Owner, he shall assume full responsibility therefore and shall bear all costs attributable thereto.
(4) In the performance of the Work, the Contractor shall comply with all applicable federal, state and local laws and regulations including those relating to workplace and employee safety. The Contractor shall notify the Owner immediately of any conditions at the place of the work which violate said laws and regulations and shall take prompt action to correct and eliminate any such violations.

(5) Conflict of Interest: Contractor agrees that, to the extent that such law is applicable to the duties Contractor is to perform hereunder, Contractor shall comply with the provisions of Chapter 268A of the General Laws concerning conflict of interest and that Contractor presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the services required to be performed under this agreement.

D. Project Superintendent: The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site at all times during the progress of the Work. The superintendent shall represent the Contractor and all communications given to the superintendent shall be as binding as if given to the Contractor. Important communications shall be confirmed in writing. Other communications shall be so confirmed on written request in each case.

E. Progress Schedule: The Contractor, immediately after being awarded the Contract, shall prepare and submit for the Owner's information an estimated progress schedule for the Work. The progress schedule shall be related to the entire Project to the extent required by the Contract Documents, and shall provide for expeditious and practicable execution of the Work.

F. Drawings, Specifications and Submittals (as applicable):
   (1) The Contractor shall maintain at the site for the Owner one record copy of all Drawings, Specifications, Addenda, Change Orders and other Modifications, and "As-Built" Drawings and Specifications in good order and marked currently to record all changes made during construction, and approved Shop Drawings, Product Data and Samples. These shall be delivered to the Owner upon completion of the Work.

   (2) By approving and submitting Shop Drawings, Product Data and Samples, the Contractor represents that he has determined and verified all materials, field measurements, and field construction criteria related thereto, or will do so, and that he has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

   (3) The Contractor shall not be relieved of responsibility for any deviation from the requirements of the Contract Documents by the Owner's approval of Shop Drawings, Product Data or Samples unless the Contractor has specifically informed the Owner in writing of such deviation at the time of submission and the Owner has given written approval to the specific deviation. The Contractor shall not be relieved from responsibility for errors or omissions in the Shop Drawings, Product Data or Samples by the Owner's approval thereof.

   (4) The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data or Samples, to revisions other than those requested by the Owner on previous submittals.

   (5) No portion of the Work requiring submission of a Shop Drawing, Product Data or Sample shall be commenced until the submittal has been approved by the Owner. All such portions of the Work shall be in accordance with approved submittals.

G. Protection of the Work and Owner's Property: The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Agreement. He shall at all times safely guard and protect his own work, and that of adjacent property from damage. The Contractor shall replace or make good any such damage, loss or injury. The Contractor shall clean the work area and restore it to its
original condition upon completion of the work.

H. Quality of the Work: The Contractor shall perform the work in a good, workmanlike manner. The Contractor hereby guarantees that the entire work constructed by him under the Agreement will meet fully all requirements thereof as to quality of workmanship and materials. The Contractor hereby agrees to make at his own expense any repairs or replacements made necessary by defects in materials or workmanship supplied to him that become evident within three (3) years after the date of final acceptance, and to restore to full compliance with the requirements set forth herein any part of the work constructed hereunder, which during said three (3) year period is found to be deficient with respect to any provisions of the Contract Documents. The Contractor also agrees to hold the Owner harmless from claims of any kind arising from damage due to said defects. The Contractor shall make all repairs and replacements promptly upon receipt of written orders for same from the Owner. If the Contractor fails to make the repairs and replacements promptly, the Owner may do the work and the Contractor shall be liable to the Owner for the cost thereof.

J. Warranty: The Contractor guarantees to Owner that all materials incorporated into the work will be new unless otherwise specified or agreed. Prior to final payment, the Contractor shall deliver to the Owner all manufacturers’ warranties, together with such endorsements or assignments as are necessary to ensure to the Owner the full rights and benefits of such warranties.

K. Payment and Performance Bonds: The Contractor shall post a payment bond, in the amount of 100% of the contract price. This payment bond shall be in the form of surety issued by an insurance company licensed by the State Division of Insurance. This payment bond is mandatory on all construction projects for all political subdivisions and ensures payment of all workers and vendors used for the contract.

Simultaneously with the delivery of the executed contract, the Contractor shall also be required to post a performance bond in an amount acceptable to the Owner as security for the faithful performance of this Contract.

5. Affirmative Action/Equal Employment Opportunity

The Contractor is directed to comply with all applicable State Laws, Ordinances, Bylaws, and rules and regulations regarding affirmative action/equal employment opportunity requirements. Failure of the Contractor to comply with any such law, rule or regulation shall constitute grounds for the Owner to terminate the Agreement.

6. Site Information Not Guaranteed; Contractor's Investigation

All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the information and convenience of the Contractor and is not guaranteed. It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents.

Contractor has familiarized himself with the nature and extent of the Contract Documents, work, locality, and with all local conditions and federal, state, and local laws, rules, ordinances, and regulations that in any manner
may affect costs, progress, or performance of the work. Contractor has made, or has caused to be made, examinations, investigations, and tests and studies of such reports and related data in addition to those referred to in the paragraph above as he deems necessary for the performance of the work at the Contract Price, within the Contract Time, and in accordance with the other Terms and Conditions of the Contract Documents; and no additional examinations, tests, investigations, reports, and similar data are or will be required by the Contractor for such purposes.

Contractor has correlated the results of all such observations, examinations, investigations, tests, reports, and data with the Contract Documents. Contractor has given the Owner written notice of all conflicts, errors, or discrepancies that he has discovered in the Contract Documents, and the resolution thereof by the Owner is acceptable to the Contractor.

It is further agreed and understood that the Contractor shall not use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner, arising from or by reason of any variance which may exist between the information made available and the actual subsurface conditions or other conditions or structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

7. Project Architect or Engineer

There is a project architect-engineer for this project who is CBI Consulting, LLC. Except as otherwise indicated in the Contract Documents, the Architect/Engineer shall be a representative of the Owner and the Contractor shall direct all communications, questions and comments on the work and the performance thereof to the Architect/Engineer. Except as otherwise provided, the Architect/Engineer shall have all the authority of the Owner set forth in the Contract Documents. In general, the Architect/Engineer shall have the authority to review the performance of the work, reject work which is defective or otherwise does not comply with the Contract Documents and to order the Contractor to remedy defective work and take such actions which are necessary to make the work conform to the Contract Documents.

8. Wage Rates

Prevailing Wage Rates as determined by the Commissioner of the Department of Labor and Workforce Development under the provisions of Massachusetts General Laws, Chapter 149, Section 26 to 27G, as amended, apply to this project. It is the responsibility of the Contractor to provide the Town with certified payrolls and to comply with all requirements of the above-cited statutes.

The schedules of prevailing wage rates are included in the Contract Documents.

9. Payments to the Contractor

A. The Owner will make payment to the Contractor in accordance with the provisions of Sections 39F and 39G of Chapter 30 of the General Laws of the Commonwealth of Massachusetts. The Contractor shall submit requisitions for payment as required by said provisions and the directions of the Owner. The Owner will remit payment within 30 days of receipt of invoice.

B. The Contractor's applications for payment shall be subject to approval by the Inspector of Buildings.

C. Changes in the Work: No changes in the work covered by the approved Contract Documents shall be made without prior written approval of the Owner. Charges or credits for the work covered by the approved change shall be determined by one or more, or a combination of the following methods:

(a) Unit bid prices previously approved.
(b) An agreed lump sum.

(c) The actual cost of:

(1) Labor.

(2) Materials entering permanently into the work.

(3) The ownership or rental cost of construction equipment during the time of use on the extra work.

(4) Power and consumable supplies for the operation of power and equipment.

(5) Wages to be paid.

To the cost under (c) there shall be added a fixed fee to be agreed upon but not to exceed fifteen percent (15%) of the actual cost of work. The fee shall be compensation to cover the cost of supervision, overhead, bonds, profit and any other general expenses.

D. Claims for Additional Costs: If the Contractor wishes to make a claim for an increase in the Contract Sum, he shall give the Owner written notice thereof within twenty days after the occurrence of the event giving rise to such claim. This notice shall be given by the Contractor before proceeding to execute the Work, except in an emergency endangering life or property. No such claim shall be valid unless so made. Any change in the Contract Sum resulting from such claim shall be authorized by Change Order.

10. Final Payment, Effect

The acceptance of final payment by the Contractor shall constitute a waiver of all claims by the Contractor arising under the Agreement.

11. Contract Documents

The Contract Documents consist of the following, together with this Agreement:

- Invitation to Bid
- Instructions to Bidders
- Plans/Drawings
- This Contract
- Form Bid Form
- Performance Bond
- Labor & Materials Payment Bond
- Certifications Required by Law (Tax Compliance, Non-Collusion, Public Contractor Debarment, OSHA Training, Labor Harmony Certification)
- Clerk's Certificate of Corporate Vote
- Certificate of Insurance
- General Conditions
- General Requirements
- Scope of Work
- Additional Terms and Conditions
- Schedule of Prevailing Wages
12. **Terms Required By Law**

This Agreement shall be considered to include all terms required to be included in it by the Massachusetts General Laws, and all other laws, applicable to the work required under this Agreement as though such terms were set forth in full herein.

13. **Indemnification**

The Contractor shall indemnify and hold harmless the Owner from and against any and all claims, damages, losses, and expenses, including attorney's fees, arising out of the performance of this Agreement when such claims, damages, losses, and expenses are caused, in whole or in part, by the acts, errors, or omissions of the Contractor or his employees, agents, subcontractors or representatives.

14. **Insurance**

The Contractor shall purchase and maintain such insurance as will protect both the Owner and the Contractor from claims which may arise under the Agreement, including operations performed for the named insured by independent contractors and general inspection thereof by the named insured. In addition, the Contractor shall require its subcontractors to maintain such insurance. Coverage shall be provided for:

1. claims under workers' or workmens' compensation, disability benefit and other applicable employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;

4. claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as a result of an offense directly or indirectly related to the employment of such person by the Contractor, or (2) by any other person;

5. claims for damages, including damages to the Work itself, because of injury to or destruction of tangible property, including loss of use resulting therefrom;

6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle; and

7. claims involving contractual liability applicable to the Contractor's obligations under Article 13.

The limits of liability for coverage required under the preceding paragraph shall be as required by the Owner.

Except for Workmen's Compensation, all liability coverage shall name the Town of Boxborough as an additional insured and shall provide for 30 days prior written notice to the Town of any modification or termination of coverage provided thereby. The Contractor shall provide the Owner with appropriate certificate(s) of insurance evidencing compliance with this provision prior to the commencement of any work under this Agreement.
15. Independent Contractor

Nothing herein contained shall be construed as creating the relationship of employer and employee or principal and agent between the Town and Contractor. Contractor shall not have any authority to represent, commit or bind the Town to any other person, firm, association or corporation or to submit proposals or make any representation on behalf of the Town without the express prior authorization of the Town Administrator.

16. Notice

All notices required to be given hereunder shall be in writing and delivered to, or mailed first class to, the parties' respective addresses stated above. In the event that immediate notice is required, it may be given by telephone or facsimile, but shall, to the extent possible, be followed by notice in writing in the manner set forth above.

17. Termination

A. Each party shall have the right to terminate this Agreement in the event of a failure of the other party to comply with the terms of the Agreement. Such termination shall be effective upon seven days’ notice to the party in default and the failure within that time of said party to cure its default.

B. The Owner shall have the right to terminate the Agreement without cause, upon ten (10) days’ written notice to the Contractor. In the event that the Agreement is terminated pursuant to this subparagraph, the Contractor shall be reimbursed in accordance with the Contract Documents for all Work performed up to the termination date, and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. Payment for material or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to Owner to establish the Owner's title to such material or equipment or otherwise protect the Owner's interests.

18. Miscellaneous

A. Royalties and Patents: The Contractor shall pay all royalties and license fees. He shall defend all suits or claims for infringement of any patent rights and shall save the Owner harmless from loss on account thereof, except that the Owner shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified; but if the Contractor believes or has reason to believe that the design, process or product specified is an infringement of a patent, he shall be responsible for such loss unless he promptly gives such information to the Owner, and thereafter the Owner insists on the use of the design, process or products specified.

B. Assignment: The Contractor shall not assign or transfer any of its rights, duties or obligations under this Agreement without the written approval of the Owner.

C. Governing Law: This Agreement shall be governed by and construed in accordance with the law of the Commonwealth of Massachusetts.

D. Enforceability: In the event any provision of this Agreement is found to be legally unenforceable, such unenforceability shall not prevent the enforcement of any other provision of this Agreement, all of which shall remain in full force and effect as though the unenforceable provision had never appeared herein. No waiver by either the Town or Consultant of a breach hereof or a default hereunder shall be deemed a waiver by such party of a subsequent breach or default of like or similar nature. If, moreover, any one or more of the provisions of this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity of subject, it shall be construed by limiting or reducing it so as to be enforceable to the extent compatible with applicable law.
E. By its signature hereon, the Contractor certifies, under the pains and penalties of perjury, that it has complied with all laws of the Commonwealth of Massachusetts relating to taxes, reporting of employees and contractors, and withholding and remitting child support.
IN WITNESS WHEREOF, the parties hereto have set their hands and seals, the Owner by its authorized representatives who, however, incur no personal liability by reason of the execution hereof or of anything herein contained, as of the day and year first above written.

CONTRACTOR:  
By its

OWNER:  
Town of Boxborough  
By its Town Administrator/Chief Procurement Officer

__________________________________________________________
Selina S. Shaw

In accordance with M.G.L. C.44, Section 31C, this is to certify that an appropriation in the amount of this contract is available therefore and that the Town Administrator has been authorized to execute the contract and approve all requisitions and change orders.

By: Jennifer Barrett, Town Accountant
CERTIFICATE OF VOTE
(to be filed if Contractor is a Corporation)

I, __, hereby certify that I am the duly qualified (Secretary of the Corporation) and acting Secretary of __________________________ and I further certify that a meeting of the Directors of said Company, duly called and held on __________________________, at which (Date of Meeting) all Directors were present and voting, the following vote was unanimously passed:

VOTED: To authorize and empower

________________________________________

________________________________________

________________________________________

________________________________________

________________________________________

Anyone acting singly, to execute Forms of General Bid, Contracts or Bonds on behalf of the Corporation.

I further certify that the above vote is still in effect and has not been changed or modified in any respect.

By: __________________________
(Secretary of Corporation)

A True Copy:

Attest: __________________________
(Notary Public)

My Commission Expires: __________________________
(Date)
SECTION 00 55 00  BID ACCEPTANCE FORM - NOTICE TO PROCEED

A. Acceptance

1. The foregoing proposal of Levi Wetherbee Farmhouse Exterior Renovation dated _____________ in the amount of _____________ Dollars ($___________)

is hereby accepted as of _________________________.

B. Order to Proceed

1. The Proceed date is established as _______________________.

By: _______________________________

for the Town of Boxborough

Attest:

_______________________________
PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: That we _________________

(Name of Contractor)
a hereinafter called “Principal” and (Corporation, Partnership, Joint Venture or Individual)

________________________ of ____________ , State of ______________

(Surety) (City & State)

________________________ hereinafter called the “Surety” and licensed by the State Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the City/Town of ________________, Massachusetts, hereinafter called "Owner", in the penal sum of

Dollars ($_____________) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with the Owner, dated the ______ day of ________________, 20____ (the “Construction Contract”), for the construction described as follows: ________________.

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of the Construction Contract during the original term thereof, and any extensions thereof which may be granted by the Owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under the Construction Contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the Surety’s obligation under this Bond shall arise after (1) the Owner has declared the Principal in default of the Construction Contract or any provision thereof or (2) has declared that the Principal has failed, or is otherwise unable or unwilling, to execute the work consistent with, and in conformance to, the Construction Contract (collectively referred to as a “Contractor Default”). The determination of a Contractor Default shall be made solely by the Owner. The Owner need not terminate the Construction Contract to declare a Contractor Default or to invoke its rights under this Bond.

When the Surety’s obligation under this Bond arises, the Surety, at its sole expense and at the consent and election of the Owner, shall promptly take one of the following steps: (1) arrange for the Principal to perform and complete the work of the Construction Contract; (2) arrange for a contractor other than the Principal to perform and complete the work of the Construction Contract; (3) reimburse the Owner, in a manner and at such time as the Owner shall decide, for all costs and expenses incurred by the Owner in performing and completing the work of the Construction Contract. Surety will keep Owner reasonably informed of the progress, status and results of any investigation of any claim of the Owner.

If the Surety does not proceed as provided in this Bond with due diligence and all deliberate speed, the Surety shall be deemed to be in default of this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner.
After the Surety’s obligation under this Bond arises, the Surety is obligated, to the limit of the amounts of this Bond, for (1) the correction of defective work and completion of the Construction Contract; (2) additional design, professional services, and legal costs, including attorneys’ fees, resulting from the Contractor Default or from the default of the Surety under this Bond; (3) any additional work beyond the Construction Contract made necessary by the Contractor Default or default of the Surety under this Bond; (4) indemnification obligation of the Principal, if any, as provided in the Construction Contract; and (5) liquidated damages as provided in the Construction Contract, or if none are so specified, actual and foreseeable consequential damages resulting from the Contractor Default or default of the Surety under this Bond.

Any proceeding, legal or equitable, under this Bond shall be instituted in any court of competent jurisdiction in the Commonwealth of Massachusetts.

The Surety, for value received, hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the Construction Contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this Bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the Construction Contract or to the work or to the specifications.
IN WITNESS WHEREOF, this instrument is executed in_____( ) counterparts, each one of which shall be deemed an original, this the_________day of______________________, 20___.

ATTEST:

__________________________________________
Principal

By ________________________________
(Principal Secretary)

__________________________________________
(Address-Zip Code)

Witness as to Principal

__________________________________________
(Address-Zip Code)

ATTEST:

__________________________________________
Surety

By ________________________________

(Address-Zip Code)

Witness as to Surety

__________________________________________
(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.
PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we ______________

________________________ a ______ __________________________
(Name of Contractor) (Corporation, Partnership, Joint Venture or Individual)
hereinafter called "Principal" and __________________________ of __________________.

(Surety)
State of ______________________ hereinafter called the “Surety” and licensed by the State
(City and State)

Division of Insurance to do business under the laws of the Commonwealth of Massachusetts, are held and firmly bound to the City/Town of ________________, Massachusetts, hereinafter called "Owner", in the penal sum of ______________________ Dollars ($__________________) in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators and successors, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that Whereas, the Principal entered into a certain contract with the Owner, dated the ________________ day of ________________, 20___, for the construction described as follows:

NOW, THEREFORE, if the Principal shall promptly make payment to all persons, firms, subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment and tools, consumed or used in connection with the construction of such work, and all insurance premiums on said work, and for all labor, performed in such work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder or the specifications accompanying the same shall in any way affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of this contract or to the work or to the specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.
IN WITNESS WHEREOF, this instrument is executed in ___ ( ) counterparts, each one of which shall be deemed an original, this the _______ day of __________________, 20___.

ATTEST:

__________________________________________

(Seal)

Witness as to Surety

__________________________________________

(Address-Zip Code)

NOTE: Date of Bond must not be prior to date of Contract. If Contractor is a Partnership, all partners should execute Bond.
Application and Certificate for Payment

TO OWNER: PROJECT:
FROM CONTRACTOR: VIA ARCHITECT:

CONTRACTOR'S APPLICATION FOR PAYMENT
Application is made for payment, as shown below, in connection with the Contract. Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM $ 0.00
2. Net change by Change Orders $ 0.00
3. CONTRACT SUM TO DATE (Line 1 + 2) $ 0.00
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) $ 0.00

5. RETAINAGE:
   a. 0 % of Completed Work (Column D + E on G703) $ 0.00
   b. 0 % of Stored Material (Column F on G703) $ 0.00
   Total Retainage (Lines 5a + 5b or Total in Column I of G703) $ 0.00

6. TOTAL EARNED LESS RETAINAGE (Line 4 Less Line 5 Total) $ 0.00
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT (Line 6 from prior Certificate) $ 0.00
8. CURRENT PAYMENT DUE $ 0.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE (Line 3 less Line 6) $ 0.00

CHANGE ORDER SUMMARY

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<thead>
<tr>
<th>Change Order Summary</th>
<th>Additions</th>
<th>Deductions</th>
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</tr>
<tr>
<td>TOTALS</td>
<td>$ 0.00</td>
<td>$ 0.00</td>
</tr>
</tbody>
</table>

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:
By: ____________________________ Date: __________
State of: ________________________
County of: ________________________
Subscribed and sworn to before me this day of ________________________
Notary Public:
My Commission expires: ________________________

ARCHITECT'S CERTIFICATE FOR PAYMENT
In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED $ 0.00
(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:
By: ____________________________ Date: __________

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.
Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor’s signed certification is attached.

In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

<table>
<thead>
<tr>
<th>ITEM NO.</th>
<th>DESCRIPTION OF WORK</th>
<th>SCHEDULED VALUE</th>
<th>WORK COMPLETED FROM PREVIOUS APPLICATION (D+E)</th>
<th>THIS PERIOD</th>
<th>MATERIALS PRESENTLY STORED (NOT IN D OR E)</th>
<th>TOTAL COMPLETED AND STORED TO DATE (D+E+F)</th>
<th>% (G ÷ C)</th>
<th>BALANCE TO FINISH (C - G)</th>
<th>RETAINAGE (IF VARIABLE RATE)</th>
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<tr>
<td>GRAND TOTAL</td>
<td>$ 0.00</td>
<td>$ 0.00</td>
<td>$ 0.00</td>
<td>$ 0.00</td>
<td>$ 0.00</td>
<td>0.00 %</td>
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</tbody>
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User Notes: 4144838199
AIA Document G715™ – 2017

Supplemental Attachment for ACORD Certificate of Insurance 25

PROJECT: (name and address)  

CONTRACT INFORMATION:  
Contract For:  
Date:  

CERTIFICATE INFORMATION:  
Producer:  
Insured:  
Date:  

OWNER: (name and address)  

ARCHITECT: (name and address)  

CONTRACTOR: (name and address)  

A. General Liability

1. Does this policy include coverage for:
   a Damages because of bodily injury, sickness, or disease, including occupational sickness or disease, and death of any person?  
   b Personal injury and advertising injury?  
   c Damages because of physical damage to or destruction of tangible property, including the loss of use of such property?  
   d Bodily injury or property damage arising out of completed operations?  
   e The Contractor’s indemnity obligations included in the Contract Documents?  

2. Does this policy contain an exclusion or restriction of coverage for:
   a Claims by one insured against another insured, where the exclusion or restrictions is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim?  
   b Claims for property damage to the Contractor’s Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor?  
   c Claims for bodily injury other than to employees of the insured?  
   d Claims for the Contractor’s indemnity obligations included in the Contract Documents arising out of injury to employees of the insured?  
   e Claims for loss excluded under a prior work endorsement or other similar exclusionary language?  
   f Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language?  
   g Claims related to residential, multi-family, or other habitational projects?  
   h Claims related to roofing?  
   i Claims related to exterior insulation finish systems, synthetic stucco, or similar exterior coatings or surfaces?  
   j Claims related to earth subsistence or movement?  
   k Claims related to explosion, collapse, and underground hazards?  

B. Other Insurance Coverage

1. Indicate whether the Contractor has the following insurance coverages and, if so, indicate the coverage limits for each.
   a Professional liability insurance Coverage limits:
   b Pollution liability insurance Coverage limits:
   c Insurance for maritime liability risks associated with the operation of a vessel Coverage limits:

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User Notes:
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>d</td>
<td>Insurance for the use or operation of manned or unmanned aircraft</td>
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<td>Coverage limits:</td>
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<td>e</td>
<td>Property insurance</td>
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<td></td>
<td>Coverage limits:</td>
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<td>f</td>
<td>Railroad protective liability insurance</td>
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<td></td>
<td>Coverage limits:</td>
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<tr>
<td>g</td>
<td>Asbestos abatement liability insurance</td>
</tr>
<tr>
<td></td>
<td>Coverage limits:</td>
</tr>
<tr>
<td>h</td>
<td>Insurance for physical damage to property while it is in storage and in</td>
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<tr>
<td></td>
<td>transit to the construction site</td>
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<tr>
<td></td>
<td>Coverage limits:</td>
</tr>
<tr>
<td>i</td>
<td>Other:</td>
</tr>
</tbody>
</table>

(Authorized Representative)

(Date of Issue)
# Change Order

**PROJECT:** (Name and address)  
**OWNER:** (Name and address)  
**ARCHITECT:** (Name and address)  
**CONTRACTOR:** (Name and address)

**CONTRACT INFORMATION:**  
Contract For: General Construction  
Date:  
**CHANGE ORDER INFORMATION:**  
Change Order Number: 001  
Date:

---

**THE CONTRACT IS CHANGED AS FOLLOWS:**  
(Insert a detailed description of the change and, if applicable, attach or reference specific exhibits. Also include agreed upon adjustments attributable to executed Construction Change Directives.)

The original Contract Sum was $0.00
The net change by previously authorized Change Orders $0.00
The Contract Sum prior to this Change Order was $0.00
The Contract Sum will be increased by this Change Order in the amount of $0.00
The new Contract Sum including this Change Order will be $0.00
The Contract Time will be increased by Zero (0) days.
The new date of Substantial Completion will be

**NOTE:** This Change Order does not include adjustments to the Contract Sum or Guaranteed Maximum Price, or the Contract Time, that have been authorized by Construction Change Directive until the cost and time have been agreed upon by both the Owner and Contractor, in which case a Change Order is executed to supersede the Construction Change Directive.

**NOT VALID UNTIL SIGNED BY THE ARCHITECT, CONTRACTOR AND OWNER.**

**ARCHITECT**  
**CONTRACTOR**  
**OWNER**

**SIGNATURE**  
**SIGNATURE**  
**SIGNATURE**

**PRINTED NAME AND TITLE**  
**PRINTED NAME AND TITLE**  
**PRINTED NAME AND TITLE**

**DATE**  
**DATE**  
**DATE**

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# Certificate of Substantial Completion

<table>
<thead>
<tr>
<th>PROJECT: (name and address)</th>
<th>CONTRACT INFORMATION:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Contract For:</td>
</tr>
<tr>
<td></td>
<td>Date:</td>
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</table>

<table>
<thead>
<tr>
<th>OWNER: (name and address)</th>
<th>ARCHITECT: (name and address)</th>
<th>CONTRACTOR: (name and address)</th>
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</thead>
<tbody>
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The Work identified below has been reviewed and found, to the Architect's best knowledge, information, and belief, to be substantially complete. Substantial Completion is the stage in the progress of the Work when the Work or designated portion is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use. The date of Substantial Completion of the Project or portion designated below is the date established by this Certificate.

(Identify the Work, or portion thereof, that is substantially complete.)

<table>
<thead>
<tr>
<th>ARCHITECT (Firm Name)</th>
<th>SIGNATURE</th>
<th>PRINTED NAME AND TITLE</th>
<th>DATE OF SUBSTANTIAL COMPLETION</th>
</tr>
</thead>
<tbody>
<tr>
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</table>

**WARRANTIES**

The date of Substantial Completion of the Project or portion designated above is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below:

(Identify warranties that do not commence on the date of Substantial Completion, if any, and indicate their date of commencement.)

**WORK TO BE COMPLETED OR CORRECTED**

A list of items to be completed or corrected is attached hereto, or transmitted as agreed upon by the parties, and identified as follows:

(Identify the list of Work to be completed or corrected.)

The failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Unless otherwise agreed to in writing, the date of commencement of warranties for items on the attached list will be the date of issuance of the final Certificate of Payment or the date of final payment, whichever occurs first. The Contractor will complete or correct the Work on the list of items attached hereto within (_____) days from the above date of Substantial Completion.

Cost estimate of Work to be completed or corrected: $

The responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work, insurance, and other items identified below shall be as follows:

(Note: Owner's and Contractor's legal and insurance counsel should review insurance requirements and coverage.)

The Owner and Contractor hereby accept the responsibilities assigned to them in this Certificate of Substantial Completion:

<table>
<thead>
<tr>
<th>CONTRACTOR (Firm Name)</th>
<th>SIGNATURE</th>
<th>PRINTED NAME AND TITLE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
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</table>

<table>
<thead>
<tr>
<th>OWNER (Firm Name)</th>
<th>SIGNATURE</th>
<th>PRINTED NAME AND TITLE</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>
SECTION 00 66 00    GENERAL RELEASE AND WAIVER OF LIEN – GENERAL CONTRACTOR

NAME: ____________________________

(Contractor)

ADDRESS: __________________________

____________________________

To: Town of Boxborough          Date: ____________

Selina Shaw, Town Administrator
Boxborough Town Offices
29 Middle Road
Boxborough, Massachusetts 01879

Project: Levi Wetherbee Farmhouse Stabilization
         Boxborough, Massachusetts

We, the undersigned, in consideration of payments made to us, hereby waive and release all actions, debts, claims, and demands against _____ (General Contractor) and the Town of Boxborough, on account of all work, services, equipment, and materials performed or furnished by us in connection with the construction of a building, improvements, and facilities on real property owned by The Town of Boxborough at the Levi Wetherbee Farmhouse and in connection with the renovations of the building, or pursuant to our contract, dated ________________ made with the Town of Boxborough, and amendments and change orders thereto; and

We hereby waive and release any mechanics’, materialman's, or like lien, and all rights to file any such lien in the future, against said real property on account of said work, services, equipment and materials performed or furnished by us.

Date: ______________________________

By: ________________________________

Title: ________________________________

(Seal)
General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

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14 TERMINATION OR SUSPENSION OF THE CONTRACT
15 CLAIMS AND DISPUTES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An Additions and Deletions Report that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.
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ARTICLE 1  GENERAL PROVISIONS
§ 1.1 Basic Definitions
§ 1.1.1 The Contract Documents
The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor’s bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract
The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect’s consultants, (2) between theOwner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect’s consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect’s duties.

§ 1.1.3 The Work
The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project
The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings
The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications
The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service
Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect’s consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker
The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.2 Correlation and Intent of the Contract Documents
§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.
§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization
Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation
In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service
§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice
§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission
The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance
Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document
G202™-2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party’s sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner’s approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner’s authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic’s lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner’s interest therein.

§ 2.2 Evidence of the Owner’s Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner’s obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner’s ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor’s request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor’s reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days’ notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.
§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner’s control and relevant to the Contractor’s performance of the Work with reasonable promptness after receiving the Contractor’s written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner’s Right to Stop the Work
If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner’s Right to Carry Out the Work
If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner’s expenses and compensation for the Architect’s additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR
§ 3.1 General
§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term “Contractor” means the Contractor or the Contractor’s authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect’s administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor
§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.
§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor’s review is made in the Contractor’s capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor’s notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures
§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor’s best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor’s proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor’s employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials
§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.
§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor’s employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty
§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor’s warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes
The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws
§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions
If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor’s cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect’s determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.
§ 3.8 Allowances
§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,
   .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
   .2 Contractor’s costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
   .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor’s costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent
§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner’s consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor’s Construction and Submittal Schedules
§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner’s and Architect’s information a Contractor’s construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect’s approval. The Architect’s approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor’s construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site
The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner;
delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples
§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect’s approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect’s approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect’s approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor’s responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely...
upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional’s written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor’s design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site
The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching
§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up
§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor’s tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work
The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights
The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.
§ 3.18 Indemnification
§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys’ fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers’ compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT
§ 4.1 General
§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

§ 4.2 Administration of the Contract
§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner’s representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor’s rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor’s failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications
The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect’s services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect’s consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.
§ 4.2.5 Based on the Architect’s evaluations of the Contractor’s Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor’s submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect’s action will be taken in accordance with the submittal schedule approved by the Architect, or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect’s professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect’s review of the Contractor’s submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect’s review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect’s approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner’s review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect’s responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect’s response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inerferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect’s decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect’s response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.
ARTICLE 5 SUBCONTRACTORS
§ 5.1 Definitions
§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work
§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (i) has reasonable objection to any such proposed person or entity or (ii) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations
By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts
§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

1. assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

2. assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.
When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor’s rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor’s compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor’s obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner’s Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner’s own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner’s own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner’s own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor’s construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor’s Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor’s Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner’s or Separate Contractor’s completed or partially completed construction is fit and proper to receive the Contractor’s Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor’s delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor’s delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.
§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner’s Right to Clean Up
If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7  CHANGES IN THE WORK
§ 7.1 General
§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders
§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:
1. The change in the Work;
2. The amount of the adjustment, if any, in the Contract Sum; and
3. The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives
§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:
1. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
2. Unit prices stated in the Contract Documents or subsequently agreed upon;
3. Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
4. As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:
.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
.4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
.5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work
The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME
§ 8.1 Definitions
§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.
§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion
§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time
§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION
§ 9.1 Contract Sum
§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values
Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment
§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.
§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner’s title to such materials and equipment or otherwise protect the Owner’s interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor’s knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment
§ 9.4.1 The Architect will, within seven days after receipt of the Contractor’s Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect’s reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect’s reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect’s evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect’s knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor’s right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification
§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect’s opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect’s opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

1. defective Work not remedied;
2. third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
3. failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

damage to the Owner or a Separate Contractor;

reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or

repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor’s portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor’s payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney’s fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.
§ 9.7 Failure of Payment
If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor’s Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days’ notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor’s reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion
§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor’s list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect’s inspection discloses any item, whether or not included on the Contractor’s list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use
§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.
§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment
§ 9.10.1 Upon receipt of the Contractor’s notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect’s knowledge, information and belief, and on the basis of the Architect’s on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect’s final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor’s being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner’s property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers’ warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys’ fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from
.1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
.2 failure of the Work to comply with the requirements of the Contract Documents;
.3 terms of special warranties required by the Contract Documents; or
.4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

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

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY
§ 10.1 Safety Precautions and Programs
The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property
§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to
employees on the Work and other persons who may be affected thereby;
the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor’s obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor’s organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor’s superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property
If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances
§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor’s notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will
promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor’s reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys’ fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury or to destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor’s fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner’s fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies
In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor’s discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS
§ 11.1 Contractor’s Insurance and Bonds
§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect’s consultants shall be named as additional insureds under the Contractor’s commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor’s Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or
expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner’s Insurance
§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner’s Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation
§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect’s consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect’s consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.
§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance
The Owner, at the Owner’s option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner’s property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner’s property, due to fire or other hazards however caused.

§ 11.5 Adjustment and Settlement of Insured Loss
§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK
§ 12.1 Uncovering of Work
§ 12.1.1 If a portion of the Work is covered contrary to the Architect’s request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect’s examination and be replaced at the Contractor’s expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor’s expense.

§ 12.2 Correction of Work
§ 12.2.1 Before Substantial Completion
The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect’s services and expenses made necessary thereby, shall be at the Contractor’s expense.

§ 12.2.2 After Substantial Completion
§ 12.2.2.1 In addition to the Contractor’s obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during
that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor’s correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor’s liability with respect to the Contractor’s obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work
If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS
§ 13.1 Governing Law
The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction’s choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns
§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner’s rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies
§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.
§ 13.4 Tests and Inspections
§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner’s expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect’s services and expenses, shall be at the Contractor’s expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest
Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT
§ 14.1 Termination by the Contractor
§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:
   .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
   .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
   .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
   .4 The Owner has failed to furnish the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.
§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days’ notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner’s obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days’ notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause
§ 14.2.1 The Owner may terminate the Contract if the Contractor
  .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
  .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
  .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
  .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor’s surety, if any, seven days’ notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:
  .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
  .2 Accept assignment of subcontracts pursuant to Section 5.4; and
  .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect’s services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience
§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent
  .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
  .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience
§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner’s convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner’s convenience, the Contractor shall
  .1 cease operations as directed by the Owner in the notice;
.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES
§ 15.1 Claims
§ 15.1.1 Definition
A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims
The Owner and Contractor shall commence all Claims and causes of action against the other arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims
§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance
§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost
If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time
§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.
§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages
The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

1. damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and

2. damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party’s termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision
§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker’s sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner’s expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.
§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor’s default, the Owner may, but is not obligated to, notify the surety and request the surety’s assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic’s lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation
§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator’s fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration
§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.
§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder
§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.
Additions and Deletions Report for
AIA® Document A201™ – 2017

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

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There are no differences.
Certification of Document's Authenticity
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I, [Name], hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 09:30:20 on 04/23/2018 under Order No. 9433965172 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ – 2017, General Conditions of the Contract for Construction, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

(Signed)

(Title)

(Dated)
SUPPLEMENTARY CONDITIONS
§ SC 1.1 INTRODUCTION
The following provisions modify, change, delete from or add to Agreement. Where any Subsection of the Agreement is modified or any Article Paragraph, Subparagraph or Clause thereof is modified or deleted by these Supplemental Conditions, the unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

§ SC 2.1 PREVAILING WAGE
In accordance with General Laws Chapter 149, Section 26 through 27D, the Contractor is obligated to comply with the prevailing wage rates established by the Commissioner of the Department of Labor and Workforce Development for mechanics, apprentices, chauffeurs, teamsters and laborers employed on the Project. The schedule of applicable prevailing wage rates for the Project, together with a Certificate of Compliance therewith, are set forth in Attachment A herein.

§ SC 3.1 CONTRACTOR'S LIABILITY INSURANCE
In no case shall the limits of liability be less than the following:

1. Contractor's Liability Insurance
   a. Workers’ Compensation:
      1. State: Statutory
      2. Employer Liability:
         $1,000,000 Bodily Injury by Accident
         $1,000,000 Bodily Injury by Disease - policy limit
         $1,000,000 Bodily Injury by Disease - each
   b. Comprehensive General Liability (including Premises-Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):
      1. Bodily Injury:
         $1,000,000 Each Occurrence
         $1,000,000 Each Individual Claim per Occurrence
         $3,000,000 Aggregate All Claims per Occurrence
      2. Products and Completed Operations
         $1,000,000 Each Occurrence (bodily injury and property damage)
         $3,000,000 Aggregate All Claims per Occurrence
      3. Property Damage Liability (including coverage for XCU hazards).
         $1,000,000 Each Occurrence
         $1,000,000 Each Individual Claim per Occurrence
         $3,000,000 Aggregate All Claims per Occurrence
      4. Products and Completed Operations insurance shall be maintained for a minimum period of 2 years after final payment and Contractor shall continue to provide evidence of such coverage to Owner on an annual basis during the aforementioned.
c. Comprehensive Automobile Liability (owned, non-owned, hired):
   
   Bodily Injury & Property Damage
   $1,000,000 Combined Single Limit

   d. Umbrella Liability Coverage
   $2,000,000 Each Occurrence
   $2,000,000 Aggregate
Incorporation of Applicable Provisions of the
Massachusetts General Laws

Certain provisions of the Massachusetts General Laws are applicable to Construction contracts including, but not limited to, those contained in Chapter 30 and Chapter 149. All applicable provisions of the Massachusetts General Laws are incorporated into the Contract as if fully set forth herein, and shall prevail over any conflicting provisions of the General or Supplemental General Conditions.
SUPPLEMENTARY CONDITIONS

Amending the General Conditions of the Contract for Construction
AIA Document A201 (2017 edition)

I. SUPPLEMENTARY CONDITIONS

The following addendum supplements, modifies, deletes and/or adds to the General Conditions. Where any Article, Paragraph or subparagraph in the General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph, or Subparagraph shall remain in effect and the supplemental provisions shall be considered as added thereto. Where any Article, Paragraph, or subparagraph in the General Conditions is amended, voided or superseded by any of the following paragraphs, the provisions of such Article, Paragraph or subparagraph not so amended, voided, or superseded shall remain in effect.

II. MODIFICATIONS TO VARIOUS ARTICLES OF THE AIA CONDITIONS

ARTICLE 1  GENERAL PROVISIONS

1.1.1 In the first sentence, delete “are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and” after “The Contract Documents”.

Insert “between the Owner and Contractor (hereinafter the Agreement)” after “consist of the Agreement”.

In the last sentence:

Delete “Unless specifically enumerated in the Agreement”.

Delete “not” after “Contract Documents do”.

Delete “other” after “sample forms,”.

Delete “or” after “or proposal,” and insert “and”.

Delete “bidding or proposal requirements” after “relating to” and insert “those documents”.

1.1.8 Delete “Claims” and insert “claims”.
Delete “and shall not be liable for results of interpretations or decision rendered in good faith.”.

1.2.1.2 Add to the end of the sub-section:

All Work mentioned or indicated in the Contract Documents shall be performed by the Contractor as part of this Contract unless it is specifically indicated in the Contract Documents that such Work is to be done by others. Should the Drawings or the Specifications disagree in themselves or with each other, the Contractor shall provide the better quality or greater quantity of Work unless otherwise directed by written addendum to the Contract.

1.2.1 Add to the end of the sentence:

, except that the performance of filed sub-trade work shall comply with the provisions of chapter 149 of the General Laws of the Commonwealth of Massachusetts. The Contractor and all Subcontractors shall refer to all of the Drawings, including those showing primarily the Work of the mechanical, electrical and other specialized trades, and to all of the Sections of the Specifications, and shall perform all Work reasonably inferable therefrom as being necessary to produce the indicated results.

1.2.4 Add the following new sub-sections 1.2.4 to 1.2.11 as follows:

§ 1.2.4 All indications or notations which apply to one of a number of similar situations, materials or processes shall be deemed to apply to all such situations, materials or processes wherever they appear in the Work, except where a contrary result is clearly indicated by the Contract Documents.

§ 1.2.5 Where codes, standards, requirements and publications of public and private bodies are referred to in the Specifications, references shall be understood to be to the latest revision prior to the date of receiving bids, except where otherwise indicated.

§ 1.2.6 Where no explicit quality or standards for materials or workmanship are established for Work, such Work is to be of good quality for the intended use and consistent with the quality of the surrounding Work and of the construction of the Project generally.

§ 1.2.7 All manufactured articles, materials, and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with the manufacturer's written or printed directions and instructions unless otherwise indicated in the Contract Documents.
§ 1.2.8 The Mechanical, Electrical and Fire Protection Drawings are diagrammatic only, and are not intended to show the alignment, physical locations or configurations of such Work. Such Work shall be installed without additional cost to the Owner to clear all obstructions, permit proper clearances for the Work of other trades, and present an orderly appearance where exposed. Prior to beginning such Work, the Contractor shall prepare coordination drawings showing the exact alignment, physical location and configuration of the Mechanical, Electrical and Fire Protection installations and demonstrating to the Contractor's satisfaction that the installations will comply with the preceding sentence. A copy of the drawings shall be submitted to the Architect, and the Contractor shall revise and resubmit the drawings if so directed by the Architect.

§ 1.2.9 Exact locations of fixtures and outlets shall be obtained from the Architect as provided in subparagraph 3.2.5 before the Work is roughed in; Work installed without such information from the Architect shall be relocated at the Contractor's expense.

§ 1.2.10 Test boring or soil test information included with the Contract Documents or otherwise made available to the Contractor was obtained by the Owner for use by the Architects in the design of the Project or Work. The Owner does not hold out such information to the Contractor as a completely accurate indication of subsurface conditions, and no claim for extra cost or extension of time resulting from a reliance by the Contractor on such information shall be allowed except as provided in subparagraph 3.7.4.

§ 1.2.11 Where the Work is to fit with existing conditions or work to be performed by others, the Contractor shall fully and completely join the Work with such conditions or work, unless otherwise specified. Owner provided drawings showing existing conditions or construction are based on available documents and are not guaranteed to show actual existing conditions.

1.5.1 Delete 1.5.1 and replace as follows:

§ 1.5.1 All Drawings, Specifications and copies thereof furnished by the Owner are and shall remain the Owner's property. They are to be used only with respect to this Project and are not to be used on any other project without the prior written consent of the Owner. With the exception of one contract set for each party to the Contract, such documents are to be returned or suitably accounted for to the Owner at the completion of the Work. Submission or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of any reserved rights.
1.8 Delete “using or relying party’s” in Section 1.8 and replace with “Contractor’s”

ARTICLE 2  OWNER

2.1.2 Delete sub-section 2.1.2.

2.2.1 - Delete subsections 2.2.1 through 2.2.4

2.2.4

2.3.5 Delete the last sentence.

2.3.6 Add to the end of the sub-section as follows:

All additional copies will be furnished upon request at the cost of reproduction.

2.4 Delete from the last sentence “, except to the extent required by Section 6.1.3” and add as follows:

The Contractor shall resume the Work after such stoppage promptly upon written notice to do so from the Owner. The Contractor shall remain responsible for maintaining the progress of the Work and shall not be entitled to any increase in the Contract Sum or Contract Time. The Contractor shall be responsible for all costs incurred by the Owner attributable to such an order to stop the Work.

2.5 Add to the end of the section as follows:

The rights of the Owner hereunder are in addition to any other rights set forth in the Contract Documents or available at law or in equity.

ARTICLE 3  CONTRACTOR

3.2.1 Delete “generally” after “the site, become”.

Add to the end of the sub-section as follows:

The Contractor shall not be entitled to any change in the Contract Time or Contract Sum on account of its failure, or that of any Subcontractor, to comply with the foregoing requirements.

3.2.2 Delete the beginning of the second sentence as follows:
These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however,

Delete the last sentence and replace as follows:

If the Contractor performs any construction activity that it knows or should know involves a recognized error, inconsistency or omission in the Contract Documents without such notice to the Architect, the Contractor shall assume appropriate responsibility for such performance and shall bear responsibility for the costs of any required correction.

3.2.3 Delete “not” after “Contractor is”.

Delete “, but” after “public authorities” and create new sentence beginning with “The Contractor shall promptly”.

3.2.4 Delete “claims” after “the Contractor shall make” and insert “a claim”.

Delete the last sentence.

3.2.5 Add new sub-section 3.2.5 as follows:

§ 3.2.5 Any claim by the Contractor or Subcontractors that, in submitting their respective bids, they did not include all items as shown in the Contract Documents will be given no consideration for an adjustment of any kind. If any item is specified in a Section which would not normally furnish this item it shall be the responsibility of the Contractor to coordinate the situation with the Subcontractor, and if the item under consideration is not to be provided by the Subcontractor it shall be the responsibility of the Contractor to provide the work in question, without any additional cost to the Owner.

3.3.1 Add to the end of the first sentence as follows:

which shall not be less than such state of skill and attention generally rendered by the contracting profession for projects similar to the Project in scope, difficulty and location. The Contractor shall adequately staff the Project to properly and thoroughly manage, schedule and supervise all construction activities.

3.3.2 Add the last sentence as follows:

This obligation shall also extend to the presence on the Site of suppliers of materials or equipment, their employees, contractors, and agents engaged in the Work.
3.4.3 Add to the end of the second sentence as follows:

, and the Contractor shall ensure that all workers to be employed on the Project have successfully completed a course in construction safety and health approved by the United States Occupational Safety and Health Administration (OSHA) of at least 10 hours. The Contractor shall be responsible for maintaining all safety precautions at and around the Project site. On the Owner’s request, the Contractor shall permanently remove from the Project site any employee of the Contractor or any Subcontractor who fails to comply with the requirements of the Contract Documents or whose presence or behavior is deemed by the Owner to be adverse to the success of the Project or the Owner’s interests.

3.5 Add to the end of the first sentence as follows:

and, promptly after written notification of non-conformance, shall be repaired or replaced by the Contractor with Work conforming to such requirements.

Delete the second to last sentence.

3.5.3 Add new sub-sections 3.5.3 to 3.5.9 as follows:

§ 3.5.3 The Contractor shall be responsible for determining that all materials furnished for the Work meet all requirements of the Contract Documents. The Architect may require the Contractor to produce reasonable evidence that a material meets such requirements, such as certified reports of past tests by qualified testing laboratories, reports of studies by qualified experts, or other evidence which, in the opinion of the Architect, would lead to a reasonable certainty that any material used, or proposed to be used, in the Work meets the requirements of the Contract Documents. All such data shall be furnished at the Contractor's expense. This provision shall not require the Contractor to pay for periodic testing of different batches of the same material, unless such testing is specifically required by the Contract Documents to be performed at the Contractor's expense.

§ 3.5.4 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements of the Contract Documents, the Contractor shall inform the Architect in writing of the nature of such deviations at the time the material is submitted for approval and request approval of the deviation. The Architect shall judge the design and appearance of proposed substitutes, and may refuse to approve any substitute which, in the
§ 3.5.5 In informing the Architect of deviations or substitutions, the Contractor shall provide, upon request, evidence leading to a reasonable certainty that the proposed substitution or deviation will provide a quality of result at least equal to that otherwise attainable in accordance with the Contract Documents. If, in the opinion of the Architect, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the Architect may reject such substitution or deviation without further investigation.

§ 3.5.6 Any additional cost, or any loss or damage arising from the substitution of any material or any method for those originally specified shall be borne by the Contractor, notwithstanding approval or acceptance of such substitution by the Owner or the Architect, unless such substitution was made at the written request or direction of the Owner or the Architect.

§ 3.5.7 The warranty provided in this paragraph 3.5 shall be in addition to and not in limitation of any other warranty required by the Contract Documents or otherwise prescribed by law.

§ 3.5.8 The Contractor shall procure and deliver to the Architect, no later than the date claimed by the Contractor as the date of Substantial Completion, all special warranties required by the Contract Documents. Delivery by the Contractor shall constitute the Contractor’s guarantee to the Owner that the warranty will be performed in accordance with its terms and conditions.

§ 3.5.9 The Contractor shall guarantee all Work for a period of one year after Date of Substantial Completion, or by the terms of any special guarantee required by the Contract Documents. The Contractor shall, upon written notice from the Owner, promptly correct defective Work or Work not in accordance with the Contract Documents.

3.6.1 Add new sub-section 3.6.1 as follows:

§ 3.6.1 The project is exempt from the Massachusetts Sales Tax to the extent permitted by G.L. c.64H, §6(f). The exemption number will be provided by the Awarding Authority to the Contractor.

3.7.2 Add to the end of the sub-section as follows:

If any of the Work is required to be inspected or approved by any public authority, the Contractor shall cause such inspection or approval to be
performed and shall comply with any instructions or corrections ordered by the public authority.

3.7.3 Delete “knowing it” after “performs Work” and replace with “it knows or should know”.

3.7.4 Delete sub-section 3.7.4 and replace as follows:

§ 3.7.4 Concealed or Unknown Conditions. Claims for concealed or unknown conditions shall be governed by Chapter 30, Section 39N of the General Laws of the Commonwealth of Massachusetts, as amended.

3.7.5 Delete second and last sentences.

3.8 Delete section 3.8 in its entirety.

3.9.1 In the first sentence:

Insert “, in accordance with the Contract Documents,” after “shall employ”.

Insert “at all times” after “the Project site”.

3.9.4 Add new sub-sections 3.9.4 and 3.9.5 as follows:

§ 3.9.4 The Contractor shall coordinate and supervise the Work performed by Subcontractors to the end that the Work is carried out without conflict between trades and so that no trade, at any time, causes delay to the general progress of the Work. The Contractor and all Subcontractors shall at all times afford each trade, any separate contractor, or the Owner, every reasonable opportunity for the installation of Work and the storage of materials.

§ 3.9.5 The Contractor shall arrange for and attend job meetings with the Architect and such other persons as the Architect may from time to time wish to have present. The Contractor shall be represented by a principal, project manager, general superintendent or other authorized main office representative, as well as by the Contractor's own superintendent. An authorized representative of any Subcontractor or Sub-subcontractor shall attend such meetings if the representative's presence is requested by the Architect. Such representatives shall be empowered to make binding commitments on all matters to be discussed at such meetings, including costs, payments, change orders, time schedules and manpower. Any notices required under the Contract may be served on such representatives.
3.10.1 In the first sentence delete “promptly” after “The Contractor” and replace with “within twenty (20) days”.

In the second sentence, insert “or as requested by the Architect” after “conditions of the Work and Project”.

Add to the end of the sub-section as follows:

The construction schedule shall be in such form and contain such information as the Architect and Owner require. The construction schedule shall be resource loaded for the Contractor and all subcontractors, with each resource identified by name, description, unit of measure, and calendar assignment. For each class of work included in the Contractor’s schedule of values, the construction schedule shall show the percentage of completion to be obtained and the total dollar value of the work to be completed as of the first of each month until Substantial Completion. All calculations shall be on the basis of work in place, but not including the value of materials delivered but not in place.

3.10.3 Add to the end of the sub-section as follows:

The Contractor’s compliance with the construction schedule is a material obligation of the Contract.

3.10.4 Add new sub-sections 3.10.4, 3.10.5, and 3.10.6 as follows:

§ 3.10.4 The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner of any delays or potential delays. The construction schedule shall be updated every month (or more frequently if requested by the Owner) to reflect actual conditions (such updates are sometimes referred to in these General Conditions as "progress reports"). In the event any progress report indicates delays in achievement of any milestone date set forth in such schedule, the Contractor shall propose in written form an affirmative plan (the "Recovery Schedule") to correct the delay, including overtime and/or additional labor, if necessary, which Recovery Schedule shall indicate the date by which the progress of the Work will comply with the construction schedule, and shall be subject to the approval of the Owner and the Architect. In no event shall any progress report or Recovery Schedule constitute an adjustment in the construction schedule, Contract Time or any milestone date unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

§ 3.10.5 In the event (i) that the performance of the Work, as of a milestone date, has not progressed or reached the level of completion
required by the construction schedule, and (ii) the progress of the Work is not brought back into compliance with the construction schedule on the date proposed by the Recovery Schedule, or the Contractor otherwise fails to comply with the Recovery Schedule, the Owner shall have the right to order the Contractor to take corrective measures to expedite the progress of the Work, including, without limitation, (1) supplying additional manpower, equipment, and facilities, (2) working additional shifts or overtime, (3) working additional days, and (4) other similar measures (hereinafter referred to collectively as "Corrective Measures"). Such Corrective Measures shall continue until the progress of the Work complies with the stage of completion required by the Contract Documents.

§ 3.10.6 The Contractor shall not be entitled to an adjustment in the Contract Sum in connection with Corrective Measures required by the Owner under or pursuant to Section 3.10.5. The Owner may exercise the rights furnished the Owner under or pursuant to Section 3.10.5 as frequently as reasonably necessary to ensure that the Contractor's performance of the Work complies with the milestone dates set forth in the construction schedule.

3.12.6 Add to the end of the sub-section as follows:

By approving and submitting Shop Drawings, Product Data, Samples, and similar submittals the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples, or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

3.12.10 Add to the end of the last sentence as follows:

, except as provided in Section 3.2.

3.12.10.2 Add to the end of subsection 3.12.10.2 the following:

When professional certification of materials, systems or equipment is required by the Contract Documents, the Owner shall be entitled to rely upon such certifications, and neither the Owner nor the Architect shall be expected to make an independent examination with respect to the performance of such materials, systems or equipment.
3.13 Add to the end of the section as follows:

The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Owner shall not be liable to the Contractor, the Subcontractors, their employees, or anyone else with respect to the conditions of the premises, except only for a condition caused directly and solely by the negligence of the Owner.

3.15.1 Add “site” to the end of the second sentence.

3.15.2 Add to the end of the sentence as follows:

, and may deduct all costs thereof from any payment due the Contractor.

3.16 Insert “, Owner’s representatives” after “provide the Owner”.

3.18.1 Delete the first sentence and replace as follows:

To the fullest extent permitted by law the Contractor shall indemnify and hold harmless the Owner, Architect, Architect’s consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys’ fees, arising out of or resulting from performance of the Work, including claims, damage, loss or expense attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, including the Work, caused in whole or in part by the negligent or wrongful acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations, including those of indemnity, which would otherwise exist as to a party or person described in this section.

ARTICLE 4 ARCHITECT

4.1.2 In the first sentence delete “, Contractor” after “consent of the Owner”.

In the second sentence insert “of the Owner” after “Consent”.

4.1.3 Delete sub-section 4.1.3.
4.2.3 In the first sentence delete “reasonably” after “will keep the Owner”.

4.2.4 Delete the second sentence.

4.2.10 Delete sub-section 4.2.10.

4.2.11 Add to the end of the sub-section as follows:

The parties agree that the Architect’s duties under this subparagraph shall be governed by Chapter 30, Section 39P of the General Laws of the Commonwealth of Massachusetts, as amended.

4.2.12 Delete the second sentence.

ARTICLE 5 SUBCONTRACTORS

5.2.1 Delete the last sentence.

5.2.2 In the second sentence insert “and legally permissible” after “has made reasonable”.

5.2.3 Delete the last two sentences and replace as follows:

No increase in the Contract Sum or Contract Time shall be allowed for such change.

5.2.4 Add to the end of the sub-section as follows:

The applicable provisions of Chapter 149, Section 44F of the General Laws of the Commonwealth of Massachusetts shall apply to filed sub-bid subcontractors.

5.4.1 In sub-heading .1 delete “Section 14.2” and replace with “Article 14”.

Add new sub-heading .3 as follows:

.3 The Owner may further assign the subcontract to a successor contractor or other entity.

Delete last sentence of sub-section.

5.4.2 Delete sub-sections 5.4.2 and 5.4.3.

ARTICLE 6 CONSTRUCTION BY OWNER OR SEPARATE CONTRACTORS
6.1.1 At the end of the second sentence delete “including those provisions of the Conditions under the Contract related to insurance and waiver of subrogation”.

6.1.4 Delete sub-section 6.1.4 and replace as follows:

§ 6.1.4 The Owner reserves the right to enter any part of the Project site at any time to inspect the Work or to perform other work with its own forces or separate contractors, or to address any emergency situation. Such access is not to be construed to mean partial occupancy by the Owner and no claim for increase in the Contract Time or Sum will be considered unless such Owner’s contractors have delayed or damaged the Contractor’s Work. The Contractor shall permit the Owner to place and install as much furniture, equipment and other material during the progress of the Work as is possible before completion of the various parts of the Work and agrees that such placing and installation of equipment shall not in any way evidence the completion or acceptance of the Work or any portion of it.

6.2.2 Delete the last sentence.

6.2.3 Delete the last sentence.

6.2.5 Delete sub-section 6.2.5.

ARTICLE 7 CHANGES IN THE WORK

7.2.3 Add new sub-section 7.2.3 as follows:

§ 7.2.3 Upon request of the Owner or the Architect, the Contractor shall without cost to the Owner submit to the Architect, in such form as the Architect may require, an accurate written estimate of the cost of any proposed extra Work or change. The estimate shall indicate the quantity and unit cost of each item of material, and the number of hours of work and hourly rate for each class of labor, as well as a description and the amounts of all other costs chargeable under the terms of this Article. Unit labor costs for the installation of each item of material shall be shown if required by the Architect. The Contractor shall promptly revise and resubmit each estimate if the Architect determines that it is not in compliance with the requirements of this Article, or that it contains errors of fact or mathematical errors. If required by the Architect, in order to establish the exact cost of new Work added or of previously required Work omitted, the Contractor shall obtain and furnish to the Architect bona fide proposals from recognized suppliers for furnishing any material included in such Work. Such estimates shall be furnished promptly so as to occasion no delay in the Work, and shall be furnished at the Contractor's expense. The Contractor shall state in the estimate any
extension of time required for the completion of the Work if the change or extra work is ordered.

7.3.3 Delete the first sentence of the sub-section and replace as follows:

If the Construction Change Directive provides for an adjustment to the Contract Sum, and if the Contract Documents include a unit price for the work that is the subject of such directive, such unit price shall be the basis of the adjustment to the Contract Sum, unless the Owner, in its sole discretion, chooses another method. If, however, the Contract Documents do not include a unit price for such work, the adjustment shall be based on one of the following methods, as selected by the Owner:

In sub-heading .2 delete “stated in the Contract Documents or” after “Unit prices”.

7.3.4 Delete first sentence and replace as follows:

If the proposed method of adjustment in the Contract Sum is based on unit prices that are stated in the Contract Documents, such unit prices shall be the basis of any adjustment to the Contract Sum, unless the Owner has chosen another method pursuant to subparagraph 7.3.3. If the proposed method of adjustment is not based on such unit prices and the Contractor objects to the proposed method of adjustment, the Contractor must notify the Architect of such objection in writing within five (5) calendar days from Contractor’s receipt of the Construction Change Directive. Failure to so object will irrevocably waive any such objections and claims on account of such method of adjustment, and the Construction Change Directive shall be deemed and shall constitute a Change Order. If the Contractor does so object, the adjustment to the Contract Sum shall be determined by the Architect on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, a reasonable allowance for overhead and profit.

In sub-heading .4 insert “and” after “and insurance,” and delete “, and sales, use or similar taxes related to the Work” after “permit fees”.

Delete sub-heading .5 and replaces as follows:

.5 A reasonable allowance for overhead and profit.

7.3.6 In the first sentence add after “the Work involved and” as follows:

, within five (5) calendar days from receipt of the Construction Change Directive,"
Insert “by written notice” after “advise the Architect”.

Add to the end of the sub-section as follows:

Failure to so advise the Architect within such 5-day period (1) shall be interpreted as Contractor’s agreement with the proposed method of adjustment; (2) shall constitute an irrevocable waiver of any right of the Contractor to submit a claim on account of the method of adjustment; and (3) shall cause the Construction Change Directive to be deemed and constitute a Change Order.

7.3.7 In the second sentence delete “recorded as” after “immediately shall be” and replace with “deemed and shall constitute”.

7.3.9 Delete the end of the first sentence starting after “Directive to the Owner,” and replace as follows:

amounts for such changes in the Work shall not be included in Applications for Payment. Such amounts shall only be included in an Application for Payment after the adjustment for the Construction Change Directive has been included in a Change Order signed by the Owner and the Contractor.

ARTICLE 8 TIME

8.2.2 In the first sentence delete “, except by agreement or instruction of the Owner”

8.2.4 Add new sub-sections 8.2.4 and 8.2.5 as follows:

§ 8.2.4 Unless specifically required by law, no payment under this Contract shall be due until the construction schedule, required by Section 3.10, and conforming to the requirements of the General Requirements has been accepted by the Architect.

§ 8.2.5 If the Architect in reviewing any Application for Payment determines that the amount of completed Work in place as certified by the Architect is less than 90% of the Work in place required by the Contractor’s construction schedule or schedule of values provided for in Section 9.2, or that there have been delays to critical paths and the Contract completion date will not be met, or that, in the Owner’s sole discretion, there is reasonable concern that the Work will not be Substantially Complete by the date required in the Contract Documents, the Contractor shall be required to submit a recovery schedule with a written description of the steps the Contractor intends to take to put the
Project back on schedule. At the Owner’s option, the Contractor shall take some or all of the following actions at no additional cost to the Owner:

.1 Increase the number of workers on the site, in such quantities and trades as will substantially eliminate the backlog of work;
.2 Increase the number of working hours per shift, shifts per day, working days per week, amount of construction equipment, or any combination of the foregoing, sufficiently to substantially eliminate backlog of work; or
.3 Reschedule activities so that the completion dates initially scheduled will be met.

8.3.1 Insert “(except weather)” after “casualties” and delete “adverse weather conditions documented in accordance with Section 15.1.6.2”

Delete “pending mediation and binding dispute resolution” after “delay authorized by Owner”.

Add to the end of the sub-section as follows:

, and this shall be the Contractor’s sole remedy for such delay. Under no circumstances will the Contractor be entitled to an increase in the Contract Sum, or to any other damages, on account of or in connection with any delay, regardless of the cause of such delay, and Contractor agrees not to make any claim for such damages, including, but not limited, claims for damages on account of having to perform out-of-sequence work, claims for damages on account of loss of production, and claims for damages on account of hindrances or interference with the work.

8.3.3 Delete sub-section 8.3.3.

8.3.4 Add new sections 8.3.4 and 8.3.5 as follows:

§ 8.3.4 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which conditions shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

§ 8.3.5 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any hindrance, delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise, except as and to the extent expressly provided in G.L. c. 30, §39N. The Contractor
acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

8.4 Add new section 8.4 as follows:

§ 8.4 LIQUIDATED DAMAGES

§ 8.4.1 It is expressly understood and agreed, by and between the Contractor and Owner, that the time for the completion of the Work described herein is a reasonable time for the completion of same, taking into consideration the average climatic range and usual industrial and/or residential conditions prevailing in this locality. If the said Contractor shall neglect, fail or refuse to complete the Work within the times herein specified, or any proper extension thereof granted by the Owner, then the Contractor does hereby agree, as a part consideration for the awarding of this Contract, to pay to the Owner $1,500.00, not as a penalty but as liquidated damages for such breach of contract, for each and every calendar day that the Contractor shall be in default after the time stipulated for completing the Work. The said amount is fixed and agreed upon by and between the Contractor and the Owner because of the impracticability and difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amount is agreed to be the amount of damages which the Owner would sustain and said amount shall be deducted by the Owner from periodic payments.

ARTICLE 9 SCHEDULE OF VALUES

9.1.2 Delete subsection 9.1.2 and replace with the following:

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed in a proposed Change Order or Construction Change Directive so that, in the opinion of the Architect, application of such unit prices to quantities of Work proposed will cause substantial inequity to the Owner, the applicable unit prices shall be equitably adjusted.

9.2 Add to the end of the section as follows:

, and shall be revised if later found by the Architect to be inaccurate. In addition, the Contractor shall submit to the Architect, at least 14 days before the first Application for Payment, a Cash Flow Schedule that shows the percentage completion to be obtained and the total dollar value of Work to be completed as of the first of each month until Substantial Completion. All calculations in the Cash Flow Schedule shall be on the basis of Work in place and shall exclude the value of materials delivered but not in place.
9.2.1 Add new sub-section 9.2.1 as follows:

§ 9.2.1 The Cash Flow Schedule shall be based on an orderly progression of the Work allowing adequate time for each operation (including adequate time for submission and review of submittals) and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Cash Flow Schedule will be reviewed by the Architect for compliance with the requirements of the Contract Documents. Unless specifically required by law, no payment under this Contract shall be due until the Cash Flow Schedule has been reviewed and approved by the Architect. The Architect’s review of the Cash Flow Schedule shall not impose any duty on the Architect or the Owner with respect to the timing, planning, scheduling or execution of the Work. In particular if the Contractor proposes a Cash Flow Schedule indicating a date of Substantial Completion which is earlier than the Contract Time the Contractor shall not be entitled to additional payment or compensation of any kind if for any reason the full Contract Time is required to achieve Substantial Completion of the Work.

9.3.1.1 Delete sub-section 9.3.1.1.

9.3.2 Add to the end of the sub-section as follows:

The Owner may deduct the amount of such costs from payments due the Contractor.

9.4.1 Insert at the beginning of the first sentence as follows:

Subject to the Contractor’s compliance with Section 9.3 and the provisions of Section 9.6,

9.5.1 Add new sub-headings .8, .9, .10, .11, and .12 as follows:

.8 failure of the Contractor or mechanical or electrical trade subcontractors to comply with requirements of the General Requirements for maintaining record drawings. The Contractor shall check record drawings each month. Written confirmation that the record drawings are current will be required by the Architect before approval of the Contractor's monthly payment requisition;
.9 failure of the Contractor to provide required warranties under Section 9.3, claims for direct payment, or reasonable evidence indicating probable filing of such claims;
.10 costs incurred by the Owner under Section 10.2.5;
.11 failure of the Contractor to submit prerequisite documentation required by the General Requirements; or
.12 liquidated damages due the Owner pursuant to Section 8.4.

9.5.2 Delete “Claim” and replace with “claim”.

9.5.3 Delete sub-section 9.5.3.

9.6.4 Delete “If the Contractor fails to furnish such evidence within seven days,” from the beginning of the second sentence.

9.6.5 Delete sub-section 9.6.5.

9.6.7 Delete sub-section 9.6.7.

9.6.9 Add new sub-section 9.6.9 as follows:

§ 9.6.8 Notwithstanding the provisions of Section 9.6 all progress payments shall be made in accordance with Chapter 30, Sections 39F, 39G and 39K (as appropriate) of the General Laws of the Commonwealth of Massachusetts, as amended.

9.7 Delete section 9.7.

9.8.1 Add to the end of the sub-section as follows:

In addition, Substantial Completion for the entire Project shall be achieved only when: (1) the Owner has beneficial occupancy and use of the entire Project for all its intended uses; (2) all Project systems included in the Work are operational and acceptable to the Owner; (3) all governmental inspections for the Project have been successfully completed, all governmental approvals and related paperwork have been delivered to the Owner, and final and unconditional certificates of occupancy for the entire Project have been delivered to the Owner, (4) the only remaining Work to be performed is minor in nature and the remaining Work may reasonably be performed without having a material adverse effect on or materially interfering with the Owner’s occupancy and use of the Project and (5) all prerequisites to Substantial Completion defined in the Contract Documents have been completed.

9.8.2 Add to the end of the first sentence as follows:

together with the estimated value of completing or correcting such items (the “Punchlist”) and (2) the permits and certificates referenced in Section 13.5. The Architect shall have the right to modify and supplement the Punchlist, including the estimated value of completion or correction.

9.8.5 Delete sub-section 9.8.5 and replace as follows:
§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor by the Architect. The certificate shall state the date of substantial completion, shall state any consequent responsibilities of the Contractor and the Owner in accordance with the Contract Documents. The Contractor shall complete and correct any incomplete and defective work within forty-five (45) calendar days from the date of Substantial Completion.

9.8.6 Add new sub-section 9.8.6 as follows:

§ 9.8.6 Services provided by the Architect to conduct more than three (3) inspections of completed Work and any inspections beyond sixty (60) days after the date of substantial completion of any portion of the Work as stated in the Agreement shall be paid by the Contractor to the Owner. The Owner may deduct the cost of such services and inspections from payments due the Contractor.

9.9.1 Delete the end of the first sentence starting after “Work at any stage”.

Delete the second sentence and replace as follows:

Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner has accepted in writing the responsibilities assigned to it and the Contractor for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance.

Delete the second to last sentence.

9.10.1 Add to the end of the sub-section as follows:

By Final Completion, the Contractor shall have completed its performance of all Punchlist items, completed all balancing of mechanical and other applicable systems and all seasonal system adjustments that are reasonably necessary to proper functioning of the completed Project, delivered to the Owner all operations and maintenance manuals and completed related training for such manuals, and delivered to the Owner all required warranties and guarantees.

9.10.3 Delete sub-sections 9.10.3 and 9.10.4.

9.10.5 Insert “for payment for Work performed and of all other claims of which the payee knew or should have known at the time of final payment,” after “claims by that payee”
9.10.6 Add new sub-section 9.10.6 as follows:

§ 9.10.6 Notwithstanding anything in the Contract Documents to the contrary, final payment shall be made in accordance with the requirements of G.L.c.30, §39K (building projects) or §39G (public works projects), as amended.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.2.1 Add new sub-heading .4 as follows:

.4 work or property of the Owner, its tenants, or other parties at or near the Project site with the Owner’s permission.

10.2.5 At the beginning and end of the first sentence:

Delete “and” after “10.2.1.2”.

Insert “and 10.2.1.4” after “10.2.1.3”.

Delete the second sentence in its entirety.

10.2.9 Add new sub-sections 10.2.9, 10.2.10, 10.2.11, 10.2.12, and 10.2.13 as follows:

§ 10.2.9 The Contractor shall provide and maintain in good operating condition suitable and adequate fire protection equipment and services, and shall comply with all reasonable recommendations regarding fire protection made by the representatives of the fire insurance company carrying insurance on the Work or by the local fire chief or fire marshal. The area within the site limits shall be kept orderly and clean, and all combustible rubbish shall be promptly removed from the site.

§ 10.2.10 The Contractor shall at all times protect excavations, trenches, buildings and materials from rain water, groundwater, backup or leakage of sewers, drains and other piping, and from water of any other origin and shall remove promptly any accumulation of water. The Contractor shall provide and operate all pumps, piping and other equipment necessary to this end.

§ 10.2.11 The Contractor shall remove snow and ice which might result in damage or delay.

§ 10.2.12 During the progress of the Work and at all times prior to the date of Substantial Completion or occupancy of the Work by the Owner, whichever is earlier, the Contractor shall provide temporary heat,
ventilation, and enclosure, adequate to permit the Work to proceed in a
timely fashion, and to prevent damage to completed Work or Work in
progress, or to materials stored on the premises. The use of the permanent
heating and/or ventilation systems for temporary heat and/or ventilation
shall be subject to the prior written approval of the Owner and Architect.

§ 10.2.13 [G.L. c.149, §44F(1)] The Contractor shall install weather
protection and furnish adequate heat in the protected area from November
1 to March 31.

10.3.1 Delete the second sentence and replace as follows:

The Contractor shall not cause or permit any introduction onto, under, or
near the Owner’s property of any hazardous materials or substances as
defined by any applicable law, and shall not cause of permit any release,
discharge, transportation, storage, or disposal of such materials or
substances onto, under, or near the Owner’s property or areas near the
Owner’s property. If the Contractor encounters or recognizes on the site
any material known or reasonably believed to be hazardous, including but
not limited to asbestos or polychlorinated biphenyl (PCB), the Contractor
shall immediately stop Work in the area affected and report the condition
to the Owner and Architect in writing. The Contractor and the Owner
shall cooperate in implementing measures to remove or contain said
material and the Contractor shall comply with all directions of the
Architect in the implementation of such removal or containment.

10.3.2 Delete sub-sections 10.3.2, 10.3.3, and 10.3.4.

10.3.5 Delete the remainder of the sentence starting after “obligations under” and replace
as follows:

Article 10 or for any violation of applicable law related to the Contractor’s
noncompliance with the provisions of this Article 10.

10.3.6 Delete sub-section 10.3.6.

10.3.7 Add new sub-section 10.3.7 as follows:

§ 10.3.7 The parties anticipate that certain hazardous substances and/or
materials may be discovered at the site. When such conditions are set forth
in the Contract Documents, the Contractor acknowledges that such
conditions have been considered in establishing the Contract Time and
Contract Sum. No extension of the Contract Time or increase in the
Contract Sum shall be claimed or allowed with respect to any hazardous
substances or materials located at the site which were disclosed in the
Contract Documents. The Contractor shall strictly comply with all laws,
regulations, rules, orders, ordinances and the like related to the excavation, storage, removal and disposal of any such hazardous substances or materials.

ARTICLE 11 INSURANCE AND BONDS

11.1.1 In the last sentence insert “the Owner’s Project Manager,” after “The Owner,”.

Add the following new paragraphs to the end of Section 11.1.1:

The insurance required by this Agreement shall include all major divisions of coverage, and shall be on a comprehensive general basis including Premises and Operations (including X-C-U), Owner's and Contractor's Protective, Products and Completed Operations, and Owned, Non-owned, and Hired Motor Vehicles. Such insurance shall be written for not less than any limits of liability required by law or those set forth in the Contract Documents, whichever is greater.

All insurance shall be written on an occurrence basis, unless the Owner approves in writing coverage on a claims-made basis. Coverages, whether written on an occurrence or claims-made basis, shall be maintained without interruption from date of commencement of the Work until date of final payment and any further period during which coverage is required to be maintained after final payment by the Contract Documents. The Owner shall be named an Additional Insured on all policies.

Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner and authorized to do business in Massachusetts. Contractor shall furnish to Owner written confirmation as to the insurance carrier's most current financial ratings prior to commencing work.

11.1.2 Delete subsection 11.1.2 and replace with the following:

§11.1.2 Contractor shall provide Performance and Payment Bonds, each in the amount of 100% of the Contract Price, and each by a surety company qualified to do business under the laws of the Commonwealth of Massachusetts and acceptable to the Owner. The attorney-in-fact who signs the bonds on behalf of the surety, must affix to each bond a certified and current copy of the power of attorney. The Performance and Payment Bonds shall be written in a form satisfactory to the Owner.

11.1.5 Add new sub-sections 11.1.5 and 11.1.6 as follows:

-11.1.6

11.1.3.1 The Contractor shall be responsible for having acceptable insurance coverage provided by or on behalf of all Subcontractors, with
such insurance to be similar to that required of the Contractor under the Agreement and these General Conditions. The Contractor shall not allow any Subcontractor to commence Work on the Project prior to the Contractor’s receipt of certificates of insurance that are acceptable in form and limits to the Owner; the Owner shall have no obligation to pay the Contractor for any Work performed by a Subcontractor who has not supplied acceptable insurance certificates prior to starting its Work. The Owner shall be named an additional insured on all such certificates.

11.1.3.2 All insurance policies shall contain provisions or endorsements necessary to assure coverage of claims by one insured against another. All required insurance policies are to be endorsed to state that the Contractor’s policies shall be primary to all other insurance available to the Owner and other specified additional insureds for liability arising out of or resulting from the Contractor’s operations under the Contract, whether such operations be by the Contractor or by a Subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

11.2 Delete section 11.2 and replace as follows:

§ 11.2 OWNER’S LIABILITY INSURANCE
The Contractor shall procure and pay for an Owner’s policy of Owner’s protective liability insurance insuring the Owner and its officers, employees and agents against claims which may arise from operations under the Contract or relating thereto.

11.2.1 Delete sub-section 11.2.1 and replace as follows:

§ 11.2.1 The Contractor shall purchase and maintain property insurance upon the entire Work at the site to the full insurable value thereof. Coverage for such liability insurance shall be provided by a company or companies reasonably acceptable to the Owner. Contractor shall furnish to Owner written confirmation as to the insurance carrier’s most current financial ratings prior to commencing work. Such insurance shall include the interests of the Owner, the Contractor, Subcontractors and Sub-subcontractors in the work and shall insure against the perils of fire and extended coverage and shall include "all risks" insurance for physical loss or damage including without duplication, theft, vandalism and malicious mischief. This insurance shall also cover portions of the Work stored off the site or in transit. If this insurance is written with stipulated amounts deductible, the Owner shall not be responsible for any difference between the payments made by the insurance carrier and the claim. The policy shall contain a provision that coverages afforded under policies will not be canceled or allowed to expire until at least 30 days’ written notice has been given to the Owner. The Owner shall be named insured within the policy.
11.2.3 Delete sub-section 11.2.3.

11.3 - Delete Sections 11.3 and 11.4 in their entirety.

11.4

11.5.1 Delete the first sentence.

11.5.2 Delete sub-section 11.5.2

11.6.11 Add new sub-section 11.6.1 as follows:

§ 11.6.11 The Owner shall have the power to adjust and settle with its insurers any loss for which it has obtained insurance.

Upon the occurrence of an insured loss, the Owner and the Contractor shall cooperate with each other and with each other's insurer in the submission of claims and related information and the distribution of any insurance proceeds. If after such a loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

12.2.1 Add to the end of the sub-section as follows:

The Contractor shall bear the cost of any loss or damages to the Owner resulting from such failure or defect.

12.2.2.1 Delete the third sentence.

Add to the end of the sub-section as follows:

If the correction or repair of any of the Work is required to avoid impacts to the maintenance, operation or safety of any portion of the Project site or the Owner’s property, the Owner reserves the right to undertake the repairs prior to notifying the Contractor or without waiting for the Contractor to respond, without waiving the Owner’s rights under the warranties and the Owner’s right to correct work under Section 2.4.

ARTICLE 13 MISCELLANEOUS PROVISIONS

13.1 Delete the the words “by the law of”, and insert the words “Commonwealth of Massachusetts” at the end of the sentence as revised.
Delete the second sentence.

13.2.1 In the second sentence delete “Except as provided in Section 13.2.2”.

13.2.2 Delete sub-section 13.2.2.

13.4.4 Delete sub-section 13.5.4 and replace as follows:

§ 13.5.4 The Contractor shall obtain and deliver promptly to the Architect any occupancy permit and any certificates of final inspection of any part of the Contractor's work and operating permits for any mechanical apparatus, such as elevators, escalators, boilers, air compressors, etc., which may be required by law to permit full use and occupancy of the premises by the Owner. Receipt of such permits or certificates by the Architect shall be a condition precedent to Substantial Completion of the Work.

13.7.1 Add new sub-section 13.7.1 as follows:

§ 13.7.1 It is expressly agreed that the obligations of the Contractor hereunder arise out of contractual duties, and that the failure of the Contractor to comply with the requirements of the Contract Documents shall constitute a breach of contract, not a tort, for the purpose of applicable statutes of limitation and repose. Any cause of action which the Owner may have on account of such failure shall be deemed to accrue only when the Owner has obtained actual knowledge of such failure, not before.

13.8 Add new section 13.8 as follows:

§ 13.8 LIMITATION OF LIABILITY

§ 13.8.1 The Owner shall be liable, if ever, only to the extent of its interest in the Project; and no officer, director, partner, agent or employee of the Owner shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation, which shall be effective if the Owner ever succeeds to the Contractor's rights and obligations under a Subcontract.

13.9 Add new section 13.9 as follows:

§ 13.9 DEFENSE OF SUITS

§ 13.9.1 The Contractor shall be responsible for, shall defend and pay all costs, attorneys' fees and liabilities both direct and indirect as a result of suits arising out of this Contract.
§ 13.9.2 Neither final acceptance nor occupation of the premises by the Owner shall relieve the Contractor of responsibility for all claims for labor, materials, and equipment arising out of this Contract.

§ 13.9.3 The Contractor shall indemnify and hold harmless the Owner and the Architect and their agents and employees from and against all claims, damages, losses, and expenses including attorneys’ fees arising out of or resulting from the performance of the work.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

14.1.1 Insert in the beginning of the first sentence as follows:

Provided that the Contractor is not in breach of any of its obligations under the Contract,

Delete sub-headings .1, .2, and .4.

14.1.2 Delete sub-section 14.1.2.

14.1.3 Delete sub-section 14.1.3 and replace as follows:

§ 14.1.3 If one of the above reasons exists, the Contractor may, upon seven days written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. The payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner’s title to such material or equipment or otherwise protect the Owner’s interest.

14.1.4 Delete sub-section 14.1.4.

14.2.1 Delete “repeatedly” from the beginning of sub-headings .1 and .3.

Insert new sub-headings .4 and .5 after sub-heading .3 as follows:

.4 becomes the subject of a voluntary petition in bankruptcy or any voluntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors or becomes the subject of an involuntary petition in bankruptcy or any involuntary proceeding related to insolvency, receivership, liquidation or comparable proceeding or any assignment for the benefit of creditors.
.5 submits three successive Applications for Payment, each of which indicate that the actual Work completed is less than 90 percent of the values estimated in the construction schedule (submitted by the Contractor pursuant to Section 3.10.1) to be completed by the respective dates.

14.2.2 In the first sentence delete “, and upon certification by the Architect that sufficient cause exists to justify such action,”.

Delete the second sentence of sub-heading .3.

14.2.4 In the first sentence:

Insert “all costs and losses incurred by the Owner on account of the Contractor’s failure to comply with the Contract Documents and” after “the Work, including”.

Insert “and Owner’s Project Manager’s” after “for the Architect’s”.

Delete the last sentence of the sub-section and replace as follows:

The Owner shall be entitled to hold all amounts due the Contractor at the date of termination until all of the Owner’s damages have been established, and to apply such amounts to such damages.

14.3.2 Insert “, subject to compliance with the conditions of Section 8.3.” at the end of the first sentence.

Delete the second sentence.

14.4.2 In sub-heading .3 delete “and” after “all existing contracts” and replace with “except for subcontracts, if any, that Owner elects to assume, terminate all”

14.4.3 Delete sub-section 14.4.3 and replace as follows:

§ 14.4.3 In the event that the Contract is terminated for the Owner’s convenience, the Contractor shall be reimbursed in accordance with the Contract Documents for all Work properly performed up to the termination date, and for all materials or equipment not incorporated in the Work, but delivered and suitably stored at the site. Payment for materials or equipment stored at the site shall be conditioned upon submission by the Contractor of bills of sale or such other evidence as is satisfactory to the Owner to establish the Owner’s title to such material or equipment or otherwise protect the Owner’s interest. The Contractor shall not be entitled to payment for overhead and profit on the Work not executed.
ARTICLE 15 CLAIMS AND DISPUTES

15.1.1 Delete sub-section 15.1.1 and replace as follows:

§ 15.1.1 DEFINITION
The word “Claim” shall mean a written demand by the Contractor for an increase in the Contract Time or the Contract Sum. The Contractor is responsible for substantiating its Claims. The word “Claim” shall not include claims by the Owner. The Owner may withhold from the Contractor the value of any claims against the Contractor in accordance with Massachusetts General Laws, including, but not limited to, Sections 39G and 39K of Chapter 30.

15.1.2 Delete subsection 15.1.2

15.1.3 Delete sub-section 15.1.3 and replace as follows:

§ 15.1.3 NOTICE OF CLAIMS
Contractor must initiate Claims within fourteen (14) calendar days after occurrence of the event giving rise to such Claim by written notice to the Architect and the Owner. Such written notice must (1) be signed by the Contractor; (2) conspicuously identify on its face that the notice serves as a notice of claim; (3) explain in sufficient detail the basis of the Claim; (4) identify the date of the event giving rise to such Claim; and (5) state the exact dollar amount of the increase in the Contract Sum being requested, if any, and the number of days extension to the Contract Time sought, if any.

15.1.3.2 Delete subsection 15.1.3.2

15.1.4 Delete “Section 9.7 and” after “as provided in”.

15.1.4.2 Delete subsection 15.1.4.2

15.1.6.1 In the second sentence delete “of cost and” after “include an estimate”.

15.1.6.2 Delete sub-section 15.1.5.2.

15.1.7 Delete sub-section 15.1.7.

15.2.1 Delete the capitalized word, “Claim,” and replace with lower-case word, “claim,” in the first and fourth sentences.

In the third sentence:

Delete “mediation” after “condition precedent to” and replace with “litigation”.

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15.2.2 Delete sub-section 15.2.2 and replace as follows:

§ 15.2.2 The Initial Decision Maker will review Claims and within 30 days of the receipt of the Claim take one or more of the following actions: (1) request additional supporting data from the Contractor; (2) notify the Contractor that the Initial Decision Maker requires additional time to resolve the Claim; and/or (3) reject the Claim in whole or in part.

15.2.3 Delete the last sentence.

15.2.4 Delete sub-section 15.2.4 and replace as follows:

§ 15.2.4 If the Architect requests the Contractor to furnish additional supporting data in connection with a Claim, the Contractor shall provide such data within ten (10) calendar days of such request. If the Contractor is of the opinion that it is impossible to provide such data within such time, the Contractor shall notify the Architect of such opinion in writing within such ten-day period. If the Architect determines that it is impossible for such data to be provided within such ten-day period through no fault of the Contractor, the Contractor shall provide such data within 30 calendar days of the Architect’s request, unless the Architect fixes another date, in which case the data must be submitted by the date so fixed. Failure of the Contractor to provide such data within the time prescribed herein shall result in the irrevocable waiver of the Claim.

15.2.5 Delete the last sentence and replace as follows:

The rejection of a claim by the Architect and any decisions of the Owner with respect to the same, and the interpretations by the Architect of the plans, drawings and specifications, shall be final and binding on the Contractor in accordance with Section 39J of Chapter 30 of the Massachusetts General Laws.

15.2.6 Delete sub-section 15.2.6 in its entirety.

15.2.7 Delete the capitalized word, “Claim,” and replace with lower-case word, “claim,” in the first and second sentences.

15.2.8 Delete sub-section 15.2.8.

15.3 Delete sections 15.3 and 15.4 in their entirety.
EXHIBIT A to Document A101 – 2017 is hereby deleted in its entirety and replaced with the Insurance Requirements set forth in the General Conditions and Supplementary Conditions.
TECHNICAL SPECIFICATIONS
DIVISION 01  GENERAL REQUIREMENTS

SECTION 01 01 00  SUMMARY OF WORK

PART 1  -  GENERAL

1.01  GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02  DESCRIPTION OF WORK - GENERAL

A. In general, the Contractor shall supply all material, labor, equipment, insurance, temporary protection, tools and appliances necessary for the proper completion of the work as described in the Plans and Specifications, in accordance with good construction practice, and as required by the materials manufacturers.

B. Supply all shoring and protection necessary to protect the occupants, building area, building systems, and landscape areas. All means and methods are the responsibility of the contractor. The Contractor is solely responsible for safety on the job site.

C. The work includes, but is not limited to:

Base Bid:

1. Excavation and installation of new perimeter foundation drainage.

2. Install new wood framing at first floor.
SUMMARY OF WORK

3. Install new concrete footings.
4. Install new welded wire mesh and steel bracing frames at basement walls.
5. Remove and install new wood bulkhead.
6. Remove, restore, and reinstall wood floor boards at first floor.
7. Remove and restore existing exterior doors.
8. Install new fire alarm.
9. Remove and install one (1) wythe of brick from portion of chimney in the attic.
10. Asbestos abatement.

Alternate #1:

1. Remove and replace asphalt shingle roof.
2. Remove and replace existing chimney cap.
3. Remove and reinstall existing gutters and downspouts.
4. Remove and replace sections of deteriorated decorative wood rake and gable trim.
5. Repoint existing masonry chimney above the roof.
6. Paint exterior surfaces.
7. Asbestos abatement.

D. The contractor shall take all necessary precautions to prevent the spreading of dirt and dust throughout the areas of the work and other areas of the building. During the demolition and other work, Contractor shall take all measures necessary to contain dust and other debris from the work within the limits of the work area under the Contractor’s control. Contractor shall be responsible for promptly cleaning up all dirt, dust and debris escaping from the work areas or dropped from vehicles traveling to and from the work. All vehicles used for removal of material from the site shall be equipped with covers, and in good condition.

1.03 INTENT OF THE PROJECT MANUAL

A. Whenever “Furnish”, “Install”, or “Provide” is used in the Contract Documents, it shall mean to erect, install, connect, make operative, and supply all labor and
materials, including miscellaneous fittings, hardware, and accessories necessary to complete the installation of the specified item.

B. The scope of work is indicated in the Project Manual. Areas of required work indicated on the drawings are for illustration and are not to be interpreted as representing quantities, exact locations, and/or the extent of work required. The Owner makes no representation of the exact quantities of work required. It shall be the responsibility of the Contractor to do all work to the complete fulfillment of the requirements of the Project Manual.

1.04 ERRORS, OMISSIONS, AND CONFLICTS IN THE PROJECT MANUAL

A. In the case of conflicts in the Drawings and the Specifications noticed by the Contractor, the Consultant shall be notified immediately in writing of such errors and/or omissions. In no case shall the Contractor proceed without written authorization from the Consultant.

1.05 UNFORESEEN FIELD CONDITIONS

A. In the case of unforeseen field conditions, the Contractor shall notify the Owner and CBI immediately in writing of such conditions. In no case shall the Contractor proceed without written authorization from the Consultant. If such unforeseen conditions result in additional expense, the Contractor shall not proceed without the written approval of the Owner.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION
SPECIAL PROJECT PROCEDURES

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 BIDDERS EXAMINATION AND INSPECTION OF EXISTING BUILDING AND SITE

A. All bidders must inspect the existing site and make their own assessment of the work required to achieve the complete, finished conditions specified in the Contract Documents.

B. Failure to adequately inspect the site and/or correctly assess existing conditions shall not be cause for additional payment.

C. Every contractor will be bound by the scope of work of the Contract Documents and shall make the inspections necessary to assure that the bid price includes the complete scope.

1.03 HOURS OF WORK

A. Work may commence at 7:00 AM and continue until 5:00 PM, Monday through Saturday.
B. The Contractor shall be completely and fully responsible for the security and safety of the job site at all times.

### 1.04 CONTRACTOR USE OF THE BUILDINGS, ACCESSIBILITY AND SCHEDULES FOR WORK

A. The work of the Contractor and all Subcontractors shall be performed during the hours of operation as specified herein and in and around areas of the building and site used while occupied by the Owner and the public. The Contractor shall execute the Work with the least possible disturbance to the use and continuous functioning of the site and building. The Contractor and each Subcontractor take all necessary measures to assure the safety of the staff, visitors, and the general public. The General Contractor is solely responsible for safety on the job site including securing and making safe all construction areas during construction hours as well as during non-construction hours.

B. Schedule of Work and Site Use

1. The Contractor shall schedule the work of this Contract so as to perform and complete the Work of the Contract according to the following schedule. The Contractor shall within seven (7) days of the Notice of Contract Award, submit a schedule to the Owner and Architect for review.

2. Between the time period of the general bid due date and Construction Commencement, the Contractor shall take all necessary measures to complete the Work of this Contract. It is expected that the Contractor utilize the time period between the bid date and construction start date to schedule and coordinate the work and work sequence, prepare shop drawings and submittals for approval and order materials. The Owner shall issue a Notice to Proceed. If the work is not complete by the completion date, the Contractor will be subject to liquidated damages.

3. The Contractor shall be responsible for providing any and all measures and/or temporary construction required to control the transmission of dust, particles, and fumes from construction activities.

4. The Contractor shall be responsible on a daily basis for informing the designated Owner’s representative of all persons on-site that day associated with the Work. The Contractor shall establish a daily reporting system of all activities which is acceptable to the Owner.

5. The Construction schedule shall indicate the dates for start and completion of each work item or task required with all milestones using a Bar Chart subject to approval by the Architect.
6. The Awarding Authority’s review of the project construction schedule shall not extend to the accuracy or other matters dealt with in the schedule, including but not limited to whether work is omitted, whether duration of activity is reasonable, the level of labor, materials or equipment, the Contractor’s means, methods, techniques, procedures or sequence of construction, or whether the sequence and timing for work remaining are practical. The accuracy, correctness of all work, sequencing, and schedules shall remain the sole responsibility of the Contractor. Neither the Awarding Authority’s review of a schedule nor a statement of resubmittal not required shall relieve the Contractor for the responsibility for complying with the contract schedule, adhering to sequences of work, or from completing any omitted work with the Contract Time.

7. The Contractor shall provide, erect and maintain barricades with any required egress, access doors, lighting, ventilation, guard rails and all other appurtenances required to protect the general public, visitors, staff, and workers while construction is in progress. Safety is the sole responsibility of the Contractor on the job site.

1.05 HOUSEKEEPING AND PROTECTION OF EXISTING CONDITIONS

A. Maintain the premises in a safe, orderly condition at all times. Protect construction, furnishings, equipment and other items.

B. Property Protection: The General Contractor shall take all measures necessary to protect the Owner’s property.

C. Security: The General Contractor shall take every possible precaution to maintain the security of the buildings and site. The Contractor shall cooperate with the Owner fully and follow the Owner’s directions as issued. The Contractor shall control and restrict access to areas of work to prevent injury to persons and property.

D. The Contractor shall properly cover, protect and maintain floor and finished surfaces to prevent damage. Replace protective coverings which become wet, torn or ineffective.

E. Correction by the Contractor

1. At no additional cost to the Owner, the General Contractor shall immediately correct all deficiencies, including damages to the building, site and site surfaces, damages to furnishings, damages to equipment or systems, damage to adjacent properties, and all other damage caused by the General Contractor or its Subcontractors during the execution of the Work of this Contract. Any and all damages resulting from inadequate, insufficient or defective temporary protections installed by the Contractor.
during the work of this Contract, shall be corrected by the General Contractor at no additional cost to the Owner.

1.06 REQUIREMENTS RELATED TO BUILDING USERS’ FURNISHINGS, EQUIPMENT AND OTHER ITEMS

A. The General Contractor is responsible for protecting all furnishings, equipment and items from damage (including construction generated dust) during the entire construction period.

B. The General Contractor shall be responsible for moving and re-setting up all furniture, fixed and movable equipment, file and storage cabinets, recreation equipment, boxes, and all other items to accomplish the work of both the General Contractor and the Subcontractors in its entirety.

1.07 DUST, DIRT, AND FUME CONTROL

A. The Contractor shall take all necessary precautions and provide all necessary temporary construction to effectively contain dust, dirt and fumes within the areas of work and within the work limits. Temporary construction shall be provided to effectively prevent dust and dirt from entering areas of the buildings or adjacent buildings, satisfying all City, State and Federal laws, codes, and requirements.

1.08 RUBBISH REMOVAL

A. The Contractor shall remove all rubbish, waste, tools, equipment and appurtenances caused by and used in the execution of the Work; but this shall in no way be construed to relieve the Contractor of his primary responsibility for maintaining the building and Project site clean and free of debris, leaving all work in a clean condition and satisfactory to the Official.

B. Immediately after unpacking, the Contractor shall collect and remove from the building and Project site all packing materials, case lumber, excelsior, wrapping and other rubbish.

C. Rubbish removal shall occur so that trash and debris are contained in closed and secured waste containers.

1.09 SITE DRAINAGE AND PUMPING

A. The Contractor shall be responsible at all times for proper and sufficient site drainage and shall maintain such drainage during the life of the Contract in a manner acceptable to the Owner and so as not to adversely affect the adjacent areas or adjacent properties.
B. The Contractor shall provide and maintain all pumps, suction and discharge lines, and power in sufficient number and capacity to keep all excavations, pits, trenches, foundations and the entire property area free from accumulation of water from any source whatsoever at all times and under way and all circumstances and contingencies that may arise.

1.10 SNOW AND ICE REMOVAL

A. The Contractor shall promptly remove all snow and ice which may impede the work, damage the finishes or materials, be detrimental to all/any crafts or trade, or impede trucking, delivery or moving of materials at the site, or prevent adequate drainage of the site or adjoining areas.

1.11 WINTER CONSTRUCTION

A. The Contractor shall provide protection against damage to materials and work installed in freezing weather, including special heat and coverings to prevent damage by the elements. Therefore, the Contractor is completely responsible for any and all winter conditions protection, including but not limited to: The ground surface, under footings, under pipe lines, under masonry, under concrete, and other work subject to damage shall be protected against freezing or ice formations.

B. Refer to SECTION 01 50 00 - TEMPORARY FACILITIES, for additional requirements applicable to winter construction.

1.12 BROKEN GLASS

A. The Contractor shall be held responsible at all times prior to Substantial Completion of the Work, or occupancy by the City, whichever occurs first, for all broken or scratched glass, or glass which had been damaged as a result of the Work, or otherwise. And, when so directed by the Official, the Contractor shall replace at no increase in Contract Price or Contract Time, all such glass broken, missing, or damaged prior to Substantial Completion.

1.13 CLEANING AND POLISHING

A. The Contractor shall at all times keep the building and Project site free from accumulation of waste materials or rubbish.

B. Immediately prior to final inspection, the entire building and surrounding Project areas shall be thoroughly cleaned by the Contractor including, without limitation:

1. All construction facilities, tools, equipment, surplus materials, debris and rubbish shall be removed from the Project site and the entire Work shall be left broom clean.
2. All finished surfaces shall be left in perfect condition, free of stains, spots, marks, dirt, and other defects. The Contractor shall be responsible for the cleaning and polishing of the Work of all trades, whether or not cleaning by such trades is included in their respective Selection of the Specifications.

3. All glass in the building shall be washed and polished on both sides.

4. All metals, hardware, fixtures, and equipment shall be left in undamaged, bright, polished condition.

5. Plenums, duct spaces and furred spaces shall be protected at all times from fumes, particles and other air-borne construction effects. These building spaces shall be left clean of debris and decayable materials.

6. Equipment and building systems located in areas of construction shall be cleaned and tested and made perfectly operational to the satisfaction of the Owner prior to Substantial Completion or partial Substantial Completion of that area of work.

C. In cleaning items having manufacturer’s finish, or items previously finished by a Subcontractor, care shall be taken not to damage such finish. In cleaning glass and finish surfaces, care shall be taken not to use cleaning agents which may stain or damage any finish materials. Any damage to finishes caused by cleaning operations shall be corrected and repaired by the Contractor at no increase in Contract Price.

1.14 OR-EQUAL

A. Where materials, equipment, apparatus, or other products are specified by Manufacturer, brand name, type or catalog number, such designation is to establish standards or performance, quality, type and style.

B. If the General or Subcontractor wishes to use materials or equipment other than these specifically designated herein, as being equal to those so specifically designated, he shall submit the proposed substitution before purchasing and/or fabrication in accordance with the requirement of the General Conditions for approval.

C. It is the responsibility of the Contractor to submit all back-up material and data needed to prove that the proposed product is an “or-equal”. The Architect will not review an alternative product without proper documentation. Alternative products and assemblies will be rejected immediately without proper documentation.
D. The schedule of the project is not subject to the availability of products submitted as “or approved equal” or the review needed to certify an “or approved equal” product.

1.15 PERMITS AND POLICE DETAILS

A. The contractor is responsible for procuring and paying for all applicable permits and police details throughout the entire project.

1.16 COORDINATION

A. The Contractor shall coordinate locations of all items to be installed with the Architect. If an item is not dimensioned, for height or location, contact the Architect for the installation information. Installation of items without the proper dimensional information may result in reinstallation at no additional charge by the contractor.

1.17 GENERAL NOTES

A. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING AND COORDINATING ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS. IN CASE OF CONFLICT, THE ARCHITECT SHALL BE NOTIFIED AND SHALL RESOLVE THE CONFLICT.

B. IN ANY CASE OF CONFLICT BETWEEN THE DRAWINGS AND THE PROJECT SPECIFICATIONS, THE MORE STRINGENT REQUIREMENTS SHALL GOVERN.

C. THE CONTRACTOR SHALL MAKE NO DEVIATION FROM DESIGN DRAWINGS WITHOUT PRIOR REVIEW BY THE ARCHITECT.

D. WORK NOT INDICATED ON A PART OF THE DRAWINGS BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING PLACES SHALL BE REPEATED.

E. ALL WORK SHALL COMPLY WITH APPLICABLE CODES AND LOCAL LAWS AND REGULATIONS.

F. GENERAL CONTRACTOR SHALL COORDINATE LOCATIONS OF OPENINGS, PITS, BOXES, SUMPS, TRENCHES, SLEEVES, DEPRESSIONS, GROOVES, AND CHAMFERS, WITH MECHANICAL, ELECTRICAL AND PLUMBING TRADES.

G. THE STRUCTURAL DESIGN OF THE BUILDING IS BASED ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS. NO PROVISIONS HAVE BEEN MADE FOR CONDITIONS OCCURRING DURING
CONSTRUCTION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO MAKE PROPER AND ADEQUATE PROVISIONS FOR STABILITY OF, AND ALL STRESSES TO THE STRUCTURE DUE TO ANY CAUSE DURING CONSTRUCTION.

H. CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REQUEST ALL DIMENSIONS OR INFORMATION REQUIRED TO PERFORM THE WORK FROM THE ARCHITECT. WORK COMPLETED BY THE CONTRACTOR WITHOUT DIMENSIONS OR INFORMATION SHALL BE DONE AT THEIR OWN RISK AND, IF DEEMED INCORRECT BY THE ARCHITECT, SHALL BE REMOVED AND REINSTALLED TO THE SPECIFICATIONS OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

I. CODES: THE PROJECT IS BASED ON THE REQUIREMENTS OF THE MASSACHUSETTS STATE BUILDING CODE - NINTH EDITION.

J. THE PLANS WERE COMPILED FROM VARIOUS SOURCES. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS AND DIMENSIONS.

1.18 INSURANCE

A. The Contractor shall purchase and maintain, at his expense all insurance required by the Contract. Documents and all insurance required by the applicable laws of Massachusetts, including but not limited to, General Laws, Chapter 146, in connection with all hoisting equipment.

B. The Contractor shall purchase and maintain such insurance as will protect him from claims under workmen’s compensation acts and from claims for damages because of bodily injury, including death and all property damage including, without limitation, damage to buildings and adjoining the site of construction which might arise from and during operations under this contract, whether such operations be by himself or by any subcontractor or anyone directly or indirectly employed by either of them including:

1. Statutory Worker’s Compensation and Employer’s Liability

The contractor shall provide insurance for the payment of compensation and the furnishing of other benefits under Chapter 152 of the General Laws (so-called Worker’s Compensation Act) to all persons to be employed under this contract and shall continue in force such insurance as aforesaid shall be deemed a material breach of this Contract and shall operate as an immediate termination thereof. The contractor shall, without limiting the generality of the foregoing, conform to the provisions of
Section 34A of Chapter 149 of the General Laws, which Section is incorporated herein by reference and made a part of hereof.

2. Comprehensive General Liability Insurance

Minimum bodily injury limits of $1,000,000 per person and $1,000,000 per accident, and property damage limits of $1,000,000 per accident and $1,000,000 aggregate during any 12 month period, shall include the following:

a. Public liability (bodily injury and property damage)

b. X.C.U. (explosion, collapse, and underground utilities)

c. Independent contractor’s protective liability.

d. Products and completed operations.

e. Save harmless agreement for Owner and Architects set forth in ARTICLE 10.11 of the GENERAL CONDITIONS.

3. Comprehensive All Risk Motor Vehicle Liability Insurance

Minimum bodily injury limits of $1,000,000 per person, $1,000,000 per accident, and property damage limit of $1,000,000 per accident.

4. All Risk Insurance

Covering all Contractor’s equipment with a provision for Waiver of Subrogation against the Owner.

5. Excess Liability Insurance in Umbrella Form with combined Bodily Injury and Property Damage Limit of $2,000,000.

6. Town of Boxborough and CBI Consulting, LLC shall be listed as Additional Insured with a Waiver of Subrogation on the insurance policy for this project.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION
DIVISION 01 GENERAL REQUIREMENTS

SECTION 01 04 00 CONDUCT OF THE WORK

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROJECT MANAGEMENT

A. The Contractor's attention is directed to the General Conditions.

B. The Building will be occupied during construction. The Contractor will have complete control of the job site and is solely responsible for safety and security on the job site. The Contractor shall take all necessary precautions to ensure the public safety and convenience of the visitors during construction.

C. The work must be completed in a continuous uninterrupted operation. The Contractor must use sufficient personnel and adequate equipment to complete all the necessary work requirements within a minimum period of time.

D. Unless specifically authorized by the Owner, in writing, the work must be conducted between the hours of 7:00 AM and 5:00 PM on Monday through Saturday. No work is to be done on holidays or Sundays, unless approved by the Owner in advance.

E. The Contractor is responsible for the security and stability of partially completed
work until the project is accepted by the Owner.

1.03 COORDINATION

A. The Contractor shall submit for approval to the Owner a detailed operational plan showing the sequence of operations prior to commencement of any work at the site. Any changes to this operational plan must be approved by the Owner.

B. The Contractor must retain on the Work during its progress a competent full time representative, satisfactory to the Owner. This representative shall not be changed, except with the consent of the Owner. The representative shall be in full charge of the work and all instructions given to this person by the Architect shall be binding.

C. The Contractor must supply to the Owner the home telephone number of a responsible person who may be contacted during non-work-hours for emergencies on the Project.

1.04 OWNER’S COOPERATION

A. The Owner shall assist the Contractor to perform the Work in accordance with the approved operational plan.

B. The Contractor shall provide:

1. Notification to the Owner one (1) week before any work is scheduled at the site/building.

2. Notification to the Owner in writing forty-eight (48) hours before work is scheduled in any particular area.

3. An updated schedule monthly with the application for payment. Payments will not be authorized until the updated schedule is received and approved.

END OF SECTION
DIVISION 01  GENERAL REQUIREMENTS

SECTION 01 09 00  DEFINITIONS & STANDARDS

PART 1 - GENERAL

1.01  GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02  DELIVERY AND STORAGE

A. Materials shall be delivered dry, in their original, unopened containers, clearly labeled with manufacturer's name, brand name, and such identifying numbers as are appropriate. Materials shall be stored as required by the Manufacturer's specifications.

1. All materials shall be stored flat, or in the case of rolls, standing on end, elevated from the ground or deck, and protected with approved waterproof covers to keep the materials dry and protected from sunlight and moisture, and ventilated to prevent excessive temperature.

2. Flammable materials shall be stored in a cool, dry area away from sparks and open flames.

3. Damaged or deteriorated materials shall not be used and shall be removed from the job site.

4. All cardboard containers shall be stored in dry areas or on pallets. Packing materials shall be collected so as not to blow around the site.
5. All materials shall be stored in temperatures specified by the manufacturer. Submit proposed storage arrangements regarding temperature to the Architect and the materials manufacturer for review.

6. All firestopping shall be performed by each respective trade. All File Sub-Bidders shall firestop their own work.

1.03 JOB CONDITIONS

A. Do not deliver to site or install any material or system that has not been approved. Materials installed without approval may be required to be removed and replaced at no additional cost to the owner.

B. Materials which have a temperature other than the application temperature of the manufacturer shall not be applied.

C. All materials shall be installed according to manufacturer's specifications and shall be compatible with the existing materials used on site.

D. Remove only as much existing roofing as can be replaced and made weathertight each day, including all flashing work.

E. All surfaces to receive the new materials shall be thoroughly dry. Should surface moisture such as dew exist, the Contractor shall provide the necessary equipment to dry the surface prior to application.

1.04 CONDITIONS, DIMENSIONS AND QUANTITIES

A. All conditions, dimensions and quantities shall be determined or verified by the Contractor. The Plans and details have been compiled from various sources and may not reflect the actual condition at the moment of construction. The Contractor is cautioned to take all precautions and make all investigations necessary to install the proposed work. The Owner will not consider unfamiliarity with the job conditions as a basis for additional compensation.

1.05 DEFINITION OF "CONSULTANT"

A. Any reference to "Designer", "Engineer" or "Architect" in this Project Manual, Specification or on the drawings shall refer to CBI Consulting, LLC, 250 Dorchester Avenue., Boston, Massachusetts 02127, (617) 268-8977, Wayne Lawson (Principal – Project Engineer)

1.06 DEFINITION OF "OWNER"

A. Any reference to the Owner shall be Town of Boxborough, Town Administrator, Selena Shaw.
1.07  MINIMUM REQUIREMENTS

A.  It is the intent of these contract documents to, in some cases, exceed the minimum requirements of the manufacturer. The new work shall be bid and installed as detailed.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION
DIVISION 01
GENERAL REQUIREMENTS

SECTION 01 22 00
UNIT PRICES

PART 1 GENERAL

1.01 GENERAL REQUIREMENTS

Attention is directed to the general and supplementary conditions and Division 1 including all sub-divisions therein attached in this document and drawings, which are made a part of this section.

1.02 DESCRIPTION

A. Scope of Work:

1. This Section covers those items for which indefinite quantities can be expected and, therefore, pre-agreed prices per unit of work are established as means to determine adjustments to the Contract Price after actual quantities are determined.

B. Related Work Specified Elsewhere:

1. Refer to Division 1 for limitations.

2. Examine Contract Documents for requirements that affect work of this Section.

1.03 QUANTITIES AND COST ADJUSTMENTS

A. Refer to this Section and individual Specification Sections for methods of measurement and payment for unit prices. As soon as the work involved in each unit cost item has been completed, submit documentation to establish the actual quantities provided. Submit to the Architect for review and issuance of Change Order.

B. Change Order amount for each unit cost item will be based on actual quantities multiplied by the unit cost. This unit cost is a total cost and includes all mark-ups applicable taxes, overhead, and profit as described below.

1.04 UNIT PRICES

A. General Provisions

1. Materials, methods of installation and definitions of terms set forth under the various unit price items are indicated in the Schedule of Unit Prices and indicated in the Contract Documents.

2. Performance of work which is not required under the Contract Documents or which is not authorized by Change Order, whether or not such work item is set
forth hereunder as a Unit Price Item, shall not be considered cause for any extra payment. The Contractor will be held fully responsible for such unauthorized work, including the performance of all corrective measures required by the Architect or Owner.

3. The Owner may choose not to approve any or all unit prices prior to award of the contract if it deems the unit price unreasonable. In this case, the Owner at their discretion may choose to:

a. Negotiate the unit costs prior to signing the contract;

b. Disapprove any or all of the unit prices and adjust the work on the change order process; or

c. Disqualify the bidder if the Owner deems the unit prices to be unreasonable.

B. Schedule of Unit Prices: Should certain additional work be required, or should the quantities of certain classes of work be increased or decreased from those required by the Contract Documents, by authorization of the Owner, the below unit prices shall, at the option of the Owner, be the basis of payment to the Contractor or credit to the Owner, for such increase or decrease in the work. The Unit Prices shall represent the exact total cost per unit to be paid the Contractor (in the case of additions or increases) or to be refunded the Owner (in the case of decreases). No additional adjustment will be allowed for overhead, profit, insurance, or other direct or indirect expenses of the Contractor or Subcontractors. No additional adjustments will be allowed for additional work without the prior written approval of the Owner.

C. The above unit prices shall include all labor, materials, overhead, profit, insurance, etc., to cover the finished work. Changes shall be processed in accordance with the provisions of Division 1 governing Changes in the Work.
### UNIT PRICE SCHEDULE

<table>
<thead>
<tr>
<th>#</th>
<th>DESCRIPTION OF WORK</th>
<th>*BASE BID QUANTITY</th>
<th>REFERENCE DETAILS</th>
<th>ADD / DEDUCT PRICE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Alternate #1: Replace damaged or deteriorated wood roof deck with plywood deck.</td>
<td>25 SF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Alternate #1: Remove and replace portions of existing rake.</td>
<td>50 LF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Replace damaged or deteriorated wood sill above foundation wall.</td>
<td>25 LF*</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART 2**  PRODUCTS - Not Used.

**PART 3**  EXECUTION - Not Used.

END OF SECTION
PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 GENERAL

A. The Add Alternate items as set forth in the Add Alternate Schedule below shall be used to determine adjustments to the Contract Sum if any of these Add Alternates are chosen by the owner to be added to the total Bid Price submitted by the Contractor.

B. The Add Alternate prices as computed are to include net cost plus overhead, profit, bond and all other cost related to the work item.

C. Add Alternate net cost to include the cost of all labor, materials, equipment, disposal, and all other costs that would have been required to complete the work item.

1.02. ADD ALTERNATE SCHEDULE

A. This schedule lists the Add Alternates which are to be incorporated into the Contract Documents. Consult the Specification Sections and Plans for the scope of the work to be included in each Add Alternate.
GENERAL CONTRACTOR

1. Add Alternate #1: Remove and replace existing asphalt shingle roofing at areas as noted on Plans. Remove and replace deteriorated roof rake and trim. Locations to be determined by Architect.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION – NOT USED

END OF SECTION
DIVISION 01  
GENERAL REQUIREMENTS

SECTION 01 30 00  
SUBMITTALS

PART 1 – GENERAL

1.01 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01- GENERAL REQUIREMENTS, which are hereby made a part of this Section of the Specifications.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be provided complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually provided in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated into the work shall be new and of the best grade of their respective kinds.

E. Consult the individual sections of the specifications for the specific submittals required under those sections and for further details and descriptions of the requirements.

1.02 GENERAL PROCEDURES FOR SUBMITTALS

A. Timeliness - The Contractor shall transmit each submittal to the Designer sufficiently in advance of performing related Work or other applicable activities so that the installation is not delayed by processing times, including disapproval and resubmittal (if required), coordination with other submittals, testing, purchasing, fabrication, delivery, and similar sequenced activities. No extension of time will be authorized because of the Contractor's failure to transmit submittals to the Architect in advance of the Work.

B. Sequence - The Contractor shall transmit each submittal in a sequence which will not result in the Architect’s approval having to be later modified or rescinded by reason of subsequent submittals which should have been processed earlier or concurrently for coordination.
C. The Contractor's Review - Only submittals received from and bearing the stamp of approval of the Contractor will be considered for review by the Architect. Submittals shall be accompanied by a transmittal notice stating name of Project, date of submittal, "To", "From" (Contractor, Subcontractor, Installer, Manufacturer, Supplier), Specification Section, or Drawing No. to which the submittal refers, purpose (first submittal, resubmittal), description, remarks, distribution record, and signature of transmitter.

D. Architect’s Action - The Architect will review the Contractor's submittals and return them with one of the following actions recorded thereon by appropriate markings:

1. Final Unrestricted Release: Where marked "Approved" the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents.

2. Final-But-Restricted Release: When marked “Approved as Noted” the Work may proceed provided it complies with the Architect’s notations or corrections on the submittal and complies with the requirements of the Contract Documents. Acceptance of the Work will depend on these compliances.

3. Returned for Resubmittal: When marked "Revise and Resubmit" or "Disapproved" the Work covered by the submittal (such as purchasing, fabrication, delivery, or other activity) should not proceed. The submittal should be revised or a new submittal resubmitted without delay (no limit to number of resubmissions), in accordance with the Designer's notations stating the reasons for returning the submittal.

E. Processing - All costs for printing, preparing, packaging, submitting, resubmitting, and mailing, or delivering submittals required by this contract shall be included in the Contract Sum.

1.03 OR EQUALS

A. Definition - Whenever a specification section names one or more brands for a given item, and the Contractor wishes to submit, for consideration, another brand, the submission shall be considered an "or-equal" or a "material substitution". For the purposes of this Contract, the terms "or-equal" and "material substitution" shall be considered synonymous.

B. In no case may an item be provided on the Work other than the item named or described, unless the Architect, with the Owner’s written concurrence, shall consider the item equal to the item so named or described, as provided by M.G.L. c.30 § 39M.
C. The equality of items offered as "equal" to items named or described shall be proved to the satisfaction of the Architect, including all research and full documentation, at the expense of the Contractor submitting the substitution.

D. The Designer and/or the Owner may require that full size samples of both the specified and proposed products be submitted for review and evaluation. The Contractor shall bear full cost for providing, delivering, and disposal of all such samples.

E. The Contractor shall assume full responsibility for the performance of any item submitted as an "Or-Equal" and assume the costs of any changes in any Work which may be caused by such substitution.

F. Or Equal Approval Process - On the transmittal, or on a separate sheet attached to the submission, the Contractor shall direct attention to any deviations, including minor limitations and variations, from the Contract Documents.

1. The Contractor shall submit to the Architect for consideration of any or-equal substitution a written point-by-point comparison containing the name and full particulars of the proposed product and the product named or described in the Contract Documents.

2. Such submittal shall in no event be made later than ten (10) calendar days prior to the incorporation of the item into the Work. In any case in which the time period specified in the Contract Documents from the Notice to Proceed to Substantial Completion is less than 30 days, this requirement can be waived by the Architect.

3. Upon receipt of a written request for approval of an or-equal substitution, the Architect shall investigate whether the proposed item shall be considered equal to the item named or described in the Contract Documents. Upon conclusion of the investigation, the Architect shall promptly advise the Contractor that the item is, or is not, considered acceptable as on Or-Equal substitution. Such written notice must have the concurrence of the Owner.

1.04 SUBMISSION OF SHOP DRAWINGS

A. Shop Drawings shall be complete, giving all information necessary or requested in the individual section of the specifications. They shall also show all adjoining Work, other work affected, and details of connection thereto, including hardware, flashing, waterproofing, and all utilities.

B. Shop Drawings shall be for whole systems. Partial submissions will not be accepted.
C. The Architect reserves the right to review and approve shop drawings only after approval of related product data and samples.

D. Shop drawings shall be properly identified and contain the name of the project, name of the firm submitting the shop drawings, shop drawing number, date of shop drawings and revisions, Contractor's stamp of approval, and sufficient spaces near the title block for the Architect's stamp.

E. The Contractor shall submit to the Architect seven (7) black line prints of each shop drawing. Transparency and prints shall be mailed or delivered in roll form. Each submittal shall be accompanied by a transmittal notice.

F. When the transparency is returned by the Architect with the stamp "Revise and Resubmit" or "Disapproved", the Contractor shall correct the original drawing or prepare a new drawing and resubmit seven (7) prints thereof to the Architect for approval. This procedure shall be repeated until the Architect’s approval is obtained. No limit.

G. The Contractor shall maintain one full set of approved shop drawings at the site.

H. Photo copies of the bid documents are not acceptable as shop drawings.

I. Provide shop drawings for every item to be installed or repaired in the entire project, whether or not indicated in the spec section.

1.05 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES (SUBMITTALS AND DISTRIBUTION)

A. The General Contractor, within ten (10) working days after the commencement of work shall prepare and submit for the Architect’s approval a schedule of Shop Drawings, Product Data and Samples required to be submitted for the work. The schedule shall indicate by trade the date by which final approval of each item must be obtained, and shall be revised as required by conditions of the work, subject to Architect’s approval. The schedule of Shop Drawings shall correspond to the Construction Schedule so that the submissions relate to the time when the products and/or systems will be required on the site. The Architect will not approve a Schedule which calls for out of sequence submittals.

B. General Contractor shall submit Shop Drawing, product data and samples accompanied by the General Contractor’s Shop Drawing, Product Data and Sample Transmittals form.

C. Preparation of Submittal Form: Fill out transmittal form in the following manner using a typewriter or word processor, and retain one copy – General Contractor’s first file:
<table>
<thead>
<tr>
<th></th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>General Contr. Job No.</td>
</tr>
<tr>
<td>2.</td>
<td>Spec. Section</td>
</tr>
<tr>
<td>3.</td>
<td>Submitted by</td>
</tr>
<tr>
<td>4.</td>
<td>Project/No.</td>
</tr>
<tr>
<td>5.</td>
<td>Transmittal No.</td>
</tr>
<tr>
<td>6.</td>
<td>Date Submitted</td>
</tr>
<tr>
<td>7.</td>
<td>Subcontractor</td>
</tr>
<tr>
<td>8.</td>
<td>Submission No.</td>
</tr>
<tr>
<td>9.</td>
<td>Spec. Sec. Para.</td>
</tr>
<tr>
<td>10.</td>
<td>Copies &amp; Type</td>
</tr>
<tr>
<td>11.</td>
<td>Contr.’s Remarks</td>
</tr>
</tbody>
</table>

D. Resubmissions: Resubmittal shall follow the same procedures as the initial submittal with the following exceptions:

1. Transmittal shall contain the same information as the first transmittal except that transmittal numbers shall run consecutively and the submission number shall indicate 2nd, 3rd, etc. submission. The drawing number/description shall be identical to the initial submission and the date shall be the revised date for that submission.
2. Unless otherwise approved by the Architect, no new material shall be included on the same transmittal for a resubmission.

3. Where Resubmittal has not been required by the Architect, but corrections have been noted on a shop drawing, seven (7) prints of the drawings after the noted corrections have been made shall be submitted to the Architect for record purposes but not for action. Shop Drawings reviewed by the Designer’s Architects will have three prints returned.

E. Submittal Procedures by General Contractor for Approval

1. General: All submittals shall be made to Architect’s office.

2. Shop Drawings: Seven (7) black line prints (maximum sheet size shall be 30 x 42).

F. Architect’s Review Procedures:

1. The Architect’s review, including Architect’s review period will not exceed fourteen (14) calendar days from the established date of each submission indicated on the Schedule of Shop Drawings, Product Data, and Samples plus the additional time, if any, for distribution by the General Contractor and receipt of submissions by the Architect. The General Contractor is required to strictly adhere to the established Schedule dates.

2. The Architect will process the submission and indicate the appropriate action on the submission and the transmittal. Incomplete or erroneous transmittals will be returned without action.

3. The Architect will fill out transmittal in the following sequence:

   a. Date Received  Date arriving in the Architect’s office.

   b. Date Return  Date leaving the Architect’s office to the General Contractor.

   c. To/Date  Name of architect to whom submission is sent for review and date leaving the Architect’s office.

   d. From/Date  Name of architect reviewing submission and date arriving in the Architect’s office.

   e. Action  Indicate action taken on submission.
f. Distribution
   Number of copies distributed and type of material distributed (sepia, print, brochure or samples, etc.).

g. Architect’s Remarks
   Note major deviations from the Contract Documents.

4. The Architect will return two (2) of Shop Drawings, one Sample or two brochures with copies of transmittal forms to the General Contractor.

5. The Architect will keep a copy and send one copy to the Owner.

1.06 SUBMISSION OF PRODUCT DATA

A. The Contractor shall submit seven (7) copies of Product Data to the Architect. All such data shall be specific and identification of material or equipment submitted shall be clearly marked in ink. Data of general nature will not be accepted.

B. Product Data shall be accompanied by a transmittal notice. The Contractor's stamp of approval shall appear on the printed information itself, in a location which will not impair legibility.

C. Product Data returned by the Designer as "Disapproved" shall be resubmitted in seven (7) days until the Architect's approval is obtained.

D. When the Product Data are acceptable, the Architect will stamp them "Approved" or "Approved as Corrected", distribute copies to the team 3 copies, and return two (2) copies to the Contractor. The Contractor shall provide and distribute additional copies as may be required to complete the Work.

E. The Contractor shall maintain one full set of approved, original, Product Data at the site.

F. Provide product data for all items to be installed whether or not noted in the specification section.

1.07 SUBMISSION OF SAMPLES

A. Unless otherwise specified in the individual section, the Contractor shall submit three specimens of each sample.

B. Samples shall be of adequate size to permit proper evaluation of materials. Where variations in color or in other characteristics are to be expected, samples shall show the maximum range of variation. Materials exceeding the variation of approved samples will not be approved on the Work.
C. Samples of items of interior finishes shall be submitted all at once to permit a coordinated selection of colors and finishes.

D. Samples which can be conveniently mailed shall be sent directly to the Designer, accompanied by a transmittal notice. All transmittals shall be stamped with the Contractor's approval stamp of the material submitted.

E. All other samples shall be delivered at the field office of the Project Representative with sample identification tag attached and properly filled in. Transmittal notice of samples so delivered with the Contractor's stamp of approval shall be mailed to the Architect.

F. If a sample is rejected by the Architect, a new sample shall be resubmitted in the manner specified hereinabove. This procedure shall be repeated until the sample is approved by the Architect.

G. Samples will not be returned unless return is requested at the time of submission. The right is reserved to require submission of samples whether or not particular mention is made in the specifications, at no additional cost to DCAM.

H. Samples shall not be installed as part of the work.

I. Provide color and finish samples of every item to be installed.

1.08 CONSTRUCTION SCHEDULE

A. The Proposed Construction Schedule shall be based on an orderly progression of the work, allowing adequate time for each operation, and leading to a reasonable certainty of Substantial Completion by the date established in the Agreement. The Proposed Construction Schedule will be reviewed by the Owner/Architect for compliance with the requirements of this Article and will be accepted or returned to the Contractor for revision and resubmittal. Unless specifically required by law, no payment under this Contract shall be due until the Proposed Construction Schedule has been approved by the Owner/Architect.

B. The Proposed Construction Schedule in critical path method form which shall include the following with such other details as Owner/Architect may require:

1. Indicate complete sequence of construction by activity, with dates for beginning and completion of each element and stage of construction.

2. Identify each item by major Specification Section number.

3. Submittal and Approval Dates for all Shop Drawings and Samples.
4. A chart showing Critical Delivery Dates for Material and Equipment to be incorporated into the Work.

5. Provide sub-schedules to define critical portions of entire Schedule.

6. Coordinate content with Schedule of Values and provide the cost of each activity as identified in the Construction Schedule.

C. During the progress of the Work, any changes in the original schedule desired by the General Contractor which affect Contract completion dates shall be approved by the Owner before being put into effect.

D. When changes in the Work are required, the original Proposed Construction Schedule shall be revised without delay to incorporate such changes or new work and indicate the effect hereof on the Project as a whole.

E. Provide updated critical path method (CPM) chart each month. Submit chart for review with Contractor’s Application for Payment.

1.09 SCHEDULE OF VALUES

A. Prior to the first request for payment, the General Contractor shall submit to the Architect and Owner, a Schedule of Values of the various portions of the work in sufficient detail to reflect various major components of each trade, including quantities when requested, aggregating the total contract sum, and divided so as to facilitate payments for work under each Section in accordance with Article VII of the Contract Form. The Schedule shall be prepared in such form as specified or as the Architect or Owner may approve, and it shall include data to substantial its accuracy. Each item in the Schedule of Values shall include its proper share of overhead and profit in this schedule, including breakdown of values, requires the approval of the Architect and Owner and shall be used only as a basis for the Contractor’s request for payment.

1.10 MANUFACTURER’S INSTRUCTIONS

A. Submit manufacturer’s printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for all products.

1.11 CERTIFICATES OF COMPLIANCE

A. Submit certificates of compliance together with the associated Shop Drawings, Product Data and Samples required for the Product.

B. Submit on 8-1/2 in. x 11 in. white paper.
C. Submit one copy.

D. The Architect will retain the certificates of compliance; no approval reply is intended.

1.12 PATTERNS AND COLORS

A. Submit accurate color charts and pattern charts to the Architect for his/her review and selection whenever a choice of color or pattern is available in a specified product, unless the exact color and pattern of a product are indicated in the Contract Documents. Submit actual cured samples of all materials for color approval.

1.13 RECORD DRAWINGS

A. At the completion of the project, the Contractor shall prepare a complete set of reproducible record drawings and AutoCAD Files, latest version on compact discs showing all systems as actually installed.

1.14 SUBMITTAL TRANSMITTAL FORM

A. All submittals shall be presented with the submittal transmittal form attached, completely filled out. Submittals without the attached form will be returned without review.

END OF SECTION
DIVISION 01  GENERAL REQUIREMENTS

SECTION 01 40 00  QUALITY CONTROL

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 INSPECTION AND TESTING

A. An independent inspector and/or testing laboratory may be engaged and paid for by the Owner to perform the inspection and testing of the new work.

B. The Contractor shall cooperate with the inspector and/or testing laboratory, furnish materials and labor as may be required and provide for convenient access to all parts of the work for purposes of inspection and testing.

C. The Contractor shall accept as final the results of all such inspection and testing.

D. The inspector shall have the authority to delay the commencement of work, or to stop the work at any time, for any reason which he deems necessary.

E. The inspector and/or testing laboratory reserves the right to require the Contractor to perform removal of materials installed by the Contractor. Make all cuts in accordance with the recognized standard practices. Remove materials only in the presence of the inspector.
1. Immediately after removing each material sample identify each by number and exact location by gummed label attached to a smooth surface of the cut sample.

2. Submit the cut samples directly to the inspector after applying identification.

3. Replace the cut with new materials, matching those removed, immediately after each removal, and insure that the replacement is completely watertight.

F. The removal cuts shall be subjected to various tests, including moisture content, density, thickness, compressive strength, composition, conformance with ASTM specifications where applicable, conformance with the recommendations of the manufacturers whose materials were used.

G. Bear all costs for tests where materials or systems have been found unacceptable and all costs for replacement required due to such unacceptability.

H. If any replacement work is required, such work will also be subject to the terms of this SPECIFICATION.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION
DIVISION 01  GENERAL REQUIREMENTS

SECTION 01 50 00  TEMPORARY FACILITIES

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 GENERAL

A. The Contractor shall be responsible for providing and maintaining all temporary facilities until Substantial Completion. Removal of such prior to Substantial Completion must be with the concurrence of the Architect. The Contractor bears full responsibility for reproviding any facility removed prior to Substantial Completion.

B. Removal of all temporary facilities shall be a condition precedent to Substantial Completion unless directed otherwise by the Architect or specifically noted in the specifications.

C. The Contractor must comply with all safety laws and regulations of the Commonwealth of Massachusetts, the United States Government, and local government agencies applicable to Work under this contract. The Contractor's attention is directed to the Commonwealth of Massachusetts, Department of Labor and Industries Regulation 454 CMR.

D. Safety is the sole responsibility of the contractor on the job site. Contractor is notified that the building will be occupied during construction. The Architect does
not have control of the job site in any way.

1.03 TEMPORARY TELEPHONES

A. The Contractor shall provide a telephone separate service for the use of the Contractor's authorized personnel, Subcontractors, as well as the Architect and the Owner in the Field Office.

B. The Contractor shall pay for the installation and removal of the foregoing temporary telephones and for all calls and charges in connection therewith.

C. No telephone service will be provided by the Owner.

D. All telephone numbers shall be available to the project team. Provide pager for the project superintendent at the job site.

E. Provide 24-hour emergency phone numbers for the Contractor’s Project Manager and Superintendent.

1.04 TEMPORARY TOILETS

A. Portable, temporary toilets shall be provided by the contractor and shall be located as directed by the owner.

B. The Contractor:

1. Assumes full responsibility for the use of the temporary toilets

2. Pays all costs for operation, maintenance and cleaning.

C. Under no circumstances will the Contractor's personnel be allowed to use the toilets and sinks in the building.

D. The Contractor shall not have use of sanitary toilet facilities within the building and must provide portable sanitary toilets for the use of their forces for the entire duration of the work. Toilets shall be cleaned and emptied twice weekly (minimum) and as directed by the Owner.

1.05 TEMPORARY CONSTRUCTION FENCE

A. The Contractor shall be responsible for providing and maintaining temporary fencing and barricades around the construction as may be necessary to assure the safety of all persons authorized or unauthorized. Such protective measures shall also be located and constructed as required by local, state, and federal ordinances, laws, codes, or regulations.
1.06 TEMPORARY STRUCTURES AND MATERIAL HANDLING

A. The Contractor shall provide such secure storage sheds, temporary buildings, or trailers as required for the performance of the Contract.

B. Materials shall be handled, stored, installed, cleaned, and protected in accordance with the best practice in the industry and, except where otherwise specified in the Contract Documents, in accordance with manufacturer's specifications and directions.

C. The Contractor must obtain the permission of the Owner for the placement of any storage facilities on site, and the Owner assumes no responsibility for articles stored.

1.07 TEMPORARY STAGING, STAIRS, CHUTES

A. Except as otherwise specified, the Contractor shall furnish, install, maintain in safe condition, and remove all scaffolds, staging, and planking over 8 ft. in height, required for the use of all trades for proper execution of the Work, except as noted.

B. The Contractor shall furnish, install, maintain in safe condition, and remove all temporary ramps, stairs, ladders, and similar items as required for the use of all trades for the proper execution of the Work.

C. If the project is new construction permanent stairs shall be erected as soon as possible, for which the Contractor shall provide temporary protective treads, risers, handrails, and shaft protection.

D. The Contractor shall furnish, install, maintain, and remove covered chutes from the work area. Such shall be in convenient locations and permit disposal of rubbish directly into trucks or disposal units.

E. Debris shall not be allowed to fall freely from upper levels of the building. Materials shall not be thrown or dropped from open windows or the roof.

1.08 HOISTING FACILITIES

A. Except as otherwise specified, the Contractor shall provide, operate, and remove material hoists, cranes, and other hoisting as required for the performance of the Work by all trades.

1.09 UTILITIES

A. The Contractor will be responsible for providing all temporary power and water needed to complete the Work.
1.10 WEATHER PROTECTION

A. The Contractor shall provide temporary enclosures and heat to permit work to be carried on during the months of November through March in compliance with MGL c.149 §44G (d). Without limitation this includes such items as excavation, pile driving, steel erection, erection of certain exterior wall panels, masonry, sealants, waterproofing, sheet metal work, roofing, and similar operations.

B. "Weather Protection" means the temporary protection of that Work adversely affected by moisture, wind, and cold by covering, enclosing, and/or heating. This protection shall provide adequate working areas during the months of November through March as determined by the Owner and consistent with the construction schedule to permit the continuous progress of all Work necessary to maintain an orderly and efficient sequence of construction operations. The Contractor shall furnish and install "Weather Protection" material and be responsible for all costs, including heating required to maintain a minimum of 40 degrees F. at the working surface. This provision does not supersede any specific requirements for methods of construction, curing of materials, or the applicable conditions set forth in the Contract Documents with added regard to performance obligations of the Contractor.

C. Within 30 calendar days after award of the Contract, the Contractor shall submit in writing, to the Architect for approval, three (3) copies of the proposed methods for "Weather Protection".

D. The Contractor shall assume the entire responsibility for weather protection during construction (until Substantial Completion), and shall be liable for any damage to any Work caused by failure to supply proper weather protection and proper ventilation.

E. Work damaged by frost shall be removed and replaced by and at the Contractor's expense and as directed by the Architect.

F. It is to be specifically understood that the Contractor shall do no work under any conditions deemed unsuitable by the Contractor to the execution of the Work. This provision shall not constitute any waiver, release, or lessening of the Contractor's obligation to bring the Work to Substantial Completion within the period of time set forth in the Contract Documents.

1.11 PROTECTION

A. Weather protection shall be provided for; weather conditions occurring or anticipated, the extent of the existing structure exposed, or any other possible hazard. Remove only as much roofing and sealant as can be completely replaced and made watertight in one day.
B. Dust control, pedestrian protection, and traffic control measures shall be provided during the course of the work.

C. Schedule and execute all work without exposing the sensitive building areas to the effects of inclement weather. Protect the existing structure and its contents against all risks, and repair or replace all damage to the Owner's satisfaction. Protect all exterior building surfaces, roofing, lighting, landscape areas, and pavement from damage.

D. All new and temporary construction, including equipment and accessories, shall be secured from wind damage or blow-off.

E. The Contractor shall provide all necessary temporary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Also provide plywood protection for roofing adjacent to construction. Areas damaged because of inadequate protection will be repaired at no additional cost to the owner, as per these specifications and the recommendations of the Architect.

F. Provide temporary barricades and other forms of protection as required to protect Owner's personnel, students, and general public from injury due to the work.

G. Any deteriorated substrate which is discovered shall be promptly reported to the Architect.

H. Safety on the job site is the sole responsibility of the contractor. The Contractor shall ensure that all Local, State, Federal, OSHA or other applicable safety requirements are strictly accorded to. All OSHA safety requirements regarding items such as scaffolding, temporary protections, lift trucks, cranes, removal of debris, dust control, cleaning solvents, and high pressure water washing, sandblasting and equipment shall be ensured by the Contractor.

1.12 DEBRIS

A. The Contractor will be responsible for the removal of all construction debris from the job site.

B. Upon completion of each day and each phase of the work the Contractor shall leave the premises free of all debris and waste, in broom-clean condition. Overnight storage of material on site will be as approved by the Owner. The Contractor shall be responsible for keeping the site free of rubbish and debris, and in a neat and orderly condition at all times. The Contractor shall clean up and remove all accumulated rubbish and debris daily.

C. The Owner's representative shall inspect the site daily. If it is determined that the site has not been cleaned of construction debris on a particular day the Contractor may be assessed $100.00 for that day to be used to have the site cleaned by in house
personnel. This shall be prepared by the Architect as a deduct change order to the contract.

D. Debris resulting from the new work shall be placed in covered containers provided by the Contractor and legally disposed of. Burning will not be permitted on site. Dumpster locations shall be approved by the Owner.

1.13 TEMPORARY NOISE AND POLLUTION CONTROL

A. All work performed under the Contract shall conform to the requirements of Chapter 111, Sections 31C and 142D of the General Laws, Commonwealth of Massachusetts, Department of Public Health, and Metropolitan Boston Air Pollution Control District regulations.

1.14 CONSTRUCTION PARKING CONTROL

A. The Contractor shall control trucks and worker's vehicles to prevent unnecessary congestion in the neighborhood of the project. See Site Plan for allowable on site parking area.

B. The schedule and location of all deliveries of materials must be coordinated and approved by the Owner.

C. There is sufficient parking on site for the contractor's vehicles. All parking will be at the direction of the Owner.

1.15 TEMPORARY SITE STORAGE

A. The Owner shall designate an area for temporary site storage on the site. All materials shall be stored in locked storage trailers or container boxes.

B. Storage of materials will not be permitted within any building in the scope of work.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION
DIVISION 01

GENERAL REQUIREMENTS

SECTION 01 51 00

PROTECTION

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 PROTECTION OF PERSONS & PROPERTIES

A. The site will not be occupied during construction. The contractor shall have complete control of the job site. The Contractor shall take all necessary precautions to ensure the public safety and convenience of visitors during construction. Safety is the sole responsibility of the contractor, regardless of what is set forth in this document. The architect does not have control of the job site, or means and methods, in any way.

B. Any damage to buildings, roads, (public and private), concrete walks, bituminous concrete areas, fences, rails, lawn areas, trees, shrubbery, poles, underground utilities, etc. shall be made good by and at the Contractor's own expense, all to the satisfaction of the Owner.

C. The Contractor shall patch, repair and/or replace all adjacent materials and surfaces damaged after the installation of new work to the complete satisfaction and at no expense to the Owner. All repair and replacement work shall match the existing in kind and appearance.
1.03 TEMPORARY PROTECTION

A. The Contractor shall:

1. Protect excavations, trenches, buildings, and materials at all times from rain water, ground water, backing-up, or leakage of sewers, drains, or other piping, or from water damage of any origin. Provide all pumps, piping, coverings, and other materials and equipment as required by job conditions to accomplish this requirement.

2. In addition to the weather protection during the months of November to March specified elsewhere, provide temporary watertight enclosures for openings in exterior walls and in roof decks when and as required to protect the Work from damage by inclement weather. Temporary enclosures shall be provided with adequate means of ventilation to prevent accumulation of moisture in the buildings.

3. Provide temporary wood doors for exterior entrances and elsewhere when required. Permanent door enclosures shall not be used as temporary enclosures.

4. Protect sills, jambs, and heads of openings through which materials are handled.

5. Protect decks and slabs to receive work by other trades from any soiling which will prevent proper adhesion of subsequent Work. Decks and slabs shall be left clean and free of blemishes at the time other trades begin the application of their work.

6. Protect concrete slabs to remain exposed and finished floors against mechanical damage, plaster droppings, oil, grease, paint, or other material which will stain the floor finish. Install and maintain adequate strips of building paper or other protection on finished floors in rooms where future Work will be done by other trades.

7. Protect all surfaces to receive work by other trades from any soiling which will prevent proper execution of subsequent work

8. Protect other areas, furniture, and private property of the resident and the Owner. Any areas damaged by the Contractor shall be restored to the original condition or compensated at the Contractor’s expense.

B. Roof surfaces and waterproofed surfaces shall not be subjected to traffic nor shall they be used for storage of materials. Where some activity must take place in order to carry out the Work, adequate protection must be provided.
C. After the installation of the Work by any Subcontractor is completed, the Contractor shall be responsible for its protection and for repairing, replacing, or cleaning any such Work which has been damaged by other trades or by any other cause, so that all Work is in first class condition at the time of Substantial Completion.

1.04 ACCESS

A. The Contractor shall, at all times, leave an unobstructed way along walks and roadways, and shall maintain barriers and lights for the protection of all persons and property in all locations where materials are stored or work is in progress.

1.05 SECURITY

A. The Contractor shall be responsible for providing all security precautions necessary to protect the Contractor's and Owner's interests.

B. Where excavation is involved, the Contractor shall be responsible for providing continuous watchmen service as necessary, to insure adequate protection of the general public.

1.06 NOISE AND DUST CONTROL

A. The Contractor shall take special measures to protect the residents, neighbors, and general public from noise, dust, and other disturbances by:

1. Keeping common pedestrian and vehicular circulation areas clean and unobstructed;

2. Insulating work area from occupied portions as far as possible; and

3. Sealing dust and fumes from contaminating occupied spaces.

1.07 FIRE PROTECTION

A. The Contractor shall take necessary precautions to insure against fire during construction. The Contractor shall be responsible to insure that the area within contract limits is kept orderly and clean and that combustible rubbish and construction debris is promptly removed from the site.

B. Installation of equipment suitable for fire protection shall be done as soon as possible after commencement of the Work. The Contractor's attention is directed to the requirements of the Commonwealth of Massachusetts, Department of Labor and Workforce Development Regulation 454 CMR.
1.08 WIND PROTECTION

A. Should high wind warnings be issued by the U.S. Weather Bureau, the Contractor shall take every precaution to minimize danger to persons, to the Work, and to the adjacent property.

1.09 WEATHER PROTECTION

A. The Contractor shall provide Weather Protection as required by Specification Section 01 50 00 – TEMPORARY FACILITIES and any other specific requirements of the Contract Documents.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

E. This section supplements the General Conditions.

F. Consult the individual sections of the specifications for cleaning of Work installed under those sections.

1.02 CLEANING DURING CONSTRUCTION

A. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on the site.

2. Do not dispose of volatile wastes such as mineral spirits, oil, or paint thinner in storm or sanitary drains.

3. Do not dispose of wastes into streams or waterways.

B. Wet down dry materials and rubbish to lay dust and prevent blowing dust.

C. Do not allow materials and rubbish to drop free or be thrown from upper floors, but
CLEANING UP
01 52 00 - 2

remove by use of a material hoist or rubbish chutes.

D. Maintain the Site free from accumulations of waste, debris, and rubbish.

E. Provide on-site containers for collection of waste materials and rubbish.

F. At the end of each day, remove and legally dispose waste materials and rubbish from site.

G. Disposal of materials shall be in compliance with all applicable laws, ordinances, codes, and by-laws.

1.03 FINAL CLEANING

A. Prior to submitting a request to the Architect to certify Substantial Completion of the Work, the Contractor shall inspect all interior and exterior spaces and verify that all waste materials, rubbish, tools, equipment, machinery, and surplus materials have been removed, and that all sight-exposed surfaces are clean. Leave the Project clean and ready for occupancy.

B. Unless otherwise specified under other sections of the Specifications, the Contractor shall perform final cleaning operations as herein specified prior to final inspection.

C. Cleaning shall include all surfaces, interior and exterior, which the Contractor has had access to, whether new or existing.

D. Employ experienced workmen or professional cleaners for final cleaning.

E. Use only cleaning materials recommended by the manufacturer of the surface to be cleaned.

F. Use cleaning materials which will not create a hazard to health or property and which will not damage surfaces.

G. All broken or defective glass caused by the Contractor's Work shall be replaced at the expense of the Contractor.

H. Remove grease, mastic, adhesive, dust, dirt, stains, labels, fingerprints, and other foreign materials from sight-exposed interior and exterior surfaces. This includes cleaning of the Work of all finishing trades where needed, whether or not cleaning by such trades is included in their respective specifications.

I. Clean and polish all new and existing glass and plastic glazing (if any) throughout the building(s), on both sides. Clean plastic glazing in accordance with the manufacturer's directions. This cleaning shall be completed by qualified window cleaners at the expense of the Contractor just prior to acceptance of the Work.
J. Wash and polish all mirrors.

K. Repair, patch, and touch up marred surfaces to the specified finish, to match adjacent surfaces.

L. Polish glossy surfaces to a clear shine.

M. Do the final cleaning of resilient floors and wood floors as specified under the respective sections of the Specifications.

N. Leave all architectural metals, hardware, and fixtures in undamaged, polished conditions.

O. Leave pipe and duct spaces, plenums, furred spaces and the like clean of debris and decayable materials.

P. In cleaning items with manufacturer's finish or items previously finished by a Subcontractor, care shall be taken not to damage such manufacturer's or Subcontractor's finish. In cleaning glass and finish surfaces, care shall be taken not to use detergents or other cleaning agents which may stain adjoining finish surfaces. Any damage to finishes caused by cleaning operations shall be repaired at the Contractor's expense.

Q. Broom clean exposed concrete surfaces and paved surfaces. Rake clean other surfaces of grounds.

R. Ventilating systems - Replace filters and clean ducts, blowers, and coils if units were operated during construction.

S. Owner's responsibility for cleaning commences at Substantial Completion.

END OF SECTION
DIVISION 01  GENERAL REQUIREMENTS

SECTION 01 70 00  PROJECT CLOSEOUT

PART 1 - GENERAL

1.01  GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished be complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02  COMPLETION OF WORK

A. The site shall be cleaned of all debris resulting from the work and areas damaged during the course of the work restored to the satisfaction of the architect and the Owner.

B. The Contractor shall notify the Architect and Owner that the work is completed and Project Manual requirements have been met. The Architect shall review the completed work with the Contractor within seven (7) calendar days of notification. Any deficiencies observed at the time will be conveyed directly to the Contractor with a written confirmation, after which the Contractor shall correct the stated deficiencies to the satisfaction of the Architect within fourteen (14) calendar days prior to demobilization from the site.

C. After satisfactory completion of the above, the work shall be considered complete with notification by the Architect to the Owner.

D. The Contractor shall submit all lien waivers and warranties at this time of final payment.
E. All guarantees, as required in any Section of the Project Manual shall be submitted for approval prior to final payment.

F. Contractor shall maintain and record all changes to the plans throughout the entire project and shall submit as-built drawings of the entire project prior to final payment. As-built drawings must be in electronic form on Auto-CAD 2000 or later, submitted on CD. Electronic copies of the Architect’s plans can be purchased from the Architect for a fee of $50 per sheet.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION - NOT USED

END OF SECTION
DIVISION 01  GENERAL REQUIREMENTS

SECTION 01 72 00  SURVEYS AND RECORD DRAWINGS

PART 1 - GENERAL

1.01  GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.01  RECORD DRAWINGS

A. Record Drawings shall consist of all the Contract Drawings.

B. From the sets of drawings furnished by the Owner, the Contractor shall reserve one set for record purposes. From this set, the Contractor shall detach and furnish, at no charge to the Subcontractors the drawings of their portion of the Work for the same purpose.

C. The Contractor and the above Subcontractors shall keep their marked up As Built set on the site at all times and note on it in colored ink or pencil, neatly and accurately, at the end of each working day, the exact location of their work as actually installed. This shall include the location and dimensions of underground and concealed Work, and any architectural, mechanical, or electrical variations from the Contract Drawings. All changes, including those issued by Addendum, Change Order, or instructions by the Architect shall be recorded. Marked up As Built drawings shall be prepared for the entire project and include all Work, including but not limited to:
1. The location of all underground utilities and appurtenances referenced to permanent surface improvements, both horizontally and vertically at ten (10) foot intervals and at all changes of direction.

2. The location of all internal utilities and appurtenances, concealed by finish materials, including but not limited to valves, coils, dampers, vents, cleanouts, strainers, pipes, junction boxes, turning vanes, variable and constant volume boxes, ducts, traps, and maintenance devices.
   a. The location of these items shall be shown by offsets to structure and drawing grid lines.
   b. The tolerance for the actual location of these items on the marked up As Built Drawings shall be plus or minus two (2) inches.
   c. Each item shall be referenced by showing a tag number, areas served, and function on the marked up As Built drawing

D. The Consultant may periodically inspect the marked up As Built drawings at the site. The proper and current maintenance of the information required on these drawings shall be a condition precedent to approval of the monthly applications for payment.

E. At Substantial Completion the Contractor shall submit the complete set of marked up As Built drawings to the Architect. The Contractor shall check all marked up As-Builts prepared by subcontractors and certify in writing on the title sheet of the drawings that they are complete and correct, prior to submission to the Architect.

F. The Consultant shall review the marked up As Built drawings and verify by letter to the Owner that the Work is complete. The Architect shall incorporate all changes onto original drawings.

G. The Contractor may make a written request for copies of the completed Record Drawings. The Contractor shall reimburse the Owner directly for the cost of printing of any requested Record Drawings.

H. Contractor shall maintain and record all changes to the plans throughout the entire project and shall submit as-built drawings of the entire project prior to final payment. As-built drawings must be in electronic form on Auto-CAD 2000 or later, submitted on CD. Electronic copies of the Architect’s plans can be purchased from the Architect for a fee of $50 per sheet.

END OF SECTION
DIVISION 02  EXISTING CONDITIONS

SECTION 02 08 00  ASBESTOS ABATEMENT – ROOFING MATERIALS

(Alternate #1)

PART 1 - GENERAL

1.01 GENERAL PROVISIONS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 1 - GENERAL REQUIREMENTS that are hereby made a part of this Section of the Specifications.

B. Examine all Drawings and all Sections of the Specifications and requirements and provisions affecting the work of this section.

1.02 DESCRIPTION OF WORK

A. The work covered by this Section includes the removal of Category 1 asbestos-containing materials (ACM) consisting of non-friable asphaltic roofing materials and roofing materials as indicated in the Contract Documents. Non-friable roofing materials shall be removed in accordance with the requirements of 310 CMR 7.15(10) – Requirements for the Removal of Roofing Sealants, and applicable requirements of 29 CFR 1926.1101-Asbestos including but not limited to 29 CFR 1926.1101(g)(8)(ii).

B. All provisions of this Section relating to the health and safety of workers and the general public, as well as protection of the environment are minimum standards. The Contractor is responsible for determining whether any additional and/or more stringent protective measures are required by any legal requirements or prudent conservative work practices, and implementing such measures if deemed necessary. Nothing in this Section shall be deemed to relieve the Contractor from any liability with respect to any such legal requirements or requirement of prudent conservative practice.

C. All work under this Section shall be performed either by a contractor holding a current Massachusetts Department of Labor Standards (DLS) Asbestos Abatement Contractor's license and/or workers who have been trained in accordance with the requirements of 29 CFR 1925.1101(k)(9)(iv)(A). A person who removes asphalt roofing or siding does not need to hold an Asbestos Abatement Contractor License from the DLS as long as the work that breaks, shears, or slices the non-friable asphalt roofing and siding materials does not produce asbestos dust or make the material friable and the work is performed in accordance with MassDEP 310 CMR 7.15.
1.03 SCOPE OF WORK

A. The work covered by this Section includes the removal of asbestos-containing materials (ACM) and materials indicated herein and on the Contract Drawings. Activities include OSHA Class II work operations involving non-friable ACM. The work also includes containment, storage, transportation and disposal of the generated asbestos-containing waste material (ACWM).

B. The Contractor shall furnish all labor, worker training, materials, equipment, utilities, and services for the complete and proper removal and disposal of asbestos-containing materials and associated debris.

C. The following is a summary of the work items to be performed under the Contract. Given quantities are estimates only and are not guaranteed. Bidders shall not use these estimates as the only basis for their Bid. Bidders shall confirm all quantities and items during the Pre-Bid walkthrough to the extent reasonably possible. The Bidders are responsible to review and confirm all quantities and field conditions (including structural integrity of walking/working surfaces), including locations of all ACM and debris, surface area, lengths, widths, cross-sections, thickness, composition of layers, substrate composition and any attachments thereto, including glue, mastic, compounds, prior to the submission of bids. Neither the Consultant nor the Owner will be responsible for errors or omissions and/or charges for extra work arising from any bidder’s failure to become familiar with the existing conditions of the site, requirements of the work and the results to be produced. By submitting a Bid, the Bidder further agrees that the descriptions contained herein and on the drawings (i.e., quantities, descriptions, locations, areas, thicknesses, etc.) are adequate and that the bidder will produce the required results. No claims for extra payment due to incorrect quantities will be considered. By submitting a Bid, a Bidder agrees and warrants that he is familiar with and will perform all the work required, including all items indicated herein and/or on the Drawings. The estimates of asbestos containing materials and approximate quantities of asbestos containing materials to be removed are in the following table.

<table>
<thead>
<tr>
<th>Asbestos Containing Materials (ACM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location</td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Material</td>
</tr>
<tr>
<td>Estimated Quantity</td>
</tr>
<tr>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Levi Wetherbee Farmhouse, 484 Middle Road, Boxborough, MA</td>
</tr>
<tr>
<td>Alternate #1 - Roof</td>
</tr>
<tr>
<td>Black Roofing Sealants around Chimney</td>
</tr>
<tr>
<td>25 sq. ft.</td>
</tr>
<tr>
<td>Alternate #1 - Roof</td>
</tr>
<tr>
<td>Black Sealant around Roofing Penetrations</td>
</tr>
<tr>
<td>15 sq. ft.</td>
</tr>
</tbody>
</table>
1.04 DEFINITIONS

A. Asbestos Abatement: Any activity that includes the removal, encapsulation, demolition, renovation, enclosure, repair, disturbance, handling, transportation, storage, or disposal of asbestos-containing material or asbestos-containing waste material.

B. Accessible: Any item (including ACM) or surface that can be reached by hand, provided sufficient ladders, lifts, safety lines, shoring, scaffolding and/or staging are installed to reach such item/surface, without performing any demolition of existing structures/items in order to reach such item/surface.

C. Airlock: A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area, typically consisting of two curtained doorways separated by a distance of at least 3 feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

D. Air Monitoring: The process of measuring the fiber content of a known volume of air collected during a specific period of time. The procedure normally utilized for asbestos monitoring follow the NIOSH Method 7400 with analysis by Phase Contrast Microscopy and/or the Transmission Electron Microscopy method.

E. Asbestos Project Monitor: The Massachusetts Division of Safety certified professional contracted or employed by the Owner to supervise and conduct air sampling and monitor asbestos abatement activities.

F. Amended Water: Water to which a wetting agent has been added.

G. Asbestos: The asbestiform varieties of chrysotile, amosite, crocidolite, tremolite, anthophylite, and actinolite.

H. Asbestos-Containing Material (ACM): Any material containing equal to or more than one percent asbestos. For materials containing less than 1% asbestos, then the MassDEP work practice requirements in 310 CMR 7.15 do not need to be followed, but waste material must be managed as Asbestos-Containing Waste Material in accordance with the requirements of packaging [310 CMR 7.15 (15)], transport [310 CMR 7.15 (16)], storage and disposal [310 CMR 7.15 (17)], and waste shipment records and reports {310 CMR 7.15 (18)}.

I. Asbestos-Containing Waste Material (ACWM): Any ACM removed during a demolition or renovation project and anything contaminated with asbestos in the course of a demolition or renovation project including, but not limited to, asbestos waste from control devices, bags or containers that previously contained asbestos,
contaminated clothing, materials used to enclose the work area during the demolition or renovation operation, and demolition or renovation debris.

J. Asbestos-Contaminated Objects/Surfaces: Shall mean any objects/surfaces that may be contaminated by asbestos or asbestos-containing material or water.

K. Bulk Loading: The placement of unconfined ACWM in a vehicle or container, such as a roll-off, dumpster or truck in lieu of packaging the ACWM in individual leak tight containers.

L. Category 1 Non Friable Asbestos-containing Material: Asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos.

M. Class I asbestos work: Activities involving the removal of thermal system insulation, surfacing insulation and Presumed Asbestos Containing Materials.

N. Class II asbestos work: Activities involving the removal of ACM that is not thermal system insulation or surfacing material. This includes, but is not limited to the removal of asbestos containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

O. Competent Person: In addition to the definition in 29 CFR 1926.32(f), an individual who is capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, and who has the authority to take corrective measures to eliminate them. In addition, for Class I and II work, this individual must be trained in a training course which meets the criteria of EPA's Model Accreditation Plan (40 CFR 763) for Project Designer or Supervisor, or its equivalent.

P. Disposal Bag: 6-mil thick leak-tight plastic bags used for transporting asbestos waste from work and to disposal site. Each bag shall be labeled in accordance with EPA's NESHAPS, OSHA and DOT regulations.

Q. Encapsulation: The application of a coating or liquid sealant to asbestos-containing materials to reduce the tendency of the material to release fibers.

R. Friable Asbestos-Containing Material: Material that contains one percent or more asbestos, which when dry, may be crumbled, pulverized, or reduced to powder by hand pressure. The term includes non-friable ACM that becomes damaged to the extent it may be crumbled, pulverized, or reduced to powder by hand pressure.

S. HEPA Filter Vacuum Collection Equipment (or vacuum cleaner): High efficiency particulate air (absolute) filtered vacuum collection equipment with a filter system.
capable of collecting and retaining asbestos fibers. Filters shall be of 99.97% efficiency for retaining fibers of 0.3 microns or larger.

T. High-Efficiency Filter: A filter which removes from air 99.97% or more of monodisperse dioctyl phthalate (DOP) particles have a mean particle diameter of 0.3 micrometer.

U. Log: An official record of all activities that occurred during the project and it shall identify the building, agent, contractor, workers, and other pertinent information.

V. Negative Pressure Respirator: A respirator in which the air pressure inside the respiratory-inlet covering is positive during exhalation in relation to the air pressure of the outside atmosphere and negative during inhalation in relation to the air pressure of the outside atmosphere.

W. Negative Initial Exposure Assessment: A demonstration by the Contractor that employee exposure during an operation is expected to be below the PEL

X. Permissible Exposure Limit (PEL): An exposure limit that is published and enforced by OSHA as a legal standard.

Y. Personal Monitoring: Sampling of the asbestos fiber concentrations within the breathing zone of an employee.

Z. Regulated Area: An area established by the Contractor to demarcate areas where Class I and II asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed the permissible exposure limit.

AA. Seal, or Block and Seal: Preparing a space or area such that there is no air movement or passage to and from the area. "Isolation barrier" shall mean the system of seals or other items which prevent air movement to and from any work area.

BB. Visible Emissions: Any emissions containing particulate asbestos material that are visually detectable without the aid of instruments. This does not include condensed uncombined water vapor.

CC. Waste Generator: The Asbestos Abatement Contractor that operates and supervises work under this Section that produces asbestos-containing waste materials.

DD. Waste Shipment Record: The shipping document, required to be originated and signed by the waste generator, used to track and substantiate the disposition of asbestos-containing waste material.
EE. Wet Cleaning: The process of eliminating asbestos contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils which have been dampened with amended water or diluted removal encapsulant and afterwards thoroughly decontaminated or disposed of as asbestos contaminated waste.

1.05 REFERENCE STANDARDS, REGULATIONS AND CODES

A. All work shall be performed strictly according to the requirements of this Section and with the applicable regulations.

B. These standards and codes shall be by reference made part of this Section and shall be complied with. Whenever regulations are conflicting, the more stringent regulation will prevail. The Contractor undertaking asbestos abatement work and persons in their employ shall comply with and be bound to requirements of the following Federal, State, and local standards, regulations, and codes:


4. US Department of Transportation. 49 CFR Parts 172 and 173.

5. All Commonwealth of Massachusetts laws, regulations, and standards, including the following: 453 CMR 6.00 - "The Removal, Containment or Encapsulation of Asbestos"; 310 CMR 7.15 - "Asbestos"; 310 CMR 19.00 – "Solid Waste Facility Regulations"; and MGL Chapter 21E.

6. Other Federal, State, and local statutes, ordinances, regulations, or rules pertaining to this Section and the work described herein, including the storage, transportation and disposal of asbestos.

C. All regulations by these and other governing agencies in their most recent version are applicable. This Section of the Specifications refers to many requirements found in these references, but in no way is intended to cite or reiterate all
provisions therein or elsewhere. It is the Contractor's responsibility to know, understand, and abide by all such regulations and common practices.

1.06 PERMITS AND NOTIFICATIONS

A. The Contractor shall be responsible for securing and paying associated fees for all necessary permits for asbestos related work, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

B. The Contractor shall prepare and submit the required notifications, including paying associated fees, to the following agencies. All notifications shall be completed on forms approved by the subject regulatory agency. Copies of all required notifications must be submitted to the Engineer and Owner prior to commencing asbestos abatement work.

1. Massachusetts Department of Environmental Protection, and Massachusetts Division of Labor Standards - (10 working days in advance). Send Common Notification to:
   Commonwealth of Massachusetts
   Asbestos Program
   P.O. Box 120087
   Boston, Massachusetts 02112-0087

   2. Boxborough Fire Department and Boxborough Health Department and other state or city agencies as required by law or ordinance.

1.07 SUBMITTALS

A. Prior to commencing any work under this Section, the Contractor shall submit the following items to the Owner or review in accordance with the General Conditions. No Work under this Section may commence until the Engineer has accepted all required submittals.

B. Copies of all notifications, permits, applications, personal licenses and like documents required by Federal, State, or local regulations obtained or submitted in proper fashion.

C. Chain of Command of responsibility at work site including supervisors, foreman, and competent person, their names, resumes and certificates of training.

D. List of employees to be used on this Contract.
E. Copies of training certificates and Massachusetts DLS asbestos licenses for each employee to be used on the Contract. (This item may be submitted upon employee’s initial arrival on the Contract).

F. Proposed transporter and landfill for asbestos wastes. Copy of proposed Asbestos Waste Shipment Record form.

G. A list of all equipment to be used on site, by make and model, including negative pressure equipment, HEPA vacuums, Water Atomizing Devices, etc.

H. Other Submittals

1. Within 30 calendar days of receipt of asbestos waste at the approved landfill, the Contractor shall submit to the Owner the original copy of the “Waste Shipment Record” acknowledging disposal of all associated waste material from the Contract showing delivery date, quantity, and appropriate signature of Contractor’s, transporter’s, and landfill's authorized representative.

1.08 PERSONAL PROTECTION

A. Personal protection, in the form of disposable Tyvek suits, and NIOSH-approved respirators, are required for asbestos abatement workers, Contractor supervision, Engineer, and visitors at the work site during the set-up, removal, and cleaning operations. Contractor shall provide all this protective equipment for workers, Engineer, and personnel authorized to access this work site.

B. Each worker shall be supplied with a minimum of two complete disposable uniforms every day. Removal workers shall not be limited to two uniforms, and the Contractor shall be required to supply additional uniforms as is necessary. Under no circumstances will anyone entering the removal area be allowed to reuse a contaminated uniform.

C. Work clothes shall consist of disposable full body suits, head covers, gloves, footwear, and eye protection.

D. The Contractor shall supply workers and supervisory personnel with NIOSH approved protective respirators and HEPA/filters. Appropriate respirator selection shall be determined by the daily personnel samples being taken and strictly follow the guidelines set forth in the OSHA respiratory program, 29 CFR 1910.134, 29 CFR 1926.1101 and the Massachusetts DLS Regulations, 453 CMR 6.00. The respirators shall be sanitized and maintained according to the manufacturer’s recommendations. PAPR’s shall be supplied by the Contractor for all personnel associated with this work. Disposable respirators shall not be considered acceptable in any circumstance. The Contractor shall maintain on site a sufficient supply of disposable HEPA/filters to allow workers and supervisory personnel to
change contaminated filters at least three (3) times daily. The Contractor is solely responsible for means and methods used and for compliance with applicable regulations.

E. Respirators shall be individually assigned to removal workers for their exclusive use. All respiratory protection shall be provided to workers in accordance with the Contractor’s written submitted respiratory protection program. A copy of this program shall be kept at the work-site, and shall be posted in the Clean Room of the Decontamination Unit.

PART 2 - PRODUCTS

2.01 MATERIALS, TOOLS, AND EQUIPMENT

A. Respirator Protection Equipment: Provide respiratory protection equipment in accordance with the requirements of 29 CFR 1926.1101 and the Asbestos Abatement Contractor’s respiratory protection program prepared in accordance with 29 CFR 1910.134.

B. Wetting Materials: For wetting prior to disturbance of asbestos-containing materials use amended water. The material must be odorless, non-flammable, non-toxic, non-irritating, and non-carcinogenic. It shall be applied as a mist using a low pressure sprayer recommended by the manufacturer. Use a mixture of surfactant and water which results in wetting of the asbestos containing material and retardation of fiber release during disturbance of the material equal to or greater than that provided by the use of one ounce of a surfactant consisting of 50% polyoxyethylene ester and 50% polyoxyethylene ether mixed with five gallons of water.

C. Lock-Down Encapsulant: Provide penetrating or lock-down type encapsulants specifically designed for the use intended (as permitted). The material shall not contain organic solvents and be non-flammable, non-toxic, non-irritating, and non-carcinogenic.

D. Duct Tape: Provide duct tape in 2" or 3" widths as indicated, with an adhesive which is formulated to aggressively stick to sheet polyethylene.

E. Spray Cement: Provide spray adhesive in aerosol cans which is specifically formulated to stick tenaciously to sheet polyethylene.

F. Waste Containers: For ACWM, provide 6 mil thick leak-tight polyethylene bags labeled with required EPA, DOT, OSHA labels. If the waste material contains sharp edges or may otherwise puncture polyethylene bags, provide drums or other closed containers for storage, transportation, and disposal.

ASBESTOS ABATEMENT – ROOFING MATERIALS

02 08 00 - 9
G. Warning Signs and Labels - Shall comply with 29 CFR 1926.1101, 1926.62, all other federal, state, or local codes and regulations.

H. Ladders or Scaffolds - Provide all scaffolding, ladders and/or staging, etc. as necessary to accomplish the work of this contract. The type, erection and use of all scaffolding shall comply with all applicable OSHA provisions.

I. Hand Power Tools - Shall be equipped with HEPA-filtered local exhaust ventilation if used to drill, cut into, or otherwise disturb ACM.

J. Vacuum Cleaning Equipment - Shall be industrial type designed for such use, equipped with High Efficiency Particulate Air (HEPA) filters. Separate dedicated vacuum cleaners shall be used for asbestos work and shall be clearly labeled as to their intended use. No other method will be permitted. Vacuuming equipment shall be Model GA72 or GA73 as manufactured by NILFISK of America, Inc.; Model CMP-1500-P as manufactured by Car-Mon Products, Inc.; equipment manufactured by J. D. Brophy, Inc. or approved equal. The equipment shall be properly operated at all times and shall contain no air leaks. Each vacuum cleaner shall be emptied and thoroughly cleaned (inside the work area) at the conclusion of the project, or each use.

PART 3 - EXECUTION

3.01 REMOVAL AND DISPOSAL OF CATEGORY 1 NON-FRIABLE ASBESTOS-CONTAINING ROOFING MATERIALS

A. Because roofing material is classified as a non-friable material, regulations for the removal of roofing material are less stringent if certain procedures are followed. Category 1 roofing materials shall be removed intact and not become friable during the removal process. Removal of Category 1 non-friable roofing material not intact or otherwise made friable during the removal process must be conducted utilizing full negative-air containment procedures, including final clearance inspection and air sampling, as defined by applicable regulations.

B. Category I non-friable asbestos-containing roofing materials shall be removed from the roof and disposed in accordance with all regulations of applicable federal, state and local authorities concerning roofing materials, including the Interpretive Rule for Roof Removal Operations under the Asbestos NESHAP (40 CFR 61, Appendix A to Subpart M). The Department of Environmental Protection (DEP) has a policy statement that addresses the requirements for handling Category I non-friable asbestos-containing roofing materials. In addition, the following minimum work practices shall be adhered to:

1. Asbestos Abatement Contractor shall post all OSHA required signage.
2. Persons not involved in the removal shall be excluded from the roof areas.

3. Workers shall wear protective clothing and respirators.

4. All openings into the building near the work area shall be sealed with polyethylene sheeting or other appropriate covering.

5. Category I Non-friable ACM shall be removed in small sections and containerized when wet. At no time shall material be allowed to accumulate or become dry.

6. The roofing materials shall be wetted down with amended water and shall be maintained in damp condition throughout the demolition and disposal process. Mechanical methods of cutting are prohibited. (i.e., such as an RB roof cutter). An RB roof cutter means an engine-powered roof cutting machine with one or more rotating cutting blades the edges of which are blunt. (Equipment with blades having sharp or tapered edges, and/or which does not use a rotating blade, is used for “slicing” rather than “cutting” the roofing material; such equipment is not included in the term “RB roof cutter”).

C. Where cutting machines are used in the removal of asphaltic roofing materials, said cutting machines shall be equipped with a HEPA vacuum to capture dust produced by the cutting process. Where cutting machines are used in the removal of asphaltic roofing materials, the material shall be adequately wetted throughout the cutting process Cutting machines that are not equipped with a HEPA vacuum to capture dust produced by the cutting process shall only be used inside a work area for which containment sufficient to prevent visible emissions of fugitive dust to the ambient air has been established

D. Wood or metal substrate material on which ACM roofing materials is adhered shall be removed and disposed of as asbestos waste. Other non-ACM material adhered to ACM roofing material shall be removed and disposed of as asbestos waste.

E. Roofing sealants shall be removed intact without saw cutting through ACM or grinding or other methods that may make the material friable.

F. Category I Non-friable ACM shall not be dropped or thrown to the floor/ground level. For roofs of heights greater than fifty (50) feet above the floor/ground, a dust-tight enclosed chute shall be constructed to transport removed Category I Non-friable ACM to containers on the floor/ground. Category I Non-friable ACM may be dropped to a raised scaffold or containerized at elevated levels for disposal.
G. All Category I Non-friable ACM shall be adequately wetted before being placed into containers for disposal. Dispose of all non-friable, Category I asbestos-containing roof material and associated demolition debris in a landfill that legally accepts the material.

H. A coating of encapsulating agent shall be applied to any porous surfaces that have been stripped of Category I Non-friable ACM to securely seal any residual fibers that may be present. The encapsulating agent should be chosen so as to be compatible with subsequent coverings.

I. Clean-up procedures using HEPA vacuuming and wet cleaning techniques shall be performed following abatement.

J. Personnel air monitoring of asbestos abatement workers, which demonstrates compliance with the provisions of OSHA 29 CFR 1926.1101 (f), may be used in lieu of clearance air sampling requirements.

K. If the work involves using a RB roof cutter (or device that similarly damages roofing material) to cut Category 1 asbestos containing roofing material, the dust and debris resulting from the cutting roof should be collected as soon as possible after the cutting operation, and kept wet until collected and placed in leak-tight containers. Where the blade guard completely encloses the blade and extends down close to the roof surface and is equipped with a device for spraying a fine mist of water inside the blade guard, and the spraying device is in operation during the cutting, most of the dust and debris from cutting will be confined along the cut. The most efficient methods to collect the dust and debris from cutting are to immediately collect or vacuum up the damaged material where it lies along the cut using a filtered vacuum cleaner or debris collector that meets the requirements of 40 CFR 61.152 to clean up as much of the debris as possible, or to gently sweep up the bulk of the debris, and then use a filtered vacuum cleaner that meets the requirements of 40 CFR 61.152 to clean up as much of the remainder of the debris as possible.

L. All ACM roofing material must be completely removed from the roof deck, to the satisfaction of the consultant prior to renovation of the roof deck by the Asbestos Abatement Contractor.

3.02 DISPOSAL OF ASBESTOS WASTE

Waste removal procedure shall be done in accordance with all regulations as set forth by the agencies having authority to regulate.

The Contractor shall provide proof that disposal sites for the waste materials have current and valid permits to receive asbestos waste at the time of the pre-construction meeting.
Receipts shall be obtained by the Contractor from the dumping site(s), and submitted to the Engineer upon request for final payment.

Warning labels having permanent, waterproof print and adhesive shall be affixed to all bags, trucks, drums (lids and sides), and other containers used to store and/or transport asbestos-containing material. All labels shall comply with applicable DOT, EPA, and OSHA requirements. Labels must be conspicuous and legible and contain the following warning:

CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

The Contractor shall be responsible for all necessary precautions to prevent pollution by spilling during the performance of services and shall assume full responsibility for all Contractor caused spills, which shall be cleaned up at the Contractor’s expense.

Temporary storage of asbestos waste on-site must be approved by the Engineer.

3.03 HOUSEKEEPING

Throughout the work period, the Contractor shall maintain the building and site in a standard of cleanliness as specified throughout these Specifications.

Contaminated disposable clothing, respirator filters, and other debris shall be bagged and sealed at the end of each work day.

The Contractor shall retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection materials.

The Contractor shall not allow the accumulation of scrap, debris, waste material, and other items not required for completion of the work.

Daily, and more often if necessary, the Contractor shall inspect the work areas and adjoining spaces, and pick up all scrap, debris, and waste material. Remove all such items to the place designated for their storage.

The Contractor shall maintain the site in a neat and orderly condition at all times.

Respirators shall be thoroughly cleaned at the end of each work day and stored for the next day’s use.

The Contractor shall provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.
3.04 WORK REVIEW

A. Consultant will review Contractor's work practices prior to the start of and during all asbestos related work and will report any Section violations to the Contractor. If the Contractor fails to correct deficiencies in a timely manner, the Owner will be notified in writing, and work may be stopped.

B. Consultant will keep a daily log of Contractor's work practices and will make these daily logs a part of the final project documents.

C. In addition to various daily inspections of work practices, Consultant will make three (3) mandatory inspections throughout the removal work. These inspections include: a pre-abatement visual inspection, a post-abatement visual inspection, and a post-teardown visual inspection.

D. Each inspection must be requested by the Contractor and performed by Consultant, to the satisfaction of the Consultant, and be signed off by the Consultant, before work is to continue on to the next task in the phase. Failure on the part of the Contractor to obtain sign-off before proceeding is regarded as a serious violation of the contract and unacceptable.

END OF SECTION
DIVISION 02  
EXISTING CONDITIONS

SECTION 02 20 00  
EXCAVATION AND BACKFILL

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01000 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Excavation and Backfill work required to complete the work of the contract including all the Excavation and Backfill work shown on the plans, listed in the specification, and needed to install a complete assembly in every way. Coordinate the Excavation and Backfill work with all the other trades for the project. Provide all demolition and disposal work to complete the Excavation and Backfill work. Patch to match all adjacent surfaces that are disturbed left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Excavation and Backfill work includes, but is not limited to:

1. Protection of all roads, sidewalks and existing utilities to remain. It is the Contractor’s responsibility to call Dig Safe in the area of excavation.
2. Excavation to indicated bearing level as approved by the Architect for all, foundations, utility lines, slabs and pavements, and other improvements. Legal disposal off-site of all unsuitable excavated materials and on-site stockpiling of all suitable excavated material.

3. Excavation and off-site disposal of all unsuitable materials encountered below indicated subgrade elevation required for placement of compacted granular fill, common fill, utilities, and other improvements.

4. Supply and placement of all backfill materials required to complete and work of this Section, including backfilling to indicated bearing elevations for footings foundations, paving and slabs.

5. Dewatering.

B. Provide all excavation and backfill to perform the work of the contract whether or not indicated including but not limited to the following locations:

1. Concrete footings, foundation walls, sumps, and slabs for the elevator pit and footings, foundations and slabs for the lobby and elevator machine room.

1.03 STANDARDS AND CODES

A. The work shall conform to the codes and standards of the following agencies as further cited herein:


2. AASHTO: American Association of State Highway and Transportation Officials.

3. ACI: American Concrete Institute


1.04 QUALITY ASSURANCE

A. Comply with all rules, regulations, laws and ordinances of the Commonwealth of Massachusetts, and of all other authorities having jurisdiction. All labor, materials, equipment, and services necessary to make work comply with such requirements shall be provided without additional cost to Owner.

B. Field Monitoring and Testing
1. The Owner will retain the services of a Geotechnical Engineer or testing agency to test, observe and document the Contractor's earthwork activities to determine the work is completed in accordance with the Project Specifications and perform such other duties as are herein described throughout these Specifications.

2. All fill materials and their placement will be subject to quality control testing. The Contractor will bear the cost of any tests which are needed to correct previously unacceptable work. Test results and lab recommendations will be available to the Contractor.

3. Approvals given by the Architect or by the testing agencies shall not relieve the Contractor of his/her responsibility for performing the work in accordance with the Contract Documents.

1.05 SUBMITTALS

A. The Contractor shall submit the information specified herein to the Architect for review. Unless otherwise specified, submittals shall be made not less than one week before the start of work.

B. Personnel qualifications, including name, license identification, qualification, and other identification of person(s) responsible for field survey.

1.06 JOB CONDITIONS

A. Site and Subsurface Conditions

1. Bidders should assume adequate soil conditions. Report unsuitable conditions or materials to the Architect.

1.07 LINES AND GRADES

A. Lay out all lines and grade work in accordance with Drawings and Specifications not presently established at the site. Maintain all established bounds and benchmarks and replace as directed any which are destroyed or disturbed.

B. The words "finished grades" as used herein shall mean the required final grade elevations indicated on the Drawings. Spot elevations shall govern over proposed contours. Where not otherwise indicated, project site areas outside of the buildings shall be given uniform slopes between points for which finished grades are indicated or between such points and existing established grades.
C. The word "subgrade" as used herein, means the required surface of subsoil, borrow fill, or compacted fill. This surface is immediately beneath site improvements, specially dimensioned fill, paving, topsoil or other surfacing material.

PART 2 – PRODUCTS

2.01 MATERIALS

Earth materials used as fill shall be as designated below:

A. Gravel Base: Gravel base shall be sandy gravel or gravely sand, free of organic material, loam, snow, ice, frozen soil, and other objectionable materials and well graded within the following limits:

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<thead>
<tr>
<th>U.S. Standard</th>
<th>Sieve Size</th>
<th>Percent Finer by Weight</th>
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<tbody>
<tr>
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<td>3&quot;</td>
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<td>40-75</td>
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<td>8-28</td>
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</tbody>
</table>

B. Compacted Granular Fill: Granular Fill shall be sandy gravel or gravely sand, free of organic material, loam, snow, ice, frozen soil, and other objectionable material and well-graded within the following limits:

<table>
<thead>
<tr>
<th>U.S. Standard</th>
<th>Sieve Size</th>
<th>Percent Finer by Weight</th>
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<tbody>
<tr>
<td></td>
<td>6&quot;</td>
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<td>#4</td>
<td>30-85</td>
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</tbody>
</table>

C. Crushed Stone: Shall consist of clean, hard, durable natural rock, free of organic matter, rock dust, and other contaminants and conforming to ASTM specification C-33, Table 2, Size 57, 1 in. to #4 sieve size or conforming to Massachusetts DPW specification of M2.01.3.

D. Common Fill: Common Fill shall consist of well graded mineral soil substantially free of organic materials, loam, wood, trash, and other objectionable material which may be compressible or which cannot be compacted properly. Common Fill shall be unfrozen and shall not contain snow, ice, or frozen materials. Common Fill shall not contain stones larger than six (6) inches in largest dimension and shall have physical properties such that it can be readily spread.
EXCAVATION AND BACKFILL

02 20 00 - 5

and compacted. Common Fill shall conform to Massachusetts DPW specification for Ordinary Borrow, M1.01.0.

E. Pipe Bedding Material: Bedding Material under and around utilities shall be natural mineral sand meeting Massachusetts DPW specification M1.04.1, or ASTM specification C-33, Fine Aggregate.

F. Dense Graded Crushed Stone: Uniformly pre-mixed composition of coarse aggregates of crushed stone or gravel and fine aggregates of natural sand or stone screenings, meeting Massachusetts DPW specification M2.01.7, and well graded within the following limits:

<table>
<thead>
<tr>
<th>Sieve Size</th>
<th>Percent Finer by Weight</th>
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<tbody>
<tr>
<td>2&quot;</td>
<td>100</td>
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<tr>
<td>1-1/2&quot;</td>
<td>70-100</td>
</tr>
<tr>
<td>3/4&quot;</td>
<td>50-80</td>
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<tr>
<td>#4</td>
<td>30-55</td>
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<tr>
<td>#50</td>
<td>8-24</td>
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<td>#200</td>
<td>3-10</td>
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</tbody>
</table>

G. Drainage Pipe: Six (6) inch diameter schedule perforated drainage pipe such as that from United Pipe & Steel Corp., or approved equal.

H. Filter Fabric: Mirafi N-series, or approved equal.

PART 3 – EXECUTION

3.01 CLEARING AND PROTECTION

A. Outside the building area where walkways, roadways, or parking areas are located and within the building area and the lateral limits to be occupied by compacted granular fill, remove all trees, brush and other vegetation and all tree stumps and root systems.

B. Locate existing underground utilities in the areas of work. If utilities are to remain in place, provide adequate means of protecting during excavation operations.

C. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult the utility Owner immediately for directions. Cooperate with Owner and public and private service companies in keeping their respective services and facilities in operation. Repair damaged utilities to the satisfaction of the utility Owner.
A. General

1. Excavation consists of the removal and disposal or stockpiling of soil materials encountered when establishing the required limits and grade elevations.

2. Conform to the elevations and dimensions shown on the drawings, extending a sufficient distance from pile caps and foundations to permit placing and removal of concrete formwork, installation of services, other construction, and for monitoring.

3. The slab-on-grade floor slab shall bear on a minimum 18 inch thick layer of compacted granular fill as specified herein.

4. All material encountered during excavation shall be classified as general excavation. No additional payment shall be made for removal of materials encountered in the excavation including concrete slabs, foundation walls etc. The excavation operations shall be conducted in a manner to insure the most efficient reuse of excavated materials where suitable. Suitable materials shall be used or stockpiled for later use in backfill and subgrade preparation.

5. All surplus excavated material not used to fulfill requirements of the Contract shall become the property of the Contractor and shall be removed from the site and legally disposed of.

6. When excavations have reached the prescribed depths, the Architect shall be notified to observe the conditions. Contractor will receive notification to proceed if bearing conditions meet the design requirements.

7. If unsuitable bearing materials are encountered at the required subgrade elevations, carry excavations deeper and replace the excavated material with compacted granular fill, as directed by the Architect.

8. Authorized removal of unsuitable material and its replacement as directed will be paid on the basis of contract conditions relative to changes in the work.

B. Earth Excavation

1. Excavate earth utilizing appropriate equipment in sufficient quantity and sizes to expeditiously perform the excavation required to facilitate construction of the structures, utilities, pavements, and other site improvements to the lines and grades specified and/or indicated on the Drawings.
2. Prevent disturbance to soil subgrades

3. If any part of the excavation is carried, through error, beyond the depth and dimensions indicated on the drawings or specified herein, the Contractor shall, at his own expense, furnish and install compacted granular fill as directed by the Architect, without additional cost to the Owner.

4. Sloped sides of excavations must be stable slopes that comply with codes and ordinances having jurisdiction.

D. Trench and Pit Excavation

1. Excavate trenches to the geometry lines and grades indicated on the drawings for the particular item to be installed.

2. Perform excavation operations in trenches in general conformations with "OSHA Standards and Interpretations, Subparagraph P - Excavation, Trenching and Shoring."

3. Prepare the bottom of the trench excavation to receive bedding material and pipes in accordance with respective specifications for utilities to be placed in the trenches. In the absence of subgrade preparation requirements in the respective specification sections for utilities, Section 3.05, herein applies.

4. Excavate all rock and other hard materials, if encountered, to at least six inches below the pipe at all points. Refill such space and all other cuts below grade with compacted granular fill.

5. Excavation for manholes, catch basins, drain, inlets, and other related structures shall be as necessary but with a 12-inch minimum clearance on all sides.

3.03 TEMPORARY EXCAVATION SUPPORT

A. It is the responsibility of the Contractor to provide protection to provide safe and stable excavations at all times during construction until the permanent structures, shown on the Drawings, have been constructed, achieve adequate strength, and are accepted by the Engineer as being complete.

B. Temporary excavation support elements shall be designed by a registered professional engineer, employed by or retained by the Contractor. Designs shall
conform to the requirements of the State of Massachusetts, Basic Building Code and good engineering practice.

3.04 DEWATERING

A. Provide, maintain, and operate pumps and related equipment, including standby equipment, of sufficient capacity to keep excavation free of all water at all times and under any and all contingencies that may arise until the structures attain their full strength.

B. Maintain groundwater in the bearing strata at a safe level at all times by methods which prevent loss of fines or other disturbance to these strata. If the methods employed have not been adequate and the bearing value of the soil has been reduced, removed disturbed soil as directed and replace with compacted granular fill or concrete at no expense to the Owner.

3.05 SUBGRADE PREPARATION AND PROTECTION

A. General

1. Complete the excavations to the specified or indicated limits and required depths, plus any additional depth required to accommodate drainage layers, pipe, etc. for Contractor-designed temporary dewatering system(s).

2. Remove any additional materials below subgrade levels which are unsuitable, as directed by the Architect.

3. Fill all holes and low points, which will not otherwise be removed in the course of the Work, to the indicated subgrade level.

B. Proofolling Subgrades

1. The Contractor shall proofoll all subgrades prior to proceeding with work in the vicinity.

2. Proofolling shall consist of at least two (2) complete coverages over the designated area(s) with approved heavy compaction equipment or a fully loaded 10-wheel dump truck.

3. Soft spots detected by the Owner's Geotechnical Engineer or testing agency shall be removed and replaced with compacted granular fill upon confirmation by the Architect.

C. Cold Weather Protection
1. Protect frost susceptible excavation subgrades against freezing when the atmospheric temperature is less than 35 degrees F. Should protection fail, remove frozen materials and replace with concrete or compacted granular fill, as directed, at no cost to the Owner.

3.06 PLACEMENT AND COMPACTION OF MATERIALS

A. General

1. All fill materials shall be placed "in-the-dry" on subgrades acceptable to the Architect. The Contractor shall dewater excavated areas as required to perform the work, and in such a manner as to preserve the undisturbed state of the subgrade material. The Contractor shall drain away ponded areas as required to perform the placement of fill "in-the-dry".

2. During compaction operations incidental compaction due to traffic by construction equipment, other than used specifically in compaction operations, will not be credited toward the required minimum coverages specified.

3. Bulldozers, trucks, and other mechanical contrivances used in placement of fill materials are expressly prohibited from approaching within 8 feet of backfilled building walls.

4. Placement of all specified fill materials shall be systematically conducted in the specified uniform layer thickness which is measured in all cases prior to compaction.

5. Compaction of fill materials shall be conducted by a minimum of four (4) complete coverages with acceptable compaction equipment to a specified density which is expressed as a percentage of maximum dry density as determined by ASTM D1557.

B. Backfill excavations as promptly as Work permits, but not until completion of the following:

1. Acceptance by the Architect of construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation, if any.

2. Completion of quality control testing, approval, and recording locations of underground utilities.

4. Removal of temporary earth support elements as specified herein and backfilling of voids with materials acceptable to the Architect.

5. Removal of trash and debris.

6. Permanent or temporary horizontal bracing is in place on horizontally supported walls.

C. Compaction Equipment

1. In all cases, the character, efficiency and acceptability of the Contractor's compaction equipment shall be subject to the approval of the Architect based on observed or documented field performance.

2. Compaction in confined areas (against walls, piers, and in trenches) shall be conducted with acceptable equipment such as hand-guided vibratory compactors or mechanical tampers. Appropriately sized vibrator rollers should be used for walkways and paved areas.

3. Compaction by puddling or jetting is prohibited.

4. Exercise care in the placement of backfill against wall and directly in contact with waterproofed structures such that stones contained in the backfill do not damage waterproofing.

5. Repair any damage to waterproofing which occurs during placement and compaction operations at no additional cost to Owner.

6. Control groundwater by ditches, sumps, or sloped surfaces to permit collection and removal efficiently and with minimal disturbance to materials being placed.

7. Fill materials of the various types specified shall generally be placed and compacted within the limits and to the thickness indicated on the Drawings unless otherwise specified.

8. Do not place fill material on surfaces that are muddy, frozen, or contain frost or ice.

9. Place fill materials evenly adjacent to structures to required elevations. Take care to prevent wedging action of backfill against structures by carrying the material uniformly around the structure to approximately the same elevation in each lift.
10. Prior to placing fill materials complete the specified ground surface and subgrade preparation for materials encountered at ground surface and at subgrade levels.

11. Fill shall not be placed when the atmospheric temperature is less than 30 degrees, unless prior approval is given by the Architect. In addition, during freezing weather, the following shall apply:

   a. A layer of fill shall not be left in an uncompacted state at the close of a day’s operations. Prior to terminating operations or the day, the final layer of fill, after compaction, shall be rolled with a smooth-wheeled roller to eliminate ridges of soil left by tractors, trucks, and compaction equipment.

   b. A layer of compacted fill shall not be placed on snow, ice, or soil that was permitted to freeze prior to compaction. Removal of these unsatisfactory materials will be required as directed by the Architect.

12. Where piping is laid in filled areas, place the fill before any pipe is placed, and compact as specified to a depth of not less than two feet above the proposed flow line of the pipe. A trench shall then be excavated to the required grade, of sufficient width to permit thorough tamping of the fill under the bells and around the pipe.

D. Moisture Control

1. The amount of moisture in any one layer of fill material shall be as uniform as practicable throughout. The upper limit of water content in materials shall be that which will permit handling, spreading and will permit proper compaction and shall not exceed a value of three (3) percentage points on the wet side of optimum water content as determined by ASTM D1557. The lower limit of water content shall not be less than two (2) percentage points below optimum water content. Material which is too wet, shall be spread and permitted to dry, assisted by mechanical agitation, if necessary, until the water content is reduced to a value within the specified limits.

2. Each layer of material which is too dry shall be sprinkled with water, and the water worked into the material by mechanical methods until a uniform distribution of moisture shall be accurately controlled in amount so that free water will not appear on the surface during, or subsequent to, compaction. Should excess water be applied to any part of material, such that materials are too wet to obtain the specified compaction, the compaction operations and all work on that section of placed material

EXCAVATION AND BACKFILL
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shall be suspended until the water content of the material is reduced to a value within the specified limits.

E. Granular Fill and Gravel Base Course

1. Place in layers not to exceed nine inches when utilizing heavy compaction equipment and in six inch layers when utilizing light, hand-operated compaction equipment.

2. Compact to at least 95 percent of maximum dry density.

F. Common Fill

1. Place in layers not to exceed twelve inches.

2. Compact to at least 92 percent of maximum dry density.

3.07 GRADING

A. General

1. Perform all rough and finish grading required to attain the elevations shown on the Drawings.

B. Grading Tolerances

Upon completion of required backfilling, compacting, and grading, the grade surface conform to the following requirements and tolerances:

1. General: Uniformly grade areas within limits of grading under this Section, including adjacent transition areas. Smooth finish surfaces within specified tolerances, compact with uniform levels or slopes between points where elevations are shown, or between such points and existing grades.

2. Grading outside Building Lines: Finish surfaces free from irregular surface changes, and as follows:

   a. Lawn and Planting Areas - Finish areas to receive topsoil to within not more than 0.10 foot above or below the required subgrade elevations.

3. Grading Surface of Fill under Pavements, Walks, and Slabs-on-Grade (both within and outside of Building): Grade smooth and even, free of voids, compact as specified, and to the

EXCAVATION AND BACKFILL

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required elevation. Provide final grades within a tolerance of 1/2 inch when tested with a 10 foot straight edge.

C. Treatment after Completion of Grading

1. After grading is completed and the Architect has finished inspection, permit no further excavating, filling, or grading except with the approval of and inspection by the Architect.

2. Use of all means necessary to prevent erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.

END OF SECTION
PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.

C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Demolition Work required to complete the Work of the Contract including all the Demolition Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way. Coordinate the Demolition Work with all the other trades for the project. Provide all demolition and disposal Work to complete the Demolition Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All Work of the Contract is related. It is the General Contractor’s responsibility to review all the Work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the Work can be properly and completely performed.

B. Demolition Work includes, but is not limited to:

1. In general, the Contractor shall supply all material, equipment, temporary protection, tools and appliances necessary for the proper removal of selected construction materials for the completion of the Work as required in the Specifications, in accordance with good construction, and as required by the materials manufacturer.
2. Supply all shoring and protection necessary to protect the occupants, building area, building systems, and landscape areas. All means and methods are the responsibility of the Contractor. The Contractor is solely responsible for safety on the job site.

3. Extent of demolition as described on the drawings and in conjunction with all the new Work shown on the drawings. The Contractor is responsible for all demolition, disposal, and cleanup associated with the Work, whether or not shown on the plans or described herein required to complete the Work.

4. Remove and dispose of the following existing material:
   a. Asphalt Roofing Shingles and underlayment – Alternate #1
   b. Associated metal flashing, pipe boot, vents, and sealants. – Alternate #1
   c. Rake trim at gable ends. – Alternate #1
   d. Carefully remove and salvage stone from partially collapsed foundation wall in basement indicated on drawing.

1.03 RELATED WORK
A. The following items of related Work are specified and included in other Sections of the Specifications:
   1. Section 02 20 00, Excavation and Backfill

1.04 QUALITY ASSURANCE
A. Supervision:
   1. Engage and assign supervision of shoring and bracing Work to qualified personnel.
B. Regulations:
   1. Comply with local codes and ordinances of governing authorities having jurisdiction.

1.05 SUBMITTALS
A. Schedule:
1. Submit schedule indicating proposed methods and sequence of operations for Selective Demolition.

2. Include coordination for shut-off, capping, and continuation of utility services in scope area.

1.06 JOB CONDITIONS

A. Condition of Structures:

1. Owner assumes no responsibility for actual condition of items or structures to be demolished.

2. Conditions existing at time of commencement of Contract will be maintained by Owner insofar as practicable.

B. Protections:

1. Provide temporary barricades and other forms of protection to protect Owner's personnel and general public from injury due to selective demolition Work. Safety is the sole responsibility of the Contractor.

2. Provide protective measures to provide free and safe passage of Owner's personnel and general public to and from area of selective demolition.

3. Erect temporary covered passageways as required by authorities having jurisdiction.

4. Take measures to protect against windblown dust, obtain Owner's approval of means used for dust control.

5. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or element to be demolished, and adjacent facilities or Work to remain.

6. Protect from damage existing finish Work that is to remain in place and becomes exposed during demolition operations.

7. Protect adjacent materials and finishes with suitable coverings when necessary including, but not limited to, automobiles in parking lot adjacent to building which will remain in use during Work to be performed.

8. Remove protections at completion of Work.

C. Damages: Promptly repair damages caused to building or property, including cars, by demolition Work at no cost to Owner.
D. Traffic:

1. Conduct Selective Demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

2. Do not close, block, or otherwise obstruct streets, walks, parking lot, or other occupied or used facilities without written permission from the authorities having jurisdiction.

3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

E. Utility services:

1. Maintain existing utilities, keep in service, and protect against damage during demolition operations.

2. Do not interrupt existing utilities service occupied or used facilities, except when authorized in writing by authorities having jurisdiction. Provide 48 hours notice if service must be interrupted.

3. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

F. Environmental Controls:

1. Comply with governing regulations pertaining to environmental protection.

2. Do not use water when it may create hazardous or objectionable conditions such as ice, flooding, and pollution.

PART 2 – PRODUCTS – NOT USED

PART 3 – EXECUTION

3.01 INSPECTION

A. Before start of Selective Demolition Work, inspect areas in which Work will be performed.
3.02 PREPARATION

A. Structure Safety:
   1. Provide exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structures to be demolished and adjacent facilities to remain.
   2. Cease operations and notify the Owner's Representative immediately if safety of structure appears to be endangered.
   3. Take precautions to support structure until determination is made for continuing operations.

B. Shoring and Bracing
   1. If shoring and bracing is required, locate the system to clear permanent construction and to permit the completion of the Work.
   2. Provide shoring and bracing system adequately anchored and braced to resist natural forces.
   3. No shoring and bracing system shall remain at the completion of the Work.

3.03 DEMOLITION

A. General:
   1. Perform Demolition Work in a systematic manner.
   2. Use such methods as required to complete Work indicated on Drawings in accordance with Demolition Schedule and governing regulations.
   3. If unanticipated mechanical, electrical, or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict with Consultant.

B. Disposal of Demolished Materials:
   1. Remove debris, rubbish, and other materials resulting from demolition operations from site.
   2. Transport and legally dispose of materials off site.
   3. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning hazardous materials.

SELECTIVE DEMOLITION
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removal, handling, and protection against exposure or environmental pollution. Present receipts from certified waste disposal firms confirming hazardous waste disposal.

4. Burning of removed materials is not permitted on project site.

3.04 CLEANING AND REPAIR

A. On completion of demolition Work, remove tools, equipment, and demolished materials from site. Remove debris on a daily basis.

B. Remove protection and leave areas broom clean.

C. Repair demolition performed in excess of that required.

D. Repair adjacent construction or surfaces soiled or damaged by selective demolition Work.

END OF SECTION
LEAD CONSIDERATIONS

DIVISION 02

EXISTING CONDITIONS

SECTION 02 83 00

LEAD PAINT CONSIDERATIONS

(Base Bid and Alternate #1)

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 DESCRIPTION OF WORK

A. The work of this Section specifies minimum requirements for the disturbance, removal, containment, and disposal of lead paint and associated waste generated as a result of renovation activities at the Levi Wetherbee Farmhouse located at 484 Middle Road, in Boxborough, Massachusetts.

B. The Contractor shall provide the labor, materials and equipment necessary to complete paint removal in areas required in order to perform renovation. Paint removal shall occur to remove all visible paint down to the bare substrate on metal surfaces from an area of at least eight (8) inches where cut lines are to occur at all surfaces of member.

C. The procedures described herein apply to all renovation work where a worker may be occupationally exposed to lead as well as to the disposal of the demolition debris. The Contractor shall assume that any painted surface not tested, as included in this Section, shall be assumed to contain lead paint and it shall be the Contractor’s responsibility to protect workers performing under this Contract. This may require additional testing by the Contractor to verify lead content.

D. The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State and local regulations pertaining to work practices, hauling and disposal of hazardous waste, hauling and recycling of all metal components coated with lead paint, protection of workers and visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the Owner, Engineer, and Consultant harmless for failure to comply with any applicable work, hauling, disposal, safety, health or regulation on the part of himself, his workers or his subcontractors.
E. The Contractor is required to ensure the protection of workers performing any related demolition work that will affect surfaces coated with lead paint as well as protecting the public and the environment from exposure to lead dust.

F. Codes and Standards

1. All work shall conform to the standards set by applicable Federal, State and local laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract and as may be required by subsequent regulations.

2. In addition to any detailed requirements of the Specification, the Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, Regional and Local Authorities regarding handling and storing of lead waste material.

3. The following references are cited as applicable standard and regulations as amended:


      29 CFR 1910 – General Industry
      29 CFR 1926.55 – Gases, Vapors, Fumes, Dusts and Mists
      29 CFR 1926.57 – Ventilation
      29 CFR 1926.62 – Lead in Construction
      29 CFR 1926.200 – Signs, Signals and Barricades
      29 CFR 1926.354 – Welding, Cutting and Heating in Way of Preservative Coatings
      29 CFR Subpart T – Demolition
      40 CFR 50 - National Primary and Secondary Ambient Air Quality Standards for Lead
      40 CFR 241 - Guidelines for the Land Disposal of Solid Wastes
      40 CFR 257 - Criteria for Classification of Solid Waste

   b. Massachusetts Regulations:

      454 CMR 23.00 Occupational Lead Exposure

4. All regulations by the above and other governing agencies in their most current version are applicable throughout this project. Where there is a conflict between this Specification and the cited State, Federal, or local regulations, the more restrictive or stringent requirements shall prevail.

5. THIS SECTION REFERS TO MANY REQUIREMENTS FOUND IN THESE REFERENCES, BUT IN NO WAY IS IT INTENDED TO CITE OR REITERATE LEAD CONSIDERATIONS
ALL PROVISIONS THEREIN OR ELSEWHERE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO KNOW, UNDERSTAND, AND ABIDE BY ALL SUCH REGULATIONS AND COMMON PRACTICES.

1.03 DEFINITIONS

A. The following definitions apply to the performance of the work of this project.

1. Action Level: Employee exposure, without regard to the use of respirators to an airborne concentration of lead at or above 30 micrograms/cubic meter ($\mu g/m^3$) calculated as an 8-hour time weighted average (TWA).

2. Area Monitoring: Sampling of lead concentrations within the work area and outside the work area which is representative of the airborne concentrations of lead.

3. Consultant: Authorized representatives who are under contract with the Owner or Engineer to perform Lead Paint Consulting services.

4. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuuming or exhaust ventilation equipment with a UL 586 filter system. Filters shall be of 99.97 percent efficiency for retaining 0.3-micrometer diameter particles.

5. Lead Paint: Paint, varnish, or stain that contains lead in excess of 0.0% lead by weight.

6. Lead Permissible Exposure Limit (PEL): The employer shall assure that no employee is exposed to lead at concentrations greater than 50 $\mu g/m^3$ of air averaged over an 8-hour period. If an employee is exposed to lead for more than 8 hours in any work day, the employee’s allowable exposure, as a time weighted average (TWA) for that day, shall be reduced according to the following formula:

   \[
   \text{Allowable employee exposure in } \mu g/m^3 \text{ of air} = \frac{400}{\text{hours worked in the day}}.
   \]

7. Sample Location: Area or place where an air or dust sample is collected.

8. Time Weighted Average (TWA): The TWA is an 8-hour time weighted average for the test of the concentration of lead for worker exposure.

9. Wet Cleaning: The process of removing lead contamination from building surfaces, equipment and other objects by using cloths, mops, or other cleaning tools which have been dampened with water, and by afterwards disposing of these cleaning tools as lead contaminated wastes.

10. Work Area: A controlled-access work area which has plastic sheeting or other containment barriers erected to separate the trades.

1.04 SUBMITTALS
A. Notifications

1. Provide in proper and timely fashion, all necessary notifications to relevant federal, state, and local authorities and obtain and comply with provisions of all permits or applications required by the work specified, as well as make all required submittals required under those auspices. Contractor shall indemnify Owner, Engineer and Consultant from, and pay for all claims resulting from failure to adhere to these provisions. Costs for all permits, applications, and the like are to be assumed by Contractor.

B. Provide four (4) copies of the following Submittals at the Pre-Construction Conference for the review of the Owner, Engineer and General Contractor:

1. Employer’s Lead Compliance Program as required by 29 CFR 1926.62, including proposed worker training, respiratory protection program and medical monitoring for all employees throughout all phases of the job, including make, model and NIOSH approval numbers of respirators to be used; worker orientation plan; written description of all proposed procedures, methods, or equipment to be utilized, including those that may differ from the Contract Specifications. In all instances, Contractor must comply with all applicable federal, state and local regulations.

2. Employer’s respiratory protection program as required by 29 CFR 1920.124.

3. Copies of written medical opinions for each employee who may be occupationally exposed to lead as required by 29 CFR 1926.62 (j)(3)(v).

4. Record of successful respirator fit testing performed by a qualified individual within the previous 12 months for each employee to be used on this project with the employee’s name and social security number with each record.

5. Safety Data Sheets on potentially hazardous materials to be used on the project.

6. Waste Disposal Plan which describes the waste stream and the disposal means (i.e. landfill, recycle, etc.) and includes the name, address, and ID number of the proposed hazardous waste hauler, waste transfer route, and proposed disposal reclamation or treatment facility.

7. Name and address of the proposed metal component construction debris recycling site, including letter stating such site accepts such waste,

NOTE: No work of the project will be allowed to begin until Owner, Engineer, and General Contractor as listed herein accepts the Pre-Construction Submittals. Any delay caused by the Contractor’s refusal to submit this documentation in a timely fashion does not constitute a claim for extra compensation or a time extension.

C. Submit the following to the Owner, Engineer, and General Contractor as a Post-Construction submittal package:

LEAD CONSIDERATIONS

02 83 00 - 4
1. Copies of waste manifests and receipts acknowledging disposal and recycling of all lead waste material from the project, showing delivery date, quantity, and appropriate signature of landfill's authorized representative.

2. All personnel monitoring results.

3. All TCLP testing results.

1.05 SPECIAL CONSIDERATIONS

A. In general, the following activities are minimum requirements of this Section and affect the demolition performed on the painted components:

1. No torch cutting, mechanical sanding or stripping, or abrasive methods of paint removal shall occur until the employer performs an employee exposure assessment as required under 29 CFR 1926.62 and determines actual employee exposure.

2. Workers shall be informed of the components to be impacted during demolition that have been identified as containing lead.

3. Separation of Trades: Unprotected, untrained workers or trades shall not perform any related work within the same vicinity as work involving components identified with lead.

1.06 REPORT OF FINDINGS

A. The following table identifies the components that were tested using paint chip analysis.

<table>
<thead>
<tr>
<th>Location</th>
<th>Component</th>
<th>Substrate</th>
<th>Color</th>
<th>Flame AAS Results (PPM/% Weight)</th>
<th>Reporting Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Exterior</td>
<td>Exterior – White Paint Chips</td>
<td>Wood</td>
<td>White</td>
<td>31</td>
<td>0.019</td>
</tr>
<tr>
<td>Building Exterior</td>
<td>Exterior – White Paint Chips</td>
<td>Wood</td>
<td>White</td>
<td>37</td>
<td>0.013</td>
</tr>
</tbody>
</table>

1.07 FEES, PERMITS & LICENSES

A. The Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or process in the performance of the work specified in this Section. The Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Contractor shall hold the Owner or the Engineer harmless from any costs, damages,
and losses resulting from any infringement of these patent rights or copyrights. If the Specification requests the use of any product, design, invention, or process that requires a licensing, patent or royalty fee for use in the performance of the job, the Contractor shall be responsible for the fee or royalty fee and shall disclose the existence of such rights.

B. Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements and all other fees related to the Contractor’s ability to perform the work in this Section.

C. Secure all necessary permits for work under this Section.

1.08 COORDINATION

A. Coordinate the work of this Section with that of all other trades. Phasing and scheduling of this project shall be subject to the approval of the Owner. The work of this Section shall be scheduled and performed so as not to impede the progress of the project as a whole.

1.09 EMERGENCY PRECAUTIONS

A. The Contractor shall establish emergency and fire exits from the work area.

B. When an injury occurs, the Contractor shall stop work until the injured person has been removed from the work area.

1.10 DISPOSAL OF WASTE MATERIAL

A. General

1. The Contractor shall comply with the Resource Conservation and Recovery ACT (RCRA) and with all applicable state and local regulations.

2. Contractor shall be responsible for disposing of all metallic waste and components determined to be coated with lead paint by separating and recycling.

3. Contractor shall be responsible for disposing of all non-metallic waste determined by Toxicity Characteristic Leachate Procedure (TCLP) to be hazardous. If TCLP testing has not been performed, the Contractor shall be responsible for testing the waste.

4. Contractor shall comply with all EPA regulations.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All materials and equipment proposed to be used on this project shall be subject to the acceptance of the Owner and the Engineer. The required materials may include, but not necessarily be limited to the following:

1. Fire retardant polyethylene sheeting, minimum thickness of six (6)-mil.
2. Plastic bags, minimum thickness of six (6)-mil.

3. Duct Tape, up to 3 inch width

4. Lead Warning Signs, as required by OSHA Hazard Communication requirements.

5. Flexible duct for ventilation units (if required)

6. Spray adhesive, fire retardant

7. Personal Protective Equipment, NIOSH approved respirators

8. Ventilation units with HEPA filtration and exhaust fans.

9. HEPA vacuums

10. Tri-sodium Phosphate (TSP) and product data

11. Cloth tarpaulins

2.02 TOOLS AND EQUIPMENT

A. Transportation Equipment: Transportation equipment, as required, shall be suitable for loading, temporary storage, transporting, and unloading waste without exposure to persons or property. All over-the-road transportation equipment must carry the appropriate hazardous waste transport licenses and insurance.

B. Vacuum Equipment: All vacuum equipment utilized in the work area shall utilize HEPA filtration systems.

C. Water Sprayer: The water sprayer shall be an airless or other low-pressure sprayer for water application.

D. Other Tools and Equipment: The Contractor shall provide other suitable tools including but not limited to: rounded edge shovels, rakes, brooms, and carts.

E. The Contractor shall provide ground fault circuit interrupters (GFCI) to protect all electrical cord and connections.

F. Approved lighting equipment for use in the work area.

G. Scaffolding: Scaffolding, as required to accomplish specified work, shall meet all applicable Federal, State and local safety regulations and used in accordance with manufacturer’s specifications.

PART 3 - EXECUTION

3.01 IDENTIFICATION OF HAZARDS
A. Prior to any work involving lead components, the contractor shall identify all work activities in which a worker may be occupationally exposed to lead and shall initially determine if any worker may be exposed to lead at or above the action level according to 29 CFR 1926.62.

3.02 WORK PROCEDURES

A. The Contractor shall initiate, and continue, sufficient work practice controls, as described in the Contractor’s Lead Compliance Program, to reduce and maintain worker exposures to lead below the Action Level.

B. Containment controls (including critical barriers, protective coverings, HEPA-filtered ventilation and decontamination facilities), may be required for demolition work. The degree of containment shall be appropriate for the anticipated levels of airborne lead dust. The lower the level of airborne lead, the lesser the requirements necessary to control lead emissions at the job site.

C. All demolition work areas involving lead shall remain isolated from all other trades on the project and remain inaccessible to the public. The Contractor shall monitor the access to the demolition work areas. The below listed items are required to control the generation of lead dust during demolition activities. The Contractor is ultimately responsible for cleaning all generated dust and paint debris from demolition operations and must maintain work areas free from lead dust generated from demolition activities.

1. All persons except those directly involved in the work shall be excluded from the work area. Physical barriers shall be used, where necessary, to limit access to the work area for the duration of the renovation operations.

2. Signs shall be posted at all approaches to the work area warning that work involving lead is being conducted. Signs shall be in bold lettering not smaller than two inches tall.

3. Thoroughly wet the areas to be demolished and mist the air to reduce the potential for creating airborne lead and dust.

4. Barriers shall not be removed until the work areas are thoroughly cleaned.

5. Provide hand-washing facilities and assure that all workers thoroughly wash their hands and face upon exiting the work area. Workers shall pay careful attention to cleanse the hands and face when decontaminating.

6. Under no circumstances shall workers or supervisory personnel eat, drink, smoke, chew gum, or chew tobacco in the work area; to do so shall be grounds for the Owner to stop all demolition operations.

3.03 PERSONNEL SAMPLING – CONTRACTOR

A. Perform personnel air sampling during all demolition work to determine worker exposure limits. The results of such sampling shall be posted, provided to individual workers, and submitted to Owner and Consultant as described herein.

LEAD CONSIDERATIONS 02 83 00 - 8
B. Provide sampling to check personal exposure levels. Representative sampling shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples need not be taken for repeated working conditions if working conditions remain unchanged, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work. Sampling will be used to determine eight-hour Time-Weighted-Averages (TWA). Personal sampling shall be as outlined in OSHA Standard 29 CFR 1926.62.

C. Air sampling results shall be transmitted to the Owner and individual workers available at the job site in written form no more than forty-eight (48) hours after the completion of a sampling cycle. The reporting document shall list each sample's result, sampling time and date, personnel monitored and their social security numbers, flow rate, sample duration, sample yield, cassette size, and analyst's name and company, and shall include an interpretation of the results. Air sample analysis results will be reported in micrograms/cubic meter (µg/m³).

D. The Contractor’s testing lab shall be AIHA accredited for analysis of metals. Contractor shall submit for Owner’s review and acceptance the name and address of the laboratory, certification(s) of AIHA accreditation for metal analysis, listing of relevant experience in air lead analysis, and presentation of a documented Quality Assurance and Quality Control program.

E. Air monitoring frequency will be established in accordance with the requirements set forth in 29 CFR 1926.62.

3.04 STORAGE OF WASTE

A. Use of waste and recycling containers on site shall be controlled under the following requirements:

1. Location of waste and recycling containers on site shall be coordinated with the Contractor, subject to Owner’s approval.

2. Waste containers shall be lined with two layers of six-mil polyethylene sheeting, be solid, enclosed containers, locked and sealed at all times. This requirement applies to waste classified as hazardous based on TCLP testing.

3. Contractor shall comply with all federal, state, and local regulations and ordinances regarding lead waste and recyclable storage.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Structural Concrete work required to complete the work of the contract including all the Structural Concrete work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Structural Concrete work with all the other trades for the project. Provide all demolition and disposal work to complete the Structural Concrete work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Structural Concrete work includes, but is not limited to:

1. New concrete footings and thrust blocks.
2. Drilling and doweling with non-shrink grout into concrete footings.

1.03 RELATED WORK

A. The following items of related work are specified and included in other Sections of the Specifications:

1. Excavation, backfilling, and rough grading.
2. Carpentry, except formwork specified herein.
3. Structural Steel

1.04 REFERENCE STANDARDS

A. The work shall conform to the codes and standards of the following agencies as further cited herein:


2. ACI: American Concrete Institute, P.O. Box 19150, Redford Station, Detroit, MI 48219.

3. CRSI: Concrete Reinforcing Steel Institute, 180 North LaSalle Street, Chicago, IL 60601.

1.05 SUBMITTALS

A. Shop Drawings:

1. Submit complete shop drawings in accordance with the GENERAL CONDITIONS for Consultant's approval. Show plans, elevations, details or job conditions, of all the new concrete work (base contract and any accepted Alternates) and their relationship to other work.

2. Drawings shall consist of sections, plans and details clearly showing location, sizes and spacing of reinforcing that is shown on the working drawings. Include schedules and diagrams to indicate bends, sizes and lengths of reinforcing members. Indicate location of construction and control joints and show additional reinforcing required at these locations. Schedule all accessories and chair bars required to hold slab or other reinforcing in place.

3. Shop drawings will be checked for general location, size, spacing and design details and returned either approved or marked for correction. Make revisions where required and resubmit. No work shall be fabricated for which shop drawings have not been approved.

4. Upon final approval of shop drawings, furnish all copies needed for erection and for use of other trades.

5. Contractor shall be responsible for furnishing and installing all materials called for in Contract Documents even though these materials may have been omitted from approved shop drawings.

B. Architectural Concrete Samples

1. Submit two samples approximately 12 inches by 2 inches thick to illustrate quality, color, and texture of surface finishes. Approved samples shall be retained at the site for use as a “Control Sample”.

1.06 QUALITY ASSURANCE

STRUCTURAL CONCRETE
03 31 00 - 2
A. In addition to other standards listed below, concrete shall comply with ACI 301 "Specifications for Structural Concrete".

B. All concrete work shall be performed to insure for the entire job homogeneous concrete having required strength, durability and weathering resistance, without planes of weakness, and other structural defects, and free of pronounced honeycombs, air pockets, voids, projections, offsets of plane, and other defacements on exposed surfaces.

C. Manufacturer's statement attesting to compliance of each shipment of cement with standard specification shall be submitted to the Consultant upon request.

1.07 STORAGE AND HANDLING

A. Handle and store cement to protect from air, ground or other moisture; to permit ready access for inspection; and to protect from contamination by foreign materials. Cement stored longest shall be used first. Caked or hardened cement shall not be used.

B. Aggregate Protection: Protect aggregates from foreign materials, and store each separately until placed in mixer.

1.08 COORDINATION

A. The work of this Section shall be coordinated with that of other trades affecting, or affected by, this work, as necessary to assure the steady progress of all work under the Contract.

1.09 GUARANTEE

A. In addition to the specific guarantee requirements of the GENERAL CONDITIONS and SUPPLEMENTARY GENERAL CONDITIONS, the Contractor shall obtain in the Owner's name the standard written manufacturer's guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities which the Contractor may have by law or other provisions of the Contract Documents.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

A. Cement: Portland Cement Type II conforming to ASTM C150. Use only one brand and type throughout the project.

B. Fine Aggregate: Natural sand consisting of clean, hard, durable uncoated particles conforming to ASTM C33. Organic content shall be determined according to ASTM C40, and supernatant liquid above test sample shall show color no darker that reference standard color solution prepared at same time. Grading for fine aggregate shall be uniform, and fineness modulus shall never vary more than 0.15 from that of sample used in design mixes.
C. Coarse Aggregate: Crushed stone or gravel conforming to ASTM C33. Maximum size: 3/4 inch.

D. Water: From approved source, potable, clean, and free from oils, salt, alkali, organic matter, and other deleterious material.

E. Water-Reducing Agent: "WRDA" by W.R. Grace and Co., or equal conforming to ASTM C494 as approved by the Consultant. Water reducing agent shall be by same manufacturer as air entraining agent.

F. Air Entraining Agent: "Darex" by W.R. Grace Company, or equal conforming to C260 as approved by the Consultant. Total air entrained shall be 5% of volume concrete.

2.02 CONCRETE MIX

A. Concrete Mix Requirements:

<table>
<thead>
<tr>
<th>Compressive Strength</th>
<th>Max. Water to Min. Cement</th>
<th>Min. Cement</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000 psi per sack</td>
<td>6.0 gallons</td>
<td>5.5 bags per yard</td>
</tr>
</tbody>
</table>

Submit proposed mix to Consultant for approval before use in work.

B. Maximum size aggregate shall be 3/4 inches.

C. Maximum slump shall be 4 inches.

D. Comply with requirements of ACI 613 "Recommended Practice for Selecting Proportions for Concrete", and ASTM C94 for Ready Mixed Concrete.

E. Admixtures causing accelerated setting of cement in concrete such as calcium chloride shall not be used.

2.03 FORMWORK

A. Formwork shall be in accordance with ACI 347 "Recommended Practice for Concrete Formwork".

B. Formwork materials shall be exterior "Plyform" Class 1, B-B not less than 3/4 inches thick.

C. Forms for Concealed Concrete Work: Forms for all work shall be of sound plywood or other material capable of providing finished surfaces conforming to the intent stated above. Joints shall be sufficiently tight to prevent leakage and shall be flush in the plane of the surface. Place ties in adequate quantity to prevent springing of forms, in locations which will be concealed from view in the finished work and will not interfere with other work under this Section or other Sections.
D. Footing Forms: Forms for footings may be of common lumber or of forms as specified herein for concealed walls, but shall be so erected as to provide full bearing on undisturbed soil, parallel sides, level top surfaces, and cross sections symmetrical with respect to the supported wall, and having dimensions not less than those indicated on the Drawings. No footings shall be placed until completed form installation has been approved by the Consultant and all footings shall have side forms unless prior approval is given to use earth as side forms.

E. Form Coatings: All forms shall be oiled before reinforcing is placed with a non-staining oil or liquid form coating as approved by the Consultant.

PART 3 - EXECUTION

3.01 PLACING CONCRETE

A. Contractor to provide dimensioned shop drawings indicated extents, locations and details of all construction, expansion and control joints as well as reinforcing. Placement shall not occur prior to Architect / Owner approval.

B. Deposit concrete only after removal of all water, dirt, and foreign matter from forms, and after checking of forms, sleeves, inserts and reinforcing for proper location.

C. Place concrete only by those methods and arrangements of equipment which comply with Parts V and VI of ACI 614 "Recommended Practice for Measuring, Mixing and Placing Concrete".

D. Vibrate concrete during deposition with internal type, high frequency mechanical vibrator having a speed of not less than 7,000 rpm. Do not use vibrators to move concrete. Supplement all vibration by wooded spade muddling between reinforcing and forms and into corners.

3.02 FIELD QUALITY CONTROL

A. The Consultant may select a qualified Testing Laboratory or Materials Engineer to make inspection tests during the course of work as specified herein and as otherwise considered necessary. Costs of all tests will be paid by the Owner and are not included in the Contract Sum.

B. All measuring, mixing, placing and curing may be subject to inspection by the Laboratory and approval by the Consultant. However, such inspection and approval shall in no way relieve Contractor of his responsibility to fulfill the requirements of this Contract.

C. Contractor shall cooperate in making tests and shall be responsible for notifying designated laboratory in sufficient time to allow taking of cylinders at time of pour.

D. Where test show that concrete is below specified strength, Contractor shall remove all such concrete, as directed by the Consultant. Full cost of removal of low strength concrete and its replacement with concrete of proper specified strength shall be borne by the Contractor.
3.03 CURING AND PROTECTION

A. Curing shall be started as soon as the concrete has hardened sufficiently to prevent surface damage.

B. Surfaces shall be wet cured for at least five (5) days by use of blankets, or approved curing compound. Blankets shall be thoroughly soaked at all times during this period.

C. In hot weather, all concreting shall be done in accordance with the recommendations of ACI 605 "Recommended Practice for Hot Weather Concreting".

D. In cold weather, all concreting shall be done in accordance with the recommendations of ACI 306 "Recommended Practice for Cold Weather Concreting". Do not place concrete when outside air temperatures are below 40 degrees F without provisions for enclosing and heating as approved by the Consultant.

3.04 FINISHING OF CONCRETE SURFACES

A. Intent Concrete Finish

1. All concrete concealed from view, or which will in the opinion of the Consultant be concealed from view at any time when appearance will be a consideration, shall be free from defects affecting structural capacity but may have minor surface deficiencies which may be patched in accordance with the Specifications.

2. All concrete not conforming to these requirements will be condemned by the Consultant and shall be properly and promptly removed and replaced with new work to the satisfaction of the Consultant, at no additional cost to the Owner.

B. At other concrete that may be patched, for honeycomb concrete, stone pockets or voids, the loose concrete and loose cement shall be removed to sound hard concrete. The surface area shall be thoroughly wetted immediately prior to repair. New cement paste shall be used to fill in voids to a hard smooth surface even with adjacent concrete. For larger defects, repairs will be as directed by the Consultant.

3.06 FORM REMOVAL

A. Do not remove forms or shoring until concrete members have acquired sufficient strength to support their weight and subsequent construction loads without deflection or distress.

B. Remove forms in manner to assure safety of structure.
C. Retain forms in place for a minimum period as follows (assuming curing temperatures above 50 degrees F.)

1. Footings  2 days

END OF SECTION
DIVISION 04  MASONRY

SECTION 04 21 00  BRICK MASONRY
(Base Bid and Alternate #1)

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect Work of this Section whether or not such Work is specifically mentioned in this Section.

C. Coordinate Work with that of all other trades affecting or affected by Work of this Section. Cooperate with such trades to assure the steady progress of all Work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the materials and equipment to be furnished complete in every respect, and that this Contractor shall provide all items needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the Work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Brick Masonry Work required to complete the Work of the Contract including all the Brick Masonry Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all hardware, finishes, and accessories. Coordinate the Brick Masonry Work with all the other trades for the project. Provide all demolition and disposal Work to complete the Brick Masonry Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All Work of the Contract is related. It is the General Contractor’s responsibility to review all the Work of each section, and each Subcontractor for the entire project so that all the Work can be properly and completely performed.

B. Work included: Provide labor materials and equipment necessary to complete the Work of this section, including but not limited to the following:

1. Cut out and replace metal step flashing between brick chimney and the roof. Refer to Section 07 62 00 – SHEET METAL FLASHING AND TRIM for additional information. – Alternate #1

2. Remove and rebuild one (1) wythe of brick all sides of chimney in the attic.
3. Cut out and repoint 100% of existing brick mortar joints on all faces of existing brick chimney above the existing roof line. – Alternate #1

1.03 QUALITY ASSURANCE

A. Contractor shall engage materials testing laboratory to determine composition and proportions of existing mortar.

B. Obtain materials from approved individual sources in sufficient quantities to complete each portion of the Work.

C. Mortar ingredients shall be of uniform quality, texture and color to match original.

D. Referenced Standards: Conform to State and Local Governing laws, Massachusetts or State Building Code, and the following standards:

1. Brick institute of America.


3. ASTM.

4. Secretary of the Interior Standards.

5. NPS Preservation Brief 2, Repointing Joints in Historic Masonry Buildings.

1.04 SUBMITTALS

A. Product Data:

1. Submit manufacturer's product data for each type of masonry accessory, and other manufactured products, including certifications that each type complies with specified requirements.

B. Samples: All samples shall be presented for approval by the Owner and CBI.

1. Mortar:

a. Mortar shall match original composition, proportions, texture, color, joint size and finish.

b. Provide fully washed, cured, and dry mortar samples in a variety of colors for decision by the Architect. Provide samples in advance of the Work so as not to adversely affect the schedule.

c. No limit to number of samples.

d. CBI shall be contacted prior to the samples being performed in order that the pointing procedures can be viewed; said procedures shall be representative of the pointing procedures for the entire project, provided they are performed per this specification section and BIA standards.
2. Brick shall match original brick size.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry materials in undamaged condition.

B. Storage and Handling:
   1. Store and handle brick masonry materials to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes.
   2. Limit moisture absorption of brick masonry materials during delivery and until time of installation to the maximum percentage specified for brick materials for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.
   3. Store cementitious materials off the ground, under weather tight covers or indoors, and kept clean and dry.
   4. Store aggregates where grading and other required characteristics can be maintained.
   5. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

1.06 PROJECT/SITE CONDITIONS

A. Protection of Work:
   1. Protect windows, doorways, trim, and all other surfaces from damage, and immediately remove stains, efflorescence, or other unsightly excess resulting from the work of this Section.
   2. Protect roof membranes, flashings, and fascia edge metals from damage.

B. Staining:
   1. Prevent grout, mortar or soil from staining the face of masonry to be left exposed.
   2. Remove immediately grout or mortar in contact with such masonry.
   3. Protect sills, ledges, and projections from droppings of mortar.

C. Cold Weather:
   1. No Masonry Work will be performed in temperatures lower than 40 degrees F and no material will be allowed to freeze within 48 hours of installation.
   2. Provide temporary heat and winter protection at all new masonry to maintain temperature above 40 degrees F until cured.
3. Mortar admixtures are not allowed on this project.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Masonry Mortar
   1. Mortar: Components and proportions shall match that of the existing mortar.
   2. New mortar at all repointing locations shall match the original mortar in composition, color, texture, aggregate and finish.
   3. Tooled joint shall match original including depth of joint, shape of joint as well as amount of aggregate exposed.
   4. Water shall be potable and free of injurious contaminates.
   5. No admixtures of any type will be permitted.
   6. Mixing:
      a. Combine and thoroughly mix cementitious, water, and aggregates in a mechanical batch mixer.

B. New brick units to match existing.

C. Cleaning Agent: Detergent, solvent cleaner, non-acid solution type: as manufactured by Prosoco, Sure Klean, or equal.

PART 3 - EXECUTION

3.01 POINTING

A. Existing joints to be pointed to a minimum depth of ¾". Sawcutting of vertical joints is prohibited; hand tools are required. Sawcutting of horizontal joints is permissible if mason demonstrates ability to do so without damaging existing bricks.

B. New mortar shall match the existing masonry mortar. Point a sample area, 2’ x 2’ for approval. No Work shall commence without approval of sample by the Owner and CBI. CBI shall be on site to observe the pointing procedures. Said procedures shall be representative of the procedures used throughout the project provided they are performed per this specification section and BIA standards.

C. Pointing:
   1. During the tooling of joints, enlarge any voids or holes and completely fill with mortar prior to pointing.
   2. Mortar shall be applied in ⅜” lifts maximum. Additional lifts shall be applied only when the previous lift is “thumbprint” hard.
3. The use of mortar bags and/or mortar guns is prohibited. Use of such equipment will result in rejection of the work.

4. Point up all joints including corners, openings, and adjacent Work to provide a neat, uniform appearance, prepared for application of sealants.

5. The following BIA Technical Standards shall be included as part of this specification section: Technical Notes 8B; Technical Notes 46. Should there be a discrepancy between this specification and the BIA Technical Notes, the more stringent of the two shall apply.

3.04 CLEANING

A. Final Cleaning

1. General:
   a. After mortar is thoroughly set and cured, clean masonry.
   b. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   c. Test cleaning methods on sample wall panel; leave 1/2 panel unclean for comparison purposes.
   d. Obtain approval of CBI for sample cleaning before proceeding with cleaning of masonry.
   e. Protect adjacent stone and non-masonry surfaces from contact with cleaner by covering them with liquid strippable masking agent, polyethylene film, or waterproof masking.

2. Clean masonry to comply with masonry manufacturer's directions and BIA Technical Standards requirements.

END OF SECTION
PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Structural Steel work required to complete the work of the contract including all the Structural Steel work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Structural Steel work with all the other trades for the project. Provide all demolition and disposal work to complete the Structural Steel work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each sub-contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Structural Steel work includes, but is not limited to:

1. Steel angle frames for foundation wall bracing.

2. Steel clips and plates for various attachments.
1.03 RELATED WORK UNDER OTHER SECTIONS

A. The following items of related work are specified and included in other sections of the Specifications:

1. Section 03 31 00, Structural Concrete.

2. Section 09 91 00, Painting.

1.04 SUBMITTALS

A. Fabricator certification/quality control procedures: Fabricator shall submit description of fabrication and quality control procedures which provide a basis for inspection control of the workmanship and the fabricator’s ability to conform to construction drawings, project specifications, and applicable standards.

If fabricator maintains an agreement with an approved independent testing or quality control agency to conduct periodic in-plant inspections of the fabricator’s plant, details of such an agreement, including qualifications of the inspectors, frequency of inspections, and scope of inspections, shall be submitted to the Structural Engineer of Record.

B. Shop drawings: Submit complete shop drawings of work of this Section to Architect for approval, showing all dimensions, details of construction, details of installation, relation to adjoining work, reinforcement, welds, fastenings, anchorage and specification of shop finishes.

C. Bolts, nuts, and washers: Manufacturer’s certificate of compliance with specifications.

D. Structural Steel: Furnish certified mill reports, chemical and physical tests for each steel melt from which structural steel is obtained to the Architect and to the Structural Engineer of Record for determination of steel’s conformity to specifications. Failure to furnish reports and suitable strength marking will authorize the Architect to direct the testing laboratory to test the structural steel at the Contractor’s expense.

E. Weld filler material: Product specifications and manufacturer’s certificate of compliance with project specifications.

F. Primer/Paint: Product specifications.

G. Do not order materials or begin fabrication or installation until Architect’s approval of submittals has been obtained.
1.05 REFERENCE STANDARDS

A. The work shall conform to the codes and standards of the following agencies as further cited herein:


2. AWS: American Welding Society Inc., 2501 NW 7th Street, Miami, FL 33125 USA as published in “Standard D1.1-72, Structural Welding Code.”


4. ANSI: American National Standard Institute, 1430 Broadway, New York, NY 10018, USA.

5. SSPC: Steel Structures Painting Council, 4400 Fifth Avenue, Pittsburgh, PA 15213, USA as published in Volumes 1 and 2 of “SSPC Manual.”

1.06 DELIVERY AND STORAGE

A. Steel shall be carefully unloaded on delivery and suitably stored at the site in approved locations. No steel shall be dumped or dropped.

B. Steel shall be neatly stacked on skids off the ground so that it will not be in contact with water or soil; shall be piled and blocked so that it will not be damaged or bent.

C. Protect all materials from weather damage at all times.

D. Deliver work under this Section to site in ample time to avoid delay in job progress and at such times as to permit proper coordination of the various parts.

1.07 COORDINATION

A. The work of this Section shall be coordinated with that of other trades affecting, or affected by, this work, as necessary to assure the steady progress of all work under the Contract.
1.08 GUARANTEE

A. In addition to the specific guarantee requirements of the GENERAL CONDITIONS and SUPPLEMENTARY GENERAL CONDITIONS, the Contractor shall obtain in the Owner's name the standard written manufacturer's guarantee of all materials furnished under this Section where such guarantees are offered in the manufacturer's published product data. All these guarantees shall be in addition to, and not in lieu of, other liabilities which the Contract may have by law or other provisions of the Contract Documents.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Structural Steel: A36

B. Bolts, Nuts, and Washers: Shall comply with ASTM A-325. Bolt dimensions shall comply with requirements of ANSI Standards B18.2 for structural bolts, except that the radius of the filler under the bolt head shall not be less than 1/32 inch for bolts up to 1 inch in diameter. Nut dimensions shall comply with requirements of ANSI B18.2 for heavy semi-finished hexagonal nuts. Circular washers shall be flat and smooth and bevel washers square or rectangular. All washers shall comply with requirements of ANSI B27.2 for Type A washers. Where clipping of washers is necessary, clip one side only and not closer than 7/8 of the bolt diameter from the center of the washer.

C. All welded wire fabric for existing stone foundation wall bracing shall be WWF 4x4-W2.1 ASTM A185.

2.02 WELDING

A. Welding connections shall be either manual or submerged electric and welded with a full 1/4 inch minimum fillet weld unless noted otherwise. The details of all structural joints, the techniques of welding employed, the appearance and quality of welds made, and the methods used to correct defective work shall conform to requirements of the AISC and AWS Codes.

B. Welding electrodes for manual shielded metal arc welding shall conform to ASTM A-233, E70 Series. Bare electrodes and granular flux used in the submerged arc process shall conform to AISC Specifications.

C. Welding shall be done only by experienced welders who have within one (1) year previously been qualified by tests as prescribed in AWS “Standard Qualification Procedure” for the type of work required.
D.  Inspection and Testing of Welding: Welding inspection shall be done in accordance with AWS Code by qualified Inspectors engaged by the Owner. Continuous inspection shall be provided for all shop and field welds except as follows.

Periodic inspection may be provided during welding of the following items provided the materials and qualifications of welding procedures and welders are verified prior to start of work; periodic inspections are made of work in progress; and a visual inspection of all welds is made prior to completion or prior to shipment of shop welding:


2.03 FABRICATION

A. Furnish and fabricate all structural steel indicated on the Drawings and as specified herein.

B. Do all required drilling and fitting, cutting, welding, bolting and riveting.

C. Fabrication of steel shall conform to the AISC and AWS Standards and Codes listed above.

D. Connections shall be designed to safely carry the full capacity of the member.

E. The design of members and connections for any portions of the structure not indicated on Drawings shall be completed by the fabricator, shall conform to AISC Specifications, and shall be capable of supporting the maximum uniform load of the member of the span shown and the materials specified unless otherwise noted on drawings.

F. Fitted surfaces of connected parts when assembled shall be clean and bare, carrying only normal mill scale, free of paint, lacquer, dirt, oil, loose scale, burrs, pits, and other defects that would prevent solid seating of the parts to be connected.

G. All shop connections shall be welded as previously specified.

H. Provide holes and connections as required to accommodate the work of other trades and for site assembly of steel work. Holes shall be drilled or punched and reamed in the shop. Show sizes and locations of all such holes on the shop drawings.

I. Diameter of holes in bolted parts shall be 1/16 inch greater than the nominal diameter of the bolt. No unfair holes will be accepted, and enlargement of holes
shall not be accomplished by burning. Burrs resulting from drilling or punching shall be ground to the surface of the metal. Shearing and punching shall be done cleanly so as not to deform or mar adjacent surfaces.

J. All steel shall be given two (2) coats of ZRC Wordwide Cold Galvanizing Compound, or approved equal.

PART 3 – EXECUTION

3.01 ERECTION OF STEEL

A. Provide all erection equipment, bracing, planking, field bolts, nuts, washers, drift pins, and similar materials which do not form a part of the completed construction but are necessary for its proper erection.

B. Erect and anchor all structural steel in accordance with AISC Code. All work shall be accurately set to established lines and elevations and rigidly fastened in place with suitable attachments to the construction of the building.

C. Temporary bracing, guying and support shall be provided to keep the structure safe and aligned at all times during construction, and to prevent danger to persons and property. Check all temporary loads and stay within safe capacity of all building components.

E. Except as otherwise indicated all field connections shall be bolted in accordance with the AISC “Specifications for Structural Joints using ASTM A325 or A490 Bolts.” Bolts in shear/bearing connections shall be tightened to the snug tight condition, defined as the tightness that exists when all plies in a joint are in firm contact. Bolts in connections requiring full pre-tensioning, such as slip-critical connections, connections subject to direct tension, and fully pre-tensioned bearing connections, shall be tightened using the turn-of-the-nut method or direct tension indicators. Use not less than one (1) washer placed under the turning part of the assembly.

F. Where bolts contact structural steel, the steel surfaces shall be parallel (by use of bevel washers, if required), clean, even and smooth, and the holes shall be aligned and free of burrs and imperfections, so that when assembled, the bolted parts shall fit together solidly without the interposition of gaskets or any flexible material.

G. All bolted connections shall be visually inspected for soundness. All slip-critical bolts shall be inspected for proper tension.

H. The use of a gas cutting torch in the field for correcting fabrication errors will not be permitted on structural framing members without the prior written approval of the Architect for each specific condition.
I. Do not cut or alter any members in the field without Architect's approval. Do not enlarge unfair holes by burning and forcing, but correct by reaming.

J. After completion of erection, all nicks, mars, scrapes, and imperfections shall be touched up with ZRC Worldwide Cold Galvanizing Compound.

3.02 FIELD QUALITY CONTROL

A. All materials and workmanship under this Section may be subject to inspection in the mill, shop or field by the Architect, or by qualified inspectors retained by the Owner.

B. However, such inspection, wherever conducted, shall not relieve Contractor of his responsibility to furnish materials and workmanship in accordance with Contract requirements, nor shall inspector's acceptance of materials or workmanship prevent later rejection of same by the Owner or Architect if defects are discovered.

END OF SECTION
PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Rough Carpentry work required to complete the work of the contract including all the Rough Carpentry work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Rough Carpentry work with all the other trades for the project. Provide all demolition and disposal work to complete the Rough Carpentry work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each sub-contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Rough Carpentry work includes, but is not limited to:

1. All General Contractor's temporary work, including barricades, tarpaulins, protective covers, dust barriers, scaffolding, and entrances.
2. Installation of materials supplied under other specification sections, including but not limited to: Blocking, wood siding, roof sheathing, wood floor boards.

3. Wood framing and blocking required to complete the work.

1.03 QUALITY ASSURANCE

A. Softwood Lumber Standards: Provide lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's Board of Review.

B. Plywood Standards: Provide plywood to comply with PSI-74 "US Product Standard for Construction and Industrial Plywood" for plywood panels and, for products not manufactured under PSI provisions, with American Plywood Association (APA) "Performance Standard and Policies for Structural Use Panels" and with ANSI A199.1.

C. Grade Stamps: Each piece of lumber and plywood delivered to job site shall have factory-market grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species and moisture content at time of surfacing, and mill.

D. Preservation treated lumber shall be marked according to AWPB Quality Mark Requirements, complying with AWPB LP-2.

1.04 PRODUCT 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 and plywood. Provide for air circulation within and around stacks and under temporary coverings.

1.05 JOB CONDITIONING

A. Time delivery and installations of carpentry work to avoid delaying other trades whose work is dependent on or affected by the carpentry work and to comply with protection and storage requirements.

B. Contractor must examine the substrates and supporting structures and the conditions under which the carpentry work is to be installed, and notify the Owner in writing of conditions until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

C. Coordinate location of furring, nailers, blocking, grounds, and similar supports so that attached work will comply with design requirements.
1.06 SUBMITTALS

A. Within thirty (30) days after Notice to Proceed, submit complete materials data and Shop Drawings in full compliance with Section 01 31 00.

B. Submit a complete list of all materials and products required to complete the work of this Section.

C. Submit full Product Data of all manufactured or proprietary items, and certification of compliance with these requirements for all items to be furnished exactly as specified.

D. Submit Shop Drawings of all items to be fabricated off or on site as requested by the Consultant or required for proper coordination of the work. Shop Drawings may include detailed framing plans and elevation, bracing or connection details, sheathing layouts, schedules or diagrams of openings, and other information.

PART 2 – PRODUCTS

2.01 LUMBER, GENERAL

A. General Quality: Lumber shall be of new, sound stock, straight, or consistent size, free of stains, and mildew, and be surfaced on four sides. Lumber which will be incorporated into the finished work shall have a moisture content of not more than 19%.

B. Nominal sizes are indicated, except as shown by detailed dimensions. Provide dressed or worked and dressed lumber as applicable manufactured to the actual sizes as required by PS 20 or to actual sizes and patterns as shown, unless otherwise indicated.

C. Lumber lengths: Lumber shall be furnished in longest particle lengths with respect to each intended use, and single length pieces shall be used whenever possible.

2.02 LUMBER, MATERIAL

A. Dimensional: "Concealed" Lumber

1. Temporary Framing: Provide "Standard" grade lumber, any species.

2. Concealed Boards, Blocking: Provide Southern Pine No. 2 or any species graded construction boards per WCLIB or WWPA rules. Concealed boards shall have maximum moisture content of 19%.

3. Plywood: Provide marine grade plywood panels in thickness indicated on the drawings or, if not otherwise indicated provide 3/4" thickness.
4. Preservative-treated Lumber shall be impregnated under pressure with water-borne preservative to comply with AWPA-U1. All treated wood shall be kiln-dried to a maximum moisture content of 19%. All field cuts shall be treated with compatible preservative materials.

B. Fasteners and Anchorages: Provide size, type material and finish as indicated and as recommended by applicable standards and the Massachusetts building Code. Where carpentry work is exposed to weather, or exterior surfaces are in contact with the ground, provide fasteners and anchorages with hot-dip zinc coating.

2.03 ROUGH HARDWARE

A. Fabricated hardware items shall be by Teco, Simpson, Heckman, or Silver as approved by the Consultant. In exterior areas or where in contact with concrete, rough hardware shall be hot-dip galvanized. In other areas electrogalvanizing will be acceptable. Select products for size of members joined or supported and to develop the full strength of the members.

PART 3 – EXECUTION

3.01 INSTALLATION

A. Coordination: Fit carpentry work to other work; scribe, and cope for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other work.

B. Defects: Discard lumber or other material with defects which might impair the quality of work.

C. General Execution: Construct all carpentry work called for in the Drawings or reasonably inferable therefrom. Set carpentry work to required levels and lines, with members plumb, level and true to line and cut and fitted. Shim as required using concealed shims. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards. Where nailing or power driving into concrete or masonry, take care to avoid puncturing conduits, pipes, ducts, etc. embedded in such work.

3.02 LAYING OUT WORK

A. The Contractor shall be responsible for establishing lines and levels in accordance with the conditions of the Contract and general requirements.

B. Lay out all work in accordance with the Contract Documents, approved Shop Drawings, and completed portions of the work. Report all discrepancies to the Consultant promptly for correction and adjustment. In the event of failure to do so, be responsible for correction of any errors.
3.03 MISCELLANEOUS BLOCKING AND CARPENTRY

A. Furring, blocking, and backing shall be furnished and installed where required for reception of wall board, formation of architectural features, concealment of pipes, conduits, ducts, attachment for supports for toilet room accessories, building specialties, and other fixtures. Contractor shall consult with the trades concerned and set furring and blocking they require.

B. Dressed wood grounds shall be furnished and installed as indicated or as required for securing trim or other finish. Set grounds rigid, true, and in perfect alignment. Nail grounds to wood members, and secure to concrete or masonry with nailing blocks or plugs, or expansion type anchors. Provide wood stripping where indicated or required for the attachment of finish materials to wood, concrete, masonry, or other surfaces.

3.04 INTENT AND WORKMANSHIP

A. It is not the intent of this Section to hereinafter define the types, sizes, or installation methods for each item of work. Methods of installation, joinery, sizes, spacing of nailers and furring strips, and other information pertaining to the lumber, plywood, and other items of required work, shall be installed in accordance with the details on the Drawings for the specified areas involved.

B. Work that is to be finished or painted shall be free from defects or blemishes on surfaces exposed to view that will show after the finish coat of paint is applied. Any material which is in any way defective and not up to specifications for quality and grade for its intended use, or otherwise not in proper condition, shall be rejected.

END OF SECTION
WOOD SIDING AND TRIM

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Wood Siding and Trim Work required to complete the work of the contract including all the Wood Siding and Trim Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Wood Siding and Trim Work with all the other trades for the project. Provide all demolition and disposal work to complete the Wood Siding and Trim, and Repairs Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section and each Subcontractor for the entire project so that all the work can be properly and completely performed.

B. Wood Siding and Trim Work includes, but is not limited to:

1. All wood sleepers, rough carpentry, and miscellaneous jobbing and cutting.
2. All blocking, sleepers, and wood braces as shown on the Plans.
3. Rough and Finish hardware items.
4. Horizontal clapboard siding replacement.
5. Replacement of existing rake and roof trim (Alternate #1).

1.03 SUBMITTALS

A. Submit the following samples in accordance with the provisions of SECTION 01 30 00 - SUBMITTALS in GENERAL REQUIREMENTS.

1. Horizontal Clapboard Siding Sample.
2. Rake and trim (Alternate #1).

B. Do not commence fabrication of any work or begin installation until approval has been obtained from the Designer.

PART 2 – PRODUCTS

2.01 WOOD PRODUCTS

A. Lumber shall be marked S-DRY. All materials shall be checked before use, with all checked, split and otherwise deficient stock rejected, or used only for miscellaneous blocking, furring, or other incidental use. The Contractor shall be responsible for replacing all members which, due to warpage, twist, splitting, or checking, result in unsatisfactory Work. Such replacement shall be required at any time, whether before or after application of finish materials under other Sections.

B. Plywood:

1. Roof sheathing shall match existing roof sheathing thickness. Contractor to assume 1/2” thick Exterior Grade APA Structural plywood having a minimum identification index of 32/16. Plyclips shall be used at all unsupported edges.

C. Siding and Trim:

1. Horizontal clapboard siding shall be ½” x6” red pre-primed solid cedar boards. Profile to match the existing clap boards.
2. Trim to be solid cedar and pre-primed.

D. Painting
1. Refer to Section 09 90 00 Painting for requirements.

2.02 ROUGH HARDWARE

A. Fabricated hardware items shall be by Teco, Simpson, Heckman, or Silver as approved by the Designer. In exterior areas or where in contact with concrete, rough hardware shall be hot-dip galvanized. In other areas electrogalvanizing will be acceptable. Select products for size of members joined or supported and to develop the full strength of the members, as directed by the Designer or shown on the drawings.

B. Anchorage and Fastening Materials: Select proper type, size, material and finish for each application. Materials for work within exterior construction shall be galvanized. Comply with the following:

7. Lag Screw or Lag Bolts: Fed. Spec. FF-B-561
8. Masonry Anchoring Devices: For expansion shields, nails and drive screws, comply with Fed. Spec. FF-S-325
10. Bar or Strap Anchors: ASTM A575 carbon steel bars
11. All clapboards shall be nailed using stainless steel ring nails.

C. Comply with all requirements and recommendations of the SBC for fasteners types, sizes, and spacings.

PART 3 – EXECUTION

3.01 LAYING OUT WORK

A. The Contractor shall be responsible for establishing lines and levels in accordance with the conditions of the Contract and general requirements.
B. Lay out all work in accordance with the Contract Documents, approved Shop Drawings, and completed portions of the work. Report all discrepancies to the Architect promptly for correction and adjustment. In the event of failure to do so, be responsible for correction of any errors.

3.02 INTENT AND WORKMANSHIP

A. It is not the intent of this Section to hereinafter define the types, sizes, or installation methods for each item of work. In general, methods of installation, joinery, sizes, spacing of nailers and furring strips, and other information pertaining to the lumber and other items of required work, shall be installed in accordance with the details on the Drawings for the specified areas involved. All clapboards and trim shall be secured via hand nailing.

B. Any material which is in any way defective and not up to specifications for quality and grade for its intended use, or otherwise not in proper condition, shall be rejected.

END OF SECTION
PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 DESCRIPTION OF WORK

A. Provide all the Wood Consolidation and Repair work required to complete the work of the contract including all the Wood Consolidation and Repair work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Wood Consolidation and Repair work with all the other trades for the project. Provide all demolition and disposal work to complete the Wood Consolidation and Repair work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each sub-Contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

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

1. Consolidation, repair, and filling of all existing deteriorated exterior finish carpentry and architectural woodwork for painting including window frames, sills, sash, trim, and all other wood shown on the plans.

2. Type of repair to use.
WOOD CONSOLIDATION AND REPAIR

Levi Wetherbee Farmhouse

Phase One: Exterior Repairs and Stabilization
Boxborough, Massachusetts
CBI Project No.: 17146

For all areas where wood is deteriorated, missing, cracked, with open joints, or small holes up to 1” x 1” x 1 ½” deep, provide wood consolidation as outlined in this section.

1.03 RELATED WORK SPECIFIED ELSEWHERE

A. Carefully examine all of the Contract Documents for requirements which effect the work of this section.

B. Other specifications sections which directly relate to the work of this section include, but are not limited to, the following:
   1. Section 01 22 00 - Unit Prices; for quantity of existing wood material that is to be repaired via consolidation.
   2. Section 02 41 19 - Selective Demolition; demolition of existing building elements as noted on drawings
   3. Section 07 62 00 - Sheet Metal Flashing and Trim
   4. Section 09 90 00 - Finish Painting; finishing of all woodwork materials.

1.04 SUBMITTALS

A. Product Data: Submit manufacturer's technical product literature for each product used for consolidation and repair. Include instructions for use and safety precautions.

B. Project Mock-up: Prior to start of work of this Section, perform one test area of wood consolidation and one test area of wood filling and repair as specified below in locations selected by Architect. Protect test areas from damage for the remainder of the Work. Approved test areas shall represent the minimum acceptable standard for the work for this Section.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original unopened containers labeled with manufacturer's name, brand name, item name, and installation instructions.

B. Store materials in compliance with manufacturer's requirements for temperature and other conditions. Keep materials under cover and dry. Protect against exposure to weather.

C. Discard and remove from the job site any materials damaged in handling or storage and any materials that have been subjected to conditions contrary to manufacturer's recommendations or whose maximum shelf life has expired.

1.06 PROJECT CONDITIONS

A. Coordination: Coordinate wood consolidation and repair with painting work so that wood requiring treatment is treated as soon as practicable after being exposed and that consolidated and repaired wood is primed as soon as possible.

B. Weather: Proceed with consolidation and repair only when existing and forecasted weather conditions permit work to be performed in accordance with manufacturer's recommendations.
C. Surface Conditions: Proceed with work of this Section only when surfaces are completely dry. (15% wood moisture content or less. Provide moisture meter and record readings with Owner's Project Manager, on site.) Loosely cover work of this section to protect from inclement weather.

D. Protection: Use all necessary means to protect areas of wood not being consolidated or repaired and all other surfaces and areas of the building from damage or staining caused by the work of this Section.

E. Keep work covered until epoxy products are completely dry.

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Subject to compliance with requirements, provide products by the following, or equal:

1. Abatron, Inc. Kenosha, WI (800)445-1754
2. Advanced Repair Technology, Cherry Valley, NY (607)264-9040
3. ConServ Epoxy, LLC, Northfield, CT (203) 484-4123
4. West System, Inc.

2.02 MATERIALS

A. Low viscosity Epoxy Consolidant: Two-part epoxy consolidant.

1. LiquidWood.
2. Primatrate
3. ConServ Flexible Epoxy Consolidant 100 or W100

B. Fillers for Epoxies: As required to provide epoxy putty of correct viscosity for each application.

1. WoodEpox
2. Flex-Tec HV.
3. ConServ Flexible Epoxy Patch 200, S200, or W200.
4. West System 105, 205, 406.

C. Dispensers: Provide manufacturer's special pumps or applicators designed to be used in dispensing and measuring resins and hardeners.

D. Other Materials: All other materials required but not specifically described shall be selected by the Contractor and subject to the approval of the Architect.
PART 3 - EXECUTION

3.01 INSPECTION

A. Exterior Wood: After all loose and deteriorated coatings are removed inspect surfaces of all exterior wood in conjunction with the Architect to determine method and extend of treatment.

1. All surfaces where the wood is rotted or spongy require consolidation.
2. All areas that do not match their original profiles require patching and repair.
3. Areas of major damage and deterioration require dutchman repairs or replacement.
4. Architect's decision regarding extent of required consolidation and repair shall be final.

3.02 PREPARATION

A. Remove all paint from surfaces to be repaired. Cut back and remove all loose, soft and flaking deteriorated wood.

B. Scrape and sand to properly roughen surfaces without removing sound wood or changing existing profiles and arises to remain.

C. Take all steps necessary to ensure areas to be consolidated or repaired are free of dirt, dust, paint, oil, grease, and other substances that might inhibit successful consolidation and repair.

D. Take all steps necessary to ensure that wood is dry. No open flames shall be used.

3.03 EPOXY CONSOLIDATION

A. Use low viscosity and medium viscosity epoxy consolidants appropriate to each situation.

B. Hand sand all wood surfaces lightly with 120-150 grit paper to remove paint chips, grit, oil glaze, etc. Dust using a dry cloth or paint brush and lastly wipe down all wood surfaces with a damp cloth of paint thinner.

C. For dry, weathered wood with very minor surface deterioration, (less than 1/8"), brush apply kyanoil (pure alkyd resin) at full strength. Repeat application until oil remains on the surface then wipe away excess. Allow to dry. Sand lightly prior to painting.

D. Mix epoxy consolidant following manufacturer's directions. Drill holes in areas of deteriorated wood to ensure complete penetration of consolidant into deteriorated portions of member as necessary. Flow consolidant onto wood with a brush or putty knife until wood is saturated. Cure following manufacturer's directions.

3.04 EPOXY PATCHING AND REPAIR

A. When patching areas of wood that have been consolidated, apply patching mixture following manufacturer's directions.
B. For minor deterioration (rot of 1/3" to 1/4" depth), consolidate with high strength epoxy resin. For deep deterioration (1/4" or deeper), either immerse the disassembled element in epoxy resin or drill 1/8" diameter holes in the element to allow saturation by the epoxy resin.

C. All holes and cracks deeper than 3/16" shall be consolidated with epoxy resin then filled with an epoxy filler. Scrape and sand to be level with adjoining surfaces. Do not feather the edges.

D. Use consolidant filled with appropriate fillers as recommended by manufacturer to provide patching material of suitable viscosity for intended application.

E. Mix consolidant following manufacturer's directions. Apply brush coat working well into wood. Add filler to form paste of desired consistency. Prepare enough material to repair one element at each mixing. Work into areas of wood requiring repair. Strike off excess material forming exact, sharp and accurate profiles to match existing. Cure following manufacturer's directions. Repeat if required to match original profile.

F. File and sand to match desired profile and to produce uniformly smooth surface as recommended by the manufacturer. No coarse-grained sandpaper mark or other imperfections shall be permitted.

3.05 FILLING WITH WOOD PUTTY

A. Mix wood putty following manufacturer's instructions.

B. Fill depressions and screw counter sink holes in existing wood. Avoid spreading putty on flat surfaces. Form sharp and accurate profiles to match existing.

C. File and sand to match desired profile and to produce uniformly smooth surface. No coarse-grained sandpaper mark or other imperfections shall be permitted.

3.06 ADJUST AND CLEAN

A. Remove and replace any repair or consolidation work that does not match existing surfaces and profiles and any consolidant that is loose and has not bonded or cured properly to the satisfaction of the Architect at no additional cost to the Owner.

B. Refer to Section 09 90 00 - Painting for finishing of wood consolidation work.

C. Clean all surfaces or materials damaged or stained by work of this Section.

D. Protection: Protect wood consolidation work and maintain conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

END OF SECTION
DIVISION 07  
THERMAL & MOISTURE PROTECTION

SECTION 07 31 00  
ASPHALT SHINGLES  
(Alternate #1)

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Asphalt Shingles work required to complete the work of the contract including all Asphalt Shingles work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Asphalt Shingles work with all the other trades for the project. Provide all demolition and disposal work to complete the Asphalt Shingles work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each Subcontractor, and for the entire project so that all the work can be properly and completely performed.

B. Asphalt Shingles work includes, but is not limited to:

1. Removal of existing asphalt shingle and (one layer and possibly two) and related elements to level of existing wood sheathing.
2. All new shingle roof system to be applied to all of the roofs including new underlayment and ice and water shield.

3. All related flashing including furnishing and installation of drip edge, wall flashing, pipe penetration flashing boots, and continuous ridge vents.

4. Removal and replacement of deteriorated roof sheathing with new ¾” plywood.

1.03 RELATED WORK IN OTHER SECTIONS

A. The following items of related work are specified and included in other Sections of the Specifications:

1. Section 02 07 00, Selective Demolition
2. Section 06 10 00, Rough Carpentry
3. Section 07 62 00, Sheet Metal Flashing and Trim
4. Section 07 92 00, Sealants and Caulking

1.04 SUBMITTALS

A. Submit complete shop drawings in accordance with the provisions of SECTION 01 30 00 - SUBMITTALS in GENERAL REQUIREMENTS.

B. Submit the following samples in accordance with the provisions of SECTION 01 30 00 - SUBMITTALS in GENERAL REQUIREMENTS.

1. Granule surfaced asphalt shingle roofing.
2. Moisture shedding underlayment, eaves, valley and ridge protection
3. Ice and Water Shield, by W.R. Grace, G.A.F. Stormguard, CertainTeed Winterguard HT Film, or approved equal.
5. Associated metal flashing and roof edge trim.

C. Do not commence fabrication of any work or begin installation until approval has been obtained from the Engineer.

PART 2 – PRODUCTS

2.01 ROOFING MATERIALS

ASPHALT SHINGLES

07 31 00 - 2
A. Provide Lifetime asphalt shingles, GAF Timberline Natural Shadow - Charcoal, CertainTeed Landmark PRO – Charcoal Black, Owens Corning Duration – Estate Gray, or approved equal asphalt shingles, conforming to: ASTM D 3018 Type I - Self-Sealing; UL Certification of ASTM D 3462, UL 997 minimum 110-mph Wind Resistance, and UL Class A Fire Resistance; fiber glass asphalt construction, as manufactured by GAF or approved equal.

B. Underlayment shall be one (1) layer of 15# asphalt saturated felt such as CertainTeed Roofers' Select, GAF TigerPaw, Atlas #15 Saturated Felt, or equal conforming to ASTM D-226.

C. Nails shall be 11 or 12 gauge hot-dipped galvanized roofing nails (or equivalent), having large heads (at least 3/8 inch diameter) and shanks which are one and one half inch long.

D. Ice and water shield to be a minimum of 36" wide rolls, pre-formed, mastic-permeated material by W.R. Grace, GAF Stormguard, CertainTeed Winterguard HT Film, or approved equal. Ice and water shield shall extend a minimum of 72” inboard of the heated wall line and 36” around all roofing penetrations.

2.02 SHEET METAL MATERIALS

A. All new drip edge shall be .032” aluminum, as noted on plans, formed to extend a minimum of 8” inches onto the roof deck from the roof edge.

B. Pipe penetration boots shall be aluminum bases with a rubber boot, properly sized to fit the appropriate pipe and installed properly so that the boot sheds water, as manufactured by Oatey, or approved equal. Boots shall be caulked at the top following installation.

C. Provide and install new zinc coated copper step flashing at roof-to-chimney intersections.

PART 3 – EXECUTION

3.01 SHINGLE APPLICATION

A. An ice and water shield shall be applied at the edge of the roof along the eaves and rake. Ice shield shall be set starting from the eaves, 72” minimum (two courses), and extending to a point 72” inside the inside wall line of the building. Ice and water shield shall be applied directly to the wood deck with 4” side laps and 6” end laps.

B. Single layer of 15# asphalt saturated roofing felt shall be applied horizontally to the roof as underlayment under the entire shingled area, including over the ice and water shield.
C. A starter course of shingles shall be applied at the eaves before the first full course of shingles is applied. The starter course shall be either a row of asphalt shingles cut 7 inches from the top or a 7 inch wide (minimum) starter strip of mineral-surfaced asphalt roll roofing positioned with the lower edge of the material overhanging the drip edge 1/4" to 3/8". **Inverting a course of shingles is not an acceptable starter course.** The material shall be fastened with roofing nails along a line that is parallel to and 5-1/2 inches above the eave edge. The nails shall be placed at 1-1/2, 11, and 13 inches in from each side and in such a way that the nail heads will not be exposed either at cutouts or spaces between shingle tabs in the first course.

D. Shingles shall be attached with four nails per shingle.

E. The first course of shingles shall be started using full shingles with the first shingle positioned to overhang the rake and eave 1/4" to 3/8". Succeeding courses shall be started from the rake with partial shingles as shown in detail.

F. Ridge Locations

1. Asphalt shingles should be butted and nailed as they progress up either side of a ridge.

2. Individual shingle tabs 12 inches by 12 inches should be cut and bent lengthwise across their centers for use as hip and ridge coverings. The unexposed portion of each tab should be cut slightly on each side so that it is narrower than the exposed portion.

3. Application of these covers should begin at the lower end of a hip or at either end of a ridge. The covers should be applied shingle fashion.

4. Secure each shingle with one fastener on each side 5-1/2 inches back from the exposed end and one inch up from the edge.

5. The peak of a cricket shall be treated as a ridge.

3.02 INSTALLATION OF METAL FLASHINGS AND SHEET METAL

A. The drip edge shall be applied directly to the roof deck along the eave and rake. At the eave the drip edge shall be attached with a layer of underlayment over it. Underlayment shall be provided between the roof deck and the drip edge along the rakes. The drip edge shall extend at least 3/8" beyond the edge of the deck and shall be nailed at 4 inches on center.

B. Flashing against Vertical Walls
1. Flashing against vertical walls shall be 8” long zinc-coated copper step-flashing between shingles applied 8 inches up the existing lead chimney wall counter-flashing and 4 inches out over the roof deck.

2. Each flashing shingle shall be placed just up-roof from the exposed edge of the flashing shingle that overlaps it.

C. Pipe penetration boots shall be installed so that the rubber boot fits snugly around the pipe and extends vertically as to prevent water from being trapped. A 24” x 24” sheet of ice shield shall be installed, centered on the pipe, directly on the plywood, before the boot is installed. The boot shall be shingled into the roofing system as per manufacturer’s recommendations and acceptable roofing practices.

END OF SECTION
DIVISION 07  
THERMAL & MOISTURE PROTECTION

SECTION 07 62 00  
SHEET METAL FLASHING AND TRIM

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Sheet Metal Flashing and Trim work required to complete the work of the contract including all the Sheet Metal Flashing and Trim work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Sheet Metal Flashing and Trim work with all the other trades for the project. Provide all demolition and disposal work to complete the Sheet Metal Flashing and Trim work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each sub-contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Sheet Metal Flashing and Trim work includes, but is not limited to:

1. Step flashing at chimney intersections. – Alternate #1.
2. New chimney cap. – Alternate #1.
3. New flashing and bulkhead.

1.03 SUBMITTALS

A. Submit complete shop drawings in accordance with the provisions of SECTION 01 31 00 - SUBMITTALS in GENERAL REQUIREMENTS.
   1. Solid lead counter flashing and zinc coated copper flashing.
   2. Stainless steel chimney cap.

B. Submit the following samples in accordance with the provisions of SECTION 01 31 00 - SUBMITTALS in GENERAL REQUIREMENTS.
   1. 12 inch by 12 inch section of flashing sheet in each configuration listed in 1.02.A, above as a mock-up for approval.
   2. Two of each fastener.

C. Do not commence fabrication of any work or begin installation until approval has been obtained from the Consultant.

PART 2 – PRODUCTS

2.01 METAL MATERIALS

A. Stainless Steel: Stainless steel sheet for architectural applications, meeting the requirements of ASTM A167, Type 304 or Type 316, with No. 4 finish. Where stainless steel sheet gage is not indicated, provide 26 gage.

B. Aluminum Sheet Metal: ASTM B209, 5005, or 3003-H14 aluminum alloy as appropriate, clear anodized or epoxy coated. Where aluminum sheet thickness is not indicated, provide .04” thickness.

C. Sheet Lead: Standard 0.062 inch thick lead sheet weighing 4 pounds per square foot, arsenical-antimonial and pig lead alloy meeting the requirements of ASTM B29. Use sheet lead or tubing for flashing of vent pipes and other penetrations of the roof.

D. Solder: Grade A meeting requirements of ASTM B32, composed of 50 percent pig lead and 50 percent block tin, warranted pure. Flux shall be an approved brand of soldering flux for the type of metal or muriatic acid neutralized with zinc.

E. Fasteners and Accessories: Furnish anchors and fasteners, washers, straps, and accessories required for a complete and finished installation. Fasteners and accessories shall conform with the following requirements:
1. Nails shall be stainless steel, hard copper, bronze, or brass. Where sheet metal is built in over roofing materials or other sheet metal, use nails or screws with 1 inch matching nonferrous washers. Screws shall be standard stainless steel, brass, or bronze wood screws, as required. Sheet metal screws shall be self-drilling, self-tapping stainless steel or tempered non-corrodible steel of proper size and length to suit conditions.

2. Screw heads shall be furnished with neoprene washers.

3. Straps: Straps and miscellaneous fastenings, where required, shall be stainless steel, half-hard copper, or half-hard 70-30 brass of size indicated or required. Where not indicated, provide straps of 1/16 inch thick by 1 inch wide size.

F. Isolating material: Alkali-resistant bituminous paint or varnish.

2.02 WATERPROOFING MEMBRANE

A. Ice and water shield to be a minimum of 36” wide rolls, pre-formed, mastic-permeated material by W.R. Grace, GAF Stormguard, CertainTeed Winterguard HT Film, or approved equal.

PART 3 – EXECUTION

3.01 INSTALLATION OF METAL FLASHINGS AND SHEET METAL

A. General: Fabricate and install flashings and other sheet metal work in accordance with the general procedures specified in accordance with the publications entitled: "Modern Application of Sheet Copper in Building Construction" and "Copper and Common Sense".

B. Clean, remove sharp objects, and prime all surfaces of the existing wood substrate to receive the waterproofing membrane. Fully adhere the membrane lapping joints in the flow of water. Lap vertical joints 6” minimum.

C. In all cases, use special care in installation procedures to ensure sufficient allowances for expansion and contraction of each type metal.

D. Use rivet connections of metal in preference to solder connections, except where visual appearance is a major factor. When solder joints are specified or necessitated, ensure that all surfaces are pre-tinned and that the proper flux is used.

E. Verify all wood nailers and other surfaces to which fasteners will be installed and request correction of same from the General Contractor where surfaces would not otherwise properly receive the fastenings.
F. Generally, flashings and sheet metal work shall be in lengths not exceeding 8’ and free from longitudinal joints. Coat all flashing in contact with dissimilar metal with asphalt paint. Form expansion joints in running flashing work by joining ends of sheets together with a 3” loose lock, filled with plastic cement, and install expansion joints every 24 feet in straight runs. Submit sample for approval.

G. Coping and Other Nonspecified Flashings: Fabricate and install all items in accordance with the details and specified publication standards.

END OF SECTION
DIVISION 07  
THERMAL AND MOISTURE PROTECTION

SECTION 07 92 13  
SEALANTS AND CAULKING

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that the equipment to be furnished complete in every respect, and that this Contractor shall provide all equipment needed and usually furnished in connection with such systems to provide a complete installation. Equipment, materials, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Sealants and Caulking work required to complete the work of the contract including all the Sealants and Caulking work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all hardware, finishes, and accessories. Coordinate the Sealants and Caulking work with all the other trades for the project. Provide all demolition and disposal work to complete the Sealants and Caulking work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each Subcontractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Sealants and caulking work includes, but is not limited to:

1. Provide water cut-off mastic sealant to seal in between all layers as detailed.

2. Provide a complete watertight installation as per good construction practice.
1.03 SUBMITTALS
A. Product Literature: Submit product data sheets and the manufacturer’s installation instructions.

1.04 PRODUCT HANDLING
A. Delivery shall be in manufacturer’s original unopened container, clearly identifying each product specified, relating it to the product literature submitted.

1.05 GUARANTEES
A. Water cut-off mastic shall be guaranteed by the manufacturer against cohesive and adhesive failure of the sealant and water penetration through the joints for TWENTY (20) years.

PART 2 – PRODUCTS

2.01 MATERIALS
A. Primer: A primer shall be used at all locations in accordance with the manufacturer's instructions, with all primers being installed prior to the installation of any backer rod or bond breaker tape. Manufacturer shall be consulted for all surfaces not specifically covered in submittal application instructions.

B. Water Cut-Off Mastic: one-component, low viscosity, self-wetting, butyl-blend mastic. Product shall be extremely tacky and remain as such when used at compression-type terminations.

PART 3 – EXECUTION

3.01 JOINT SURFACE PREPARATION
A. Remove all failed sealants and clean joint surfaces immediately before installation of sealant and caulking compounds. Remove dirt, insecure coatings, moisture and other substances which would interfere with the bond of sealant or caulking compounds.

3.02 INSTALLATION
A. Where backer rod is required it shall be installed using only blunt instruments or rounded tools which will insure a uniform depth (+ or - 1/8") depth without puncturing the material. Backer rod shall be a minimum of 33% oversized for the joint to be sealed.
B. Surrounding areas shall be protected to ensure that no sealant contaminates these surfaces.

C. Sealant shall be installed in accordance with manufacturer’s recommendations and instructions in order to insure proper width to depth ratio. Take all steps to prevent three (3) sided adhesion. Sealant depth shall be one half of joint width with a minimum depth of 1/4” and a maximum of 1/2” unless otherwise required by the manufacturer.

D. Both temperature and dampness conditions may restrict application of these sealants. Comply with manufacturer's instructions.

END OF SECTION
DIVISION 09  
FINISHES

SECTION 09 90 00  
PAINTING

(Base Bid and Alternate #1)

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Include the General Conditions, Modifications to the General Conditions, and applicable parts of Division 01 as part of this Section.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Painting work required to complete the work of the contract including all the Painting work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Painting work with all the other trades for the project. Provide all demolition and disposal work to complete the Painting work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, each sub-contractor, and each file sub-bidder for the entire project so that all the work can be properly and completely performed.

B. Painting work includes, but is not limited to:

1. Paint all new roof trim. – Alternate #1.

2. Painting of existing roof trim. – Alternate #1.
3. Painting of new bulkhead.
4. Painting of existing floor boards.
5. Painting of exterior doors.

1.03 SUBMITTALS

A. Submit the following shop drawings in accordance with the provisions of SECTION 01 31 00 - SUBMITTALS in the general requirements.
1. Manufacturer’s literature on each product used.

1.04 QUALITY ASSURANCE

A. Provide at all times during the work of this Section adequate supervisory personnel who shall be thoroughly familiar with the type of construction involved and with the requirements of the Contract Documents pertinent to this Work. Provide adequate numbers of skilled craftsmen and other personnel to ensure the orderly and proper progress of the Work in accordance with the approved Progress Schedule.
B. Comply with the Codes and Standards of the Steel Structures Painting Council.

PART 2 – PRODUCTS

2.01 PAINT

A. All paints to be by Benjamin Moore or approved equal. Specification is based on the Benjamin Moore Paints brand but may be by an approved equal.

B. Wood
1. Primer for wood surfaces to be Fresh Start Exterior Wood Primer (094).

2. Finish (2 coats) for wood surfaces to be Aura White Diamond Exterior Paint.

3. Sealant: DAP Dynaflow 230 or approved equal.

PART 3 – EXECUTION

3.01 SURFACE PREPARATION

A. Refer to Section 02 83 00 – LEAD PAINT REMOVAL for additional information.

PAINTING
09 90 00 - 2
B. Install all paint as per the manufacturer's written recommendations.

C. Unfinished New Wood:

1. Remove surface dirt and grit with a detergent solution followed by a thorough rinsing with clear water. Allow surface to dry completely before coating.

2. Prime all bare wood.

3.02 APPLICATION TO WOOD

A. Apply paint by methods generally accepted by the trade to achieve approved results.

B. Do not apply finishes on surfaces that are not sufficiently dry. Make sure each coat of finish is dry and hard before following coat is applied unless manufacturer's direction states otherwise.

C. Prime all surfaces before installation by other trades.

D. Brush on oil-based paints with a high quality natural bristle brush.

E. Apply two finish coats using high quality natural bristle brush.

3.03 PROTECTION

A. The contractor is responsible for protecting the finish after coating during storage, delivery and installation.

B. Touch-up scrapes, scratches and any other mar in the finish as required after installation as per this specification.

C. If Consultant determines that the paint finish has been damaged by the contractor, beyond repair by touch-up, the entire rail section shall be re-finished as per this specification and at no additional cost to the Owner.

END OF SECTION
PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.

B. Examine all other Sections of the Specifications for requirements which affect work of this Section whether or not such work is specifically mentioned in this Section.

C. Coordinate work with that of all other trades affecting or affected by work of this Section. Cooperate with such trades to assure the steady progress of all work under Contract.

D. It is the intent of the Specifications and the Drawings to require that all the material, labor, and equipment be furnished complete in every respect, and that this Contractor shall provide all material, labor, and equipment needed and usually furnished in connection with such systems to provide a complete installation including all demolition, disposal, and patching of adjacent surfaces. Materials, equipment, and articles incorporated in the work shall be new and of the best grade of their respective kinds.

1.02 WORK TO BE PERFORMED

A. Provide all the Landscaping Repair Work required to complete the work of the contract including all the Landscaping Repair Work shown on the plans, listed in the specification, and needed to install a complete assembly in every way, with all reinforcing, pinning, and finishes. Coordinate the Landscaping Repair Work with all the other trades for the project. Provide all demolition and disposal work to complete the Landscaping Repair Work. Patch to match all adjacent surfaces that are disturbed, left exposed, or unfinished. All work of the contract is related. It is the General Contractor’s responsibility to review all the work of each section, and each Subcontractor for the entire project so that all the work can be properly and completely performed.

B. Landscaping Repair Work includes, but is not limited to, replacing and planting of trees, shrubs and grass, including mulching, staking and related planting procedures of landscaping items disturbed or displaced by the work or damaged during construction.

1. Preparation of final sub-grades in planted areas.
2. Furnishing topsoil at areas to be planted.
3. Planting mixes
4. Protection, maintenance and guarantee of plant materials.

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5. Existing tree protection and care

1.03 RELATED WORK UNDER OTHER SECTIONS

A. The following items of related work are specified and included in other Sections of the Specifications:

1. SECTION 02 41 00, SELECTIVE DEMOLITION

1.04 QUALITY ASSURANCE

A. Comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature. Names of varieties not listed conform generally with names accepted by the nursery trade. Provide stock true to botanical name and legibly tagged.

B. Comply with sizing and grading standards of the latest edition of "American Standard for Nursery Stock". A plant shall be dimensioned as it stands in its natural position.

C. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project for a minimum of 2 years.

1.05 SAMPLES

A. Submit the following samples in accordance with the requirements of GENERAL CONDITIONS and SUPPLEMENTAL GENERAL CONDITIONS.

1. Mulch
2. Anchors
3. Wire
4. Hose
5. Turnbuckles and cable clamps
6. Wrapping
7. Topsoil

B. Provide samples for testing as required by Architect.

PART 2 – PRODUCTS

2.01 TOPSOIL

A. Topsoil shall be a fertile, friable natural topsoil not excessively acid or alkaline and free of toxic substances harmful to plant growth. Topsoil shall be without admixture of subsoil and free from clay lumps, stumps, roots, debris, stones, or other similar substances 2" or more in diameter.

1. It shall be obtained from a well-drained arable site with a history of good plant growth. Submit sample for approval by the Landscape Architect.

2.02 SLUDGE FERTILIZER
A. Sludge fertilizer shall be an organic activated, granular, heat dried sludge and shall contain the following minimum percentages by weight: 6% Nitrogen, 4% Phosphoric Acid, and other nutritious basic elements. The sludge fertilizer shall be delivered as specified in standard size bags, showing weight analysis and name of processor and shall be stored in a weatherproof storage place.

2.03 COMPOSTED COW MANURE

A. Manure shall be a derivative of cattle manure which has undergone a period of composting rendering it into a crumbly, odor free, weed free material containing beneficial natural soil bacteria. It shall be free of harmful chemicals and other injurious substances. Manure shall be free of refuse of any kind and shall not contain more than 25% of straw, shavings, leaves, or other material. Manure shall not be more than 2 years nor less than 9 months old.

B. A composition of peat moss or peat humus to which has been added dehydrated manure such as bovine in the proportion of 100 pounds of dehydrated manure per cubic yard of peat, may be substituted for manure as specified above.

2.04 BONE MEAL

A. Bone meal shall be commercial raw bone meal, finely ground, having a minimum analysis of 4% nitrogen and 20% phosphoric acid.

2.05 WATER

A. Water will be furnished by Owner on the site. Hose and other watering equipment shall be furnished by Contractor.

2.06 PLANT MATERIALS

A. Contractor shall replace in kind and plant all plants or lawn damaged or killed during construction. No substitutions will be permitted. All plants shall be nursery grown unless specifically authorized to be collected.

B. Plant shall be in accordance with the USA Standard for Nursery Stock of the American Association of Nurseriesmen.

C. All plants shall be typical of their species or variety and shall have a normal habit of growth and be legibly tagged with the proper name. All plants shall have been grown under climatic conditions similar to those in the locality of the site of the project under construction, or have been acclimated to such conditions for at least 2 years. Trees shall have straight trunks and all abrasions and cuts shall be completely culled over.

D. The root system of each shall be well provided with fibrous roots. All parts shall be sound, healthy, and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, eggs or larvae.

E. All plants must be moved with the root systems as solid units with balls of earth firmly wrapped with burlap. The diameter and depth of the balls of earth must be sufficient to encompass the fibrous root feeding system necessary for
the healthy development of the plant. No plant shall be accepted when the ball of earth surrounding its roots has been badly cracked or broken preparatory to or during the process of planting or after the burlap, staves, ropes or platform required in connection with its transplanting have been removed. The plants and balls shall remain intact during all operations. All plants shall be freshly dug. No plants from cold storage or previously heeled-in will be accepted. All plants that cannot be planted at once must be heeled-in by setting in the ground and covering the balls with soil and then watering.

F. The height of the trees (measure from the crown of the roots to the tip of the top branch) shall be not less than that of the tree being replaced. The branching height for shade trees next to walks shall be 7'. This may be obtained by pruning after delivery if this does not ruin the shape or form of the trees or cause unsightly scares. All cuts shall be shellacked. The trunk of each tree shall be a single trunk growing from a single unmutilated crown of roots. No part of the trunk shall be conspicuously crooked as compared with normal trees of the same variety. The trunk shall be free from sunscald, frost cracks, or wounds resulting from abrasions, fire or other causes. No pruning wounds shall be present having a diameter exceeding 2" and such wounds must show vigorous bark on all edges. No trees which have had their headers cut will be accepted.

G. Shrubs shall meet the requirements for spread of height of the shrub being replaced. The measurements for height are to be taken from the ground level to the average height of the shrub and not to the longest branch. The thickness of each shrub shall correspond to the trade classification No. 1.

1. Single stemmed or thin plants will not be accepted. The side branches must be generous, well-twiggled, and the plant as a whole well branched to the ground. The plants must be in a moist vigorous condition, free from dead wood, bruises or other root or branch injuries.

2.07 MULCH

A. Mulch material shall be softwood hemlock bark shredded into fibrous pliable slices generally not exceeding 1/2" in width.

1. Mulch shall be 98% organic matter with the pH range 3.5 to 4.5. Moisture content of packaged material shall not exceed 35%. Submit sample.

2.08 STAKING MATERIALS

A. Stakes for supporting trees shall be of sound wood, uniform in size, free of knots and holes. They shall be nominal 2" x 4" and 10' long for support staking, 3' long for guy wire anchor stakes. Stakes shall be stained dark brown.

B. Wire for tree bracing and guying shall be pliable No. 12 gauge galvanized steel.

C. Hose for covering wire shall be new or used 2 ply reinforced rubber garden hose

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D. Wrapping material shall be first quality, heavy waterproof crepe paper manufactured for this purpose, or first quality burlap not less than 4" nor more than 6" wide of suitable strength and manufactured for this purpose.

2.09 SEED

A. Seed mixture shall be fresh, clean, new crop seed. Grass shall be of the previous year’s crop and in no case shall the weed seed content exceed 0.25% by weight. The seed shall be furnished and delivered in the proportion specified below in new, clean, sealed and properly labeled containers. All seed shall comply with State and Federal seed laws. Submit manufacturer’s Certificates of Compliance. Seed that has become wet, moldy or otherwise damaged shall not be acceptable. Chewings fescue, hard fescue, tall fescue and Ryegrass shall contain Acromonium endophytes. Seed containing endophyte must be kept cool and dry at all times; do not stockpile in the sun.

1. Seed Mixture Composition (not to be used on terraces)

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Proportion By Weight</th>
<th>Germination Minimum</th>
<th>Purity Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creeping Red Fescue</td>
<td>50%</td>
<td>85%</td>
<td>95%</td>
</tr>
<tr>
<td>Kentucky Bluegrass</td>
<td>40%</td>
<td>85%</td>
<td>90%</td>
</tr>
<tr>
<td>Perennial Rye</td>
<td>10%</td>
<td>90%</td>
<td>90%</td>
</tr>
</tbody>
</table>

a. Bluegrass and ryegrass varieties shall be within the top 50 percent and 25 percent respectively, of varieties tested in National Turfgrass Evaluation Program, or currently recommended as low maintenance varieties by University of Massachusetts or the University of Rhode Island.

b. Seeding rate for the General Lawn Seed Mix shall be 6 pounds per 1,000 square feet.

PART 3 - EXECUTION

3.01 METHODS

A. Personnel: The planting and lawn construction shall be performed by personnel familiar with the accepted procedure of planting and under the constant supervision of a qualified planting foreman.

B. Planting Seasons:

1. Deciduous plants shall be planted only when dormant, that is, before leaves appear in the spring and subsequent to their loss in the fall, unless otherwise directed by the Architect.

2. Evergreen plants may be planted in the spring until new growth appears and any time between September 15 and November 30.

3. If the building completion date prohibits in-season planting, the
Contractor shall complete his work within the project date and prepare himself for out-of-season planting, including wiltproofing and extra watering.

a. Plant guarantee periods remain as stated below. No frozen ground planting.

C. Lawn Replacement

1. Remove all areas of dead lawn including root system. The Architect shall be the sole authority as to the extent of lawn replacement areas.

2. Contractor to provide a minimum of 6" of new loam in all areas of lawn replacement. Peat moss shall be mixed into existing hard and/or clay type soil. Architect shall determine the need for and amounts of peat moss required.

3. New grass shall be sod of rye grass, blue grass or a combination of both.

4. Apply starter fertilizer to all areas of newly planted grass.

5. Maintain constant moist soil conditions, a minimum of thirty days.

D. Planting of Trees, Shrubs, and Vines:

1. Unless otherwise directed by the Architect, the indication of a plant to be replaced is to be interpreted as including the digging of a hole, furnishing a plant of the specified size, the work of planting and mulching, and guying, staking and wrapping where called for.

2. One or more stockpiles of approved backfill mixture shall be maintained at all times during the planting operations. The backfill mixture shall consist of 50% topsoil and 50% specified composted cow manure by volume, thoroughly mixed together. The following shall be added to each area of tree replacement:

   a. 5 lbs. of sludge fertilizer
   b. 5 lbs. of bone meal
   c. 5 lbs. of cottonseed meal

   1) The following shall be added to each area of lawn replacement:

      (a) 1 lb. sludge fertilizer
      (b) 1 lb. bone meal
      (c) 1 lb. cottonseed meal

3. Locations for all plants shall be staked on the ground and must be approved by the Architect before any excavation is made. Adjustments in locations and outlines shall be made as directed. In the event that areas for planting are prepared and backfilled with Backfill Mixture to grade prior to commencement of lawn operations, they shall be so
marked that when the work of planting proceeds, they can be readily located.

a. In case underground obstructions such as ledge or utilities are encountered, locations shall be changed under the direction of the Architect without extra charge.

4. Holes for trees shall be at least 2' greater in diameter than the spread of the root systems and at least 6" deeper than root ball. Holes for shrubs and vines shall be at least 12" greater in diameter than the spread of the root system and at least 18" deep.

5. Specified backfill mixture shall be spread and incorporated with loam in all areas of tree or lawn replacement and as directed by the Architect.

6. Planting: All plant roots and earthballs must be kept damp and thoroughly protected from sun and/or drying winds at all times from the beginning until the final operation, during transportation, and on the ground until the final operation of planting. The plants shall be planted in the center of the holes and at the same depth as they previously grew. They shall be plumbed and turned as directed. Specified Mixture shall be backfilled in layers of not more than 9" and each layer watered sufficiently to settle before the next layer is put in place. Backfill Mixture shall betamped under edges of balled plants. Enough Backfill Material shall be used to bring the surfaces to finish grade when settled.

   a. A saucer shall be provided around each plant.
   b. Plants must be flooded with water twice within the first 24 hours of time of planting.
   c. Wrapping: The trunks of all shade trees shall be wrapped spirally from the ground to the height of the second branches or as directed. Wrap brown cord 3" on center spirally to hold paper neatly in place.
   d. Provide a 3" layer (after settlement) of bark mulch over the surface of each saucer and over the entire area of shrub beds.
   e. Stake all trees.

E. PLANTING COORDINATION:

1. Replacement plantings must match existing for type and caliber of trees and size of shrubs.

2. The Contractor shall be responsible for selection and tagging at nurseries stocking the specified materials.

3. Contractor shall inform Architect when planting will commence, anticipated delivery date of material and have made and provided for the staking of all plants and plant bed.
4. Failure to notify the Architect in advance, in order to arrange proper scheduling may result in loss of time or removal of any plant or plants not installed as specified or directed.

3.02 PRUNING

A. Each tree and shrub shall be pruned in accordance with American Nurserymen Association Standards to preserve the natural character of the plant.

B. All dead wood or suckers and all broken or badly bruised branches shall be removed. In addition, 1/3 of the wood may be removed by thinning out to balance root loss due to transplanting providing the natural character and form of the tree is preserved. Never cut a leader.

C. Pruning shall be done with clean, sharp tools.

D. Cuts over 1" in diameter shall be painted with an approved asphaltic tree paint. Paint shall cover all exposed living tissue.

3.03 MAINTENANCE

A. Maintenance shall begin immediately after each plant is planted. Plants shall be watered, mulched, weeded, pruned, sprayed, fertilized, cultivated and otherwise maintained and protected for a minimum of 30 days until provisional acceptance. Settled plants shall be reset to proper grade and position, planting saucer restored and dead material removed. Stakes and wire shall be tightened and repaired.

1. Defective work shall be corrected as soon as possible after it becomes apparent and weather and season permit.

B. Upon completion of planting and prior to provisional acceptance, remove from the site excess soil and debris, and repair all damage resulting from planting operations.

C. Protection: Planting areas and plants shall be protected against trespassing and damage of any kind. This shall include the provision and installation of approved temporary fencing if necessary. If any plants become damaged or injured by vandalism or neglect of others prior to provisional acceptance, the Contractor shall treat or replace them at his own expense.

3.04 ACCEPTANCE AND GUARANTEE

A. After the 30-day maintenance period, the Contractor shall request from the Architect an inspection to determine whether the plant material is acceptable. If the plant materials and workmanship are acceptable, written notice shall be given by the Architect to the Contractor stating that the guarantee period begins from the date of inspection.

B. If a substantial number of plants are sickly or dead at the time of inspection, acceptance will not be granted, and the Contractor's responsibility for maintenance of all plants shall be extended until replacements are made. Replacements shall conform in all respects to specifications for new plants and
shall be planted in the same manner.

C. Materials and Operations: All replacements shall be plants of the same kind and size specified on the plant list. They shall be furnished and planted as specified above. The cost shall be borne by the Contractor. Replacements resulting from the removal, loss or damage, due to occupancy of the project in any part, vandalism, or acts of neglect on the part of others, physical damage by animals, vehicles, etc., and losses due to curtailment of water by local authorities, will be approved and paid for by the Owner.

D. Plants shall be guaranteed for a period of one year after inspection and shall be alive and in satisfactory growth at the end of the guarantee period.

E. At the end of the guarantee period, inspection will be made again. Any plant required under this Contract that is dead or unsatisfactory shall be removed from the site. These shall be replaced during the normal planting season, until the plants live through one year.

END OF SECTION