

#5(cont.)

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
1. Do not use original Project Record Documents as part of operation and maintenance manuals.
- G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Each Contractor, Subcontractor and/or supplier providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
1. Record Drawings.
 2. Record Specifications.
 3. Record Product Data.
 4. Miscellaneous record submittals.
- B. Related Sections include the following:
1. Division 01 Section "Closeout Procedures" for general closeout procedures.
 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 3. Divisions 02 through 33 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
1. Number of Copies: Submit one set(s) of marked-up Record Prints.
 2. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and one of file prints.
 - 3) Submit record digital data files and one set(s) of plots.
 - 4) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit three paper-copy set(s) of marked-up record prints.
 - 2) Submit PDF electronic files of scanned record prints and three set(s) of prints.
 - 3) Print each drawing, whether or not changes and additional information were recorded.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- c. Final Submittal:
 - 1) Submit one paper-copy set(s) of marked-up record prints.
 - 2) Submit record digital data files and three set(s) of record digital data file plots.
 - 3) Plot each drawing file, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.
- D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit one paper copy of each submittal.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: The Contractor will maintain one set of black-line white prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Depths of foundations below first floor.
 - d. Locations and depths of underground utilities.
 - e. Revisions to routing of piping and conduits.
 - f. Revisions to electrical circuitry.
 - g. Actual equipment locations.
 - h. Duct size and routing.
 - i. Locations of concealed internal utilities.
 - j. Changes made by Change Order or Construction Change Directive.
 - k. Changes made following Architect's written orders.
 - l. Details not on the original Contract Drawings.
 - m. Field records for variable and concealed conditions.
 - n. Record information on the Work that is shown only schematically.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 5. Mark important additional information that was either shown schematically or omitted from original Drawings.
 6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect and Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Specifications, and Record Drawings where applicable.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: The Contractor will maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. Maintenance of Record Documents and Samples: The Contractor will store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 017839

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 024119 – SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. This Section includes the following:

1. Demolition and removal of mechanical equipment and associated ductwork, as indicated.
2. Removal, salvage and reinstallation of the following, as indicated:
 - a. Mechanical equipment.
 - b. Wiring conduits.

- B. Related Sections include the following:

1. Division 01 Section "Summary" for use of premises and Owner-occupancy requirements.
2. Division 01 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for selective demolition operations.
3. Division 01 Section "Cutting and Patching" for cutting and patching procedures.
4. Division 07 Section "Preparation for Re-Roofing" for roof removals.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
- B. Remove and Salvage: Detach items from existing construction and deliver them to Owner.
- C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
- D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.4 MATERIALS OWNERSHIP

- A. Unless otherwise indicated, demolition waste becomes property of Contractor.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.5 PRE-DEMOLITION MEETINGS

- A. Pre-demolition Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to selective demolition including, but not limited to, the following:
1. Inspect and discuss condition of construction to be selectively demolished.
 2. Review structural load limitations of existing structure.
 3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
 5. Review areas where existing construction is to remain and requires protection.

1.6 SUBMITTALS

- A. Qualification Data: For refrigerant recovery technician.
- B. Schedule of Selective Demolition Activities: Indicate the following:
1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
 2. Interruption of utility services. Indicate how long utility services will be interrupted.
 3. Coordination for shutoff, capping, and continuation of utility services.
 4. Use of elevator and stairs.
 5. Locations of proposed dust- and noise-control temporary partitions and means of egress.
 6. Coordination of Owner's continuing occupancy of portions of existing building.
 7. Means of protection for items to remain and items in path of waste removal from building.
- C. Inventory: After selective demolition is complete, submit a list of items that have been removed and salvaged.
- D. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by selective demolition operations.
- E. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.
- F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.7 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ANSI A10.6 and NFPA 241.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.8 PROJECT CONDITIONS

- A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.
 - 1. Comply with requirements specified in Division 01 Section "Summary."
- B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
- C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.
- D. Hazardous Materials: Hazardous materials are present in construction to be selectively demolished. A report on the presence of hazardous materials is included in Division 00 Section "Existing Hazardous Materials Information." Examine report to become aware of locations where hazardous materials are present.
 - 1. Hazardous material remediation is specified in other Division 02 Sections.
 - 2. If suspected hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.
- E. Storage or sale of removed items or materials on-site is not permitted.
- F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped.
- B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.
- C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.
- D. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.
- E. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

1. Comply with requirements for existing services/systems interruptions specified in Division 01 Section "Summary."
- B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.
1. Owner will arrange to shut off indicated services/systems when requested by Contractor.
 2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.
 3. Disconnect, demolish, and remove fire-suppression systems, plumbing, and HVAC systems, equipment, and components indicated to be removed.
 - a. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.
 - b. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.
 - c. Equipment to Be Removed: Disconnect and cap services and remove equipment.
 - d. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.
 - e. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.
 - f. Ducts to Be Removed: Remove portion of ducts indicated to be removed and plug remaining ducts with same or compatible ductwork material.
 - g. Ducts to Be Abandoned in Place: Cap or plug ducts with same or compatible ductwork material.
- C. Refrigerant: Remove refrigerant from mechanical equipment to be selectively demolished according to 40 CFR 82 and regulations of authorities having jurisdiction.

3.3 PREPARATION

- A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
1. Comply with requirements for access and protection specified in Division 01 Section "Temporary Facilities and Controls."
- B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2. Provide temporary weather protection, during interval between selective demolition of existing construction on exterior surfaces and new construction, to prevent water leakage and damage to structure and interior areas.
 3. Protect walls, ceilings, floors, and other existing finish work that are to remain or that are exposed during selective demolition operations.
 4. Cover and protect furniture, furnishings, and equipment that have not been removed.
 5. Comply with requirements for temporary enclosures, dust control, heating, and cooling specified in Division 01 Section "Temporary Facilities and Controls."
 6. Comply with indoor air quality requirements specified in Division 01 Section "Indoor Air Quality Construction Plan."
- C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.
1. Strengthen or add new supports when required during progress of selective demolition.
- 3.4 SELECTIVE DEMOLITION, GENERAL
- A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:
1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition operations above each floor or tier before disturbing supporting members on the next lower level.
 2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
 3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
 4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
 5. Maintain adequate ventilation when using cutting torches.
 6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
 7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
 8. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
 9. Dispose of demolished items and materials promptly.
- B. Removed and Salvaged Items:
1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until delivery to Owner.
 4. Transport items to Owner's storage area designated by Owner.
 5. Protect items from damage during transport and storage.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and reinstalled in their original locations after selective demolition operations are complete.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them.

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

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property.

1. Include cost of all transportation and disposal.
2. Provide verification of all disposal trips.
3. Hazardous materials are to be handled and disposed of in accordance with all State, Local, and Federal regulations.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

END OF SECTION 024119

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 061053 – MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. This Section includes the following:
1. Wood blocking, nailers, and plywood associated with roofing.
- B. Related Sections include the following:
1. Division 07 Section "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing" for furnishing and installation of wood blocking, nailers and plywood associated with roofing.

1.3 DEFINITIONS

- A. Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.
- B. Lumber grading agencies, and the abbreviations used to reference them, include the following:
1. NeLMA: Northeastern Lumber Manufacturers' Association.
 2. NLGA: National Lumber Grades Authority.

1.4 SUBMITTALS

- A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Indicate type of preservative used and net amount of preservative retained.
 2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
 3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.
- B. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
1. Preservative-treated wood.
 2. Power-driven fasteners.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3. Powder-actuated fasteners.
4. Expansion anchors.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

- A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
3. Provide dressed lumber, S4S, unless otherwise indicated.

- B. Plywood: DOC PS 1.

1. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.
2. Factory mark panels to indicate compliance with applicable standard.

2.2 WOOD-PRESERVATIVE-TREATED MATERIALS

- A. Preservative Treatment by Pressure Process: AWP C2.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

- B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or does not comply with requirements for untreated material.

- C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

- D. Application: Treat miscellaneous carpentry, including the following:

1. Wood sills, sleepers, blocking, furring, and similar concealed members in contact with masonry or concrete.

- E. Manufacturers: Subject to compliance with requirements, provide products by one the following:

1. Georgia Pacific.
2. Hoover Treated Wood Products, Inc.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3. Koppers Performance Chemicals (Osmose, Inc.); NatureWood.

2.3 MISCELLANEOUS LUMBER

- A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
1. Blocking.
 2. Nailers.
 3. Furring.
- B. For items of dimension lumber size, provide Construction or No. 2 lumber with 15 percent maximum moisture content and the following species:
1. Hem-fir (north); NLGA.
- C. For blocking not used for attachment of other construction Utility, Stud, or No. 3 grade lumber of any species may be used provided that it is cut and selected to eliminate defects that will interfere with its attachment and purpose.
- D. For blocking and nailers used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.4 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.
1. Where carpentry is exposed to weather, in ground contact, fire retardant treated, or in area of high relative humidity, provide fasteners of with hot-dip zinc coating complying with ASTM A 153/A 153M.
- B. Nails, Brads, and Staples: ASTM F 1667.
- C. Power-Driven Fasteners: NES NER-272.
- D. Wood Screws: ASME B18.6.1.
- E. Lag Bolts: ASME B18.2.1.
- F. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.
- G. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
1. Material: Stainless steel with bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.
- B. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.
- C. Do not splice structural members between supports, unless otherwise indicated.
- D. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.
- E. Securely attach carpentry work to substrate by anchoring and fastening as indicated, complying with the following:
 - 1. NES NER-272 for power-driven fasteners.
 - 2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.
- F. Use common wire nails, unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING AND NAILER INSTALLATION

- A. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.
- B. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

3.3 PROTECTION

- A. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes wet, apply EPA registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

END OF SECTION 06 10 53

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 070150.19 – PREPARATION FOR REROOFING (EPDM)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

A. Section Includes:

1. Roof tear-off.
2. Removal of damaged or deteriorated curbs and blocking.
3. Roof re-cover preparation.
4. Removal of base flashings.
5. Temporary roof protection.
6. All hoisting and scaffolding for completion of the work.
7. Waste disposal.

B. Related Sections:

1. Division 01 Section "Summary" for use of the premises and phasing requirements.
2. Division 01 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.
3. Division 02 Section "Selective Demolition."
4. Division 07 Section "Ethylene-Propylene-Diene-Monomer (EPDM) Membrane Roofing" for new roofing installation over prepared decks.
5. Division 23 Sections for HVAC equipment removal and reinstallation.
6. Division 26 Sections for electrical equipment disconnection and reconnection.

1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
- B. Existing Membrane Roofing System: Roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.
- C. Roof Tear-Off: Removal of membrane roofing system from deck.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Fastener pull-out test report.
- C. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.
- D. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.
- E. Qualification Data: For Installer, including certificate that Installer is licensed to perform asbestos abatement.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Installer of new membrane roofing system, licensed to perform asbestos abatement in the State of Connecticut.
- B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Reroofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner; Architect, Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
 - 2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
 - a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
 - b. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
 - c. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - d. Existing deck removal procedures and Owner notifications.
 - e. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
 - f. Structural loading limitations of deck during reroofing.
 - g. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- h. HVAC shutdown and sealing of air intakes.
- i. Shutdown of fire-suppression, -protection, and -alarm and -detection systems.
- j. Asbestos removal and discovery of asbestos-containing materials.
- k. Governing regulations and requirements for insurance and certificates if applicable.
- l. Existing conditions that may require notification of Architect before proceeding.

1.7 PROJECT CONDITIONS

- A. Existing Roofing System: EPDM membrane roofing.
- B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
- D. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
 - 1. The results of an analysis of test cores from existing membrane roofing system are available for Contractor's reference.
- E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

PART 2 - PRODUCTS

2.1 TEMPORARY PROTECTION MATERIALS

- A. Expanded Polystyrene (EPS) Insulation: ASTM C 578.
- B. Plywood: DOC PS1, Grade CD Exposure 1.
- C. OSB: DOC PS2, Exposure 1.

2.2 AUXILIARY REROOFING MATERIALS

- A. General: Use auxiliary reroofing preparation materials recommended by roofing system manufacturer for intended use and compatible with components of new roofing system.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Prior to removal operations, examine all interior and exterior conditions. Identify and accommodate existing assemblies anchored to existing substrates and/or impacted by removal operations.
- B. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- C. Maintain roof drains in functioning condition to ensure roof drainage at end of each workday. Prevent debris from entering or blocking roof drains and conductors. Use roof-drain plugs specifically designed for this purpose. Remove roof-drain plugs at end of each workday, when no work is taking place, or when rain is forecast.
 - 1. If roof drains are temporarily blocked or unserviceable due to roofing system removal or partial installation of new membrane roofing system, provide alternative drainage method to remove water and eliminate ponding. Do not permit water to enter into or under existing membrane roofing system components that are to remain.
- D. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner's Representative each day of extent of roof tear-off proposed for that day.
- B. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components down to the deck.
 - 1. Remove cover boards, roof insulation and substrate boards as occurs.
 - 2. Remove fasteners from deck.
 - 3. Remove all existing roofing materials down to existing deck.
 - a. Ensure substrate is dry and free of loose debris prior to installation of new roofing materials.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of membrane roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

3.4 EXISTING BASE FLASHINGS

- A. Remove existing base flashings around parapets, curbs, walls, and penetrations.
 - 1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.
- B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings specified in Division 07 Section "Sheet Metal Flashing and Trim."

3.5 FASTENER PULL-OUT TESTING

- A. Retain independent testing and inspecting agency to conduct fastener pull-out tests according to SPRI FX1, and submit test report to Architect and roofing manufacturer before installing new roofing system.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1. Obtain roofing manufacturer's approval to proceed with specified fastening pattern. Roofing manufacturer may furnish revised fastening pattern commensurate with pull-out test results.

3.6 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 1. Storage or sale of demolished items or materials on-site is not permitted.
 2. Comply with Division 01 Section "Construction Waste Management and Disposal."
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 070150.19.1 - PREPARATION FOR RE-ROOFING (ASPHALT)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

A. Section Includes:

1. Roof tear-off.
2. Roof re-cover preparation.

B. Related Sections:

1. Division 01 Section "Summary" for use of the premises.
2. Division 01 Section "Temporary Facilities and Controls" for temporary construction and environmental-protection measures for reroofing preparation.
3. Division 02 Section "Selective Demolition" for sheathing removal.
4. Division 06 Section "Sheathing."
5. Division 07 Section "Asphalt Shingles" for new roofing installation over prepared decks.

1.3 MATERIALS OWNERSHIP

- A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.4 DEFINITIONS

- A. Roof Tear-Off: Removal of existing asphalt shingle roofing system from deck.
- B. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
- C. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.5 SUBMITTALS

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

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. Photographs: Show existing conditions of adjoining construction and site improvements, including exterior and interior finish surfaces, that might be misconstrued as having been damaged by reroofing operations. Submit before Work begins.
- C. Landfill Records: Indicate receipt and acceptance of hazardous wastes, such as asbestos-containing material, by a landfill facility licensed to accept hazardous wastes.

1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Reroofing Conference: Conduct conference at Project site.
 - 1. Meet with Owner; Architect, testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing.
 - 2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
 - a. Reroofing preparation, including roofing system manufacturer's written instructions.
 - b. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - c. Existing deck removal procedures and Owner notifications.
 - d. Condition and acceptance of existing roof deck for reuse.
 - e. Structural loading limitations of deck during reroofing.
 - f. Governing regulations and requirements for insurance and certificates if applicable.
 - g. Existing conditions that may require notification of Architect before proceeding.

1.7 PROJECT CONDITIONS

- A. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.
- B. Maintain access to existing walkways and other adjacent occupied or used facilities.
- C. Conditions existing at time of inspection for bidding will be maintained by Owner as far as practical.
- D. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

PART 2 - PRODUCTS (not used)

PART 3 - EXECUTION

3.1 PREPARATION

- A. During removal operations, have sufficient and suitable materials on-site to facilitate rapid installation of temporary protection in the event of unexpected rain.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. Verify that rooftop utilities and service piping have been shut off before beginning the Work.

3.2 ROOF TEAR-OFF

- A. General: Notify Owner's Representative each day of extent of roof tear-off proposed for that day.
- B. Roof Tear-Off: Remove existing roofing and other roofing system components down to the deck.
 - 1. Remove fasteners from deck.

3.3 DECK PREPARATION

- A. Inspect deck after tear-off of roofing system.
- B. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.
- C. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Owner's Representative and Architect. Do not proceed with installation until directed by Architect.
- D. Replace deck as required.

3.4 DISPOSAL

- A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.
 - 1. Storage or sale of demolished items or materials on-site is not permitted.
- B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150.19.1

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 0072500 -- WEATHER BARRIERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. Section Includes:
 - 1. Flexible flashing.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. For building wrap, include data on air and water-vapor permeance based on testing according to referenced standards.

1.4 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For water-resistive barriers and flexible flashing, from ICC-ES.

PART 2 - PRODUCTS

2.1 MISCELLANEOUS MATERIALS

- A. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, rubberized-asphalt compound, bonded to a high-density polyethylene film to produce an overall thickness of not less than 25 mil.
 - 1. Basis of Design Product: Subject to compliance with requirements, provide the following, or equal:
 - a. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Vycor Plus Self-Adhered Flashing.
- B. Primer for Flexible Flashing: Product recommended by manufacturer of flexible flashing for substrate.
- C. Nails and Staples: ASTM F 1667.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

PART 3 - EXECUTION

3.1 FLEXIBLE FLASHING INSTALLATION

- A. Apply flexible flashing where indicated to comply with manufacturer's written instructions.
1. Prime substrates as recommended by flashing manufacturer.
 2. Lap seams and junctures with other materials at least 4 inches except that at flashing flanges of other construction, laps need not exceed flange width.
 3. Lap flashing over water-resistive barrier at bottom and sides of openings.
 4. Lap water-resistive barrier over flashing at heads of openings.
 5. After flashing has been applied, roll surfaces with a hard rubber or metal roller to ensure that flashing is completely adhered to substrates.

END OF SECTION 072500

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. This Section includes the following:
1. Asphalt shingles for sloped roofs.
 2. Ridge vents.
 3. Underlayment and self-adhering sheet underlayment.
 4. All hoisting and scaffolding necessary for the completion of the roof work.
 5. Waste disposal.
- B. Related Sections include the following:
1. Division 06 Section "Sheathing" for roof sheathing.
 2. Division 07 Section "Sheet Metal Flashing and Trim" for metal valley flashing, step flashing, drip edges, and other sheet metal work.

1.3 DEFINITIONS

- A. Roofing Terminology: Refer to ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Samples for Initial Selection: For each type of asphalt shingle indicated.
- C. Samples for Verification: For the following products, of sizes indicated, to verify color selected.
1. Asphalt Shingle: Full-size asphalt shingle strip.
 2. Ridge Vent: 12-inch- long Sample.
 3. Underlayment: 12 inches square.
- D. Qualification Data: For Installer.
- E. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency or by manufacturer and witnessed by a qualified testing agency, for asphalt shingles.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- F. Research/Evaluation Reports: For asphalt shingles.
- G. Maintenance Data: For asphalt shingles to include in maintenance manuals.
- H. Warranties: Special warranties specified in this Section.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: A firm or individual that is approved, authorized, or licensed by asphalt shingle roofing system manufacturer to install roofing system indicated.
- B. Fire-Test-Response Characteristics: Provide asphalt shingle and related roofing materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
 - 1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.
- C. Wind-Resistance-Test Characteristics: Provide asphalt shingles and related products identical to those tested according to ASTM D 7158 Class H 150 mph wind resistance and passed. Identify each bundle of asphalt shingles with appropriate markings of applicable testing and inspecting agency.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
 - 1. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing.
 - 3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Store underlayment rolls on end on pallets or other raised surfaces. Do not double-stack rolls.
 - 1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.
- B. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.7 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer's written instructions and warranty requirements.
1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

1.8 WARRANTY

- A. Standard Warranty: Standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period.
1. Failures include, but are not limited to, the following:
 - a. Manufacturing defects.
 - b. Structural failures including failure of asphalt shingles to self-seal after a reasonable time.
 2. Material Warranty Period: Lifetime, prorated, with first 10 years nonprorated.
 3. Labor Warranty Period: 10 years (no dollar limit) from date of Substantial Completion.
 4. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds up to 130 mph for 15 years from date of Substantial Completion.
 5. Algae-Discoloration Warranty Period: Asphalt shingles will not discolor 10 years from date of Substantial Completion.
- B. Special Project Warranty: Roofing Installer's Warranty, signed by roofing Installer, covering the Work of this Section, in which roofing Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.

1.9 EXTRA MATERIALS

- A. Furnish extra materials described below that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.
1. Asphalt Shingles: 100 sq. ft of each type, in unbroken bundles.

PART 2 - PRODUCTS

2.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminate Strip Asphalt Shingles: ASTM D 3462, laminated multi ply overlay construction, glass fiber reinforced, mineral granule, surfaced and self-sealing, and rated to perform at 110 mph.
1. Products: Subject to compliance with requirements, provide one of the following:
 - a. CertainTeed; Landmark Premium.
 - b. GAF Materials Corporation; Timberline.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- c. Owens Corning; Duration.
 - 2. Butt Edge: Straight cut.
 - 3. Strip Size: Manufacturer's standard.
 - 4. Weight/Square: 300 lbs.
 - 5. Algae Resistance: Granules treated to resist algae discoloration.
 - 6. Color: As selected by Architect from manufacturer's full range to match existing..
 - B. Ridge Shingles: Manufacturer's standard units to match asphalt shingles.
- 2.2 UNDERLAYMENT MATERIALS
- A. Felt: ASTM D 226 or ASTM D 4869, Type I, #15, asphalt-saturated organic felts, nonperforated.
 - 1. Obtain felt underlayment from same manufacturer of asphalt shingles, or equal product approved in writing by manufacturer, as required to maintain specified warranty of system.
 - 2. Products: Subject to compliance with requirements, provide the following or equal:
 - a. CertainTeed; Roofers' Select High-Performance Underlayment.
 - b. GAF; Shingle-Mate.
 - B. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-mil- thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.
 - 1. Obtain self-adhering sheet underlayment from same manufacturer of asphalt shingles, or equal product approved in writing by manufacturer, as required to maintain specified warranty of system.
 - 2. Products: Subject to compliance with requirements, provide one of the following or equal:
 - a. CertainTeed; WinterGuard Granular.
 - b. GCP Applied Technologies; Grace Ice and Water Shield.
 - c. Johns Manville International, Inc.; Roof Defender.
 - d. Owens Corning; WeatherLock M.
 - e. Polyguard Products, Inc.; Polyguard Deck Guard.
- 2.3 RIDGE VENTS
- A. Rigid Ridge Vent: Manufacturer's standard rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips; for use under ridge shingles.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Air Vent Inc., a CertainTeed Company; ShingleVent II.
 - b. Cor-A-Vent; V-600.
 - c. Trimline Building Products; Trimline Ridge Vent.
 - 2. Minimum Net Free Area: 18 sq. in. /ft.
 - 3. Width: 12 inches.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.4 ACCESSORIES

- A. Roofing Nails: ASTM F 1667; hot-dip galvanized steel wire shingle nails, minimum 0.120-inch-diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch-diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through plywood sheathing.
1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

2.5 METAL FLASHING AND TRIM

- A. General: Comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
1. Step Flashings: Fabricate with a headlap of 2 inches and a minimum extension of 5 inches over the underlying asphalt shingle and up the vertical surface.
 2. Open Valley Flashings: Fabricate in lengths not exceeding 10 feet with 1-inch-high inverted-V profile at center of valley and equal flange widths of 10 inches.
 3. Drip Edges: Fabricate in lengths not exceeding 10 feet with 2-inch roof deck flange and 1-1/2-inch fascia flange with 3/8-inch drip at lower edge.
- B. Vent Pipe Flashings: ASTM B 749, Type L51121, at least 1/16 inch thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof and extending at least 4 inches from pipe onto roof.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.
1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.
 3. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 UNDERLAYMENT INSTALLATION

- A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.
- B. Single-Layer Felt Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides a minimum of 2 inches over underlying course. Lap ends a minimum of 4 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with roofing nails.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of felt over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends of felt not less than 6 inches over self-adhering sheet underlayment.
 2. Install fasteners at no more than 36 inch o.c.
- C. Self-Adhering Sheet Underlayment: Install self-adhering sheet underlayment, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated on Drawings, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.

3.3 METAL FLASHING INSTALLATION

- A. General: Install metal flashings and other sheet metal to comply with requirements in Division 07 Section "Sheet Metal Flashing and Trim."
- B. Step Flashings: Install with a headlap of 2 inches and extend over the underlying asphalt shingle and up the vertical surface. Fasten to roof deck only.
- C. Open Valley Flashings: Install centrally in valleys, lapping ends at least 8 inches in direction to shed water. Fasten upper end of each length to roof deck beneath overlap.
1. Adhere 9-inch- wide strip of self-adhering sheet to metal flanges and to self-adhering sheet underlayment.
- D. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.
- E. Eave Drip Edges: Install eave drip edge flashings over underlayment and fasten to roof sheathing.
- F. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 ASPHALT SHINGLE INSTALLATION

- A. Install asphalt shingles according to manufacturer's written instructions, recommendations in ARMA's "Residential Asphalt Roofing Manual," and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."
1. Fasten asphalt shingles to roof sheathing with roofing nails.
 2. Fasten asphalt shingles with a minimum of six fasteners per shingle in accordance with the Connecticut State Building Code. STAPLING OF SHINGLES IS NOT ALLOWED.
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip at least 7 inches wide with self-sealing strip face up at roof edge.
1. Extend asphalt shingles 1/2 inch over fascia at eaves and rakes.
 2. Install starter strip along rake edge.
- C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- D. Fasten asphalt shingle strips with a minimum of six roofing nails located according to manufacturer's written instructions.
 - 1. Where roof slope is less than 4:12, seal asphalt shingles with asphalt roofing cement spots.
 - 2. When ambient temperature during installation is below 50 deg F, seal asphalt shingles with asphalt roofing cement spots.
- E. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips. Maintain uniform width of exposed open valley from highest to lowest point.
 - 1. Set valley edge of asphalt shingles in a 3-inch- wide bed of asphalt roofing cement.
 - 2. Do not nail asphalt shingles to metal open valley flashings.
- F. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
- G. Ridge Cap Shingles: Maintain same exposure of cap shingles as roofing shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds. Fasten with roofing nails of sufficient length to penetrate sheathing.
 - 1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

3.5 WASTE DISPOSAL

- A. Disposal: At completion of roofing work, transport demolished materials and waste off Owner's property.

END OF SECTION 073113

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. Section includes the following:

1. Adhered EPDM membrane roofing system.
2. Roof insulation, tapered insulation, and crickets.
3. Membrane base flashing.
4. Pitch pockets.
5. Vapor retarder.
6. Walkway pads.
7. Flashing for roof drains, vent piping, and all roof penetrations.
8. Furnish and install all wood nailers, blocking, curbs and plywood.
9. Curb mounted mechanical equipment to receive base flashing.
10. All hoisting and scaffolding necessary for the completion of the roofing work.
11. Waste disposal.

- B. Related Sections:

1. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, curbs, blocking and plywood sheathing.
2. Division 07 Section "Preparation for Re-Roofing" for removal of existing roofing system.
3. Division 07 Section "Sheet Metal Flashing and Trim" for metal roof penetration flashings, flashings, and counterflashings.
4. Division 07 Section "Roof Specialties" for metal fascia and roof drainage specialties.
5. Division 07 Section "Joint Sealants."

1.3 DEFINITIONS

- A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other Work.
1. Base flashings and membrane terminations.
 2. Tapered insulation layout, including slopes.
 3. Insulation fastening patterns.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

C. Samples for Verification: For the following products:

1. 6-by-6-inch square of sheet roofing, of color specified, including T-shaped side and end lap seam.
2. 6-by-6-inch square of roof insulation.
3. 6-by-6-inch square of walkway pads or rolls.
4. 6-inch length of metal termination bars.
5. Six insulation fasteners of each type, length, and finish.
6. Six roof cover fasteners of each type, length, and finish.
7. 18-inch length of through wall and counterflashing assembly.

1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified Installer and manufacturer.
- B. Installer Certificates: Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system. Certification is required to be issued by manufacturer not less than one year prior to start of work.
- C. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in "Performance Requirements" Article.
1. Submit evidence of meeting performance requirements.
 2. Submit certificate of roof membrane sheet thickness specified, signed by manufacturer's control manager. ASTM +/- tolerance for membrane thickness is not acceptable.
- D. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of membrane roofing system.
- E. Research/Evaluation Reports: For components of membrane roofing system, from the ICC-ES.
- F. Field quality-control reports.
- G. Inspection Report: Copy of roofing system manufacturer's inspection report of completed roofing installation.
- H. Warranties: Sample of special warranties.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For membrane roofing system to include in maintenance manuals.

1.7 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that has a UL Listing and FMG approval for membrane roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.
1. The Installer shall be doing business under the same name for a minimum of 5 years prior to March 28, 2022, and have applied similar roofing systems on 10 or more projects which have been completed for more than two years.
 - a. Furnish names and addresses of each project within 100 miles of Project.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2. The Contractor that receives the award of this Project shall be the Installer of the roofing system. Installation of the roofing system shall not be subcontracted.
- C. **Installer's Field Supervision:** Maintain a full-time supervisor/foreman on-site during times that the roofing installation is in progress, who is experienced in installing roofing systems similar to type and scope required for this Project, and who is certified by the manufacturer as an approved applicator of the roofing system.
- D. **Source Limitations:** Obtain components for membrane roofing system from or approved by roofing membrane manufacturer.
- E. **Exterior Fire-Test Exposure:** ASTM E 108, Class A; for application and roof slopes indicated, as determined by testing identical membrane roofing materials by a qualified testing agency. Materials shall be identified with appropriate markings of applicable testing agency.
- F. **Preinstallation Roofing Conference:** Conduct conference at Project site.
 1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
 2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
 3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
 5. Review structural loading limitations of roof deck during and after roofing.
 6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.
 7. Review governing regulations and requirements for insurance and certificates if applicable.
 8. Review temporary protection requirements for roofing system during and after installation.
 9. Review roof observation and repair procedures after roofing installation.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
 1. Store membrane rolls horizontally on pallets, fully protected from the weather with canvas tarpaulins. Non-vented, polyethylene tarpaulins are not permitted.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.
 1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.
- D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.9 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
- B. Substrate Conditions: Proceed with roofing installation after substrates have been inspected and determined to be in satisfactory condition. Commencement of work indicates acceptance of substrates.

1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form, without monetary limitation, edge-to-edge, in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period. Failure includes roof leaks.
 - 1. Special warranty includes roofing membrane, base flashings, roofing membrane accessories, roof insulation, fasteners, cover boards, and other components of membrane roofing system.
 - 2. Special warranty includes manufacturer's standard wind speed warranty.
 - 3. Warranty Period: 20 years from date of Substantial Completion.
- B. Special Project Warranty: Submit roofing Installer's warranty, signed by Installer, covering Work of this Section, including all components of membrane roofing system such as roofing membrane, base flashing, roof insulation, fasteners, cover boards, and walkway products, for the following warranty period:
 - 1. Warranty Period: 2 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
 - 1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
 - 2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.
- B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
- C. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7 and the Connecticut State Building Code.
 - 1. Exposure Category: Exposure C.
 - 2. Importance Factor: IV.
 - 3. Ultimate Design Wind Speed: 145 mph.
- D. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class C; for application and roof slopes indicated; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.2 EPDM MEMBRANE ROOFING

- A. EPDM: ASTM D 4637, Type I, non-reinforced, uniform, flexible EPDM sheet.
1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Firestone Building Products; RubberGard Platinum. (*Basis of Design*)
 - b. Carlisle SynTec Incorporated; Sure-Seal.
 - c. Johns Manville.
 2. Thickness: 90 mils nominal.
 3. Exposed Face Color: Black.

2.3 AUXILIARY MEMBRANE ROOFING MATERIALS

- A. General: Auxiliary membrane roofing materials recommended by roofing system manufacturer for intended use and compatible with membrane roofing.
1. Liquid-type auxiliary materials shall comply with VOC limitations included in the State of Connecticut DEP Regulations, Chapter 446c Abatement of Air Pollution, Section 22a-174-44.
 2. Adhesives and sealants that are not on the exterior side of weather barrier shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):
 - a. Plastic Foam Adhesives: 50 g/L.
 - b. Gypsum Board and Panel Adhesives: 50 g/L.
 - c. Multipurpose Construction Adhesives: 70 g/L.
 - d. Fiberglass Adhesives: 80 g/L.
 - e. Contact Adhesive: 80 g/L.
 - f. Single-Ply Roof Membrane Sealants: 450 g/L.
 - g. Nonmembrane Roof Sealants: 300 g/L.
 - h. Sealant Primers for Nonporous Substrates: 250 g/L.
 - i. Sealant Primers for Porous Substrates: 775 g/L.
 - j. Other Adhesives and Sealants: 250 g/L.
- B. Sheet Flashing: 60-mil- thick EPDM, partially cured or cured, according to application.
- C. Protection Sheet: Epichlorohydrin or neoprene non-reinforced flexible sheet, 55- to 60-mil- thick, recommended by EPDM manufacturer for resistance to hydrocarbons, non-aromatic solvents, grease, and oil.
- D. Bonding Adhesive: Manufacturer's standard. To be applied at 0.83 gallon per square over the substrate and to the underside of the membrane
- E. Seaming Material: Manufacturer's standard, synthetic-rubber polymer primer and 3-inch- wide minimum, butyl splice tape with release film. Basis of Design Quickseam Splice Tape by Firestone (3" width min.)
- F. Lap Sealant: Manufacturer's standard, single-component sealant.
- G. Water Cutoff Mastic: Manufacturer's standard butyl mastic sealant.
- H. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- I. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening membrane to substrate, and acceptable to roofing system manufacturer.
- J. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, reinforced EPDM securement strips, T-joint covers, in-seam sealants, termination reglets, cover strips, and other accessories.

2.4 ROOF INSULATION

- A. General: Preformed roof insulation boards manufactured or approved by EPDM membrane roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Approvals-approved roof insulation.
- B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, felt or glass-fiber mat facer on both major surfaces.
 - 1. To maintain system warranty, manufacturer's approved insulation must be installed.
 - a. Basis of Design Firestone ISO 95+ GL
 - 2. R-Value: 5.7 per inch.
 - 3. R-30 Minimum (total assembly)
- C. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.5 INSULATION ACCESSORIES

- A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

2.6 PITCH POCKETS

- A. Pitch Pockets: Copper, formed to provide not less than two inches clear between the penetrating item face and vertical edge of the pitch pan.
 - 1. Form side walls that project not less than 6 inches above the finished sheet membrane, with 1-1/2" inside hem at the top edge.
 - 2. Flange: Not less than 3-1/2- inches wide.
 - 3. Solder all seams to avoid open joints and to form a water tight seal.
 - 4. Prime the interior and exterior surfaces with metal primer.

2.7 WALKWAYS

- A. Flexible Walkways: Factory-formed, nonporous, heavy-duty, solid-rubber, slip-resisting, surface textured walkway pads, approximately 7/16-inch-thick, and acceptable to membrane roofing system manufacturer.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.8 **NAILERS, BLOCKING AND PLYWOOD**

- A. Comply with requirements for lumber and plywood specified in Division 06 Section "Miscellaneous Rough Carpentry."

PART 3 - EXECUTION

3.1 **EXAMINATION**

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
 2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
- B. Proceed with installation only after unsatisfactory conditions have been corrected. Commencement of the work indicates acceptance of substrates.

3.2 **PREPARATION**

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
- C. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.3 **TEMPORARY CUT-OFF**

- A. All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary waterstops shall be constructed to provide a 100 percent watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the waterstop. Waterstop shall be sealed to the deck or substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant as specified. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of offsite. None of these materials shall be used in the new work.
- B. If inclement weather occurs while a temporary waterstop is in place, the Contractor shall provide the labor necessary to monitor the situation to maintain a watertight condition.
- C. If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Contractor's expense.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.4 **WOOD NAILER AND BLOCKING INSTALLATION**

- A. Install continuous wood nailers at perimeter of the entire roof, around roof projections, penetrations, and locations indicated.
 - 1. Do not use nailers less than three feet in length.
 - 2. Build up nailer height to match thickness of substrate or insulation, with smooth transitions.
 - a. Wood blocking and nailers are indicated in nominal lumber sizes. Where required, as indicated or not, provide ripped, continuous shims to create nailer height to match thickness of substrate or insulation.
- B. Anchor nailers to resist a minimum force of 300 lbf in any direction. Provide a 1-1/2" space between lengths of nailers.
 - 1. Anchor nailers with fasteners spaced at 12 inches on center, staggered 1/3 the nailer width and installed within 6 inches of each end.

3.5 **INSULATION INSTALLATION**

- A. Coordinate installing membrane roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.
- B. Comply with membrane roofing system and insulation manufacturer's written instructions for installing roof insulation.
- C. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
 - 1. Where installing composite insulation in two or more layers, install noncomposite board insulation for bottom layer and intermediate layers, if applicable, and install composite board insulation for top layer.
- D. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
 - 1. Slope insulation and membrane at drains to create a 4' x 4' sump.
 - 2. End top edge of flashing just below the top edge of the sump to prevent any blockage for positive water flow.
- E. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
 - 1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

3.6 **ADHERED MEMBRANE ROOFING INSTALLATION**

- A. Adhere membrane roofing over area to receive roofing according to membrane roofing system manufacturer's written instructions. Unroll membrane roofing and allow to relax before installing.
- B. Start installation of membrane roofing in presence of membrane roofing system manufacturer's technical personnel.
- C. Accurately align membrane roofing and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.
- D. Bonding Adhesive: Apply to substrate and underside of membrane roofing at rate required by manufacturer and allow to partially dry before installing membrane roofing. Do not apply to splice area of membrane roofing.
- E. In addition to adhering, mechanically fasten membrane roofing securely at terminations, penetrations, and perimeters.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- F. Apply membrane roofing with side laps shingled with slope of roof deck where possible.
- G. Adhesive Seam Installation: Clean both faces of splice areas, apply splicing cement, and firmly roll side and end laps of overlapping membrane roofing according to manufacturer's written instructions to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of membrane roofing terminations.
 - 1. Apply a continuous bead of in-seam sealant before closing splice if required by membrane roofing system manufacturer.
- H. Repair tears, voids, and lapped seams in roofing that does not comply with requirements.
- I. Spread sealant or mastic bed over deck drain flange at roof drains and securely seal membrane roofing in place with clamping ring.
- J. Adhere protection sheet over membrane roofing at locations indicated.

3.7 BASE FLASHING INSTALLATION

- A. Install sheet flashings and preformed flashing accessories and adhere to substrates according to membrane roofing system manufacturer's written instructions.
- B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate and allow to partially dry. Do not apply to seam area of flashing.
- C. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
- D. Clean splice areas, apply splicing cement, and firmly roll side and end laps of overlapping sheets to ensure a watertight seam installation. Apply lap sealant and seal exposed edges of sheet flashing terminations.
- E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

3.8 PITCH POCKET INSTALLATION

- A. Install pitch pockets at all pipe and conduit penetrations, including equipment supports.
- B. Attach pitch pockets directly to roofing sheet membrane in accordance with roofing manufacturer's written instructions.
- C. Provide wood blocking at all pitch pockets greater than 6 inches in any direction.
- D. Fill any holes in bottom of pitch pocket with roofing insulation and fill with sand or mortar to within 2 inches of the top of the pan.
- E. Fill to top of pitch pocket with two-component, cold-applied elastomeric flashing cement.

3.9 WALKWAY INSTALLATION

- A. Flexible Walkways: Install walkway products in locations indicated. Adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.10 FIELD QUALITY CONTROL

- A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Architect.
 - I. Notify Architect 48 hours in advance of date and time of inspection.
- B. Repair or remove and replace components of membrane roofing system where test results or inspections indicate that they do not comply with specified requirements.
- C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.11 PROTECTING AND CLEANING

- A. Protect membrane roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove membrane roofing system that does not comply with requirements, repair substrates and repair or reinstall membrane roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 WASTE DISPOSAL

- A. Unless otherwise indicated, excess materials are Contractor's property. At completion of roofing work, remove from Project site.

3.13 PROJECT COMPLETION

- A. Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of the manufacturer shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and the manufacturer prior to demobilization.
- B. All Warranties referenced in this Section shall have been submitted and have been accepted at time of contract award.

END OF SECTION 075323

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 076200 – SHEET METAL FLASHING & TRIM (EPDM)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

A. Section Includes:

1. Formed Products:
 - a. Formed reglets and counterflashing.
 - b. Formed low-slope roof sheet metal fabrications.
2. All hoisting and scaffolding necessary for the completion of the work.
3. Waste disposal.

B. Related Sections:

1. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
2. Division 07 Section "Roof Specialties" for roof edge and roof drainage specialties.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.
- B. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field assembled work. Include the following:
1. Identification of material, thickness, weight, and finish for each item and location in Project.
 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 4. Details of termination points and assemblies, including fixed points.
 5. Details of edge conditions, including counterflashings as applicable.
 6. Details of special conditions.
 7. Details of connections to adjoining work.
 8. Detail formed flashing and trim at a scale of not less than 1-1/2 inches per 12 inches.
- C. Samples for Initial Selection: For each type of sheet metal flashing, trim, and accessory indicated with factory-applied color finishes involving color selection.
- D. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
 3. Accessories and Miscellaneous Materials: Full-size Sample.
- E. Qualification Data: For qualified fabricator.
- F. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.
- G. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

- A. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- C. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
- D. Preinstallation Conference: Conduct conference at Project site.
 - 1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials, roof accessories, unit skylights, and roof-mounted equipment.
 - 2. Review methods and procedures related to sheet metal flashing and trim.
 - 3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
 - 4. Review special roof details, roof drainage, roof penetrations, and condition of other construction that will affect sheet metal flashing.
 - 5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.7 COORDINATION

- A. Coordinate installation of manufactured roof specialties with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

1.8 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 - 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 - 2. Finish Warranty Period: 25 years from date of Substantial Completion.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. Surface: Smooth, flat.
 - 2. Exposed Coil-Coated Finish:
 - a. 2-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - 2. Fasteners for Aluminum Sheet: Series 300 stainless steel.
- C. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- D. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- E. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

F. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.

G. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.3 FABRICATION, GENERAL

A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.

1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
2. Obtain field measurements for accurate fit before shop fabrication.
3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.

B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.

C. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.

D. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.

F. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.

G. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.

I. Do not use graphite pencils to mark metal surfaces.

2.4 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

A. Sill Flashing: Fabricate from the following material:

1. Aluminum: 0.040 inch thick.

B. Counterflashing: Fabricate from the following material:

1. Aluminum: 0.040 inch thick.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- C. Flashing Receivers: Fabricate from the following material:

1. Aluminum: 0.040 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
1. Verify compliance with requirements for installation tolerances of substrates.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
 5. Install sealant tape where indicated.
 6. Torch cutting of sheet metal flashing and trim is not permitted.
 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
1. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with sealant concealed within joints.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- D. Fastener Sizes: Use fasteners of sizes that will penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Seal joints as shown and as required for watertight construction.
1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
1. Do not solder aluminum sheet.
 2. Pre-tinning is not required for zinc-tin alloy-coated copper.
 3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
 4. Copper Soldering: Tin edges of uncoated sheets, using solder for copper.

3.3 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements[, sheet metal manufacturer's written installation instructions,] and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing. Insert counterflashing in reglets or receivers and fit tightly to base flashing. Extend counterflashing 4 inches over base flashing. Lap counterflashing joints a minimum of 4 inches and bed with sealant. Secure in a waterproof manner by means of snap-in installation and sealant or lead wedges and sealant.
- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.4 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.5 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.6 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

3.7 WASTE DISPOSAL

- A. Unless otherwise indicated, excess materials are Contractor's property. At completion of roofing work, remove from Project site. Comply with requirements in Division 01 Section "Construction Waste Management and Disposal."

END OF SECTION 076200

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 076200.1 - SHEET METAL FLASHING AND TRIM (ASPHALT)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

A. Section Includes:

1. Formed Products:

- a. Formed roof drainage sheet metal fabrications.
- b. Formed steep-slope roof sheet metal fabrications.
- c. Formed sheet metal fabrications for wrapped wood trim.
- d. Roof penetration flashing.

- 2. All hoisting and scaffolding necessary for the completion of the work.
- 3. Waste disposal.

B. Related Sections:

- 1. Division 06 Section "Miscellaneous Rough Carpentry" for wood blocking.
- 2. Division 07 Section "Metal Roof Panels" for sheet metal flashing and trim integral with metal roof panels.

1.3 PERFORMANCE REQUIREMENTS

- A. General: Sheet metal flashing and trim assemblies as indicated shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

- B. Thermal Movements: Provide sheet metal flashing and trim that allows for thermal movements from ambient and surface temperature changes.

- 1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. Shop Drawings: Show fabrication and installation layouts of sheet metal flashing and trim, including plans, elevations, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled work. Include the following:
1. Identification of material, thickness, weight, and finish for each item and location in Project.
 2. Details for forming sheet metal flashing and trim, including profiles, shapes, seams, and dimensions.
 3. Details for joining, supporting, and securing sheet metal flashing and trim, including layout of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 4. Details of termination points and assemblies, including fixed points.
 5. Details of edge conditions, including eaves, rakes, and counterflashings as applicable.
 6. Details of special conditions.
 7. Details of connections to adjoining work.
 8. Detail formed flashing and trim at a scale of not less than 1-1/2 inches per 12 inches.
- C. Samples for Verification: For each type of exposed finish required, prepared on Samples of size indicated below:
1. Sheet Metal Flashing: 12 inches long by actual width of unit, including finished seam and in required profile. Include fasteners, cleats, clips, closures, and other attachments.
 2. Trim, Metal Closures, Expansion Joints, Joint Intersections, and Miscellaneous Fabrications: 12 inches long and in required profile. Include fasteners and other exposed accessories.
 3. Accessories and Miscellaneous Materials: Full-size Sample.
- D. Qualification Data: For qualified fabricator.
- E. Maintenance Data: For sheet metal flashing, trim, and accessories to include in maintenance manuals.
- F. Warranty: Sample of special warranty.

1.5 **QUALITY ASSURANCE**

- A. Product Options: Information on Drawings and in Specifications establishes requirements for system's aesthetic effects and performance characteristics. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction. Performance characteristics are indicated by criteria subject to verification by one or more methods including preconstruction testing, field testing, and in-service performance.
1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- B. Fabricator Qualifications: Shop that employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- C. Sheet Metal Flashing and Trim Standard: Comply with SMACNA's "Architectural Sheet Metal Manual" unless more stringent requirements are specified or shown on Drawings.
- D. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1. Build mockup of typical roof eave, including gutter and fascia trim, approximately 10 feet long, including supporting construction cleats, seams, attachments, underlayment, and accessories.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Installer, and installers whose work interfaces with or affects sheet metal flashing and trim including installers of roofing materials.
2. Review methods and procedures related to sheet metal flashing and trim.
3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
4. Review special roof details, roof drainage, roof penetrations, and condition of other construction that will affect sheet metal flashing.
5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
- B. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to the extent necessary for the period of sheet metal flashing and trim installation.

1.7 COORDINATION

- A. Coordinate installation of manufactured roof specialties with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

1.8 WARRANTY

- A. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.
 1. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 20 years from date of Substantial Completion.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

PART 2 - PRODUCTS

2.1 SHEET METALS

- A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying a strippable, temporary protective film before shipping.
- B. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper as required to suit forming operations and performance required.
 - 1. Surface: Smooth, flat.
 - 2. Exposed Coil-Coated Finish:
 - a. 2-Coat Fluoropolymer: AAMA 620. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - 3. Concealed Finish: Pretreat with manufacturer's standard white or light-colored acrylic or polyester backer finish, consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.
- C. Copper Sheet: ASTM B 370, cold-rolled copper sheet, H00 or H01 temper.
 - 1. Nonpatinated Exposed Finish: Mill.

2.2 MISCELLANEOUS MATERIALS

- A. General: Provide materials and types of fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.
 - 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating.
 - b. Blind Fasteners: High-strength aluminum or stainless-steel rivets suitable for metal being fastened.
 - 2. Fasteners for Zinc-Tin Alloy-Coated Copper Sheet: Series 300 stainless steel.
 - 3. Fasteners for Copper Sheet: Copper, hardware bronze or passivated Series 300 stainless steel.
- C. Solder:
 - 1. For Copper: ASTM B 32, Grade Sn50, 50 percent tin and 50 percent lead.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- D. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant; low modulus; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Epoxy Seam Sealer: Two-part, noncorrosive, aluminum seam-cementing compound, recommended by aluminum manufacturer for exterior nonmoving joints, including riveted joints.
- H. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.3 FABRICATION, GENERAL

- A. General: Custom fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, geometry, metal thickness, and other characteristics of item indicated. Fabricate items at the shop to greatest extent possible.
 - 1. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 2. Obtain field measurements for accurate fit before shop fabrication.
 - 3. Form sheet metal flashing and trim without excessive oil canning, buckling, and tool marks and true to line and levels indicated, with exposed edges folded back to form hems.
 - 4. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces exposed to view.
- B. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- C. Sealed Joints: Form nonexpansion but movable joints in metal to accommodate elastomeric sealant.
- D. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Fabricate cleats and attachment devices of sizes as recommended by SMACNA's "Architectural Sheet Metal Manual" for application, but not less than thickness of metal being secured.
- G. Seams: Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
- H. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer.
- I. Do not use graphite pencils to mark metal surfaces.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.4 ROOF DRAINAGE SHEET METAL FABRICATIONS

- A. Hanging Gutters: Fabricate to cross section indicated, complete with end pieces, outlet tubes, and other accessories as required. Fabricate in minimum 96-inch- long sections. Furnish flat-stock gutter spacers and gutter brackets fabricated from same metal as gutters, of size recommended by SMACNA but not less than twice the gutter thickness. Fabricate expansion joints, expansion-joint covers, and gutter accessories from same metal as gutters.
1. Gutter Profile: Style A according to cited sheet metal standard, in size indicated on Drawings.
 2. Fabrication:
 - a. Fascia Splices: Fabricated from 0.032 inch thick aluminum in 6 inch lengths, formed to fit inside the snap-on fascia.
 - b. Provide factory mitered corners for fascia and liner.
 - c. Provide factory mitered, sculptured end caps for fascias.
 - d. Provide mill finished aluminum liner end caps at all fascia end caps and wall abutments.
 - e. Provide gutter guard
 - 1) Gutter guard to be ShurFlo 5" Gutter Protection System
 - a) .019 thickness, mill finished aluminum
 - b) <http://www.theshurflo.com>
 - c) or "approved equal"
 3. Fabricate from 0.032 inch thick aluminum.
 - a. Color: As selected by Architect from manufacturer's full range.
- B. Downspouts: Fabricate round and square downspouts with mitered elbows to dimensions indicated. Furnish with metal hangers, from same material as downspouts, and anchors.
1. Provide aluminum outlets at all downspout locations to connect gutter liner to downspout.
 2. Wall Brackets: Fabricated from 0.125 inch x 1 inch extruded aluminum bar, finished to match downspout. Furnish brackets at 60 inch maximum spacing, two brackets minimum per downspout.
 3. Fabricate from 0.024 inch thick aluminum.
 - a. Color: As selected by Architect from manufacturer's full range.

2.5 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Step Flashing: Fabricate from the following material:
1. Copper: 20 oz./sq. ft.
- B. Valley Flashing: Fabricate from the following material:
1. Copper: 20 oz./sq. ft.
- C. Drip Edges: Fabricate from the following material:
1. Aluminum: 0.032 inch thick.
- D. Roof-Penetration Flashing: Fabricate from the following material:

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1. Copper: 20 oz./sq. ft.
- E. Sheet Metal Wrapped Wood Fascia: Fabricate from the following material:
 1. Aluminum: 0.019 inch thick.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions and other conditions affecting performance of the Work.
 1. Verify compliance with requirements for installation tolerances of substrates.
 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
- B. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement. Use fasteners, solder, welding rods, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 1. Install sheet metal flashing and trim true to line and levels indicated. Provide uniform, neat seams with minimum exposure of solder, welds, and sealant.
 2. Install sheet metal flashing and trim to fit substrates and to result in watertight performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
 3. Space cleats not more than 12 inches apart. Anchor each cleat with two fasteners. Bend tabs over fasteners.
 4. Install exposed sheet metal flashing and trim without excessive oil canning, buckling, and tool marks.
 5. Install sealant tape where indicated.
 6. Torch cutting of sheet metal flashing and trim is not permitted.
 7. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals will contact each other or corrosive substrates, protect against galvanic action by painting contact surfaces with bituminous coating or by other permanent separation as recommended by SMACNA.
 1. Underlayment: Where installing metal flashing directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet or install a course of polyethylene sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently watertight, form expansion joints

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.

- D. Fastener Sizes: Use fasteners of sizes that will penetrate wood sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Seal joints as shown and as required for watertight construction.
 - 1. Where sealant-filled joints are used, embed hooked flanges of joint members not less than 1 inch into sealant. Form joints to completely conceal sealant. When ambient temperature at time of installation is moderate, between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures. Do not install sealant-type joints at temperatures below 40 deg F.
 - 2. Prepare joints and apply sealants to comply with requirements in Division 07 Section "Joint Sealants."
- F. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches, except reduce pre-tinning where pre-tinned surface would show in completed Work.
 - 1. Do not solder aluminum sheet.
 - 2. Pre-tinning is not required for zinc-tin alloy-coated copper.
 - 3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

3.3 ROOF DRAINAGE SYSTEM INSTALLATION

- A. General: Install sheet metal roof drainage items to produce complete roof drainage system according to SMACNA recommendations and as indicated. Coordinate installation of roof perimeter flashing with installation of roof drainage system.
- B. Hanging Gutters: Join sections with riveted and soldered joints or with lapped joints sealed with sealant. Provide for thermal expansion. Attach gutters at eave or fascia to firmly anchored straps spaced not more than 36 inches apart. Provide end closures and seal watertight with sealant. Slope to downspouts.
 - 1. Fasten gutter spacers to front and back of gutter.
 - 2. Loosely lock straps to front gutter bead and anchor to roof deck.
 - 3. Anchor and loosely lock back edge of gutter to continuous cleat.
 - 4. Anchor back of gutter that extends onto roof deck with cleats spaced not more than 24 inches apart.
 - 5. Install gutter with expansion joints at locations indicated, but not exceeding, 50 feet apart. Install expansion-joint caps.
 - 6. Install gutter guards per manufacturers recommendations
- C. Downspouts: Join sections with 1-1/2-inch telescoping joints.
 - 1. Provide hangers with fasteners designed to hold downspouts securely to walls. Locate hangers at top and bottom and at approximately 60 inches o.c. in between.
 - 2. Provide elbows at base of downspout to direct water away from building.
 - 3. Connect downspouts to underground drainage system where indicated.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- D. Conductor Heads: Anchor securely to wall with elevation of conductor head rim 1 inch below gutter discharge.
- E. Splash Blocks: Install where downspouts discharge on low-slope roofs.

3.4 ROOF FLASHING INSTALLATION

- A. General: Install sheet metal flashing and trim to comply with performance requirements[, sheet metal manufacturer's written installation instructions,] and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible, set units true to line, and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending a minimum of 4 inches over base flashing. Install stainless-steel draw band and tighten.
- C. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 MISCELLANEOUS FLASHING INSTALLATION

- A. Equipment Support Flashing: Coordinate installation of equipment support flashing with installation of roofing and equipment. Weld or seal flashing with elastomeric sealant to equipment support member.

3.6 ERECTION TOLERANCES

- A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- B. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

3.7 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.
- D. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions. On completion of installation, remove unused materials and clean finished surfaces. Maintain in a clean condition during construction.
- E. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.8 WASTE DISPOSAL

- A. Unless otherwise indicated, excess materials are Contractor's property. At completion of roofing work, remove from Project site.

END OF SECTION 076200

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 077100 - ROOF SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

A. Section Includes:

1. Roof-edge specialties.
2. Roof-edge drainage systems.

B. Related Requirements:

1. Division 01 Section "Sustainable Design Requirements."
2. Division 06 Section "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking.
3. Division 07 Section "Sheet Metal Flashing and Trim" for custom- and site-fabricated sheet metal flashing and trim.
4. Division 07 Section "Roof Accessories" for roof hatches and other manufactured roof accessory units.
5. Division 07 Section "Joint Sealants" for field-applied sealants between roof specialties and adjacent materials.

C. Preinstallation Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Construction Manager, roofing-system testing and inspecting agency representative, roofing Installer, roofing-system manufacturer's representative, Installer, structural support Installer, and installers whose work interfaces with or affects roof specialties, including installers of roofing materials and accessories.
2. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.
3. Review special roof details, roof drainage, and condition of other construction that will affect roof specialties.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. CTHPB Documentation Submittals: Comply with Division 01 Section "Sustainable Design Requirements" and provide the following in addition to other action submittals:
1. Product Data for Credit 5d: For adhesives and sealants, documentation including printed statement of VOC content.
 2. Product Data for Credit 5d: For paints and coatings, including printed statement of VOC content.
 3. Product Data for Credit d8: For products having recycled content, documentation indicating percentages by weight of postconsumer and preconsumer recycled content. Include statement indicating cost for each product having recycled content.
 4. Product Certificates for Credit d10: For products and materials required to comply with requirements for regional materials indicating location and distance from Project of material manufacturer and point of extraction, harvest, or recovery for each raw material. Include statement indicating cost for each regional material and the fraction by weight that is considered regional.
- C. Shop Drawings: For roof specialties.
1. Include plans, elevations, expansion-joint locations, keyed details, and attachments to other work. Distinguish between plant- and field-assembled work.
 2. Include details for expansion and contraction; locations of expansion joints, including direction of expansion and contraction.
 3. Indicate profile and pattern of seams and layout of fasteners, cleats, clips, and other attachments.
 4. Detail termination points and assemblies, including fixed points.
 5. Include details of special conditions.
- D. Samples: For each type of roof specialty and for each color and texture specified.
- E. Samples for Initial Selection: For each type of roof specialty indicated with factory-applied color finishes.
- F. Samples for Verification:
1. Include Samples of each type of roof specialty to verify finish and color selection, in manufacturer's standard sizes.
 2. Include roof-edge specialties and roof-edge drainage systems made from 12-inch lengths of fullsize components in specified material, and including fasteners, cover joints, accessories, and attachments.

1.4 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For manufacturer.
- B. Product Certificates: For each type of coping and roof edge flashing that is ANSI/SPRI ES-I tested.
- C. Product Test Reports: For roof-edge flashings, for tests performed by a qualified testing agency.
- D. Sample Warranty: For manufacturer's special warranty.

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing specialties to include in maintenance manuals.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.6 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer offering products meeting requirements that are ANSI/SPRI ES-1 tested to specified design pressure.
- B. Source Limitations: Obtain roof specialties approved by manufacturer providing roofing-system warranty specified in Section.
- C. Mockups: Build mockups to verify selections made under Sample submittals, to demonstrate aesthetic effects, and set quality standards for fabrication and installation.
 - 1. Build mockup of typical roof edge approximately 10 feet long, including supporting construction, seams, attachments, and accessories.
 - 2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
 - 3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Do not store roof specialties in contact with other materials that might cause staining, denting, or other surface damage. Store roof specialties away from uncured concrete and masonry.
- B. Protect strippable protective covering on roof specialties from exposure to sunlight and high humidity, except to extent necessary for the period of roof-specialty installation.

1.8 FIELD CONDITIONS

- A. Field Measurements: Verify profiles and tolerances of roof-specialty substrates by field measurements before fabrication, and indicate measurements on Shop Drawings.
- B. Coordination: Coordinate roof specialties with flashing, trim, and construction of parapets, roof deck, roof and wall panels, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

1.9 WARRANTY

- A. Roofing-System Warranty: Roof specialties are included in warranty provisions in Division 07 Section "Ethylene-Propylene-Diene-Monomer (EPDM) Roofing".
- B. Special Warranty for Roof Edge System: Manufacturer's standard form in which manufacturer agrees to provide a lifetime warranty for the roof edge system, when installed per manufacturer's instructions, covering blow-off from winds up to 145 mph.
 - 1. Warranty Period: 20 years from date of Substantial Completion, not to exceed life of membrane roofing system.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- C. Special Warranty on Painted Finishes: Manufacturer agrees to repair finish or replace roof specialties that show evidence of deterioration of factory-applied finishes within specified warranty period.
1. Fluoropolymer Finish: Deterioration includes, but is not limited to, the following:
 - a. Color fading more than 5 Hunter units when tested according to ASTM D 2244.
 - b. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.
 - c. Cracking, checking, peeling, or failure of paint to adhere to bare metal.
 2. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Roof specialties shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.
- B. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.
- C. SPRI Wind Design Standard: Manufacture and install roof-edge specialties tested according to SPRI ES-1 and capable of resisting the following design pressures:
1. Design Pressure: As indicated on Drawings.
- D. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, hole elongation, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Provide clips that resist rotation and avoid shear stress as a result of thermal movements. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
1. Temperature Change (Range): 120 deg F, ambient; 180 deg F, material surfaces.

2.2 ROOF-EDGE SPECIALTIES

- A. Roof-Edge Fascia: Manufactured, two-piece, roof-edge fascia consisting of snap-on metal fascia cover in section lengths not exceeding 12 feet and a continuous metal receiver with integral drip-edge cleat to engage fascia cover and secure single-ply roof membrane. Provide matching corner units.
1. Basis-of-Design Product: Subject to compliance with requirements, provide **Metal-Era, Inc.; Anchor-Tite Standard Fascia** or comparable product by one of the following:
 - a. Hickman Company, W. P.
 - b. Perimeter Systems; a division of Southern Aluminum Finishing Company, Inc.
 2. Size: 4, 5-1/2, 7, or 8-1/2 inch as indicated on drawings.
 3. Formed Aluminum Sheet Fascia Covers: Aluminum sheet, 0.040 inch thick.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- a. Surface: Smooth, flat finish.
 - b. Finish: Two-coat fluoropolymer.
 - a. Color: As selected by Architect from manufacturer's full range.
 - 4. Corners: Factory mitered and continuously welded.
 - 5. Splice Plates: Concealed, of same material, finish, and shape as fascia cover.
 - 6. Receiver: Extruded aluminum in manufacturer's standard thickness, with pre-punched slotted holes. All bar miters are welded.
- B. Copings: Manufactured coping system consisting of formed-metal coping cap in section lengths not exceeding 12 feet, concealed anchorage; corner units, end cap units, and butt-type joints with concealed splice plates with same finish as coping caps.
- 1. Basis-of-Design Product: Subject to compliance with requirements, provide **Metal-Era, Inc.; Anchor-Tite Coping**, or a comparable product by one of the following:
 - a. Hickman, W. P. Company.
 - b. MM Systems Corporation.
 - 2. Coping-Cap Material: Extruded aluminum, 0.040 inch thick.
 - a. Finish: Two-coat fluoropolymer.
 - b. Color: As selected by Architect from manufacturer's full range.
 - 3. Corners: Factory mitered and continuously welded.
 - 4. Coping-Cap Attachment Method: Face leg hooked to continuous cleat with back leg fastener exposed, fabricated from coping-cap material.
 - 5. Concealed Splice Plates: Finished to match coping cap with factory applied dual non-curing sealant strips.
 - 6. Extruded Anchor Bar: Extruded aluminum, mill finish, 0.100-inch thick, pre-punched and integrated with anchor/support cleat.
 - 7. Anchor/Support Cleats: Concealed, continuous galvanized-steel sheet, 20 gauge, with stainless steel spring mechanically locked to cleat at 48-inches on center. Integrated with extruded anchor bar.
 - 8. Fasteners: Stainless steel in type recommended by manufacturer.

2.3 ROOF-EDGE DRAINAGE SYSTEMS

- A. Downspouts: Rectangular closed face with mitered elbows, manufactured from extruded aluminum. Furnish wall brackets, from same material and finish as downspouts with anchors.
- 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Architectural Products Co.; Extruded Downspouts.
 - b. Eastern Metals Inc.; Extruded Aluminum Downspouts.
 - c. Perimeter Systems, a division of Southern Aluminum Finishing Company; DS-EX.
 - 2. Wall Brackets: Fabricated from 0.125 inch x 1 inch extruded aluminum bar, finished to match downspout. Furnish brackets at 60 inch maximum spacing, two brackets minimum per downspout.
 - 3. Size: As indicated.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

4. Fabricate from the following material:
 - a. Aluminum: 0.125 inch thick.
 - b. Color: Custom, as indicated to match fascia.
- B. Parapet Scuppers: Manufactured with closure flange trim to exterior, 4-inch- wide wall flanges to interior, and base extending 4 inches beyond cant or tapered strip into field of roof.
 1. Formed Aluminum: 0.040 inch thick.
- C. Conductor Heads: Manufactured conductor heads, each with flanged back and stiffened top edge, and of dimensions and shape indicated, complete with outlet tube that nests into upper end of downspout, exterior flange trim, and built-in overflow.
 1. Formed Aluminum: 0.040 inch thick.
- D. Concrete Splash Blocks: Provide 24" long x 16" wide precast concrete splash blocks at the termination of each downspout at roof level.
- E. Aluminum Finish: Two-coat fluoropolymer.
 1. Color: Custom to match roof edge fascia.

2.4 MATERIALS

- A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, with temper to suit forming operations and performance required.
- B. Aluminum Extrusions: ASTM B 221, alloy and temper recommended by manufacturer for type of use and finish indicated, finished as follows:

2.5 MISCELLANEOUS MATERIALS

- A. Fasteners: Manufacturer's recommended fasteners, suitable for application and designed to meet performance requirements. Furnish the following unless otherwise indicated:
 1. Exposed Penetrating Fasteners: Gasketed screws with hex washer heads matching color of sheet metal.
 2. Fasteners for Aluminum: Aluminum or Series 300 stainless steel.
- B. Elastomeric Sealant: ASTM C 920, elastomeric polyurethane polymer sealant of type, grade, class, and use classifications required by roofing-specialty manufacturer for each application.
- C. Butyl Sealant: ASTM C 1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type joints with limited movement.
- D. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187/D 1187M.
- E. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required for application.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.6 FINISHES

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Protect mechanical and painted finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
- C. Appearance of Finished Work: Noticeable variations in same piece are unacceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.
- D. Aluminum Extrusion Finishes:
 - 1. High-Performance Organic Finish: Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - a. Two-Coat Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
 - b. Concealed Surface Finish: Apply pretreatment and manufacturer's standard acrylic or polyester backer finish consisting of prime coat and wash coat with a minimum total dry film thickness of 0.5 mil.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
- B. Examine walls, roof edges, and parapets for suitable conditions for roof specialties.
- C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage where applicable, and securely anchored.
- D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

- A. General: Install roof specialties according to manufacturer's written instructions. Anchor roof specialties securely in place, with provisions for thermal and structural movement. Use fasteners, solder, protective coatings, separators, underlayments, sealants, and other miscellaneous items as required to complete roof specialty systems.
 - 1. Install roof specialties level, plumb, true to line and elevation; with limited oil-canning and without warping, jogs in alignment, buckling, or tool marks.
 - 2. Provide uniform, neat seams with minimum exposure of solder and sealant.
 - 3. Install roof specialties to fit substrates and to result in weathertight performance. Verify shapes and dimensions of surfaces to be covered before manufacture.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

4. Torch cutting of roof specialties is not permitted.
 5. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
1. Coat concealed side of uncoated aluminum roof specialties with bituminous coating where in contact with wood, ferrous metal, or cementitious construction.
 2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof specialties for waterproof performance.
- C. Expansion Provisions: Allow for thermal expansion of exposed roof specialties.
1. Space movement joints at a maximum of 12 feet with no joints within 18 inches of corners or intersections unless otherwise indicated on Drawings.
 2. When ambient temperature at time of installation is between 40 and 70 deg F, set joint members for 50 percent movement each way. Adjust setting proportionately for installation at higher ambient temperatures.
- D. Fastener Sizes: Use fasteners of sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches for nails and not less than 3/4 inch for wood screws.
- E. Seal concealed joints with butyl sealant as required by roofing-specialty manufacturer.
- F. Seal joints as required for weathertight construction. Place sealant to be completely concealed in joint. Do not install sealants at temperatures below 40 deg F.
- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pre-tin edges of sheets to be soldered to a width of 1-1/2 inches; however, reduce pre-tinning where pre-tinned surface would show in completed Work. Tin edges of uncoated copper sheets using solder for copper. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.
- 3.3 ROOF-EDGE SPECIALTIES INSTALLATION
- A. Install cleats, cants, and other anchoring and attachment accessories and devices with concealed fasteners.
 - B. Anchor roof edgings with manufacturer's required devices, fasteners, and fastener spacing to meet performance requirements.
- 3.4 ROOF-EDGE DRAINAGE-SYSTEM INSTALLATION
- A. General: Install components to produce a complete roof-edge drainage system according to manufacturer's written instructions. Coordinate installation of roof perimeter flashing with installation of roof-edge drainage system.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. Downspouts: Join sections with manufacturer's standard telescoping joints. Provide hangers with fasteners designed to hold downspouts securely to walls and 1 inch away from walls; locate fasteners at top and bottom and at approximately 60 inches o.c.
 - 1. Provide elbows at base of downspouts at grade to direct water away from building.
 - 2. Connect downspouts to underground drainage system indicated.
- C. Splash Pans: Install where downspouts discharge on low-slope roofs. Set in elastomeric sealant.
- D. Parapet Scuppers: Install scuppers through parapet where indicated. Continuously support scupper, set to correct elevation, and seal flanges to interior wall face, over cants or tapered edge strips, and under roofing membrane.
 - 1. Anchor scupper closure trim flange to exterior wall and seal or solder to scupper.
 - 2. Loosely lock front edge of scupper with conductor head.
 - 3. Seal or solder exterior wall scupper flanges into back of conductor head.
- E. Conductor Heads: Anchor securely to wall with elevation of conductor top edge 1 inch below scupper discharge.

3.5 CLEANING AND PROTECTION

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder and sealants.
- C. Remove temporary protective coverings and strippable films as roof specialties are installed. On completion of installation, clean finished surfaces, including removing unused fasteners, metal filings, pop rivet stems, and pieces of flashing. Maintain roof specialties in a clean condition during construction.
- D. Replace roof specialties that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077100

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 079200 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors, and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section "Summary", Paragraph 1.1A, entitled "Related Documents."

1.2 SUMMARY

- A. Section Includes:
1. Silicone joint sealants.
 2. Urethane joint sealants.

1.3 PRECONSTRUCTION TESTING

- A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
 2. Submit not fewer than eight pieces of each type of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
 3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
 4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
 5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

1.4 PERFORMANCE REQUIREMENTS

- A. Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Provide joint sealants for interior applications that establish and maintain airtight and water-resistant continuous joint seals without staining or deteriorating joint substrates.

1.5 ACTION SUBMITTALS

- A. Product Data: For each joint-sealant product indicated.
- B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- C. Samples for Verification: For each type and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- wide joints formed between two 6-inch- long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- D. Joint-Sealant Schedule: Include the following information:
 - 1. Joint-sealant application, joint location, and designation.
 - 2. Joint-sealant manufacturer and product name.
 - 3. Joint-sealant formulation.
 - 4. Joint-sealant color.

1.6 INFORMATIONAL SUBMITTALS

- A. Product Certificates: For each type of joint sealant and accessory, signed by product manufacturer.
- B. Qualification Data: For Installer.
- C. Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- D. Product Test Reports: Based on comprehensive testing of product formulations performed by a qualified testing agency, indicating that sealants comply with requirements.
- E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:
 - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
 - 2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.
- F. Warranties: Special warranties specified in this Section.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: Manufacturer's authorized Installer who is approved or licensed for installation of elastomeric sealants required for this Project.
- B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.
- C. Product Testing: Test joint sealants using a qualified testing agency.
 - 1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
 - 2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- D. Mockups: Build mockups incorporating sealant joints, as follows, to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution:
1. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
 2. Each type of sealant and joint substrate indicated.
- E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.8 PROJECT CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
 2. When joint substrates are wet.
 3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
 4. Contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.9 WARRANTY

- A. Special Installer's Warranty: Installer's standard form in which Installer agrees to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period: Two years from date of Substantial Completion.
- B. Special Manufacturer's Warranty: Manufacturer's standard form in which elastomeric sealant manufacturer agrees to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
1. Warranty Period for Urethane: Five years from date of Substantial Completion.
 2. Warranty Period for Silicone: 20 years from date of Substantial Completion.
- C. Special warranties specified in this Article exclude deterioration or failure of elastomeric joint sealants from the following:
1. Movement of the structure resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression caused by structural settlement or errors attributable to design or construction.
 2. Disintegration of joint substrates from natural causes exceeding design specifications.
 3. Mechanical damage caused by individuals, tools, or other outside agents.
 4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by jointsealant manufacturer, based on testing and field experience.
- B. VOC Content of Interior Sealants: Provide sealants and sealant primers for use inside the weatherproofing system that comply with the following limits for VOC content when calculated according to 40 CFR 59, Part 59, Subpart D (EPA Method 24):
 - 1. Architectural Sealants: 250 g/L.
 - 2. Sealant Primers for Nonporous Substrates: 250 g/L.
 - 3. Sealant Primers for Porous Substrates: 775 g/L.
- C. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.
- D. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 SILICONE JOINT SEALANTS

- A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. Dow Corning Corporation; 790.
 - b. Pecora Corporation; 890 NST.
 - c. Tremco Incorporated; Spectrem 1.

2.3 URETHANE JOINT SEALANTS

- A. Multicomponent, Nonsag, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, for Use NT.
 - 1. Products: Subject to compliance with requirements, provide one of the following:
 - a. BASF Corporation-Construction Systems; MasterSeal NP 2.
 - b. Pecora Corporation; Dynatrol II.
 - c. Tremco; Dymeric 240 FC.

2.4 JOINT-SEALANT BACKING

- A. General: Provide sealant backings of material and type that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

- B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin) as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.
- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
 - 1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
 - 2. Clean porous joint substrate surfaces by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
 - a. Concrete.
 - b. Masonry.
 - c. Unglazed surfaces of ceramic tile.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3. Remove laitance and form-release agents from concrete.
 4. Clean nonporous surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
 - a. Metal.
 - b. Glass.
 - c. Porcelain enamel.
 - d. Glazed surfaces of ceramic tile.
- B. Joint Priming: Prime joint substrates, where recommended in writing by joint-sealant manufacturer, based on preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Install sealant backings of type indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
 1. Do not leave gaps between ends of sealant backings.
 2. Do not stretch, twist, puncture, or tear sealant backings.
 3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.
- D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.
- E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
 1. Place sealants so they directly contact and fully wet joint substrates.
 2. Completely fill recesses in each joint configuration.
 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
 1. Remove excess sealant from surfaces adjacent to joints.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
 3. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.
- G. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations.

3.4 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

- A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. Joints as indicated.
 2. Urethane Joint Sealant: Multicomponent, nonsag, Class 50.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors, for each material.
- B. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.
1. Joint Locations:
 - a. Perimeter joints at frames of doors.
 - b. Joints in exterior insulation and finish systems (EIFS).
 - c. Perimeter joints between EIFS and frames of doors.
 - d. Other joints as indicated.
 2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 100/50.
 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors, for each material.

END OF SECTION 079200

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

SECTION 099100 – PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The Contractor, Subcontractors and/or suppliers providing goods or services referenced in or related to this Section shall also be bound by the Documents identified in Division 01 Section “Summary”, Paragraph 1.1A, entitled “Related Documents.”

1.2 SUMMARY

- A. This Section includes surface preparation and the application of paint systems on the following substrates:
1. Roof Hatches
- B. Paint exposed surfaces, except where these Specifications indicate that the surface or material is not to be painted or is to remain natural. If an item or a surface is not specifically mentioned, paint the item or surface the same as similar adjacent materials or surfaces. If a color of finish is not indicated, Architect will select from standard colors and finishes available.
- C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
1. Prefinished items include the following factory-finished components:
 - a. Finished mechanical and electrical equipment.
 - b. Light fixtures and wiring devices.
 - c. Switchgear.
 - d. Distribution cabinets in closets or equipment rooms.
 2. Finished metal surfaces include the following:
 - a. Anodized or coated aluminum.
 - b. Stainless steel.
 - c. Chromium plate.
 - d. Copper and copper alloys.
 - e. Bronze and brass.
 3. Operating parts include moving parts of operating equipment and the following:
 - a. Valve and damper operators.
 - b. Linkages.
 - c. Sensing devices.
 - d. Motor and fan shafts.
 4. Labels: Do not paint over UL, FMG, or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

D. Related Sections include the following:

1. Division 08 Section "Hollow Metal Doors and Frames" for factory priming steel doors and frames.

1.3 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.

1. Flat refers to a lusterless or matte finish with a gloss range below 15 when measured at an 85degree meter.
2. Eggshell refers to low-sheen finish with a gloss range between 20 and 35 when measured at a 60degree meter.
3. Semigloss refers to medium-sheen finish with a gloss range between 35 and 70 when measured at a 60-degree meter.
4. Full gloss refers to high-sheen finish with a gloss range more than 70 when measured at a 60degree meter.

1.4 SUBMITTALS

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

1. Material List: An inclusive list of required coating materials. Indicate each material and crossreference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material.
3. Certification by the manufacturer that products supplied comply with State of Connecticut Ozone Transportation Commission (OTC) regulations controlling use of volatile organic compounds (VOCs).

B. Samples for Verification: For each type of paint system and in each color and gloss of topcoat indicated.

1. Submit Samples on rigid backing, 8 inches square.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

C. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of Architects and Owners, and other information specified.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. VOC content.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.5 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For coatings to include in maintenance manuals. Include the following:
1. Area summary with Finish Schedule and area detail designating where each product, color, and finish is used.
 2. Product data pages.
 3. Material safety data sheets.
 4. Care and cleaning instructions.
 5. Touch-up procedures.
 6. Color samples of each color and finish (gloss level) used.
- B. Manual: Provide Sherwin Williams; "Custodian Project Color and Product Information" manual, or equal.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.
1. Quantity: Furnish an additional 1 gallon of each material and color applied.

1.7 QUALITY ASSURANCE

- A. Applicator Qualifications: A firm or individual experienced in applying paints and coatings similar in material, design, and extent to those indicated for this Project, whose work has resulted in applications with a record of successful in-service performance.
- B. Mockups: Apply benchmark samples of each paint system indicated and each color and finish selected to verify preliminary selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.
 - a. Wall Surfaces: Provide samples of at least 100 sq. ft.
 2. Apply benchmark samples after permanent lighting and other environmental services have been activated.
 3. Final approval of color selections will be based on benchmark samples.
 - a. If preliminary color selections are not approved, apply additional benchmark samples of additional colors selected by Architect at no added cost to Owner.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F.
1. Maintain containers in clean condition, free of foreign materials and residue.
 2. Remove rags and waste from storage areas daily.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

1.9 PROJECT CONDITIONS

- A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F.
- B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Benjamin Moore & Co.
 - 2. PPG Architectural Finishes, Inc.; Pittsburgh Paints.
 - 3. Sherwin-Williams Co.

2.2 PAINT, GENERAL

- A. Material Compatibility:
 - 1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
 - 2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.
- B. VOC Content for Interior Paints and Coatings:
 - 1. All products shall comply with the VOC content regulations of the Ozone Transportation Commission (OTC) effective in the State of Connecticut. For interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
 - a. Flat Coatings: 100 g/L.
 - b. Nonflat Coatings: 150 g/L.
 - c. Nonflat-High Gloss Coatings: 250 g/L.
 - d. Primers, sealers and undercoaters: 200 g/L.
 - e. Anti-corrosive and Anti-rust Paints Applied to Ferrous Metals: 250 g/L.
- C. Color: As selected by Architect from manufacturer's full range.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

2.3 EXTERIOR PRIMERS

Exterior Galvanized Metal Primer: Factory-formulated galvanized metal primer for exterior application.

1. Benjamin Moore; Super Spec HP Acrylic Metal Primer No. P04: Applied at a dry film thickness of not less than 2.0 mils.
2. Pittsburgh Paints; 90-712 Pitt-Tech Interior/Exterior Primer/Finish DTM Industrial Enamel: Applied at a dry film thickness of not less than 3.0 mils.
3. Sherwin-Williams; Pro Industrial Pro-Cryl Universal Acrylic Primer: Applied at a dry film thickness of not less than 2.0 mils.

2.4 EXTERIOR PAINTS

A. Exterior Full-Gloss Acrylic Enamel: Factory-formulated full-gloss waterborne acrylic-latex enamel for exterior metal application.

1. Benjamin Moore; Ultra Spec HP DTM Acrylic Gloss Enamel, HP28: Applied at a dry film thickness of not less than 2.3 mils.
2. Pittsburgh Paints; 90-374 Series Pitt-Tech Interior/Exterior High Gloss DTM Industrial Enamels: Applied at a dry film thickness of not less than 3.0 mils.
3. Sherwin-Williams; DTM Acrylic Coating Gloss (Waterborne) B66W100 Series: Applied at a dry film thickness of not less than 2.4 mils.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.
- B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
 1. Masonry (Clay and CMU): 12 percent.
 2. Wood: 15 percent.
 3. Gypsum Board: 12 percent.
- C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.
- D. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
 1. Notify Architect about anticipated problems when using the materials specified over substrates primed by others.
- E. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
 1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.2 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates indicated.
- B. Remove plates, machined surfaces, and similar items already in place that are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.
 - 1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
 - 2. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulants.
 - 1. Remove incompatible primers and reprime substrate with compatible primers as required to produce paint systems indicated.
- D. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

3.3 APPLICATION

- A. Apply paints according to manufacturer's written instructions.
 - 1. Use applicators and techniques suited for paint and substrate indicated.
 - 2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
 - 3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
- B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.
- C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

**TOWN OF WATERFORD
PUBLIC SAFETY BUILDING
WATERFORD, CT**

3.4 CLEANING AND PROTECTION

- A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
- B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
- C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
- D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.5 EXTERIOR PAINT SCHEDULE

- A. Zinc-Coated Metal: Provide the following finish systems over exterior zinc-coated metal surfaces:
 - 1. Full-Gloss Acrylic-Enamel Finish: Two finish coats over galvanized metal.
 - a. Primer: Metal primer, including factory primed surfaces.
 - b. Finish Coats: Exterior full-gloss acrylic enamel.

END OF SECTION 099100

TOWN OF WATERFORD PUBLIC SAFETY FACILITY ROOF REPLACEMENT

204 BOSTON POST ROAD
WATERFORD, CT

MARCH 25, 2022

DRAWING LIST:

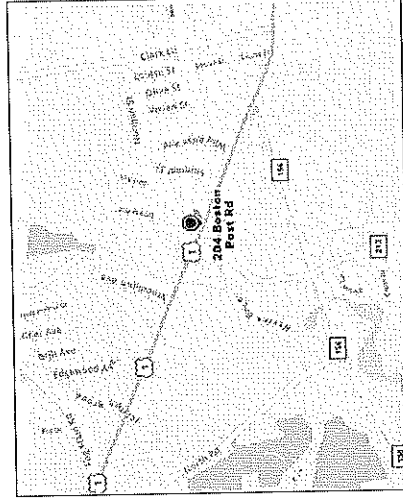
COVER SHEET
GENERAL NOTES
A1.0
ROOF DETAILS
A2.0
ROOF DETAILS
A2.1

PREPARED BY:

CRZ Design Associates, Inc.
MECHANICAL AND ELECTRICAL
ENGINEERING
750 OLD MAIN STREET
SUITE 202
ROCKY HILL, CT 06067
P: (860) 436-4336
F: (860) 436-4450
www.rzdesignassociates.com
JOB #22-058

QA+M
architecture
Quisenberry/Kean/Malk
195 Scott Swamp Road
Farmington, CT 06032
www.qamarch.com

LOCATION MAP:



ROOF PLAN KEY
EPDM ROOFING

- EXISTING SLOPED METAL DECK
- RIGID INSULATION, 5" MEN*
- FULLY ADHERED EPDM ROOF SYSTEM

A

600

EXISTING ROOF CONSTRUCTION

- EPDM ROOF MEMBRANE
- INSULATION, 4.0" THICK
- MECHANICALLY FASTENED
- EXISTING SLOPED METAL D
- (TO REMAIN)

GENERAL ROOFING NOTES:

- [illegible]

ROOF PLAN KEY

B

—

GENERAL ROOFING NOTES:
 REMOVE ALL EXISTING ROOF SHINGLES &
 BUILDING PAPER DOWN TO EXISTING
 PLYWOOD SHEATHING. PREPARE EXISTING
 ROOF SHEATHING TO RECEIVE NEW
 REMOVE ALL EXISTING FLASHING (STEP DRAIN,
 HANG, ETC.) & PREPARE TO RECEIVE NEW.
 SEE DETAILS
 CUT IN NEW RIDGE VENTING, LIFE FLASH &
 DETAILS FOR FURTHER INFORMATION &

REMOVE ALL EXISTING CUTTERS,
DOWNSPOUTS & ASSOCIATED MOUNTING
HARWARE. PROVIDE ALL NEW ALUMINUM
EXTENTS OF RIDGE VENTING.

GUTTERS, DOWNPOUTS & ASSOCIATED MOUNTING HARDWARE (CONCEALED), CONNECT TO EXISTING UNDERGROUND DRAINAGE. NEW GUTTERS TO BE 3" (100)

WITH 3" X 4" (24) DOWNSPOUTS, COLOR TO BE WHITE. SEE DETAILS & SPECIFICATIONS FOR MORE INFORMATION. CONNECT DOWNSPOUTS TO EXISTING UNDERGROUND

SEE PLANS & DETAILS FOR ICE & WATER
DRAINAGE SYSTEM, U.L.F., 10' HILL VENT & EXTENTS

PATCH & REPAIR ALL GRASS & BITUMINOUS AREAS DISTURBED BY THE ROOF CONSTRUCTION TO MATCH EXISTING

REMOVE & DISPOSE OF ALL VEGETATION
GROWING ON ALL EXISTING GUTTERS &
ADJACENT AREA'S.

DOWNSPOLTS
ALL OVERALL DIMENSIONS ARE TO BE
VERIFIED IN FIELD PRIOR TO BIDDING.

ALL ROOF PITCHES ARE TO BE VERIFIED IN
FIELD PRIOR TO BIDDING

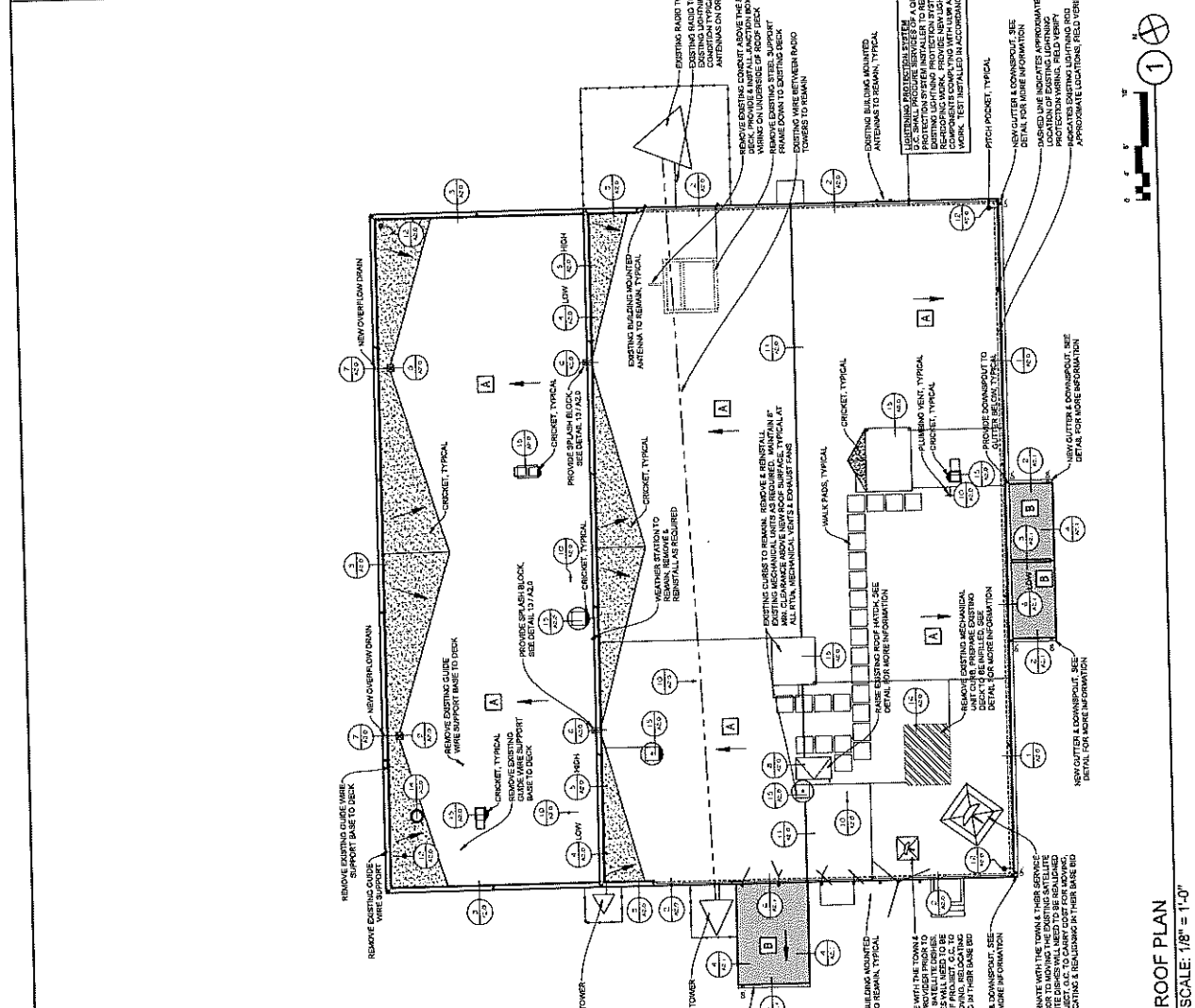
OVER
OVER GROUND TO
PROTECTION SYSTEM.

AT ALL TOWERS &
ADJACENT TO BUILDING

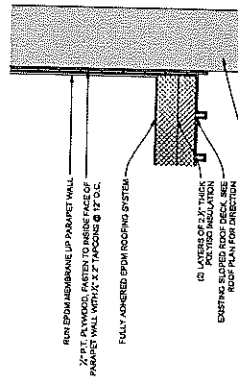
ULIFIED LIGHTNING
OVE, REINSTALL & TEST
TO FACILITATE

NEEDING PROTECTION
NEEDED TO FACILITATE
WITH NFPA 780

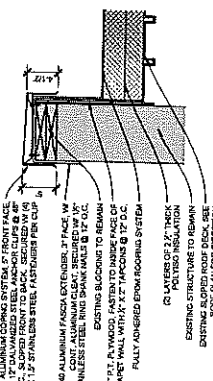
.....



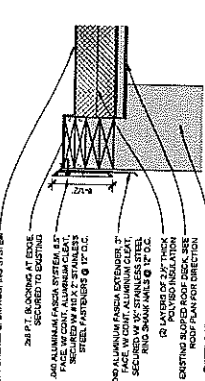
ROOF PLAN
SCALE: 1/8" = 1'-0"



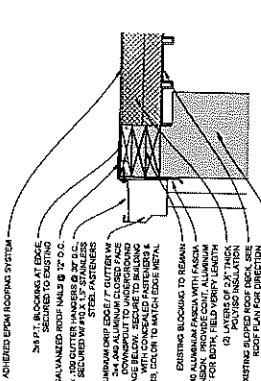
TYPICAL ROOF TO WALL DETAIL (LOW)



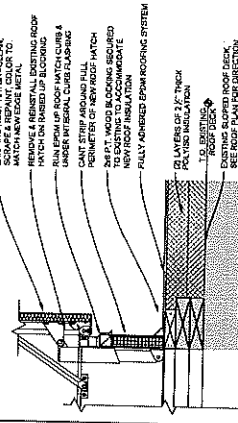
TYPICAL PARAPET DETAIL



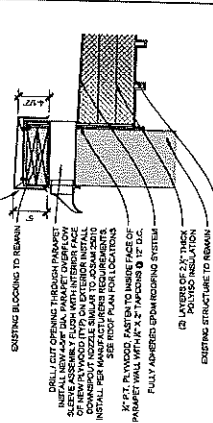
TYPICAL UPPER ROOF EDGE DETAIL



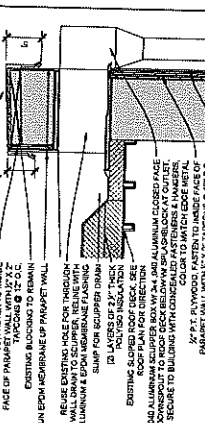
TYPICAL UPPER ROOF GUTTER DETAIL



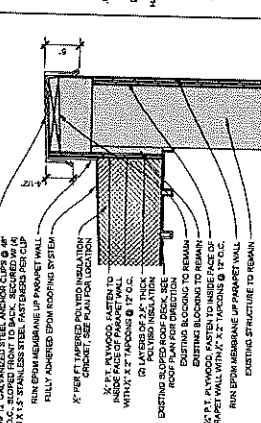
TYPICAL ROOF HATCH DETAIL



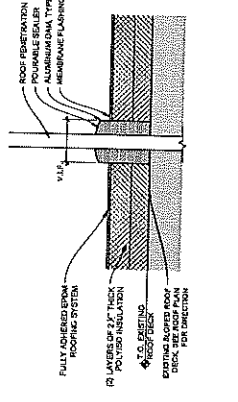
TYPICAL PARAPET DETAIL W/ OVERFLOW DRAIN



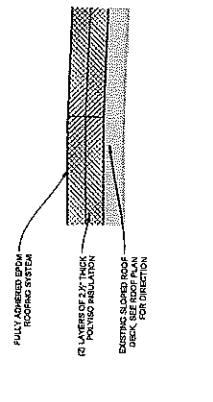
TYPICAL PARAPET WALL ROOF DRAIN DETAIL



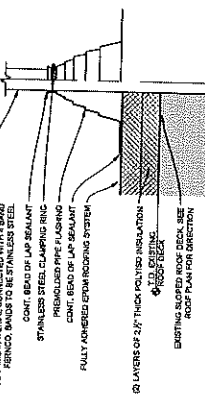
OPICAL PARAPET DETAIL WITH TAPERED INSULATION



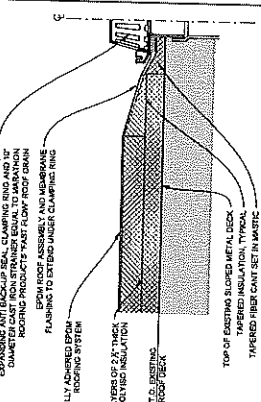
12 TYPICAL PITCH POCKET DETAIL



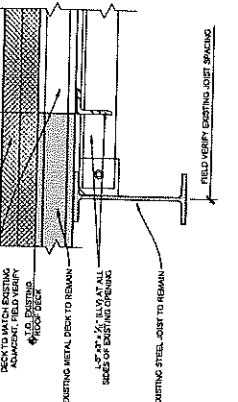
11 RIDGE DETAIL



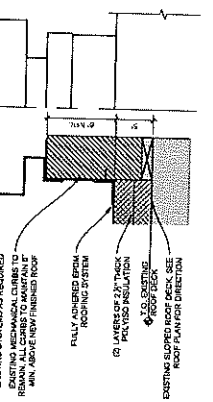
TYPICAL PIE PENETRATION DETAIL



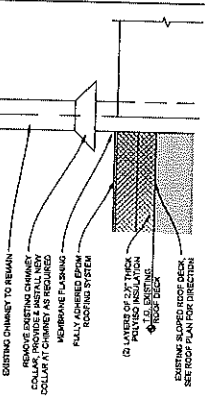
TYPICAL ROOF DRAIN DETAIL



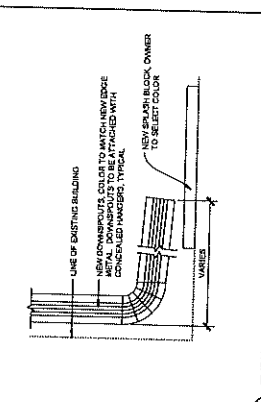
16 TYPICAL UPPER ROOF GUTTER DETAIL



6 TYPICAL MECHANICAL CURB DETAIL



CHIMNEY DETAIL



TYPICAL DOWNSPOUT & SPLASH BLOCK

TOWN
OF
WATERFORD

PUBLIC SAFETY
FACILITY
ROOF
REPLACEMENT

204 Boston Post Road
Waterford CT 06385

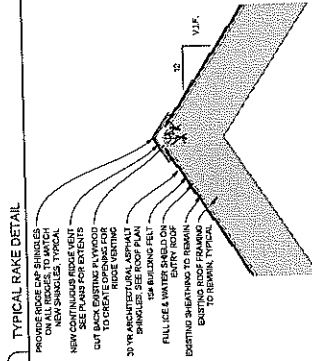
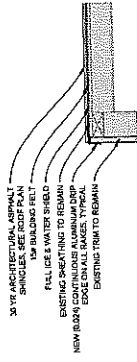
ENVIRON DATA

PROJECT NUMBER:	22-058
SUBMISSION DATE:	03/28/22
DRAWN:	AMT
REVIEWED:	
SCALE:	$1\frac{1}{2}'' = 1'-0''$
DWG TITLE	

ROOF DETAILS

1

A2.1



TYPICAL RAKE DETAIL

PROVIDE RIDGE CAP SHINGLES ON ALL RIDGES, TO MATCH NEW SHINGLES, TYPICAL

NEW CONTINUOUS RIDGE VENT WITH PLANS FOR EXTENDS OUT BACK EXISTING PLYWOOD TO CREATE OPENINGS FOR RIDGE VENTING

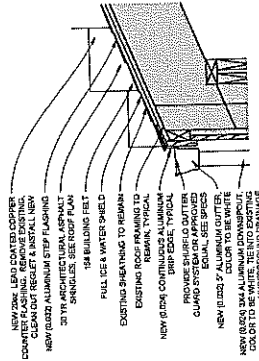
30 YR ARCHITECTURAL ASPHALT SHINGLES, SEE ROOF PLAN

15# BUILDING FELT

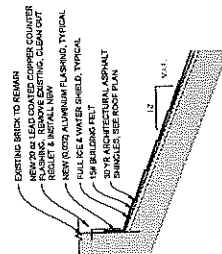
FULL ICE & WATER SHIELD ON ENTRY ROOF

EXISTING SHEATHING TO REMAIN

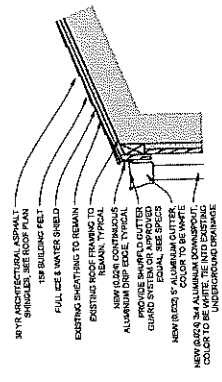
EXISTING ROOF FRAMING TO REMAIN, TYPICAL



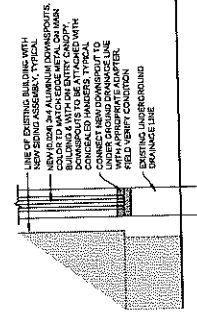
BINGE VENT



TYPICAL EAVE DETAIL - ENTRY



6. TYPICAL SLOPED ROOF TO WALL DETAIL



TYPICAL EAVE DETAIL - SHED ROOF

E TYPICAL DOWNSPOUT TO UNDERGROUND

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

Bid#22-132 Public Safety Facility – Roof Replacement
204 Boston Post Road, Waterford, CT. 06385

THE OWNER:
(Name, legal status and address)

« TOWN OF WATERFORD
15 Rope Ferry Road, Waterford, CT 06385

THE ARCHITECT:
(Name, legal status and address)

RZ Design Associates, Inc.
750 Old Main Street, Suite 202, Rocky Hill, CT. 06067

TABLE OF ARTICLES

- | | |
|----|--|
| 1 | GENERAL PROVISIONS |
| 2 | OWNER |
| 3 | CONTRACTOR |
| 4 | ARCHITECT |
| 5 | SUBCONTRACTORS |
| 6 | CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS |
| 7 | CHANGES IN THE WORK |
| 8 | TIME |
| 9 | PAYMENTS AND COMPLETION |
| 10 | PROTECTION OF PERSONS AND PROPERTY |
| 11 | INSURANCE AND BONDS |
| 12 | UNCOVERING AND CORRECTION OF WORK |
| 13 | MISCELLANEOUS PROVISIONS |
| 14 | TERMINATION OR SUSPENSION OF THE CONTRACT |
| 15 | CLAIMS AND DISPUTES |

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 the Owner and a Subcontractor or a Sub-subcontractor except as set forth in Sections 5.3 and 5.4, (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.

§ 1.1.9 Knowledge. The terms "knowledge", "recognize", "discover" and "observe" and their respective derivatives, and similar terms in the Contract Documents, as used in reference to the Contractor shall be interpreted to mean that which: (1) the Contractor knows, recognizes, discovers and observes, and (2) the Contractor should, in exercising the care, skill and diligence required by the Contract Documents, professional standards or by law, know, recognize, discover or observe, as the case may be. Analogously, the expression "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a party familiar with the Project and exercising the care, skill and diligence required by the Contract Documents, professional standards or by law (including any Work that the party should be able to reasonably anticipate or infer based on Contract Documents then existing).

§ 1.1.10 Terminology

1. Unless otherwise indicated the term "provide" shall include furnishing and installing a product, materials, systems, and/or equipment complete in place, fully tested and approved.
2. The terms "approved" and/or "approval" shall mean approved and/or approval in writing unless otherwise indicated.
3. The term "Contractor" shall also mean "Construction Manager" for purposes of this Agreement.

§ 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. In the event of inconsistencies within or between parts of the Contract Documents or between the Contract Documents and applicable standards, codes and ordinances, the Contractor shall (i) provide the better quality or greater quantity of Work or (ii) comply with the more stringent requirement; either or both in accordance with the Architect's interpretation.

1. On the Drawings, given dimensions shall take precedence over scaled measurements and large scale drawings over small scale drawings.
2. Before requesting the ordering of any material or doing any Work, the Contractor and each Subcontractor shall verify measurements at the Project site and shall be responsible for the correctness of such measurements. No extra charges or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings.
3. If a minor change in the Work is found to be necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure to the Architect for approval before making the change.
4. Contractor shall thoroughly acquaint itself with and comply with the terms, statutes, rules and regulations governing excavation in the area of underground utilities.

§ 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. The parties acknowledge that the provisions of this Agreement are the subject of arms-length negotiations between the parties and agree that no provision of this

Agreement shall be construed against the other party by reason of such party having drafted such provision of this Agreement.

§ 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. The Contractor shall, and shall require all Subcontractors to, refer to all Contract Documents, including those not specifically showing the Work of their specialized trades, and shall perform all Work necessary to produce the results shown or reasonably inferable therefrom. It shall be Contractor's responsibility in subcontracting portions of the Work to arrange or group items of Work under particular trades to conform to the then-prevailing customs of the trade, and in accordance with applicable requirements of law. The Owner shall have no liability arising out of jurisdictional issues raised or claims advanced by subcontractors, trade organizations or other interested parties based on the arrangement or subdivision of Work in the Contract Documents. In the event of any claim arising out of any duplication, conflict, inconsistency or discrepancy within the Contract Documents as to the allocation of Work among the subcontractors and Contractor's own forces, the Contractor shall be solely responsible for resolving the claim and ensuring that all Work is completed regardless of where it appears in the Contract Documents.

§ 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.

§ 1.2.4 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 documents of the specifications, and shall perform all work reasonably inferable therefrom as being necessary to produce the indicated results. If work is required in a manner to make it impossible to produce work of the quality required by or reasonably inferred from the Contract Documents, or should discrepancies appear among the Contract Documents, the Contractor shall request, in writing, an interpretation from the Architect before proceeding with the Work. If the Contractor fails to make such request, no excuse will thereafter be entertained for failure to carry out Work in the required manner or to provide required guarantees, warranties, or bonds, and the Contractor shall not be entitled to any change in the Contract Sum or the Contract Time on account of such failure.

§ 1.2.5 Owner and Contractor intend the Contract Documents to complement one another. If, and to the extent of, any conflict, inconsistency, ambiguity or discrepancy in the Contract Documents, or drawings and/or specifications therein, Contractor is deemed to have included the better quality or level of performance, greater quantity of work and most expensive and time consuming item in Contractor's Bid. The Contractor shall not take advantage of any obvious error or apparent discrepancy in the contract Documents. Notice of discovered error or discrepancy shall immediately be given in writing to Architect to make such corrections or interpretations as Architect may deem necessary for completion of the work in a satisfactory and acceptable manner.

§ 1.2.6 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.

§ 1.2.7 All manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned strictly in accordance with the manufacturers' written instructions unless specifically indicated otherwise in the Contract Documents.

§ 1.2.8 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.

§ 1.2.9 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.

§ 1.2.10 Mechanical and electrical Drawings are diagrammatic only, and are not intended to show exact physical locations or configuration of work. Such Work shall be installed to clear all obstructions, permit proper clearances for the work of other trades, and present an orderly appearance where exposed. Exact locations of fixtures and outlets

shall be obtained from Architect before the Work is roughed in; Work installed without such information from Architect shall be relocated at contractor's expense.

§ 1.2.11 Test boring and soil test information included with the Contract Documents or otherwise made accessible to Contractor was obtained by Owner for use by Architect in the design of the Work. Owner does not hold out such information to the Contractor as an accurate or approximate indication of sub-surface conditions. Contractor waives any claim of any kind or nature, including but not limited to claims for delay, impact, additional compensation, extra cost, extension of time, inaccuracy, misrepresentation, inappropriateness or incompleteness, resulting or arising from or relating to such items.

§ 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, except as may be provided under the Agreement with the Owner. 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, by courier providing proof of delivery, or electronic transmission.

§ 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.

§ 1.9.1 Character and Intent of Drawings

During the bidding or negotiation period, questions or discrepancies called to the Architect's attention, in writing, will be answered by the Architect by means of an addendum. All addendums shall become part of the Contract Documents. If any item of Work is shown on the Drawings and not specified, or mentioned in the Specifications and not shown on the Drawings, the matter shall be brought to the attention of the Architect during the bidding period so an addendum can be issued correcting the omission. If such correction is not made, the Work in question shall be considered to be required as if it has been specified and shown on the Drawings.

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. The term "Owner's Representative" means the Owner's authorized representative.

§ 2.1.2 No mechanic's or materialmen's liens shall be filed against Owner's property.

§ 2.1.3 The Owner shall not be responsible for construction means, methods, techniques, sequences and procedures or for site safety except as stated in Article 6.

§ 2.2 Evidence of the Owner's Financial Arrangements

Intentionally omitted

§ 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 may employ a successor whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 Owner may furnish surveys describing physical characteristics, legal limitations, and utility locations for the Project site and a legal description of the Project site. The furnishing of these surveys and the legal description of the Project site are for the convenience of the Contractor only and shall not relieve Contractor from its duties under the Contract Documents. To the extent the foregoing are made available to Contractor they are not deemed Contract Documents and there is no warranty or guaranty, either express or implied, that the conditions indicated by such documents are representative of those existing throughout the areas where the Work is to be performed. If Owner or Architect has made investigations of subsurface characteristics or concealed conditions of areas where the Work is to be performed, such investigations, if any, were made solely for the purposes of Owner's study and Architect's design. Neither such investigations nor the records thereof are a part of the Contract between Owner and Contractor. To the extent such investigations or the records thereof are made available to Contractor by Owner or Architect, such information is furnished solely for the convenience of Contractor. Neither the Owner nor Architect assumes any responsibility whatsoever with respect to the sufficiency or accuracy of the investigations thus made, the records

thereof, or of the interpretations set forth therein or made by Owner or Architect in its use thereof, and there is no warranty or guaranty, either express or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout the areas where the Work is to be performed, or any part thereof, or that unforeseen developments may not occur, or that materials other than or in proportions different from those indicated may not be encountered. In connection with the foregoing, Contractor shall be solely responsible for locating and shall locate prior to performing any Work all utility lines, telephone lines and cables, sewer lines, water pipes, gas lines, electrical lines, including, without limitation, all buried pipelines and buried telephone cables, and shall perform the Work in such a manner so as to avoid damaging any such lines, cables, pipes, and pipelines. Not in limitation of the foregoing, before performing any excavation at the Project Contractor shall use the services of Call Before You Dig. Contractor waives any claim of any kind or nature, including but not limited to claims for delay, impact, additional compensation, extra cost, extension of time, inaccuracy, misrepresentation, inappropriateness or incompleteness, resulting or arising from or relating to any information provided by Owner pursuant to this Section 2.3.4.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness after receipt from the Contractor of a written request for such information or services. To the extent the foregoing are made available to Contractor they are not deemed Contract Documents and there is no warranty or guaranty, either express or implied, that the condition indicated by such documents are representative of those existing throughout the areas where the Work is to be performed.. 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 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. This right shall be in addition to and not in limitation of any of any other rights or remedies available to Owner.

§ 2.4.1 The Owner shall have the right, but not the obligation, to reject Work that it believes does not conform to the Contract Documents.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or fails to carry out the Work in accordance with the Contract Documents and fails within a seven-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 may, 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 and the Owner or 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.

§ 2.5.1 In no event shall the Owner have control over, charge of, or any responsibility for construction means, methods, techniques, sequences or procedures or for safety precautions and programs in connection with the Work, notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

§ 2.5.2 The rights stated in this Article and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (1) granted in the Contract Documents, (2) at law, or (3) in equity.

§ 2.6 Owner's Right to Inspect the Work

§ 2.6.1 The Owner has the right to have full access to and inspect all portions of the Work for quality, progress and conformance to the Contract Documents.

§ 2.7 Commissioning

§ 2.7.1 The Owner may elect to perform inspections and tests of systems to validate the proper installation and performance of the Work as intended and required by the Contract Documents. These tests and inspections may be performed by the Owner's Representative or by independent contractors or consultants.

§ 2.7.2 The commissioning activities performed by the Owner shall in no way relieve or replace the obligations of the Architect or the Contractor in their fulfillment of Contract obligations.

§ 2.7.3 The commissioning agent of the Owner will utilize information provided by the Architect for design intent and the Contractor for actual installation conditions.

§ 2.7.4 Any commissioning activities are at the sole discretion of the Owner and not a requirement of this Agreement.

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 Owner or 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 or any amendment thereto by the Contractor is a representation that the Contractor has examined the Project 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. The Contractor shall, and shall require each Subcontractor to evaluate and satisfy themselves as to the conditions and limitations under which the work is to be performed, including, without limitation (1) the location, condition, layout and nature of the Project site and surrounding areas, (2) generally prevailing climatic conditions, (3) anticipated labor supply and costs, (4) availability and cost of materials, tools and equipment, and (5) other similar issues. The Owner shall not be required to make any adjustment in either the Contract Sum, Contract Time or any milestone date in connection with any failure by the Contractor or any Subcontractor to comply with the requirements of this Section.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work and at frequent intervals during the progress thereof, 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. The Contractor shall promptly report to the Architect and Owner 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. However, if the Contractor proceeds with the Work without such notice to the Architect and Owner, after having discovered such errors, inconsistencies or omissions, or if by reasonable study of the Contract Documents by the Contractor, the Contractor shall pay all costs arising therefrom.

§ 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 unless they bear upon the performance of the Work, 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 Contractor believes that any portion of the Contract Documents do not clearly define the Work, the Contractor shall immediately notify the Owner and Architect thereof, in writing, by utilizing a Request for Information (RFI) form, and shall request supplementary instructions before proceeding with such Work. If the Contractor proceeds with the Work without first obtaining such supplementary instructions, the Contractor shall make any repairs or corrections to the Work, as required by the Contract Documents, to complete the Work, at the Contractor's expense. If the Contractor believes that additional cost or time is involved because of clarifications or instructions issued by the Architect 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, 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, unless the Contractor recognized or reasonably should have recognized such errors, inconsistencies, omissions, or difference and knowingly failed to report it to the Architect. Contractor shall give Architect and Owner timely notice of any additional design drawings, specifications, or instructions required to define the Work in greater detail, or to permit the proper progress of the Work. The Contractor shall conduct its inspection and review of the Contract Documents, Project site and other reviews provided in section 3.2 well in advance of the Work so as to afford the Architect sufficient time to correct or otherwise supplement the Contract Documents in the event of any error, omission or inconsistency therein. The Contractor shall also allow sufficient time for the Contractor to assess the impact of such error, omission or inconsistency and for the Owner to evaluate same.

§ 3.2.5 RFIs shall be submitted in a timely manner so as to cause no delay in the progress of the Work, and to allow adequate time for review and response prior to the date on which the Contractor's current schedule of submittals requires a subsequent submittal which is dependent on the information requested. Unless another period of time is reasonably requested and agreed to at the time of submittal, the Architect shall respond to each RFI within not more than fourteen (14) days after receiving it. It is understood that larger, more complicated RFIs shall require more than fourteen (14) days to review and respond, but shall be a reasonable amount of time as mutually agreed at time of submission. RFIs shall be sequentially numbered and logged and tracked by the Contractor regardless if the source of the RFI was from the Contractor or Owner. Submittal of an RFI shall not in any way stop work.

§ 3.2.6 The Contractor shall reimburse the Owner amounts charged to the Owner by the Architect for responding to an unreasonable number of Contractor's Requests for Information where such information is available to the Contractor from a reasonable study and comparison of the Contract Documents, field conditions, other Owner provided information, Contractor prepared Coordination Drawings, or project correspondence or documentation. Such amounts may be deducted by the Owner from any payment otherwise due the Contractor.

§ 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, procedures and safety precautions 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 and safety precautions, 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 directly 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 and, in addition to any indemnification obligations set forth herein, for any damages, injuries, losses, costs and expenses, including, but not limited to, attorney fees resulting from such acts or omissions.

§ 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.

§ 3.3.4 The Contractor shall inspect all materials delivered to the Project site and shall reject any materials that will not conform with the Contract Documents when properly installed. The Contractor shall be responsible for and coordinate any and all inspections required by any governmental body that has jurisdiction over the Project. Failure to obtain any permits, licenses, or other approvals because of the failure of the Contractor to conform to the requirement shall not extend the Contract Time, and Contractor shall not be entitled to an increase in the Contract Sum therefor.

§ 3.3.5 The Contractor shall only use specifically assigned areas for parking, storage of materials, and construction operations unless other areas are authorized by the Owner. The Contractor shall comply with any and all local, municipal and state regulations regarding use of and parking on public streets.

§ 3.3.6 The Contractor shall arrange for and attend weekly job meetings with the Architect, the Owner's Project Manager, and such other persons as the Architect or Owner 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 familiar with the Work, 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. The recording of minutes for these job meetings and their timely distribution to the Owner and Architect shall be the responsibility of the Contractor unless agreed otherwise by the Owner, Architect and Contractor.

§ 3.3.7 The Contractor shall not be relieved of any obligation to perform the Work in accordance with the Contract Documents either by activities or duties of the Owner in the Owner's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor. The Contractor shall be responsible for and coordinate any and all inspections required by any governmental body that has jurisdiction over the Project. Failure to obtain any permits, licenses, or other approvals because of the failure of the contractor to conform to the requirement shall not extend the Contract Time, and Contractor shall not be entitled to an increase in the Contract Sum therefor.

§ 3.3.8 The Contractor shall retain a competent Registered Professional Engineer or Registered Land Surveyor acceptable to the Architect who shall establish the exterior lines and required elevations of all buildings and structures to be erected on the site and shall establish sufficient lines and grades for the construction of associated Work such as but not limited to roads utilities and site grading. The Engineer or Land Surveyor shall certify as to the actual location for the constructed facilities in relation to property lines, building lines, easements and other restrictive boundaries. Such information shall be turned over to the Owner as a part of Record Documents.

§ 3.3.9 The Contractor shall establish the building grade elevations, levels, columns, walls and partition lines required by the Contractor and Subcontractors in laying out their Work.

§ 3.3.10 The Contractor shall coordinate and supervise the work performed by Subcontractors to ensure 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 their work and the storage of materials.

§ 3.3.11 The Owner may undertake or award other contracts for additional work at the Project. With regard to the work of the Owner's third party contractors, subcontractors, and vendors or work that is otherwise not the responsibility of Contractor, Contractor shall fully cooperate with such third parties and shall provide management support to Owner in order to assist the Owner in managing and coordinating such work, which management support shall be limited to providing scheduling input to Owner and the third parties with respect to the delivery and installation of third party services, materials, and equipment that must be integrated with Contractor's Work.

§ 3.3.12 The Contractor shall at all times staff the Project adequately for high quality management and construction work. The Contractor shall have competent supervision continuously on the job during work hours and readily available at all times upon call.

§ 3.3.13 The Owner, Project Manager or Owner's Designated Representative shall have access to the Project site and all Work. No inspection by any of the foregoing shall relieve the Contractor of any of its obligations under the Contract Documents or give rise to any duty on the part of the Owner.

§ 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. The Contractor shall be responsible for determining that all materials and equipment furnished for the Work meet all requirements of the Contract Documents. Any additional cost, or any loss or damage arising from the substitution or proposed substitution of any material, equipment or method for those originally specified shall be borne by Contractor, including costs of any structural, mechanical, electrical, architectural or other changes necessary to accommodate substitute materials or equipment, and costs of modifying documents and other additional fees of the Architect or other consultants notwithstanding approval or acceptance of such substitution by the Owner or Architect unless such substitution was made at the written request or direction of Owner or Architect.

§ 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. The Contractor shall furnish labor that can and will work in harmony with all other elements of labor employed or to be employed on the Project. The Contractor shall promptly resolve any labor or jurisdictional dispute so as not to cause any delay on the Project.

§ 3.4.4 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the project site. Protection of construction materials and equipment stored at the project site from weather, theft, damage, and other adversity is solely the responsibility of the Contractor.

§ 3.5 Warranty

§ 3.5.1

The Contractor guarantees and warrants to Owner that (a) the Work, whether performed by Contractor's own personnel or by any Subcontractors, shall be first class in quality, free from all defects whatsoever (including, without limitation, patent, latent or developed defects or inherent vice (except inherent vice or developed defects resulting solely due to material specified by the Contract Documents unless Contractor knows or should reasonably have known through the exercise of their obligations and due care that such specified items are subject to inherent vice or developed defects), and in strict conformance with the Contract Documents, and (b) all materials, appliances, mechanical devices, equipment and supplies incorporated into the Work shall be new and of such quality to strictly meet or exceed the Specifications and requirements of the Contract Documents. If requested by Owner at any time and from time to time, Contractor will furnish satisfactory evidence to Owner as to the kind and quality of materials, appliances, mechanical devices, equipment and supplies. All Work not conforming to the requirements of this Section (including, without limitation, substitutions or deviations not properly approved and authorized by Owner in writing), shall be considered defective.

The Contractor's warranty excludes remedy for damage or defect caused by abuse by Owner, alterations to the Work by Owner, 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.

While Contractor and Subcontractors shall be responsible for strict compliance with the requirements of this Section throughout the course of the Work, the "Warranty Period" shall commence upon the issuance of a Certificate of Substantial Completion for the Work as a whole and shall extend for a period of twelve (12) months from the date of

issuance of such Certificate or for such longer period as set forth in an applicable manufacturer's warranty or as may be required by applicable Laws. Nothing contained in this Section shall be construed to establish a period of limitation with respect to other obligations which Contractor might have under the Contract Documents or under applicable law, in equity or otherwise, or reduce the period of any other similar warranty or guaranty that may apply at law or otherwise to the Work. Upon receipt of Owner's written notice at any time during the course of the Work or during the Warranty Period, and during any longer period of time as are prescribed by any applicable Laws or other applicable terms, Contractor shall at Contractor's sole cost promptly perform all corrective services (including, without limitation, furnishing all labor, materials, equipment and other services at the site and elsewhere) to Owner's satisfaction as may be necessary to remedy any defective workmanship or omissions in the Contractor's Work, including without limitation, promptly correct or replace any Work rejected by Owner or which is incomplete, defective or fails to conform to the Contract Documents, whether observed before or after Final Completion of the Work and whether or not fabricated, installed, or completed. Contractor's compliance with its obligations as stated herein, and Owner's acceptance of such corrective services, shall at all times be determined by ascertaining whether Contractor has achieved strict compliance to Owner's reasonable satisfaction with both the written and inferable requirements contained in the Contract Documents.

All costs incurred by Contractor in fulfilling Contractor's remedial warranty obligations as set forth on this Article 3.5 shall be Non-Allowable Costs of the Work and shall be solely Contractor's responsibility which Contractor shall pay, including, without limitation, additional testing and inspections and compensation for the services of any professional or consultant made necessary thereby. Contractor shall also, as part of Contractor's warranty and guarantee at Contractor's own expense, repair or replace any other damaged components, material, finishes, furnishings and other Work or portions of the Project or other property damaged, affected or otherwise made necessary by or resulting from such defective, non-conforming or incomplete Work, to return the same to their original condition. In addition, and notwithstanding anything to the contrary in this Agreement, if within one (1) year after Substantial Completion any portion of the Work (including, without limitation, any roof and any walls) is not watertight and leakproof at every point and in every area (except where leaks can be attributed to damage to the Work proximately caused by extraordinary, external forces beyond Contractor's control and which Contractor could not reasonably have anticipated), Contractor shall, immediately upon notification by Owner of water penetration, determine the source of water penetration and, at Contractor's own expense, do any work necessary to make the Work watertight.

Contractor shall use all best efforts to fully perform all warranty and corrective services to Owner's satisfaction within five (5) calendar days of the receipt of Owner's written notice of defective workmanship. If the corrective services require more than five (5) calendar days for completion, Contractor shall submit, within five (5) calendar days of receipt of Owner's written notice, a comprehensive written proposal itemizing all corrective actions necessary which Contractor is prepared to and shall immediately undertake and diligently pursue to enable the Work to achieve strict compliance with the Contract Documents, including the latest Drawings and Specifications. In performing such corrective Work, Contractor shall perform its Work so as to cause the least inconvenience and disruption to Owner's business which may require performance of Work at hours when Owner's business is least active. Contractor shall not be entitled to the extra costs, if any, incurred in connection with performing corrective Work at non-business hours.

Contractor's warranty obligations herein shall apply to Work done by Subcontractors, as well as to Work done by direct employees of Contractor, and such provisions shall survive acceptance of the Work and survive any termination of the Contract and Contractor shall be responsible to fully indemnify and hold Owner harmless from any and all liens, claims, lawsuits, costs and expenses which may arise out of the failure of the Contractor to fulfill its warranty obligations pursuant to this Contract. Such claims include penalties, fines or costs imposed by governmental authorities in connection with, or resulting from any violation of, or noncompliance with laws, regulations, codes, ordinances or directives by the Contractor or any person working under the Contractor or any Subcontractor. Any provision to the contrary notwithstanding, Owner shall be entitled to withhold a reasonable amount to protect the Owner from loss from any such conditions.

- .1 defective Work not remedied;
- .2 reasonable evidence that the Work will not be completed within the Contract Time and/or established milestone dates and that the unpaid balance would not be adequate to cover actual or the anticipated delay;
- .3 reasonable evidence that the Work will not be completed for the unpaid balance of the stipulated price;
- .4 failure to carry out the Work in accordance with the Contract Documents;
- .5 reasonable evidence that Contractor has failed to pay subcontractors and/or suppliers; or
- .6 Contractor becomes insolvent or files for bankruptcy.

§ 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.

§ 3.5.3 The Contractor agrees to assign to the Owner at the time of final completion of the Work any and all manufacturer's warranties relating to materials and labor used in the Work.

§ 3.5.4 The Contractor shall procure and deliver to the Architect, no later than thirty (30) calendar days after the Date of Substantial Completion, all warranties required by the Contract Documents.

§ 3.5.5 This Warranty shall include the repair and/or replacement of all damaged materials resulting from the defective materials and/or workmanship. This shall include but not be limited to furniture, fixtures, equipment, finishes or any other affected materials or property.

§ 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. If the Owner is an institution exempt from sales tax, the Tax Exemption Number will be furnished to the Contractor. In addition, the Contractor and Subcontractors shall pay any and all compulsory taxes required or which may be imposed by any governmental agency, as applicable. Contractor shall be familiar with the current regulations of the Department of Revenue Services. The tax on materials, supplies, or products purchased for this Project and exempted by such regulations shall not be included in the Contract Sum.

§ 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. In connection with this, the Contractor shall attend such administrative meetings and public hearings as are required, communicate with the Owner and Architect as to the status of the same, and otherwise will diligently participate in the permitting and approval processes.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders and all other requirements of public authorities applicable to performance of the Work. The Contractor shall be responsible for scheduling all tests and inspections required by authorities having jurisdiction.

§ 3.7.2.1 It shall be the sole responsibility of all Contractors to confer with the various inspection offices of the local, state, or federal agency having jurisdiction over this construction project with the intent of verifying acceptability of materials and methods of construction indicated and specified herein. The respective Contractors and/or Subcontractors shall visit the building inspector, plumbing inspector, electrical inspector, or any other inspection office having the authority for granting approvals or construction permits.

§ 3.7.2.2 All construction work shall performed in compliance with all prevailing codes and to the quality set forth in Section 3.5.

§ 3.7.2.3 It is the sole responsibility of the Contractor to determine what local ordinances, if any, will affect its Work. It shall check for any county, city, borough, or township rules or regulations applicable to the area in which the project is being constructed, and in addition, for any rules or regulations of other organizations having jurisdiction, such as chamber-of-commerce, planning commissions, industries, or utilities companies who have jurisdiction over lands which the Contractor occupies.

§ 3.7.3 If the Contractor performs Work knowing, or has reason to know, 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 damages and expenses attributable to correction, and be liable to Owner for the attributable costs and damages arising therefrom and defend, hold harmless and indemnify Owner against the adverse consequences thereof. If the Contractor observes that any of the Contract

Documents are at variance therewith in any respect, he shall promptly notify the Owner and Architect in writing so that the Owner may take such action as, at his discretion, the Owner may determine to be necessary. The requirements of the foregoing section do not waive the Contractor's responsibility of complying with the requirements of the Contract Documents when such requirements exceed those of laws, ordinances, rules, regulations, and order of any public authority applicable to the Work.

§ 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 Bid and 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 and (3) could not have been discovered by Contractor prior to the Effective Date through the exercise of due diligence consistent with the terms of 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 7 days after first observance of the conditions. Pursuant to the Owner's request, the Architect will promptly investigate such conditions and, if the Architect determines that such conditions (i) differ materially from those contained in the Contract Documents or (ii) are 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 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 in the Contract Sum or Contract Time, or both. If the Architect determines such conditions are (i) not materially different from those indicated in the Contract Documents or (ii) not 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 and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor in writing, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may make a claim as provided in Article 15. No request by the Contractor for an equitable adjustment to the Contract Sum or Contract Time under this sub-section or the following sub-section shall be allowed, unless the Contractor has given the required written notice and any such claim shall be deemed waived and abandoned. Further, no request by Contractor for such equitable adjustment shall be allowed if made after the Architect has issued the final Certificate of Payment.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites, memorial objects such as signs, trees, stones, etc. 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.

§ 3.7.6 In determining changes in Contract Time, under any circumstance, in proposed change orders submitted by the Contractor, a change will not be considered unless the Contractor provides documentation to the Architect and Owner that the circumstances described has substantially and materially adversely affected and lengthened the schedule approved. If the proposed change order adversely affects the schedule, the Contractor's request for additional Contract Time will be rejected.

§ 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.

§ 3.8.4 No allowances shall be included in the Bid Documents by the Architect unless specifically requested by the Architect and approved in writing by the Owner.

§ 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. The Project Manager, Assistant Project Manager and Superintendent may not be removed without the prior written consent of the Owner. Owner reserves the right to have any employee of Contractor removed from the Project.

§ 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 and Owner 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.

§ 3.9.4 The superintendent shall be in attendance at the project site at all times during the progress of the Work until the date of Substantial Completion, and for such time thereafter necessary for the completion of the Work.

§ 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 approval a Contractor's construction schedule for the Work which will be considered the baseline schedule. 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 and, (4) submittal/product approval activities. 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. The baseline schedule shall be approved prior to submission of the first Pay Application.

§ 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. The submittal schedule shall be approved prior to the first Pay Application. The submittal schedule shall be updated and reviewed at progress meetings.

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

§ 3.10.4 The construction schedule shall be in a detailed critical path method (CPM) type format satisfactory to the Owner and Architect which shall also (1) provide a graphic representation of all activities and events that will occur during performance of the Work, including but not limited to hazardous material remediation, demolition, furniture and equipment deliveries, Substantial Completion, move-in activities, commissioning, training, punch list, and final cleaning; (2) identify each phase of construction and occupancy; (3) identify float time associated with non-critical path activities and (4) set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as Milestone Dates). Upon review and acceptance by the Architect and Owner, the construction schedule shall be deemed the Baseline Construction Schedule for the Project and will be used to determine the validity of Claims for Additional Time as identified in Section 15.1.5. This Baseline Construction Schedule can only be modified with approved changes in Contract Time through the execution of a Change Order. The Contractor shall monitor the progress of the Work for conformance with the requirements of the construction schedule and shall promptly advise the Owner and Architect of any delays or potential delays. The construction schedule shall be updated regularly to reflect actual conditions or if requested by the Owner or at least monthly. In the event any progress report indicates any delays, the Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, any Milestone Date or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

§ 3.10.5 At weekly or biweekly construction progress meetings, the Contractor shall submit detailed two (2) week look ahead schedules which depict specific activities to occur during that period.

§ 3.10.6 The Contractor shall schedule and conduct construction and progress meetings, on a frequency required to effect coordination, to discuss such matters as procedures, progress, problems and scheduling. The Contractor shall prepare and distribute minutes within three (3) working days of such meetings.

§ 3.10.7 The Contractor shall record the progress of the Project. Submit written progress reports not less frequently than monthly to the Owner and the Architect, including information on each Subcontractor and each Subcontractor's Work, as well as the entire Project, showing percentages of completion and the number and amounts of Change Orders. The Contractor will keep a daily log containing a record of weather, Subcontractor's Work on the site, number of workers, Work accomplished, problems encountered and other similar relevant data as the Owner may require. Upon request, Contractor shall make the log available to the Owner and the Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall maintain at the Project site for the Owner, the Contract Documents, including Change Orders, Construction Change Directives, other Modifications baseline schedule, current schedule, schedule of submittals, RFI log and other documents related to the Project as directed by the Architect, in good order and marked currently to record 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, and delivered to the Architect for submittal to the Owner upon completion of the Work. A designated complete set of Contract Documents shall be maintained by the Contractor and kept on-site at all times with up-to-date red-line modifications that accurately record field conditions different than those shown on the original documents. These red-lined drawings shall be turned over to the Architect for record purposes no later than thirty (30) calendar days after the date of Substantial Completion. This set of "red-lined" drawings shall be maintained and kept current by the Contractor and their completeness shall be routinely inspected by the Architect and Owner. If these "red-lined" drawings are not maintained by the Contractor or kept current during construction, then the approval of Applications for Payment, as defined in Section 9.3, shall be denied.

§ 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. The Contractor's approval shall be noted on the submitted item or in its transmittal letter, together with written notice of any deviation in the submitted item from the requirements of the Work and of the Contract Documents. In collaboration with the Architect, Contractor shall establish and implement procedures for expediting the processing and approval of Shop Drawings, Product Data, Samples and other submittals.

§ 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. Each Shop Drawing, Product Data, Sample and similar submittals shall have a cover sheet on them identifying the project name and address, contractor information, drawing and/or specification reference, submission date and contents of the submittal. Ample space shall be provided on this cover sheet to allow for the Contractor's and Architect's review stamps. The Contractor's approval shall be noted on the submitted item or in its transmittal letter, together with written notice of any deviation in the submitted item from the requirements of the Work and of the Contract Documents.

§ 3.12.6 By submitting and approving 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 and (4) coordinated with information on Shop Drawings, Product Data, Samples, or similar submittals previously approved by the Architect or submitted by the Contractor for approval but not yet acted upon by the Architect, 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 approving Shop Drawings, Product Data, Samples, and similar submittals, the Architect shall be entitled to rely upon the Contractor's representation that such information is accurate and in compliance with the Contract.

§ 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. If the Contractor procures, performs or installs portions of the Work without required approvals, the Contractor does so at its own risk and such Work may be required by Owner to be removed or replaced with approved Work at no cost to the Owner.

§ 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. Any submittals forwarded to the Architect for review that includes a deviation from the requirements of the Contract Documents or is not the specific make, model or manufacturer that was listed in the Contract Documents, shall have a completed Substitution Request Form attached to the submittal. This Substitution Request Form shall be provided by the Owner. Unless such deviation is identified by utilizing the Substitution Request Form, the Contractor shall not be relieved of the responsibility for the specific requirements of the Contract Documents even though the subject submittal was approved by the Architect. The Contractor shall not be relieved of responsibility for the Contractor's, Subcontractor's or Vendor's 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 who shall have and maintain reasonable limits of insurance,, 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, completeness and accuracy of the services, certifications, and approvals performed or provided by such design professionals, . 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.

§ 3.12.11 Services provided by the Architect to evaluate Contractor product substitution requests or to review shop drawings or other project submittals which are required to be submitted more than three (3) times shall be paid for by the Contractor to the Owner.

§ 3.13 Use of Site

§ 3.13.1 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. The Contractor shall confine operations at the Project site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the Project site with materials or equipment.

§ 3.13.2 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

§ 3.13.3 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the Project site without the prior written consent of the Owner.

§ 3.13.4 The Contractor shall only use specifically assigned areas for parking, storage of materials, and construction operations unless other areas are authorized by the Owner. The Contractor shall comply with any and all local, municipal and state regulations regarding use of and parking on public streets. Access to the site/building will be through Owner approved paths.

§ 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.

§ 3.14.3 The Contractor shall in all cases exercise extreme care in cutting operations and perform such operations under adequate supervision by competent mechanics skilled in the applicable trade. Openings shall be neatly cut and shall be kept as small as possible to avoid unnecessary damage. Careless and/or avoidable cutting and damage is not permitted and the Contractor will be held responsible for such avoidable or willful cutting or damage.

§ 3.14.4 Except as may be required for demolition as specified in the Contract Documents, the Contractor shall locate, protect, and save from injury utilities of all kinds, either above or below grade, inside or outside of any structure, found in the areas affected by its work. Contractor shall be responsible for all damage caused to such utility by the operation of equipment or delivery of materials or as the direct or indirect result of any of its work and shall repair all such damage at its expense and as a part of the Work included in the Contract Documents. The Contractor shall not be entitled to any increase in the Contract Sum or the Contract Time on account of such damage to any utility.

§ 3.15 Cleaning Up

§ 3.15.1

§ 3.15.1 Contractor shall regularly and on a daily basis during the course of the Work keep the Site and all Work-related areas in a clean and safe condition to Owner's reasonable satisfaction by promptly removing and properly disposing of all debris and rubbish generated by Contractor's operations. Contractor shall maintain streets leading to the Site and used as a means of ingress or egress from the Site in a clean condition, and shall remove from these areas all of Contractor's (and Subcontractors') spillage and tracking arising from the performance of the Work, and shall promptly repair any damage to same. Contractor shall minimize the impact and effect of the Work and other activity on the Site on properties adjoining and nearby the Site, and shall take all necessary and commercially practical precautions (and comply with all applicable Laws) to prevent any debris including, but not limited to, fugitive dust, from entering or interfering with any adjacent or nearby property..

Except to the extent that Owner may designate otherwise in writing, a punch list prepared or required prior to the date of issuance of the Certificate of Substantial Completion shall include, but not be limited to:

- (a) removal of all wastes and rubbish;
- (b) cleaning of all walls and other surfaces including tile, wood and glass surfaces;
- (c) replacement of all broken glass (including removing labels, washing and polishing both sides);
- (d) cleaning and polishing of all plumbing fixtures and equipment;
- (e) restoring existing facilities such as roads, other paved surfaces, fencing and curbing at the Site to their pre-existing condition unless more is required by the Contract Documents;
- (f) requiring affected Subcontractors to promptly remove from the Site all temporary offices, tools, equipment, machinery and surplus materials not required for the continued performance of the Work and otherwise leaving the designated areas "vacuum clean;"
- (g) machine-sweep and clean all drive-way surfaces;
- (h) grind, smooth, and sweep clean any concrete surfaces, as necessary or desirable;
- (i) remove temporary protections;
- (j) remove marks, spots, dust, stains, fingerprints and other soil or dirt from all floors, tile, walls, finishes, marble, finished materials, fixtures, equipment and other Work, and wash or wipe clean and leave same in undamaged, new condition;
- (k) clean tubs, toilets and other fixtures, cabinet work and equipment, removing stains, paint, dirt and dust, and leave same in undamaged new condition;
- (l) clean all metal finished in accordance with recommendations of the manufacturer and accepted industry standards; and
- (m) clean resilient floors thoroughly with a well rinsed mop containing only enough moisture to clean off any surface dirt or dust and buff dry by machine to bring the surfaces to sheen.

Prior to Final Completion, Contractor shall complete any Punch List Items described above which were either not required by Owner at the time of Substantial Completion or which were not satisfactorily completed and accepted by Owner at the time of Substantial Completion.

§ 3.15.2 In the event Contractor fails to maintain the Site as described above in a manner satisfactory to Owner, and fails to complete appropriate clean up and/or removal activities within forty-eight (48) hours after receipt of Owner's written notice to do so, Owner shall have the right to perform such clean up and removal activities at Contractor's expense and may withhold and or deduct such costs from any amounts owed to Contractor or, if the deduction is insufficient, Owner shall be entitled to reimbursement from the Contractor.

§ 3.15.3 All areas of new or existing construction which are damaged during the Project shall be restored to their original condition by the Contractor responsible for said damage or disturbance.

§ 3.15.4 The Contractor shall take proper measures to reduce, contain and control temporary site and building dust and dirt through the use of temporary enclosures, partitions, site watering, calcium chloride or other approved means.

§ 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, Contractor hereby indemnifies and agrees to protect, defend, and hold Owner, the Architect and the Owner's Representative, and their respective subsidiaries, affiliates, parent companies and their respective members, officers, directors, managers, employees, agents, shareholders, successors and assigns, heirs, administrators, and personal representatives (collectively, "Owner Indemnitees") harmless from and against any and all claims, liabilities, obligations, losses, suits, actions, legal proceedings, damages, costs, fines, penalties, punitive damages, expenses, awards, or judgments, including, without limitation, reasonable attorneys' fees and costs (whether or not suit is filed) (collectively "Actions"), any Owner Indemnitee(s) may suffer or incur or be threatened with and whether based upon statutory, contractual, tort or other theory, that are: (i) imposed by law, or (ii) arise by reason of or relating directly or indirectly to (a) the death of or bodily injury to any person or persons, including, without limitation, employees of Contractor, (b) injury to property (including loss of use and the Work itself and including all costs for repair or replacement of work, materials, supplies or equipment (whether on or off Site or in transit), including whether lost, stolen, damaged or destroyed), equipment or material, including, without limitation, any of the same resulting or arising out of the performance of the Work performed by Contractor or any Subcontractor, (c) violation of or failure to comply with or abide by any Laws, or variations from the Contract Documents in the actual construction of the Work, (d) any infringement of the rights of any third party, including, without limitation, copyright and patent rights (in connection with which Contractor shall pay all royalties and license fees), (e) any stop notices, mechanic's liens or similar claims relating to any labor, services, materials, goods or equipment whether provided by Contractor, Subcontractor and relating to the Work, and (f) any breach or alleged breach of Contractor's warranties, representations, obligations, covenants or agreements set forth in the Contract, and (iii) relate to or arise out of or result from, directly or indirectly, the performance of the Work, or from any act or omission of Contractor, or any Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts any of them are liable or responsible at law or under the Contract Documents, regardless of whether or not such Action is caused by an Owner Indemnitee. Subject to the limitations set forth in Section 3.18.2 immediately below, the indemnification provisions, including defense costs, shall include all attorneys' fees, investigation costs, expert witnesses, court costs, and other costs and expenses incurred by the Owner Indemnites and Contractor Indemnites, as the case are, to the extent their interests appear. The Contractor's indemnity obligations shall apply irrespective of whether or not any Subcontractors obtain or fail to obtain insurance coverages as required herein, shall apply during the performance of any Work, and along with Owner's indemnity obligation shall survive any termination of this Contract or the Final Completion of the Work.

§ 3.18.2

The Contractor's indemnification obligation covers all acts arising out of, but not limited to, the following: bodily injury, sickness, disease or death, or to injury to or destruction of property including the loss of use resulting therefrom:

- a. Caused by, incident to, connected with or arising directly or indirectly out of the performance of the Agreement with Owner;
- b. Arising directly or indirectly out of the presence of any person in, or about any part of the Project site or the streets, sidewalks and property adjacent thereto; or
- c. Arising directly or indirectly out of the use, misuse, or failure of any machinery or equipment (including but not limited to, scaffolding, ladders, hoists, rigging, supports, etc.) whether or not such machinery or equipment was furnished, rented or loaned by Owner, its officers, employees, agents or servants or other Indemnitees..

§ 3.18.3 In any and all Claims against the Indemnitees by any employee of Contractor or any of its subcontractors or consultants and/or anyone directly or indirectly employed by any of them or for whom they are responsible, the indemnification obligations under this Agreement shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the Contractor or any subcontractor or consultants under Worker's Compensation Acts, disability benefits acts or other employee benefit acts. If Contractor fails to defend any Indemnitee entitled to indemnification hereunder, such person may, but shall not be obligated, to defend any such Claims and the actual and reasonable cost thereof (including, without limitation, reasonable attorneys', experts' fees and costs, whether incurred in or out of court and/or arbitration or as part of a regulatory, administrative or bankruptcy proceeding) shall be included as part of the Claims covered by Contractor's indemnity obligations hereunder. Owner reserves the right to approve or reject any counsel, expert or consultant intended to represent or work on Owner's behalf in fulfillment of the foregoing defense and indemnity obligations. Owner further reserves the right to supplement or hire additional or other counsel, experts or other consultants as Owner deems necessary to assure adequate defense and indemnity of Owner's interests. Contractor shall be responsible for, and promptly pay, all costs and expenses arising from or relating to all such counsel, experts or other consultants and the defense and indemnity obligations hereunder. All defense, hold harmless and indemnification obligations set forth in this section 3.18 and elsewhere in this Agreement shall survive termination and/or full or partial performance of the Agreement and/or the Project.

§ 3.18.4 It shall be the responsibility of Contractor to immediately notify Owner in writing in the event Contractor files for bankruptcy or has a judgment exceeding \$250,000 recorded against it during the course of Work and/or prior to final payment pursuant to this Agreement. The Contractor shall also promptly notify the Owner in writing if it becomes aware of any material change in the financial condition of any subcontractor performing a portion of the Work on the Project.

§ 3.18.5 In the event that the Contractor fails or refuses to indemnify any indemnitee hereunder, in addition to all other obligations and upon adjudication in favor of an indemnitee, Contractor shall be responsible for any and all costs associated with the Owner compelling the Contractor to comply with its obligations.

§ 3.19 Commissioning

§ 3.19.1 The Contractor will provide access to the Work as well as support and coordination to the Owner for the commissioning activities as described in Section 2.6.

§ 3.19.2 Any and all deficiencies identified during the commissioning process will be the responsibility of the Contractor to correct or complete in order to comply with and fulfill the requirements of the Contract Documents. These deficiencies must be corrected or completed as a condition for the issuance of the final Certificate for Payment.

§ 3.19.3 The requirements of the Contractor to support the Owner's commissioning process may include 1) balancing reports of mechanical systems approved by the Architect; 2) provision and coordination of training as required by the Contract Documents; 3) cooperation of Contractor's personnel with the Owner's commissioning personnel; 4) access to specific equipment or portions of the Work; 5) provision of systems and equipment documentation; and 6) provision of Operations and Maintenance Manuals.

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 and Owner will provide administration of the Contract as described in the Contract Documents and the Architect and Owner's Representative will be the 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 and Owner 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, neither the Architect nor Owner will be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect and Owner 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. Neither the Architect nor Owner will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect and Owner 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

Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Owner's Representative, if retained, about matters arising out of or relating to the Contract. Communications by and with the Architect's consultants shall be through the Architect. Communications between the Architect and Contractor shall be confirmed in writing to the Owner's Representative. Communications between Owner's Representative and Contractor shall be confirmed in writing to the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

§ 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 and Owner have authority to reject Work that does not conform to the Contract Documents. Whenever the Architect or Owner considers it necessary or advisable, the Architect and Owner 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 or Owner 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 or Owner 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 and intent 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 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.

§ 4.2.8.1 The Architect will evaluate substitutions proposed by the contractor, whether as part of a cost reduction procedure or as otherwise, which are prepared and submitted in accordance with the requirements of subparagraphs 3.4.2. Such evaluation and any action taken by the Architect with respect thereto shall be performed within 14 calendar days, or as requested in writing, as may, in the Architect's professional judgment be required to permit adequate review. The Owner shall evaluate and approve or take other appropriate action upon contractor proposed substitutions and the architect's recommendations with respect thereto, which evaluation shall include, but not be limited to, a review of the total net change to project cost, taking into account the proposed change to the construction cost, the possible additional services costs of the architect, and the possible change in the contract sum, the contract time, or the requirements of the contract documents as a result of an Owner approved substitution shall be reflected in a Change Order.

§ 4.2.9 The Architect and Owner 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. The Architect may, as the Architect judges desirable, issue additional drawings or instructions indicating in greater detail the construction or design of the various parts of the Work; such drawings or instructions may be affected by field order, or notice to the Contractor, and provided such drawings or instructions are reasonably consistent with the previously existing Contract Documents, the Work shall be executed in accordance with such additional drawings or instructions without additional cost or extension of Contract Time. If the Contractor claims additional cost or time on account of such additional drawings or instructions, it shall give notice provided in Section 15. Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable 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. The Architect shall not be required to render interpretations the sole or primary purpose of which is the resolution of jurisdictional disputes between Contractor and Subcontractor or between Subcontractor and Subcontractor.

§ 4.2.12 Interpretations of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings.

§ 4.2.13 The Owner'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 Contractor will review any requests for information submitted by Subcontractors prior to submission of the requests for information to the Architect to evaluate as far as practical, whether the requests for information are not already adequately answered in the Contract Documents. 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 fourteen (14) calendar days or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information. The issuance of additional Drawings or Specifications shall not, in itself, serve as a basis for adjustment of cost or time.

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. Prior to delivering its proposal for any person to conduct a portion of the Work, the Contractor, with input from the Owner and the Architect, shall confirm the qualifications of low bidders and validate that they have complete scope. If the bids of the construction subcontractors are rejected, the Contractor shall re-bid the respective packages.

The Contractor shall solicit bids for each trade or specialty contractor package. Upon its receipt of bids, the Contractor shall meet thereafter with the low bidders for each trade package to review their approach to the work, scope of bid, ability to perform the work and solicit value engineering suggestions. When proposing a person, the Contractor shall demonstrate to the Owner and Architect that the scope and price submitted by the bidder is within the parameters of the Control Budget.

Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. The Owner will make the final decision for the award of trade contracts and material purchases.

§ 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.

§ 5.2.5 Intentionally Omitted

§ 5.2.6 Contractor shall furnish Owner and Architect with a copy of Contractor's proposed forms for use as subcontracts and purchase orders (which includes professional services agreements) for Owner's review and approval prior to Contractor's use thereof, and Contractor shall only enter into those subcontracts approved by Owner in writing,

without material modification; provided, however, subcontracts and purchase orders which do not subject Contractor to liability in excess of \$250,000 individually, and otherwise are in accordance with the Contract Documents, shall not require Owner's prior written approval. Contractor shall furnish to Owner a copy of each subcontract and purchase order it enters into in connection with the Work within ten (10) calendar days after execution of such subcontract or purchase order. All subcontracts and purchase orders shall require all Subcontractors to assume toward Contractor the same legal obligations and responsibilities which Contractor assumes toward Owner in this Contract, including requiring the indemnities provided in Article 3.18.1 hereof, except as specifically provided otherwise in the Contract Documents or waived by Owner in writing. All subcontracts and purchase orders shall require that the subcontract may not be assigned by Subcontractor but permit the assignment of the subcontract by Contractor to Owner or a third party designated by Owner, as provided herein. All subcontract agreements and purchase orders shall conform to the requirements of the Contract Documents. All subcontracts and purchase orders shall also provide that any warranties contained or referenced therein shall run to the benefit of and be enforceable by Owner and Owner's grant providers. Contractor shall not waive or fail to exercise any material or significant right or remedy under any subcontract or waive any material or significant default under any subcontract without Owner's prior written approval.

§ 5.2.7 Contractor shall not replace any Subcontractor who has been approved by Owner, unless Owner gives prior written approval to the replacement.

§ 5.2.8 In cooperation with, and upon notice to Contractor, Owner or Architect shall have the right at any time and from time to time to contact Contractor's Subcontractors to discuss the progress of their portion of the Work. Contractor shall have the right to be present at the time of any such direct communications, excepting only if Contractor is in default under the Contract or unreasonably refuses to attend meetings after Owner or Architect has given Contractor reasonable advance notice and opportunity to be present. Notwithstanding the exercise of any of Owner's rights of direct communication in the subcontracting process or the process of managing subcontracts, Contractor shall be responsible and liable to Owner for all acts or omissions of Subcontractors and their respective agents and employees and any other person performing any of the Work under an agreement with Contractor or any Subcontractor.

§ 5.2.9 Contractor hereby assigns to Owner all its interest in all subcontract agreements and purchase orders now existing or hereafter entered into by Contractor for performance of any part of the Work, which assignment will be effective only upon acceptance by Owner in writing and only as to those subcontract agreements and purchase orders that Owner designates in said writing. Such assignment may not be withdrawn by Contractor prior to expiration of the Warranty Period, and Owner may accept said assignment at any time during the course of construction prior to expiration of the Warranty Period. Upon such acceptance by Owner: (a) Contractor shall promptly furnish to Owner the originals or copies of the designated subcontract agreements and purchase orders, and (b) Owner shall only be required to compensate the designated Subcontractor(s) for compensation accruing to same for Work done or materials delivered from and after the date as of which Owner accepts assignment of the subcontract agreement(s) or purchase order(s) in writing. All sums due and owing by Contractor to the designated Subcontractor(s) for Work performed or material supplied prior to the date as of which Owner accepts in writing the subcontract agreement(s) or purchase order(s), and all other obligations of Contractor accruing prior to Owner's written acceptance of such assignment, shall constitute a debt and an obligation solely between such Subcontractor(s) and Contractor, and Owner shall have no liability with respect such sums or any other obligations of Contractor. It is further agreed that all subcontract agreements and purchase orders shall provide that they are freely assignable by Contractor to Owner and Owner's assigns under the terms and conditions stated in this Section and that all such Subcontractors shall continue to perform their Work for Owner pursuant to the terms of the respective subcontract or purchase order. Owner agrees not to accept such assignment solely for the purpose of intentionally causing Contractor harm and in bad faith.

§ 5.3 Subcontractual Relations

§ 5.3.1 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.

§ 5.3.2 Without limitation on the generality of the foregoing, each Subcontract written agreement (the "Sub-contract") and each Sub-subcontract agreement (the "Sub-subcontract") shall include, and shall be deemed to include, the following provisions:

1. An Agreement that the Owner is a third-party beneficiary of the Sub-contract (or Sub-subcontract), entitled to enforce any rights thereunder for its benefit, and that the Owner shall have the same rights and remedies against the Subcontractor (or Sub-subcontractor) as the Contractor (or Subcontractor) has, including but not limited to the right to be compensated for any loss, expense, or damage of any nature whatsoever incurred by the Owner resulting from any breach of representations and warranties, express or implied, if any, arising out of the agreement and any error, omission, or negligence of the Subcontractor (or Sub-subcontractor) in the performance of any of its obligations under the Subcontract (or Sub-subcontract);
2. A provision that the Sub-contract (or Sub-subcontract) shall be terminable upon seven (7) days' written notice by the Contractor (or Subcontractor) or, if the Subcontractor (or Sub-subcontractor) has been assigned to Owner, by Owner;
3. A provision that neither the Contractor nor the Subcontractor (or Sub-subcontractor) shall have the right to require arbitrations of any disputes; and
4. A Provision requiring the Subcontractor (or Sub-subcontractor) to submit certificates and waivers of liens for work completed by Subcontractor (or Sub-subcontractor) or anyone directly employed by any of them as a condition precedent to the disbursement of the progress payment next due and owing.
5. Subcontractor (or Sub-subcontractor) hereby agrees that it shall have no claim for damages of any kind on account of any delay in commencement of the Work and/or any delay or suspension of any portion of the Work, whether such delay is caused by the Contractor, the Owner, the Architect, or otherwise. Subcontractor (or Sub-subcontractor) acknowledges that its sole remedy for any such delay and/or suspension will be an extension of time as may be expressly provided herein.
6. Subcontractor (and Sub-subcontractor) acknowledges that delays resulting from changes in the Work, extreme weather, changes to the sequencing of the Work, material shortages, transportation, strikes and other causes are inherent in the construction process. Subcontractor (and Sub-subcontractor) acknowledges that it has accounted for delays in its prices and agrees to bring no claims for money damages as a result of any delay or hindrance. In the event that Subcontractor (or Sub-subcontractor) claims that it has been delayed or hindered, it shall submit a request for a time extension to Contractor in the manner and pursuant to the time periods set forth in the Contract Documents. If it is determined that Subcontractor (or Sub-subcontractor) has been delayed or hindered through no fault of its own, the time for performance hereunder will be extended and the extension of time will be Subcontractor's (or Sub-subcontractor's) sole remedy for the delay. Under no circumstances will the Contractor or Owner be liable to the Subcontractor (or Sub-subcontractor) for damages resulting from any delays or hindrances.

§ 5.3.3 Any entity other than the Contractor (i.e. subcontractors, vendors, suppliers, etc.) shall not have the right to require mediation, arbitration, or litigation of any dispute in those cases in which the Owner is a party or in which the outcome could affect the Contract Sum or the Contract Time, except at the sole discretion of the Owner.

§ 5.3.4 The Owner assumes no responsibility for the overlapping or omission of parts of the Work by various Subcontractors in their agreements with the Contractor, because this is solely the Contractor's responsibility.

§ 5.3.5 The Contractor shall be responsible for any and all Subcontractors working under it and shall carry insurance for all Subcontractors or ensure that they are carrying it themselves so as to relieve the Contractor, Owner, Architect, and their respective officers, directors, agents, and employees of any and all liability arising out of the respective Subcontractor's work.

§ 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 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor in writing; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

§ 5.4.2 The Contractor shall, upon the request of Owner, submit a copy of each subcontract signed by Contractor in connection with the Project. Each subcontract shall contain a contingent assignment of the subcontract to the Owner consistent with Sections 5.3 and 5.4. In the event of such assignment and acceptance by Owner, the Subcontractor shall have no claim against Owner or any third party assignee of Owner for work performed by such Subcontractor or other matters arising prior to termination of the Contract and Owner or such assignee, as the case may be, shall be liable only for obligations to the subcontractor arising after such assignment or assumption. The Contractor shall include this assignment provision in all agreements, contracts, purchase orders or otherwise that it executes with its subcontractors, suppliers and other third parties.

§ 5.4.3 Upon such 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 elects to assign the subcontract to a successor contractor or entity, the Subcontractor shall look solely to the successor contractor or entity with respect to any liability under the subcontract, but only to the extent the Owner would have had such liability if the subcontract had not been assigned to the successor contractor or entity.

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 Unless otherwise required in the Contract Documents, 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, unless mutually agreed otherwise by Owner and Contractor.

§ 6.1.5 The Owner reserves the right of access to any part of the Project at all times to inspect the same or to install other Work either with its own forces or with separate contractors hired by the Owner. 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 the installation of equipment shall not in any way evidence the completion or acceptance of the Work or any portion of it.

§ 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.

§ 6.2.5.1 If a separate contractor sues or initiates a mediation, arbitration or litigation proceeding against the Owner on account of any damage alleged to have been caused by the Contractor, the Owner shall notify the Contractor who shall defend such proceedings at the Contractor's sole cost and expense, and if any judgment or award against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for all attorney's fees and court or arbitration costs which the Owner has incurred.

§ 6.2.6 The Contractor shall consult with its subcontractors and other contractors as soon as possible after execution of the Contract to coordinate all work phases in order that the Project as a whole can be completed in a professional and expeditious manner.

§ 6.2.7 In addition to any other indemnity obligation of Contractor hereunder, if a separate contractor sues or initiates a dispute resolution proceeding against the Owner on account of any damage or delay alleged to have been caused by the Contractor, the Owner shall notify the Contractor who shall indemnify, defend and hold the Owner harmless from any damages, costs or expenses.

§ 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. It will be the Owner's decision as to whether the Change Order work is executed via a Change Order, Construction Change Directive, or a minor change in the Work.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires signature by the Owner and Architect and may or may not be agreed to by the Architect and/or Contractor. Except as permitted in Sections 7.3 and 9.7.2, a change in the Contract Sum or the

Contract Time shall be accomplished only by Change Order or by Construction Change Directive. Accordingly, no course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there is, in fact, any unjust enrichment, shall be the basis of any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents.

§ 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.

§ 7.1.4 The Contractor's itemized accounts for all expenditures or savings for additions to, or deductions from, the Work in the Contract Documents shall at all times be open to inspection by the Owner and Architect.

§ 7.1.5 Proposed changes in the Work requested during the construction period shall be priced by the Contractor and submitted to the Architect and Owner for review, in such form as the Architect and Owner may require, within ten (10) calendar days following the Contractor's receipt of the request. The Contractor shall promptly revise and resubmit such proposal if the Architect and Owner determine 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 or Owner, in order to establish the exact cost of new Work added or previously required Work omitted, the Contractor shall obtain and furnish to the Architect and Owner bona fide proposals from recognized suppliers for furnishing and material included in such Work. Such proposals shall be furnished at the Contractor's expense.

§ 7.1.6 The Contractor's proposal for a change in the Work, (Change Order Request), shall be itemized completely and shall include: Specific number of calendar days for additional time (if applicable); all material costs and quantities accompanied by the original manufacturer invoices; labor wages; unit prices; subcontractor costs; mark ups; equipment costs, profit, overhead, general conditions, fees, bond costs and approved daily time sheet tickets for work performed under the utilization of labor rates. The Architect's and Owner's refusal to approve a Change Order or Change Order Request due to the Contractor's lack of itemized backup information shall not be used to support a claim for additional time.

§ 7.1.7 The methods used in determining the adjustment to the Contract Sum due to the change in the Work may include those listed in Section 7.3.3 and are at the discretion of the Owner.

§ 7.1.8 If the method utilized to execute the Change in the Work is based on the labor rates, unit prices and material costs, then actual daily time sheets/tickets, approved by the Superintendent and the Owner, must accompany the Change Order, Construction Change Directive, or minor change in the Work. Not including these actual daily time sheets/tickets, approved by the Superintendent and the Owner, with the Change Order, Construction Change Directive, or minor change in the Work may be cause for their rejection.

§ 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.

§ 7.2.2 A signed Change Order shall constitute a final settlement on all matters relating to the change in the Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change and any and all adjustments to the Contract Sum and the construction schedule, excluding all warranties and representations concerning quality and defects.

§ 7.2.3 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3 and are at the discretion of the Owner.

§ 7.2.4 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change which results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both addition 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.

§ 7.2.5 In calculating costs of proposed change orders by the Contractor, the Contractor's fee for the proposed change order shall be above the same rate as that established in this Agreement.

§ 7.2.6 In calculating costs of proposed change orders by the Contractor, the Contractor's general conditions costs shall be considered to be the actual costs for the added general conditions items; added costs for supervision may only be included if the change order includes an approved increase in contract time or an acceleration of the Work.

§ 7.2.7 Architect or Owner shall provide no oral orders or directives to change the Work and Contractor is not obligated to follow any such oral directives or orders. All such directives or orders shall be made in writing by the Owner or Architect. The Contractor specifically agrees that if it proceeds on an oral order to change the Work, it shall waive any claim for additional compensation for such work and the Contractor shall not be excused from compliance with the Contract Documents. The requirements set forth in this Article 7 are the essence of the Contract Documents. Accordingly, no course of conduct or dealings between the parties, no oral, express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the Work shall be the basis for any claim to an increase in the Contract Sum or Contract Time. Changes in the Work may be made without notice to Contractor's sureties, and absence of such notice shall not relieve such sureties of any of their obligations to Owner.

§ 7.2.8 A Change Order duly executed by Owner, Contractor and Architect shall constitute an all inclusive settlement on account of the changes in the Work described or referred therein including all direct, indirect, supplemental, consequential and cumulative costs, impacts and delays associated in any way therewith, and the Contractor's signature on a Change Order represents a waiver of any and all rights, if any, to make any further Claim on account of that instrument or the changes reflected therein. By executing a Change Order, the Contractor represents to the Owner that all subcontractors performing work under the Change Order have agreed to the terms of the Change Order, and the Contractor assumes full responsibility for, and shall defend, indemnify and hold harmless the Owner with respect to, any claims from subcontractors in connection with the Change Order or the performance of the Work covered by the Change Order.

§ 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. The Owner may also by Construction Change Directive order work to be performed that has been interpreted by the Owner or Architect to be part of the Work but is disputed by the Contractor through submission of a Claim.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order or work interpreted by the Owner or Architect to be part of the Contract.

§ 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 and rates 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 and Owner 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, as determined per Sections 3.5, 3.6 and 3.7 of the AIA A701-1997, modified, Instructions to Bidders and the Bid Form. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect and Owner 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 Work involved and advise the Owner and 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 and Owner will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect and Owner determines, in the Architect's and Owner's professional judgment, to be reasonably justified. The Architect's and Owner'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 Contractor agrees with a determination made by the Architect and Owner 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.

§ 7.3.11 Notwithstanding the status of any proposed, pending or disputed Change (including any Construction Change Directive), or any dispute, and so long as Owner continues to timely make payment to Contractor of amounts properly due Contractor under and subject to the terms of the Contract Documents and not in dispute, Contractor shall not be entitled to and will not suspend any services under the Contract Documents, but will continue to be bound by the terms and conditions of the Contract Documents and will continue to perform all services thereunder and proceed diligently with the performance of its Work in accordance with the terms hereof, including completing any Work described in any Construction Change Directive, unless Owner directs in writing otherwise.

§ 7.3.12 Individual Change Orders or Construction Change Directives as described in the Contract Documents which when combined do not in the aggregate exceed ten percent (10%) of the Price, shall not be subject to inspection or approval by Contractor's surety on any performance or labor and material payment bond, whether or not the Change Orders (or Construction Change Directives) encompass "substantial" Changes in the scope of Work undertaken by Contractor. Contractor and/or Owner shall provide notice to the bonding company or companies as required by the companies.

§ 7.4 Minor Changes in the Work

The Architect, with approval from the Owner, 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 Owner 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 and Owner 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. The term "calendar day" is a full 24 hour period starting from 12 am (midnight) and includes all weekends and legal holidays. If the last day of any time period specified in the Contract Documents within which a party is required to act falls on a Saturday, Sunday or legal holiday in Connecticut, the period of time within which the required action must be taken shall be extended to the next following regular business day. The term "business day" excludes Saturdays, Sundays and legal holidays in Connecticut. There shall be no winter shutdown period unless otherwise agreed to in writing by Owner.

§ 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.

§ 8.2.4 If in any Application for Payment the total value of the completed Work in place, as certified by the Architect, is less than 95% of the total value of the Work in place estimated in the Progress Schedule, the Owner may, at the Owner's option, require the Contractor to accelerate the progress of the Work without cost to the Owner by increasing the work force or hours of work, or by other reasonable means approved by the Owner and Architect.

§ 8.2.5 If each of three successive Applications for Payments, as certified by the Architect, indicates that the actual Work completed is less than 95% of the values estimated in the Progress Schedule to be completed by the respective dates, the Owner may, at the Owner's option, treat the Contractor's delinquency as a default justifying the action permitted.

§ 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) fire or other causes beyond the Contractor's control; (3) by delay authorized by the Owner pending mediation and binding dispute resolution; or (4) by other causes that the Contractor asserts, and the Architect and Owner determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect and Owner may determine.

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

§ 8.3.3 Notwithstanding anything to the contrary in the Contract Documents, the Contractor's remedy for any (1) delay in the commencement, prosecution or completion of the Work, (2) hindrance or obstruction in the performance of the Work, (3) loss of productivity, or (4) other similar claims (collectively referred to as "Delays") whether or not such Delays are foreseeable, shall be an extension of time in which to complete the Work if permitted under Section 8.3.1. In the event of a concurrent delay by the Owner, the parties agree to share in proportion to their fault, the direct cost and time associated with said delay. In no event shall the Contractor be entitled to any other remedy or compensation or recovery or any damages, in connection with any Delay, including, without limitation, consequential damages, lost opportunity costs, impact damages or other similar remuneration.

§ 8.3.4 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 delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise, other than as set forth in this Section. In the event of a delay, the Contractor may submit a claim pursuant to Section 4.3 to recover from the Owner the Contractor's general conditions costs, equipment storage costs, increased direct costs of performance, demobilization and remobilization costs and other direct and unavoidable costs incurred during the period of such delay, but only to the extent delay is not caused by the Contractor. Contractor shall not be entitled to recover any consequential damages including, by way of example, interest on working capital, unabsorbed home office overhead or lost opportunity costs. Contractor shall include similar no damage for delay and no impact claim provisions in the agreements the Contractor executes with its subcontractors, suppliers and other persons or entities that Contractor employs to perform Work. Nothing in the Contract Documents shall be construed as preventing Owner from making a claim against Contractor for delay damages. No extension of time will be allowed for adverse weather conditions unless the number of days of inclement weather is substantially greater or conditions substantially more severe than the average for the calendar period as recorded by a recognized weather observatory agency.

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 and Owner 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 and Owner. This schedule, unless objected to by the Architect or Owner, shall be used as a basis for reviewing the Contractor's Applications for Payment. The description of the Work shall be broken down to indicate in detail labor and material costs associated with each area of Work. Any breakdown that fails to include sufficient detail, is unbalanced, or exhibits "front-loading" of the value of the Work, will be rejected. The Schedule of Values shall be revised if later determined by the Owner or Architect to be inaccurate. Any changes to the schedule of values shall be submitted to the Architect and Owner and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect or Owner, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment. Any change to such schedule of values must be approved by Owner and Architect in writing. By submitting such Schedule of Values, the Contractor warrants and represents that the schedule of values is accurate and not front-end loaded.

§ 9.3 Applications for Payment

§ 9.3.1 In order to expedite monthly payments during the course of the Project, the Contractor shall prepare for the Architect's and Owner's review a preliminary draft of the Application for Payment (pencil copy), at least approximately ten (10) days before the end of each month. The payment period shall conclude on the last of that month. Then, five (5) days before the end of each month the Contractor shall have made mutually agreed modifications of the pencil copy and the Contractor shall submit to the Architect and Owner for approval an itemized Proposed Final 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. The

Contractor shall utilize and submit AIA G702 and G703, which shall be 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 Payments for changes in the Work which have not been formally approved in a Change Order, shall not be included.

§ 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.

§ 9.3.1.3 The Application for Payment will reflect the amount due to the Contractor for the cost of the Work less retainage as determined in the Owner-Contractor Agreement.

§ 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.

§ 9.3.2.1 In addition, for consideration of payment for stored products:

- (a) Storage shall be agreed upon in advance prior to shipment;
- (b) Location of storage shall be agreed upon in advance;
- (c) Contractor shall be responsible for, and pay costs of, the verification and inspection of storage;
- (d) Insurance certificate required for stored items; and
- (e) Bill of sale from supplier to verify transfer of goods to the Owner

§ 9.3.2.2 Schedule of Values and Construction Schedule will be considered in decision on any specific request for payment for storage.

§ 9.3.2.3 Payment for material and equipment delivered and stored shall not relieve Contractor of responsibility for furnishing equipment and material required for the Work in the same manner as if such payment were not made.

§ 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.

§ 9.3.4 To the extent payment has been made by the Owner for amount due, Contractor hereby expressly waives, releases and relinquishes any and all right to maintain, or have filed or maintained, any mechanic's lien or claim against the aforesaid premises, or any part thereof, or any building or buildings thereon, for or on account of any work, labor and materials performed or furnished under this Agreement, and agrees that no such lien or claim shall be so filed or maintained by or on behalf of Contractor; and in addition to other remedies of Owner herein, Contractor further agrees to save the Owner harmless from the lien or claim of liens against the aforesaid premises or any part thereof, or any buildings thereon, of any subcontractor, or any persons acting through or under the Contractor and agrees, that if at any time there shall be any evidence of the filing or maintenance of any such lien or claim for liens, the Owner shall have the right to deduct from the amount otherwise due to the Contractor hereunder, an amount sufficient to indemnify it for any or all loss or damages which may result from such lien or claim; and the Contractor further agrees that this waiver shall be an independent covenant, and shall operate and be effective, not only with respect to materials furnished or labor performed under and any Agreement supplemental to this principal Agreement and under any Agreement for extra labor or materials for the above described premises and buildings.

§ 9.3.4.1 Each application shall include releases of liens from Contractor and each Subcontractor, with regard to Work that is covered on the previous Application for Progress Payment, and signed and acknowledged (by a notary); each application shall set forth all Subcontractors and any material suppliers with whom the Contractor has contracted, the amount of each such contract, the amount requested for the Application for Payment, and the amount to be paid to the Contractor from such progress payment.

§ 9.3.4.2 Each Application for Payment or periodic estimate requesting payment shall be accompanied by a statement from each Contractor and Subcontractor certifying that there are no delay claims for the period being paid. In addition, each Application for Payment shall state the amount to which each Subcontractor, supplier of materials and equipment is entitled and shall be accompanied by the following:

- .1 Waivers of Lien in the form required by Owner from each Subcontractor and supplier or material and equipment to whom or which payment has been made, according to the affidavit;
- .2 A waiver of Lien by the Contractor in the form required by Owner; and
- .3 Satisfactory bills of sale for all materials and equipment for which payment is requested and which have not yet been incorporated into the Work, said bills of sale to evidence ownership of such material in Owner free of any liens, encumbrances and security interests. Applications for Payment shall not be accepted unless all of the foregoing documents are provided. The format and number of copies of the Application for Payment shall be as directed by the Architect or Owner's Designated Representative.

Failure by Contractor to provide the information in this Section or otherwise required by the Contract Documents, in a form acceptable to Owner and Architect, shall cause the application for payment to be incomplete and defective and suspend Owner's obligation to pay until such time as the defects are cured and the application for payment processed in accordance with the terms of the Contract Documents. In order to expedite progress payments during the course of the Project, Contractor, prior to submitting an application for payment, shall review with Owner and Architect a draft of such application in order to expedite and facilitate agreement with the amounts requested.

§ 9.3.5 To the extent payment has been made by the Owner for amounts due, Owner shall be entitled to withhold payment to Contractor upon receipt of notice of any intent to file a lien in an amount sufficient to protect the interests of the Owner.

§ 9.3.6 Contractor's acceptance of any payment shall constitute: (1) a warranty and representation by contractor that all workmen have been paid for the Work so done by them which is covered by such payments and that all subcontractors and suppliers of materials have been paid pursuant to the terms of their respective agreements, or shall forthwith be paid, out of the proceeds of such payment to the Contractor, and (2) a binding agreement by the Contractor to hold and apply such payment subject to and upon all of the terms and conditions set forth in their respective agreements.

§ 9.3.7 Contractor agrees to indemnify, defend and save harmless Owner from and against any and all claims and liens from any subcontractor, supplier or other claimant for which the Contractor is directly or indirectly responsible that may assert a claim arising from the Work on the Project and claims and actions brought or judgments rendered thereon, and from and against any and all loss, claims and expenses, including attorney's fees and disbursements, which Owner may sustain or incur in connection with the failure by Contractor to seek a discharge of such claim and/or the subsequent satisfaction of same as required herewith.

§ 9.3.8 The Owner, in addition to any other right or remedy under the Contract Documents, may, in its sole discretion, withhold from any application for payment then due or to become due the Contractor one and one half times the amount of any claim and/or lien filed against the Project or made against Owner, which is covered by any payment previously made by Owner to Contractor in accordance with the terms of the Agreement, until such claim and/or lien is discharged or otherwise satisfied.

§ 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 and Owner determines is properly due, and notify the Contractor of the Architect's and Owner'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 of the Architect's and Owner'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 professional judgment, 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 advise the Owner to 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 The overall percentage of Work satisfactorily completed by Contractor and each relevant Subcontractor (determined by comparing the amount of Work satisfactorily completed to the total amount of Work to be completed), is less than the overall percentage of payments determined by comparing (i) the sum of (a) all amounts previously paid by Owner; and (b) the pending invoice to be paid, to (ii) the total amount of the Cost of the Work.

.2 Contractor's failure to perform the Work in accordance with the Contract Documents, and/or failure to maintain insurance in compliance with the requirements of this Agreement.

.3 Defective Work not remedied in a timely manner after receipt of notice from Owner during the course of the Work or during the Warranty Period, as applicable. If any Work inspected by Owner is not to Owner's reasonable satisfaction in accordance with the Contract Documents, a condition of any additional payments to Contractor shall be the correction of any such unsatisfactory Work to Owner's reasonable satisfaction in accordance with the Contract Documents.

.4 Reasonable evidence of the failure by Contractor to make timely or properly due payments to Subcontractors.

.5 Contractor's failure to submit lien waivers as required pursuant hereto.

.6 The filing by Contractor or any Subcontractor of mechanic's liens or other claims relating to the Work against Owner, the premises of Owner, the Project and/or the Site, or the making or filing of any claim by any other party arising out of or relating to the Work or acts or omissions of Contractor, any Subcontractor or any other person for whose acts Contractor is responsible or liable at law or under the Contract Documents, except for those liens filed as a result of Owner's failure to make payment when due to Contractor under the Contract.

- .7 Contractor's failure expeditiously to remove mechanic's liens filed against the premises of Owner and/or the Site by Contractor or any Subcontractor, except for those liens filed as a result of Owner's failure to make payment when due to Contractor under the Contract.
- .8 The existence of Work, including Punch List Items, not fully completed or corrected after either Substantial or Final Completion.
- .9 Any failure by the Contractor to provide timely access to the Contractor's books and records for audit purposes to the extent described in Article 9.3.4 of this Agreement.
- .10 Owner's or Architect's good faith belief based on reasonable evidence that the Work cannot be completed for the unpaid balance of the budget.
- .11 Regarding any particular portion of the Work as shown on the Schedule of Values, any amount requested that is attributable to a portion of the Work not actually completed.
- .12 Owner's or Architect's good faith belief based on reasonable evidence that the Work will not be completed within the Contract Time.
- .13 Damage to property or Work or injury to persons attributable to the acts or omissions of Contractor, any Subcontractor or any person for whose acts or omissions Contractor is responsible or liable at law or under the Contract Documents.
- .14 Deviations from the Contract Documents other than those approved or permitted in accordance with the Agreement without an applicable Change Order or Construction Change Directive.
- .15 Any material breach or default or failure to perform by Contractor under the Contract Documents, including without limitation failure to maintain any required insurance, or any material inaccuracy in any of Contractor's representations or warranties.
- .16 A determination by Owner to nullify in whole or in part a prior approval of an Application for Progress Payment and/or prior payment made, because of subsequently discovered evidence or subsequent observations which otherwise would allow Owner to withhold pursuant to this Section or elsewhere in the Contract Documents.
- .17 Contractor's failure to obtain, comply with and keep valid and in full force, and deliver copies to Owner of, all approvals, permits, certifications, consents and licenses of governmental authorities or other parties having jurisdiction over the Site, the Project or the Work or contractual rights to approve or inspect any of the foregoing which are necessary at the stage of construction and/or otherwise existing and required to be complied with or satisfied when such disbursement to Contractor is to be made to enable Final Completion on or before the Contract Time.
- .18 It shall be a condition precedent to all payments to Contractor following the date that certificates of occupancy (or any other equivalent permits required for occupancy and use) are obtainable for the whole or any part of the Project prior to Final Completion, that Contractor obtain and deliver to Owner all such permits when they are first available to be obtained (unless due to the fault of Owner such certificates are not obtainable).
- .19 Encroachments by any part of the Work being constructed on the Site outside the boundaries of the Site.
- .20 An order or statement shall have been made by or received from any governmental, administrative or regulatory authority or agency stating that the whole or any part of the Work, and/or any proposed change thereto, for which Contractor or any Subcontractor is responsible or which relates to Contractor's or any Subcontractor's activities is in violation of any laws, unless such order or statement has been timely corrected

to the satisfaction of both the applicable governmental agency and Owner and evidence of such timely correction shall have been provided to Owner in form and substance satisfactory to Owner.

- .21 The existence of Disputed Claim Amounts (as defined in the Contractor's Certificate) in excess of \$75,000.00, in the aggregate on any one Application For Progress Payment; or
- .22 Owner's or Architect's good faith belief that the payment will not be reimbursed, in whole or in part, by the State of Connecticut.
- .23 failure to provide response to on-going construction commissioning reports.

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

§ 9.5.3 If the Architect withholds certification for payment under Section 9.5.1.4, 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. In no event shall joint payment create any obligations or contracts between Owner and a Subcontractor or supplier or create any rights in such Subcontractor or supplier against the Owner. The Contractor agrees that in the event Owner exercises its rights hereunder, Contractor shall endorse such joint check and the Contract Sum shall be reduced by the amount of such payment(s). If the Contractor fails or refuses to execute such joint check, the Owner may, in its sole discretion and for its sole benefit, pay the subcontractor or supplier or any other party directly and reduce the contract sum accordingly.

§ 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 All material and work covered by progress payments made shall upon such payment become the sole property of Owner, however the Contractor shall not be relieved from the risk of loss and responsibility for all material and Work upon which payments have been made or the restoration of any damaged Work. Contractor represents and warrants to Owner that (i) title to all of the Work, materials and equipment covered by any Application for Progress Payment will pass to Owner upon the earlier of incorporation in the Work or receipt of payment by Contractor, and such title shall be free and clear of all liens, claims, security interests or encumbrances; (ii) the vesting of such title shall not impose any obligations on Owner or relieve Contractor of any of its obligations under the Contract Documents; (iii) Contractor shall remain responsible for damage to or loss of the Work, whether completed or under construction, until responsibility for the Work has been accepted by Owner in the manner set forth in this Agreement (Contractor's risk of loss, however, shall be subject to the terms and provisions of the OCIP); and (iv) no Work covered by an Application for Progress Payment and no material or equipment incorporated in the Work will have been acquired or incorporated into the Work, subject to an agreement under which an interest in the Work or an encumbrance on the Work is retained by the seller or otherwise imposed by Contractor or such other person.

9.6.9 Materials Off-Site. All materials which are the subject of an Application for Progress Payment (or Application for Final Payment, if applicable) shall be stored at all times at the Project, in a bonded warehouse or such other secured facility satisfactory to Owner, or at the premises of the manufacturer or fabricator (in which event the materials shall be appropriately marked and identified with the applicable purchase contract and physically segregated in an area with access to a public street), until the materials are incorporated into the Project; provided that if the materials are stored with the manufacturer or fabricator, Owner must receive evidence satisfactory to Owner of the creditworthiness of the manufacturer or fabricator and/or Contractor shall procure and deliver or cause to be procured and delivered to Owner such dual obligee performance and labor and material payment bond or bonds, in form, substance and amount satisfactory to Owner, as Owner may require. Furthermore, Contractor shall:

- .1 use the materials only for construction of the Project, and not make any transfer thereof or permit any lien to attach thereto which could materially impair the ability of Owner to use the materials for such purpose;
- .2 take or cause to be taken all actions necessary to maintain, preserve and protect the materials and keep them in good condition and repair, and to comply with all laws, regulations and ordinances relating to the ownership, storage or use of the materials;
- .3 cause to be delivered to Owner any applicable bailee waivers where such bailee rights exists, and the original warehouse receipt covering any stored materials, and ensure that such stored materials have been stored in such a way as to eliminate the possibility that they will be commingled with other materials or projects; and
- .4 if Contractor shall fail to perform any of its obligations under this Section after Owner has made payment to Contractor for the materials, Owner may, but shall not be obligated to, take such actions and expend such sums as are necessary in Owner's judgment to protect and preserve Owner's interest in such materials, and all such expenditures so incurred (including, without limitation, attorneys' fees and disbursements) shall be repayable by Contractor promptly on demand and shall be Non-Allowable Costs of the Work.

§ 9.7 Failure of Payment

§ 9.7.1 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 thirty additional days' written 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. The Owner's exercise of any right granted to it under the Contract Documents to reduce payment to the Contractor or to delay or suspend full or partial payment to Contractor as a result of Contractor's failure to perform according to the Contract Documents or to pay third parties shall not constitute a failure of payment under section 9.7, nor shall it be cause for Contractor to stop or suspend Work or grounds for termination by Contractor under Article 14.

§ 9.7.2 Notwithstanding anything to the contrary, in no event shall the Contractor stop the Work in connection with any withholding or payment for an item or failure to make payment relating to an item made in connection with a good faith dispute.

§ 9.7.3. Liens

(1) If any subcontractor, vendor, or any other party for whom the Contractor is responsible files any lien against the Project and/or the Project site, the Contractor shall discharge such lien within fifteen (15) calendar days of the Contractor's learning of such lien, unless the Owner requests that the Contractor obtain a lien discharge bond in which case the Contractor shall obtain within the same fifteen (15) calendar day period, at no cost to the Owner, a lien discharge bond for which both the surety and the form of bond are acceptable to the Owner, (2) If the Contractor fails to discharge such lien (or, if requested by the Owner, fails to obtain a lien discharge bond acceptable to the Owner) within such fifteen (15) calendar day period, the Owner shall have the right to withhold from the next progress payment or any other sum payable to the Contractor an amount equal to one hundred and fifty percent (150%) of the total of (i) the amount of such lien plus (ii) reasonable costs and expenses the Owner may incur related to such lien. The Owner may either: (i) apply amounts so withheld to discharging such lien and paying the costs and expenses for such discharge; or (ii) retain such amounts (including amounts for costs and expenses) until such liens are discharged by the Contractor, thereafter crediting to the Contractor any amounts remaining after payment of the costs and expenses the Owner incurs related to such lien. (3) The Contractor shall defend, indemnify, and hold harmless the Owner from all costs and expenses incurred by the Owner in connection with such liens, unless and to the extent that such liens are the result of the Owner's failure to make timely payment of amounts due to the Contractor in accordance with the requirements of the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1

"Substantial Completion" means the stage in the progress of the Work when (a) the Work in its entirety, or a designated portion thereof which Owner agrees to accept separately, is sufficiently complete in accordance with the Contract Documents and all applicable Laws to enable Owner to fully occupy and utilize the Work, or such designated portion thereof which are requested in writing by Owner, for all of its intended purposes and all aspects of such Work and the Project can be open to the general public; (b) all Project systems included in the Work (including, without limitation, all life safety systems) are operational and functioning as designed and scheduled; (c) all instruction of Owner's personnel in the operation of the Project systems has been completed; (d) all final finishes within the Contract are in place; (e) the Work is otherwise satisfactory to Owner in accordance with the Contract Documents; and (f) no liens, claims or encumbrances have been filed or are outstanding with respect to the Work. In general, the only remaining Work shall be minor in nature, so that Owner could occupy the building(s) comprising the Project and fully utilize such building(s) on that date, and all elements are fully functionable and operable as provided in the Contract, and the Final Completion of the Work by Contractor would not materially interfere with, disrupt or hamper Owner's use, occupancy or enjoyment of the Project, including the intended normal business operations of the Project, or detract from the aesthetic appearance of the Project.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof designated in the Contract Documents for separate completion which the Owner agrees to accept separately, is substantially complete, as defined in Section 9.8.1 above,, the Contractor shall notify the Architect and Owner in writing and shall prepare and submit to the Architect (1) a comprehensive list of items to be completed or corrected prior to final payment and (2) all Certificates of Occupancy and applicable permits required by the Contract Documents, endorsed by the Contractor and in a form reasonably acceptable to the Architect and Owner. Promptly after receiving such notice, the Architect will conduct a preliminary review to determine whether or not the Documents are generally complete and correct. If the Architect finds on the basis of this review that the Contractor's notice and supporting documents are not generally complete or correct, the Architect will return them to the Contractor for revision and resubmittal, describing in general the additions or corrections required. If the Architect finds on one preliminary review of the

Contractor's resubmittal that the resubmitted notice and supporting documents are still not generally complete and correct, the Contractor shall again correct and resubmit them, and shall, in addition, reimburse the Owner for the cost of any change in the Architect's services resulting from such a second and any subsequent preliminary reviews. When the Architect finds on the basis of a preliminary review that the Contractor's notice and supporting documents are substantially complete, the Architect will proceed as stated in Section 9.8.3 below. 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 and Owner will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's or Owner'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 or Owner. In such case, the Contractor shall then submit a request for another inspection by the Architect or Owner 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 in accordance with Section 9.8.6. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.8.6 The retainage, as determined by the Owner Contractor Agreement, will continue to be withheld in full, and the Owner will release such retainage within thirty (30) days after the date of the issuance of a Certificate of Substantial Completion by the Architect. The Owner will continue to hold retainage in an amount of one hundred fifty percent (150%) of the estimated cost of incomplete or unsatisfactory work. Further, the Owner will consider a reduction of retainage on a trade-by-trade (subcontractor-by-subcontractor) basis based upon their satisfactory progress and/or substantial completion of their Work prior to project Substantial Completion.

§ 9.8.7 Either party may initiate procedures for Substantial Completion of the Work in its entirety or a designated portion thereof, but Owner shall not be required to make a determination and accept partial Substantial Completion unless: (a) specific areas or phases of the Work are designated for partial Substantial Completion by Owner; or (b) Owner assumes physical possession of a portion of the Work solely for purposes of Owner's full use and occupancy. The use or occupancy of a portion of the Work by Owner or its other contractors to inspect and/or correct defective workmanship or install FF&E or other work shall not be considered as use and occupancy.

§ 9.8.8 Unless waived by Owner in writing, Substantial Completion of either the Work in its entirety or a designated portion thereof shall not occur earlier than the date of all designated or required governmental certificates of occupancy and other permits, inspections and certifications for the Project or such portion thereof as the case may be, have been achieved and issued to Owner by the relevant governmental authority, and posted for the Project or such portion thereof, by the relevant governmental authority (provided that a temporary certificate of occupancy ("TCO") rather than a permanent certificate of occupancy may have been achieved and issued to Owner, and posted, so long as the obtaining of a temporary, rather than a permanent, certificate of occupancy does not prevent any aspect of the Project from being open to the general public).

§ 9.8.9 Prior to the issuance of a Certificate of Substantial Completion by Owner, the parties shall develop a final punch list which must be completed prior to Final Completion. The final punch list shall include the Contractor's Punch List Items and other incomplete or missing items which Owner elected in its discretion to waive for purposes of Substantial Completion.

§ 9.8.10 Immediately prior to the issuance of a Certificate of Substantial Completion, Owner, Architect and Contractor shall jointly inspect and document the condition of the Work, or designated portion thereof, at the time of Owner's initial possession to determine and record its condition. Such inspection and acceptance by Owner shall not, however, alter the Contractor's responsibility to complete all Work necessary for Final Completion in accordance with the Contract Documents, including items discovered by Owner after Substantial Completion.

§ 9.8.11 Owner shall have the final decision as to whether or not Contractor has achieved Substantial Completion. When Owner determines that the Work in its entirety, or a designated portion thereof, is substantially complete and a TCO has been obtained therefor, Owner shall prepare and issue a "Certificate of Substantial Completion," which shall certify the date of Substantial Completion.

§ 9.8.12 Notwithstanding any provisions in the Contract Documents which may indicate otherwise, Owner's acceptance of partial Substantial Completion and the possession, use and occupancy of any portion of the Work prior to Substantial Completion of the Work in its entirety, shall not in any manner constitute a waiver by Owner of any of the provisions or requirements of the Contract Documents, including, but not limited to, Contractor's warranty obligations and Contractor's obligations to achieve the contract time set forth in Article 8 of this Agreement.

§ 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.

§ 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 written notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect and Owner will promptly make such inspection. When the Architect and Owner 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 professional judgment, 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. All warranties and guarantees required under or pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Owner prior to submission of the final Application for Payment. The final payment will not be made by the Owner until all close-out documents including as-built documents, operation and maintenance manuals, training and any other requirements identified in the Contract Documents have been received and accepted by the Owner and provided in the media and format requested by the Owner.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect and Owner (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 and Owner 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.

§ 9.10.3.1 If after ninety (90) calendar days after Substantial Completion of the Work, or as otherwise stated in the Owner-Contractor Agreement, Final Completion thereof is not achieved due to actions or inaction of the Contractor, in addition to other remedies including Liquidated Damages, the Contractor shall reimburse the Owner for any and all costs incurred by the Owner for professional fees, including those of the Architect and Owner's Representative.

§ 9.10.4 Intentionally omitted.

§ 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.

§ 9.10.6 In addition to the foregoing, and as limitation upon any foregoing language or general provisions, "*Final Completion*" means that stage in the progress of the Work when Owner determines that the Work has been properly completed and equipped by Contractor in accordance with the Contract Documents, including (a) completion of all punch list items (including Contractor's Punch List Items), (b) the submittal to Owner of all documentation as described in the Contract Documents, (c) completion in compliance with all applicable Laws, and (d) all obligations of Contractor under the Contract Documents (except for those obligations which are intended to be satisfied after Final Completion) are fully satisfied, and the Work is otherwise satisfactory to Owner. When Contractor considers that the Work is finally complete, Contractor shall so notify Owner in writing requesting a Certificate of Final Completion. Such notice shall be accompanied by, and it shall be a condition to Final Payment and Final Completion that Contractor deliver to Owner, the following:

.1 An affidavit that all payrolls (including all union dues, health, welfare, pension plan and other labor associated contributions), invoices for all labor, materials and equipment and all other indebtedness connected with the Work for which Owner or its property might in any way be responsible, and for which Owner has paid the Contractor, have been paid or otherwise satisfied.

.2 Unconditional Final Lien Waivers from Contractor and all Subcontractors and all other persons providing any services, labor or materials in relation to the Work, including certified copies of waivers of all liens filed during the course of the Work and not previously provided to Owner, and no liens, claims or other encumbrances have been filed or are outstanding with respect to the whole or any part of or interest in either the Site or the Work.

.3 All final occupancy certificates obtained from any government authority and all other required approvals and acceptances as necessary or required for the full use and occupancy of all aspects of the Project by any city, county and state authorities having jurisdiction and not previously provided to Owner;

1.4 All written guarantees and warranties under the Contract for Contractor and Subcontractors, all required operation and maintenance manuals for major equipment required under the Contract all in form and substance satisfactory to Owner; and assignment documentation assigning to Owner in form and substance satisfactory to Owner any remaining warranties and guarantees pertaining to the Work and not previously provided and assigned to Owner, and Contractor agrees to assist Owner in the prosecution and enforcement of all such assigned warranties and guarantees.

.5 An affidavit certifying that Contractor has timely paid all federal, state and local taxes due arising out of the Work in a form satisfactory to Owner.

.6 An affidavit certifying that Contractor shall maintain completed operations insurance in amounts required by the Contract Documents for a period of two (2) years after Final Completion and a certificate of the insurer evidencing that insurance required by the Contract Documents to remain in force after Final Payment is currently in effect and will not be cancelled or allowed to expire until at least 60 days' prior written notice has been given to Owner.]

.7 All operating, maintenance, servicing and cleaning manuals and instructions, spare parts, maintenance stocks and spare materials provided by Subcontractors and/or reasonably required by Owner for beneficial use of the Work for its intended purpose, and if requested by Owner adequate verbal instructions in the operation of mechanical, electrical, plumbing and other systems.

.8 A complete and accurate set of as-built Drawings, to the highest professional standards, which clearly delineate any changes made to the latest approved Drawings and Specifications.

.9 An accounting of the credits due Owner for the value of any excess items paid for by Owner and a complete detailed statement of the Cost of the Work showing, without limitation, all expenditures for which state or federal tax credits or deductions may be allowed.

.10 Any documents, instruments, releases, affidavits, certificates and indemnities reasonably required in order to permit Owner and Owner's grant providers to secure endorsements in form and content satisfactory to them to their respective policies of title insurance for the Site, including without limitation that no mechanics or materialmen's liens appear of record, and that there are no encroachments or violations of any recorded covenants, conditions or restrictions affecting the Site.

11 Such documents and other items so that Owner will receive and Owner does receive a release and complete refund without deduction or offset of all security, bonds and/or cash amounts provided by or on behalf of Owner and held by or for the benefit of any administrative or governmental agency.

.12 If required by Owner or Architect, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract or the Work which may then or in the future affect the Project or Site, and to the extent and in such form as may reasonably be designated by Owner (if a Subcontractor refuses to furnish a release or waiver required by Owner, Contractor shall furnish a bond satisfactory to Owner to indemnify Owner against such lien and cause it to be paid and released; if such lien remains unsatisfied after payments are made, Contractor shall immediately refund to Owner and indemnify Owner against all money that Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees).

.13 Owner shall have received (at Owner's expense) an updated survey of the Site showing the Work "as built."

.14 Master, submaster and special keys with keying schedule.

.15 Consent of any surety to Final Payment.

.16 Such other certificates, instruments and affidavits relating to the Work as Owner or Owner's grant providers may reasonably require.

§ 9.10.7 Notwithstanding Section 9.10.1, upon receipt of Contractor's request for a Certificate of Final Completion and all submittals that comply with this Section immediately above, Owner shall promptly make appropriate evaluations and inspections as follows:

.1 If Owner considers that the Work is fully completed in accordance with the Contract Documents, Owner shall promptly so advise Contractor.

.2 In the event that Owner does not agree that Final Completion has been achieved, Owner shall promptly so advise the Contractor in writing of the remaining items to be completed for purposes of Final Completion.

.3 After Contractor satisfies all remaining items necessary for Final Completion, Contractor may submit a further written notice to Owner stating that the Work is ready for re-inspection. All re-inspections to determine if the Work is acceptable for purposes of Final Completion shall be jointly made by Owner and Contractor.

.4 Owner shall have the final decision as to whether Contractor has achieved Final Completion. When Owner agrees that the Work is finally complete, which agreement Owner agrees not to unreasonably delay, Owner shall prepare and issue a "Certificate of Final Completion," which shall set forth the date of Final Completion, and Owner may file a Notice of Completion.

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. The Owner assumes no responsibility or liability for the safety of the Project site. Contractor shall be solely responsible for providing a safe place for the performance of the Work.

§ 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

- .1 employees on the Work and other persons who may be affected thereby;
- .2 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
- .3 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. Notwithstanding any provision to the contrary, the Owner shall not have any responsibility for job site inspections or safety recommendations. Any inspections or observations by the Owner or the Architect are solely for the benefit of the Owner and shall not create any duties or obligations to anyone else. The Contractor shall notify the Owner in writing of all bodily injury, property damage, death, theft, or vandalism relating to the Project within one working day of such occurrence. Upon the request of the Owner, the Contractor shall provide the Owner with all safety programs for the Work or any portion of the Work.

§ 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 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, written 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.

§ 10.2.9 The Contractor shall, within five (5) business days, report in writing to the Owner and Architect all accidents out of or in connection with the Work that caused death, personal injury or property damage, giving names of those involved and any witnesses.

§ 10.2.10 The Contractor shall be solely responsible for the adequate strength and safety of all scaffolding, staging and hoisting equipment and for temporary shoring, bracing and tying.

§ 10.2.11 The Contractor shall, at all times, be solely responsible for maintaining fire safety on the site, including prompt removal of all combustible rubbish, provision of fire extinguishing apparatus, and other measures, and/or services specified herein or required by the State Fire Marshal or other authority having jurisdiction. If such authority determines that the Contractor has failed to provide or maintain adequate fire safety, the Contractor shall, at its own expense, provide any compensatory services, equipment or devices required by the authority having jurisdiction, including but not limited to maintaining a continuous fire watch.

§ 10.2.12 Cutting and welding to be performed in or immediately adjacent to existing spaces and shall not be performed without written approval of the Owner for each instance.

§ 10.2.13 The Contractor shall comply with the requirements of the Occupational Safety and Health Act and the Construction Safety Act of 1969, including all standards and regulations which have been promulgated by the governmental authorities which administer such Acts and said requirements, standards and regulations are incorporated herein by reference. The Contractor shall be directly responsible for compliance therewith on the part of its agents, employees, subcontractors, and material suppliers and shall directly receive and be responsible for all citations, assessments, fines or penalties which may be incurred by reason of its agents, employees, material suppliers or subcontractors, to so comply.

§ 10.2.14 The Contractor shall, at all times, protect excavations, trenches, buildings, and materials from rain water, ground water, ice, snow, back-up or leakage of sewers, drains, or 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.

§ 10.2.15 The Contractor shall remove snow or ice within the limits of the Work indicated in the Contract Documents which might result in damage or delay.

§ 10.2.16 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 permanent heating and ventilation systems may be used for these purposes when available unless otherwise provided in the Contract Documents. The use of the permanent heating system for temporary heat shall be subject to the prior written approval of the Owner and Architect.

§ 10.2.17 The Contractor shall be solely responsible for protecting the Work, materials and equipment at all times from commencement of Work until completion of its Work. It may, if it wishes, employ watchmen to assure such protection.

§ 10.2.18 In case of an emergency involving danger to life or property, the Contractor may act at its discretion to prevent injury or damage to the threatened life or property.

§ 10.2.19 The Contractor shall maintain its hand tools, machinery, personnel protective equipment, etc. in safe operating condition and shall require its subcontractors and individual mechanics to maintain their equipment in the same condition.

§ 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 and 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 written 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. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor.

§ 10.3.2.1 If Hazardous Material is determined to be present on the site, the Contractor will cooperate with the Owner and the Owner's consultants and contractors to coordinate the Work in conjunction with the abatement, handling, disposal, or other procedures related to the presence of the Hazardous Material to maintain a safe working environment and to progress with the execution of the Work to avoid delay.

§ 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 reasonable 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 to or 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 defend and hold harmless 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 or as required by the Owner. 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. Such coverage shall be maintained for no less than four (4) years following final payment. The Owner shall be named additional insureds. Contractor shall provide a Blanket Additional Insured Endorsement. Contractor shall provide Owner with evidence of workers' compensation coverage. The Contractor shall not commence the Work under the Contract nor permit any subcontractor to commence work on a subcontract until all the insurance required is obtained. The Contractor may carry, at its own expense, such additional coverage as it may deem necessary. The Contractor shall not be deemed to be relieved of any responsibility by the fact it carries insurance. Should the Contractor at any time neglect or refuse to provide the insurance required herein or should such insurance be cancelled, or should the full annual aggregate or any policy not be available to satisfy the requirements of the Contract, the Owner shall have the right to procure such insurance and the cost thereof shall be deducted from monies then due or thereafter to become due the Contractor.

§ 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. The surety, form and substance of the bond shall be satisfactory to the Owner. Surety companies executing bonds must appear on the Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the state in which 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 written 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 may 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.

§ 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, to the extent of actual recovery of any insurance proceeds obtained pursuant to this Section..

§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 or Owner's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect or Owner, be uncovered for the Architect's or Owner'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 or Owner has not specifically requested to examine prior to its being covered, the Architect or Owner 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 within seven (7) calendar days or such other time period as Owner may otherwise agree to in writing, correct Work rejected by the Architect or Owner 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, and any cost, loss or damage to the Owner resulting therefrom, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 Contractor covenants and agrees that it will, upon notice from Owner, immediately repair, replace, restore, correct and cure at Contractor's expense, all defects, deficiencies, errors and omissions in workmanship and materials and all failures to comply with the Contract Documents which appear within one (1) year from the date of Substantial Completion of the Project; provided, however, that: (i) this warranty and guarantee on the part of Contractor, and Contractor's obligation to correct defective, deficient or non-conforming Work as hereinbefore provided, shall remain and continue in full force and effect as to those components of the Project specified in the Contract Documents for the extended periods specified in the Contract Documents, likewise commencing on the date of Substantial Completion unless otherwise indicated in the Contract Documents; and (ii) with respect to any incomplete or defective item of Work completed or corrected by Contractor after the date of Substantial Completion of the Project (i.e., punchlist work) this warranty and guarantee shall commence when such incomplete or defective item of Work is satisfactorily completed or corrected by Contractor in each instance. Contractor shall pay for and, if requested, repair, replace, restore, correct and cure any damage or injury, whenever the same shall occur or appear during the applicable warranty period, resulting from any defects, omissions or failures in workmanship and materials. The foregoing guarantee and warranty shall not shorten any longer warranty period or longer period of Contractor's liability provided for by law or in the Drawings or Specifications or in any other Contract Document or otherwise received from Contractor or any supplier, Subcontractor, Sub-subcontractor or any manufacturer, nor supersede the terms of any special warranty given by Contractor, imposed by law or required by the Contract Documents, but shall be in addition thereto.

§ 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.

§ 12.2.3 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

Notwithstanding anything to the contrary contained herein, it is understood and agreed that the warranty and guarantee set forth in this Article 12 shall not affect, limit or impair Owner's right against Contractor and its surety with regard to latent defects in the Work which do not appear within the applicable warranty period and which could not, by the exercise of reasonable care and due diligence, be ascertained or discovered by Owner within such warranty period. Contractor shall be and remain liable and responsible to correct and cure and such latent defects which are reported to Contractor by Owner in writing within one (1) year after any such latent defects first appear or could, by the exercise of reasonable care and due diligence, be ascertained or discovered by Owner.

Notwithstanding anything to the contrary contained herein, if Contractor fails to promptly commence and diligently perform and complete all corrective Work required under Section 12.2 from time to time (whether punch list or warranty work), Owner shall have the right (but not the obligation) in each instance, at Owner's election, to cause such corrective work to be done by others and recover the costs thereof, together with damages and reasonable attorney fees, from Contractor and his surety, in addition to all other rights and remedies available to Owner against Contractor and his surety hereunder and at law and in equity for such default by Contractor.

§ 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 even if such Work was installed as submitted and approved in shop drawings. 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.

§ 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 engaged by the Owner, or with the appropriate public authority. The Owner will hire and pay for services as outlined in Section 2.2.6, from which reports will be forwarded to the Contractor. The Contractor shall give the Architect and Owner timely notice of when and where tests and inspections are to be made so that the Architect and Owner 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 and Owner of when and where tests and inspections are to be made so that the Architect and Owner 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 including testing and costs related to remedial work.

§ 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.

§ 13.4.7 The Owner shall have the right to conduct testing and inspections related to, but not limited to, commissioning as outlined in Section 2.6 and 3.19.

§ 13.5 Interest

No interest will be paid by the Owner.

§ 13.6 Written Notice

Written notice shall be deemed to have been duly served if delivered in person to the individual, to a member of the firm or entity, or to an officer of the corporation for which it was intended; or if delivered at, or sent by registered or certified mail or by courier service providing proof of delivery to, the last business address known to the party giving notice.

§ 13.7 No action or failure to act by the Owner shall constitute a waiver of a right or duty afforded the Owner under this Agreement, nor shall such action or failure to act constitute approval of or acquiescence in a breach of this Agreement, except as may be specifically agreed in writing. Neither the approval of any Application for Payment, the making of any payment, the giving of any approval or consent, the use of occupancy of the Work, or any part thereof, the making of Final Payment, or any other action or inaction, on the part of the Owner or Architect shall constitute a waiver of claims by the Owner or an acceptance of any Work which is not in accordance with the Contract Documents either by the activities or duties of the representation of the Owner or Architect, or by inspections, tests, or approvals required or performed by the Owner or Architect or anyone else.

§ 13.7 This Agreement shall not be recorded. If this Agreement shall be recorded contrary to this provision, such recording shall be ineffective and Owner is hereby authorized for and on behalf of, and in the name of Contractor to execute and have recorded a discharge of any such recording.

§ 13.9 The invalidity in whole or in part of any article, section, subsection, sentence, clause, phrase or word, or other provision of the Agreement or these General Conditions and any exhibits or documents attached thereto shall not affect the remaining portions thereof.

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 60 consecutive days through no act or fault in whole or in part of the Contractor or a Subcontractor, Sub-subcontractor, or their agents or employees, or any other persons or entities performing portions of the Work under direct or indirect contract with the Contractor, 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, provided, resumption is not likely within a reasonable time;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped provided, resumption is not likely within a reasonable time; or
- .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 then due and owing within the time stated in the Contract Documents.

§ 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' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work properly executed, including reasonable overhead and profit on Work properly executed, and actual costs reasonably incurred by reason of such termination. Contractor shall not be entitled to recover overhead and profit on Work not properly executed or any other termination fee.

§ 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

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents, or be adjudged a bankrupt, or if he should make a general assignment for the benefit of its creditors, or if a receiver should be appointed on account of his insolvency, or if he should refuse or should fail, except in cases for which extension of time is provided, to provide Contractor's representatives satisfactory to Owner, to supply enough properly skilled workmen or proper materials, or if he should fail to make prompt payment to Subcontractors or for materials or labor, or disregard laws, ordinances, rules, regulations or orders of any public authority having jurisdiction or disregard an instruction, order or decision of the Architect, or otherwise be guilty of a substantial violation of any provisions of the Contract, then the Contractor shall be in default, and the Owner, may, without prejudice to any other right or remedy and after seven (7) days' written notice to the Contractor, make good such deficiencies and may deduct the costs thereof, or at his option, may terminate the Contract and the employment of the Contractor, take possession of all materials, equipment, and construction equipment intended for or to be incorporated into the Project, wherever stored, and finish the Work by whatever method he may deem expedient. In such case the Contractor shall not be entitled to receive any further payment until the Work is finished.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, 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, Owner's attorney fees and costs 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 reviewed by Architect, 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. In said event, the Owner shall equitably adjust the Contract Sum and Contract Time, if warranted.

§ 14.3.2 The Contract Sum and Contract Time may 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. Under such circumstances, this Agreement shall terminate on the date set forth in the written notice from the Owner to Contractor. The Contractor agrees to immediately prepare to cease performing all Work on the date of termination and shall otherwise cease, to the extent practicable, incurring costs chargeable to the Owner under this Contract as of the date of termination. To the extent that the Owner elects (and Contractor hereby grants to the Owner the right to elect to do so in connection with termination of this Contract) to take legal assignment of subcontracts or purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Section and otherwise under this Contract, at the Contractor's sole cost and expense, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts or purchase orders and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders. Otherwise, Contractor shall terminate such subcontracts and purchase orders as of the date of termination or as soon as possible thereafter. In the event an attempted termination by the Owner for cause is not justified, it shall be deemed a termination for convenience under this section.

§ 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, as directed by Owner, either terminate all existing subcontracts and purchase orders or assign them to Owner and enter into no further subcontracts and purchase orders.

§ 14.4.3

Upon such termination, the Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the project site, delivered and stored in accordance with the Owner's instructions. The Contractor hereby waives and forfeits all other claims for payment and damages, including, without limitation, overhead anticipated and/or unearned profits, consequential or indirect damages.

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 and 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.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor must be initiated by written notice to the other party with a copy sent to the Architect. Claims by the Contractor shall be initiated within 21 days after occurrence of the event giving rise to such Claim.

After a Change Order Request or a formal Change Order has been executed, no additional Claim based on the same scope of work will be considered.

§ 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 which are not the subject of a good faith dispute in accordance with the Contract Documents. The Owner shall have no obligation to make payments to the Contractor on or against such claims, disputes, or other matters in question during the pendency of any mediation, arbitration, or other proceedings to resolve such matters. Owner shall continue to make payments of undisputed amounts.

§ 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.

§ 15.1.4.3 If the Contractor submits a claim that is interpreted by the Architect or Owner as being part of the Work and the Contractor disputes this interpretation, a Construction Directive will be issued per Article 7. The Contractor shall immediately proceed with the execution of the disputed Work.

§ 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, written notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall be as per Article 8.3.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be as per Article 8.3..

§ 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 Interpretation

§ 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 Architect for initial interpretation. An initial interpretation 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 Architect and all affected parties agree, the Architect will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Architect 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) recommend approval of the Claim, (4) suggest a compromise, or (5) advise the parties that the Architect is unable to interpret the Claim if the Architect lacks sufficient information to evaluate the merits of the Claim or if the Architect concludes that, in the Architect's sole discretion, it would be inappropriate for the Architect to interpret the Claim.

§ 15.2.3 In evaluating Claims, the Architect 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 Architect in rendering an initial interpretation. The Architect may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Architect 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 Architect when the response or supporting data will be furnished, or (3) advise the Architect that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Architect will either reject or recommend approval of the Claim in whole or in part.

§ 15.2.5 The Architect will render an initial interpretation or indicate that the Architect is unable to interpret the Claim. This initial interpretation shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties of any change in the Contract Sum or Contract Time or both. The initial interpretation shall be considered by 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 interpretation at any time, subject to the terms of Section 15.2.6.1.

§ 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 mutually agree that arbitration is the method for binding dispute resolution, 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. Any unresolved claims between Owner and Contractor, Owner and Architect, Contractor and Architect, Contractor and its Surety, or Contractor and its Subcontractors or Suppliers may be submitted for arbitration as provided in this Section 15 and any or all of the parties named above shall, at the Owner's request, be joined or consolidated therein.

§ 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.

15.4.5 Records.

.1 To facilitate audits by Owner including, without limitation, for any purpose related to Change Orders, Changes or Change Proposals, Contractor shall at all times implement and maintain, and require its Subcontractors to implement and maintain, such cost control systems and daily record keeping procedures as may be necessary to attain proper fiscal management and detailed financial records for all costs related to the Work and as are otherwise reasonably satisfactory to Owner. All cost and pricing data shall include, without limitation, the identification of any markups, vendor quotations and pricing methodologies. Records to be maintained by the Contractor, its Subcontractors for purposes of the Contract, including for purposes of all audits conducted by Owner shall include, but not be limited to

the following: (a) payroll records and payroll burden costs on actual wages and salaries (payroll taxes, insurance, benefits, etc.); (b) all correspondence, minutes of meetings, daily logs including schedule status reports, memoranda and other similar data; (c) items such as bids, proposals, estimating work sheets, quotes, cost recaps, tabulations, receipts, submittals, , general ledger entries, canceled checks and computer data relating to the Work and this Contract, and (d) all other data relating to or arising out of the Work and any other similar supporting documentation reasonably required by Owner. It is further agreed that records subject to audit include Project-related records maintained by parent companies, affiliates, subsidiaries or other related parties. Contractor's failure to cooperate or to provide access shall be a material breach of this Contract.

If any inspection by the Owner of the Contractor's records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda and any other data relating to the Contract Documents reveals an overcharge, including, without limitation, any untimely request for payment, in addition to other remedies the Contractor shall pay the Owner upon demand, when the overage is in excess of 0.25% of the Work, all the overcharged amount along with the complete cost of the administrative expenses incurred in determining the overage. The requirements of this Paragraph shall not apply to any portion of an overcharge which is the subject of a good faith dispute between the Owner and Contractor.

15.4.6 Independent Contractor

.1 While Contractor is required to perform the Work in strict accordance with the Contract Documents, Contractor shall at all times be an independent contractor and responsible for and have control over all construction means, methods, techniques, sequences and procedures for constructing, coordinating and scheduling all portions of the Work to achieve the requirements of the Contract Documents. Nothing in the Contract Documents shall be deemed to imply or represent or be construed to (a) make Contractor, its supervisors, employees, its Subcontractors of any tier the agents, representatives or employees of Owner, or (b) create any partnership, joint venture, or other association or relationship between Owner and Contractor or any Subcontractor, nor shall anything contained in the Contract Documents be deemed to give any third party any claim or right of action against Owner or Contractor which does not otherwise exist without regard to the Contract Documents. Any approval, review, inspection, supervision direction or instruction by Owner or any party on behalf of Owner, including any of Owner's grant providers, in respect to the Work or services of Contractor shall relate to the results Owner desires to obtain from the Work, and shall in no way affect Contractor's independent contractor status or obligation to perform the Work in accordance with the Contract Documents.

15.4.7 Appropriation.

The parties recognize that payments, including claims for additional payments, under this Contract by Owner are expressly dependent and contingent upon the Owner's appropriation of funds according to the General Statutes and the Owner's Charter. In the event that the Owner does not appropriate sufficient funds the Owner may terminate this Agreement and all work. In the event of termination of this Agreement and the work, the Owner shall be responsible to pay the Cost of Work to the date of the termination.

15.4.8 Compliance with wage laws and Special Owner resolutions.

Contractor shall comply at all times, and require all subcontractors to comply, with all minimum wage laws, including any obligation to pay prevailing wages.

