

NOBLIN & ASSOCIATES, L. L. C.

Consulting Engineers

BUILDING ENVELOPE REPAIRS

SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE

OWNER: Shaker Landing Condominium Association
c/o Moseley Associates, Ltd.
P. O. Box 706
White River Junction, VT 05001

ENGINEER: Noblin & Associates, L. L. C.
One Washington Street
Suite 3050.
Dover, New Hampshire 03820

PRE-BID DATE: 10:00 AM, May 13, 2015

BID DATE: 2:00 PM, May 27, 2015

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BUILDING ENVELOPE REPAIRS

SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE

The Shaker Landing Condominium Trust invites sealed proposals for "Building Envelope Repairs" at the Shaker Landing Condominium, in Enfield, New Hampshire. The work includes replacement of shingle roofs and replacement of exterior decks.

The buildings are located off Shaker Blvd. in Enfield, New Hampshire. A mandatory pre-bid meeting will be held at the site for all bidders at 10:00 am, May 13, 2015. Bids will be due at the offices of Noblin & Associates, L. L. C. no later than 2:00 pm, May 27, 2015. Bids, correspondence and questions of a technical nature are to be directed to the Project Engineer, at the following address:

Noblin & Associates, L. L. C.
One Washington Street
Suite 3050
Dover, New Hampshire 03820
Phone (603) 740-9400
Fax (603) 740-9339

The successful Bidder shall be required to furnish certificates of Commercial General Liability Insurance in the following minimum amounts:

\$1,000,000.00 per occurrence
\$2,000,000.00 general aggregate

including Product/Completed Operations and Premises/Operations.

The successful Bidder shall also be required to furnish certificates of Automobile Insurance in the following minimum amounts:

\$100,000.00 per person bodily injury
\$500,000.00 per accident bodily injury
\$100,000.00 property damage

The successful Bidder shall also be required to furnish certificates of Workman's Compensation, to cover Statutory Requirements, and Employer's Liability for 100/500/100.

All insurance certificates shall name the Shaker Landing Condominium Trust, the Unit Owners and Noblin & Associates as Additional Insureds. Release of Liens forms shall be required from all suppliers prior to final payment to the Contractor.

The buildings will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the buildings and inconvenience to the building occupants. Work may be performed between the hours of 8:00 am and 5:00 pm, Monday through Friday. No Saturday, Sunday or holiday work shall be permitted without written approval by the Owner. Water and electricity for the work shall be provided by the Owner at no cost, provided these are not used wastefully by the Contractor. The Contractor shall provide his own sanitary facilities.

Bids shall be considered valid by the Owner and Bidders for up to 45 days, unless the Bidder can prove a legitimate, material error in the preparation of the bid. The Owner reserves the right to accept or reject any or all bids, for any reason.

**SHAKER LANDING CONDOMINIUM
ENFIELD, NEW HAMPSHIRE**

BID FORM

Bidder: _____

Address: _____

1. The Bidder agrees to perform the specified work for the following prices:

- (a) **Base Proposal:** The Bidder agrees to perform Reroofing with Asphalt Shingles at the Shaker Landing Condominium in Enfield, New Hampshire as described in the Specification and shown on the Plans for the sums of:

Triplex Building (#33 - #47)

_____ /building (\$) /bldg)

Duplex Building (B-7 through B-29)

_____ /building (\$) /bldg)

(Amount shall be in both words and figures. In case of discrepancy, the amount shown in words will govern).

**SHAKER LANDING CONDOMINIUM
ENFIELD, NEW HAMPSHIRE**

- (b) **Alternate #1:** The Bidder agrees to perform Triplex Deck Replacement at the Shaker Landing Condominium in Enfield, New Hampshire as described in the Specification and shown on the Plans for the sums of:

UNIT	TYPE	BID PRICE
33-1	FRAMED	\$
33-2	FRAMED	\$
	FRAMED	\$
33-3	PAVER	\$
35-1	FRAMED	\$
35-2	FRAMED	\$
	FRAMED	\$
35-3	PAVER	\$
37-1	FRAMED	\$
37-2	FRAMED	\$
	FRAMED	\$
37-3	PAVER	\$
43-1	FRAMED	\$
43-2	FRAMED	\$
	FRAMED	\$
43-3	PAVER	\$
45-1	FRAMED	\$
45-2	FRAMED	\$
	FRAMED	\$
45-3	PAVER	\$
47-1	FRAMED	\$
47-2	FRAMED	\$
	FRAMED	\$
47-3	PAVER	\$

**SHAKER LANDING CONDOMINIUM
ENFIELD, NEW HAMPSHIRE**

2. UNIT PRICES

Description	Contract Quantity	Unit Price
1. Wall Sheathing Replacement	100 s.f./bldg	\$_____ /s.f.
2. Framing Replacement	10 b.f./bldg	\$_____ /b.f.
3. Skylight Replacement	1/bldg	\$_____ /unit
4. Skylight Elimination	1/bldg	\$_____ /unit
5. Misc. Repairs		\$_____ /man hour
6. Material Mark-up		_____ %

3. ADDENDA

The Bidder acknowledges all items included in the following Addenda have been included in the Bid:

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

Bids shall be considered valid by the Owner and Bidders for up to 45 days, unless the Bidder can prove a legitimate, material error in the preparation of the bid.

SUBMITTED ON: _____

By: _____
Name of Corporation (Type or Print)

Name of Authorized Official of Corporation (Type or Print)

Signature

State of Incorporation

(CORPORATE SEAL)

CONTRACT

This AGREEMENT is made as of the _____ day of _____ in the year _____.

Between the Owner:

*Shaker Landing Condominium Trust
c/o Moseley Associates, Ltd.
P. O. Box 706
White River Junction, VT 05001*

and the Contractor:

The Project is:

*Building Envelope Repairs
Shaker Landing Condominium
Enfield, New Hampshire*

The Engineer is:

*Noblin & Associates, L. L. C.
One Washington Street
Suite 3050
Dover, New Hampshire 03820*

The Owner and Contractor agree as set forth below:

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this agreement, Standard General Conditions of the Construction Contract, Supplementary General Conditions, Drawings, Specifications, Addenda issued prior to the execution of this Contract and Bid Documents, and are as fully a part of this Contract as if attached to this Agreement or repeated herein.

ARTICLE 2 THE WORK

- 2.1 The Work shall include *Building Envelope Repairs*, as described in the Specification and shown on the Plans bearing the title "*Building Envelope Repairs*", *Shaker Landing Condominium, Enfield, New Hampshire*", prepared by the Engineer.
- 2.2 The Contractor agrees to perform the Work, as described in the Specification and shown on the Plans.

ARTICLE 3 DATE OF COMMENCEMENT AND FINAL COMPLETION

- 3.1 The date of commencement shall be the date of this Agreement, as first written above, unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.
- 3.2 The Contractor shall achieve Final Completion of the entire Work within 120 days from the date of commencement.

ARTICLE 4
CONTRACT SUM

4.1 The Owner shall pay the Contractor in current funds for the Contractor's performance of the Contract the Contract Sum of \$_____, subject to additions and deductions as provided in the Contract Documents.

4.2 Unit Prices are as follows:

Description	Contract Quantity	Unit Price
1. Wall Sheathing Replacement	100 s.f./bldg	\$_____ /s.f.
2. Framing Replacement	10 b.f./bldg	\$_____ /b.f.
3. Skylight Replacement	1/bldg	\$_____ /unit
4. Skylight Elimination	1/bldg	\$_____ /unit
5. Misc. Repairs		\$_____ /man hour
6. Material Mark-up		_____ %

ARTICLE 5
PROGRESS PAYMENTS

5.1 Based upon Applications for Payment submitted to the Engineer (for review and approval) and forwarded to the Owner, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

5.2 Each Application for Payment shall be based upon the Schedule of Values submitted by the Contractor in accordance with the Contract Documents. The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Engineer may require.

5.3 Applications for Payment shall indicate the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

5.4 The amount of each progress payment shall be the approved percentage of completion (less previous payments) less 10% retainage. Payments shall be made within 30 days from the date of approval of the Application for Payment.

ARTICLE 6
FINAL PAYMENT

Final Payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when (1) the Contract has been fully performed by the Contractor including the submission of all warranty related paperwork, (2) a final Application for Payment has been submitted and approved and (3) Release of Liens forms from all subcontractors and suppliers have been submitted.

ARTICLE 7
TERMINATION OR SUSPENSION

The Contract may be terminated or suspended by the Owner or Contractor as provided for in the General Conditions.

This agreement is entered into as of the day and year first written above and is executed in at least three original copies of which one is to be delivered to the Contractor, one to the Engineer for use in administration of the Contract and the remainder to the Owner.

ARTICLE 8
INTERIOR DAMAGE

Notwithstanding any contrary provisions elsewhere in the Contract Documents, in the event of any pre-existing interior repairs which may be needed, and/or interior repairs caused by the Work which are to be reasonably expected due to the nature of the Work (for example, interior wall cracks, nail pops, etc.), any such interior repairs shall not be deemed part of the Work, but rather shall be addressed upon request of the Owner by Change Orders. The foregoing shall not apply, however, to interior repairs necessitated by the Contractor's negligence or failure to otherwise comply with the terms and conditions of the Contract Documents. The determination of whether a condition was pre-existing, such as was to be reasonably expected due to the nature of the Work or as a result of the negligence or other failure of the Contractor to comply with the terms and conditions of the Contract Documents shall be by the Engineer, whose decision shall be binding on the Owner and the Contractor.

OWNER

CONTRACTOR

(Signature)

(Signature)

(Printed Name and Title)

(Printed Name and Title)

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly by



AMERICAN COUNCIL OF ENGINEERING COMPANIES

ASSOCIATED GENERAL CONTRACTORS OF AMERICA

AMERICAN SOCIETY OF CIVIL ENGINEERS

PROFESSIONAL ENGINEERS IN PRIVATE PRACTICE
A Practice Division of the
NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS

Endorsed by



CONSTRUCTION SPECIFICATIONS INSTITUTE

These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 Copies of Documents

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Times; Notice to Proceed

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of

the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work.* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work.* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 1. A Field Order;
 2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
 2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the

Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings:* The Supplementary Conditions identify:

- 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
- 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

- 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
- 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
- 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

- 1. is of such a nature as to establish that any "technical data" on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
- 2. is of such a nature as to require a change in the Contract Documents; or
- 3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

- B. *Engineer's Review*: After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner's obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer's findings and conclusions.

C. *Possible Price and Times Adjustments*:

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to

permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.

- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.

- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 - 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 - 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
 - 1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners,

employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of

them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;

2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.

- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.
- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or-equal" item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
 - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.

- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or

entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.

- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its

use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.

- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner

and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts

any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.

- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.
- B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. *Engineer's Review:*

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the

Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. *Resubmittal Procedures:*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;

3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. use or occupancy of the Work or any part thereof by Owner;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
 - 1. written notice thereof will be given to Contractor prior to starting any such other work; and
 - 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe

access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.

- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
 - 1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 - 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 - 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER’S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner’s duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner’s identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner’s responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner’s responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner’s Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws

and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations

on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of,

and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.

- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of

executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
 - 1. deny the Claim in whole or in part;
 - 2. approve the Claim; or
 - 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 Cost of the Work

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
 - 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 - 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 - 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in

the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

C. *Contingency Allowance:*

1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.

D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:

1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
2. there is no corresponding adjustment with respect to any other item of Work; and
3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.

- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee*: The Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.
- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 Notice of Defects

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 Tests and Inspections

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.

- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.
- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers,

architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. repair such defective land or areas; or
 - 2. correct such defective Work; or
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. *Applications for Payments:*

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's

review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:

- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
- b. the Contract Price has been reduced by Change Orders;
- c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
- d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. *Reduction in Payment:*

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and

- d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 Final Completion Delayed

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's repeated disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other

dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and

4. reasonable expenses directly attributable to termination.

B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.

B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.

C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or

2. agrees with the other party to submit the Claim to another dispute resolution process; or
3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 Cumulative Remedies

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 Survival of Obligations

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 Controlling Law

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 Headings

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

SECTION 00600
SUPPLEMENTARY GENERAL CONDITIONS

GENERAL

Articles of the Standard General Conditions of the Construction Contract (EJCDC 1910-8) listed under this Section are amended by adding, substituting or omitting material as indicated herein.

All provisions of such Articles not specifically amended shall remain in force and effect.

ARTICLE 2

Section 2.02. Substitute Sentence 1 with the following:

“Owner shall furnish to CONTRACTOR up to three copies of the Contract Documents as are reasonably necessary for the execution of the Work.”

ARTICLE 4

Section 4.02. Section Omitted.

ARTICLE 5

Section 5.01. Substitute Sentence 1 with the following:

“ CONTRACTOR shall furnish Bid, Performance and Payment Bonds as security for the faithful performance and payment of all CONTRACTOR’S obligations under the Contract Documents as required in the Invitation to Bid.”

Section 5.04. Substitute Section with the following:

“ CONTRACTOR shall purchase and maintain such liability and other insurance as required in the Invitation to Bid.”

Section 5.06. Section Omitted.

Section 5.07. Section Omitted.

Section 5.08. Section Omitted.

Section 5.11. Add the following Paragraphs:

5.11.1 Contractor shall protect the job site and the Work, and shall repair or replace, at its own cost and expense, any loss, claim or damage to the building, the Owner or any resident of any apartment in the building, occurring during the term of this Contract or prior to the final delivery and acceptance by the Owner of the Work, by reason of any act, omission, negligence, accident, fire, wind, water, lightning, theft, or for any reason caused either directly or indirectly by Contractor, its agents or employees, in the performance or default of this contract, except that the Owner shall also maintain property insurance upon all buildings for all permanent construction and installations thereof. Contractor shall be wholly responsible for the carrying out of this Work, subject to approval and final acceptance by the Owner. Any payment made to the Contractor shall not relieve Contractor from responsibility for the carrying out of said Work.

- 5.11.2 Contractor shall furnish and maintain during the life of this Contract such public liability and property damage insurance with a waiver of subrogation in favor of the Owner as shall protect it and any subcontractor or person performing Work covered by this Contract, from claims for damages for personal injury, including accidental death, except by persons protected by workers compensation statute, and from claims for property damage, which might arise from operations under this Contract. The minimum amounts of such insurance shall be as set forth in the Invitation to Bid.
- 5.11.3 Prior to commencement of any Work, Contractor shall furnish the Owner with; (1) workers compensation certificates (showing that they have coverage for the classification of work); (2) Certificates of Insurance naming the Owner and its officers, directors and agents and the Unit Owners at the Shaker Landing Condominium Trust as additional insureds and agreeing to notify the Owner before termination thereof; and (3) Insurance Declaration pages with policies attached covering all of the insurance heretofore mentioned. The Owner, at its option, may terminate this contract without cost if Contractor fails to deliver properly executed insurance certificates prior to commencement of the Work.

ARTICLE 6

Section 6.08. Sentence 4, omit the following:

“and Owner shall pay all charges of such utility Owners for capital costs related thereto such as plant investment fees”

Section 6.11. Add the following Paragraphs:

- 6.11 (E) The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times with the Owner. The Contractor's right to entry and use thereof arises solely from the permission granted by the Owner under the Contract Documents. The Contractor shall confine his equipment, materials, and workers to limits indicated by law, ordinances, the Contract Documents and permits and/or directions of the Owner. The Owner shall not be liable to the Contractor, the Subcontractors, their employees, or any other person or entity with respect to the conditions of the premises, except only for a condition caused directly by the sole negligence of the Owner and such individuals are otherwise on the premises at their sole risk. Any damage to any common area or facility, building (and/or Unit) which is caused by the Contractor or its agents or Subcontractors shall be repaired promptly at the Contractor's expense.
- 6.11 (F) The Contractor shall use only areas specifically assigned to the Contractor for parking, if any, and shall comply with local municipal regulations regarding use of, and parking on, public streets. He shall use only authorized access to existing buildings, and shall not block, nor interfere with, traffic or parking facilities, except as authorized in writing by the Owner.
- 6.11 (G) Contractor may store project materials necessary for the Work in an area of building as approved and designated in advance by the Owner. All risk of loss to any such materials and equipment shall remain with Contractor at all times during the Work. Contractor agrees to promptly remove from the site, upon completion of the Work (or such portion thereof as to which such equipment may pertain), all equipment brought onto the premises by or for the Contractor in connection with the Work and/or this Contract.

6.11 (H) Contractor shall remove debris from the site at the completion of each day's Work, and shall leave the site clean and neat. Contractor shall provide its own dumpsters at no charge to the Owner and shall not use Owner's dumpsters. Contractor shall be responsible for all costs and expenses related to clean-up and/or remediation of any release or leakage of hazardous material, substances or waste during the performance of the Work.

Section 6.20. Substitute Section with the following:

“ Contractor shall indemnify and hold harmless the Owner and its officers, directors, agents, employees, and the Engineer, Engineer’s employees and consultants and agents and employees of any of them from any and all claims, damages, losses and expenses, injury, death, or accident, including court cost and attorneys’ fees, to the extent caused by any breach or default of this Contract, or negligent act or omission of Contractor, its employees, agents or subcontractors. This indemnity shall not be limited in any way by any limitations on the amount or type of process, damages, compensation, or benefits payable under insurance policies, workers compensation acts, disability benefit, or other employee benefit acts. In case any action is brought against any person or entity and indemnified under this paragraph, the Contractor shall assume full responsibility for its defense by counsel reasonably acceptable to the Owner and upon failure to do so on proper notice, the Owner reserves the right to defend such action and charge all costs thereof to the Contractor. For the purpose of this Section, the definition of “Owner” shall include each Owner of each individual Unit within the Shaker Landing Condominium.”

ARTICLE 8

Section 8.06. Section Omitted.

Section 8.11. Section Omitted.

ARTICLE 9

Section 9.09(C). Omit the following:

“any other individual or entity”

SECTION 02050
DEMOLITION

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the demolition of the existing roof systems, preparation of the existing structural roof decks and demolition of existing wood framed decks. All work shall be performed in a first class, workmanlike manner to provide a secure, properly prepared substrate for the new roof system. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this Section shall be directly related to the work under the following Sections:

- Section 06100 - Rough Carpentry
- Section 07200 - Insulation
- Section 07310 - Asphalt Shingles
- Section 07460 - Rigid PVC Siding
- Section 07530 - EPDM Membrane Roofing

The work shall include all materials, equipment and labor required to properly complete the work under this and related Sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- Occupational Safety and Health Administration (OSHA) - Construction Standards.

1.04 SCOPE OF WORK

BASE BID

- A. Removal and disposal of the existing shingle roof systems and associated flashings.
- B. Removal and disposal of existing wood siding and trim in areas to receive new materials.
- C. Elimination of skylight units.

NOTE: The Contractor shall submit a Unit Price for skylight elimination with the Bid. Elimination of one skylight per building shall be included in the Bid price. The Unit Price will be used to adjust the Contract price based on the actual number of skylights eliminated.

- D. Removal and disposal of all existing deteriorated plywood deck materials and plywood deck materials in areas to receive new foam insulation.
- E. Removal and disposal of all existing deteriorated wood framing members.
- F. Resecurement of all structural roof deck sheathing materials.
- G. Provide continuous opening in roof sheathing along ridges to receive new ridge vents.

- H. Removal and disposal of the existing membrane roof systems on the Triplex buildings, including but not limited to membrane, insulation, underlayment, metal and other flashings.

ALTERNATE #1

- A. Removal and disposal of existing wood decks.
- B. Removal and disposal of existing concrete footings.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- Applicable OSHA requirements.

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to commencement of the work:

- Staging and scaffolding programs including current certificates of inspection for all applicable equipment;
- Project schedule including start dates and durations of the various phases of the work;
- Final landfill destination and copies of hauling and landfill permits.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.
- B. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- C. Remove and dispose of all demolition materials, trash and debris, except materials specifically designated to remain as property of the Owner, in strict accordance with Local, State and Federal laws.
- D. All trash and job related debris shall be removed from the site or stored in approved dumpsters at the end of each day's work.
- E. The location of all dumpsters and staging shall be coordinated with the Owner. Dumpsters shall be covered at all times other than loading or unloading.
- F. Dumpsters shall be emptied in a timely fashion to provide adequate capacity for job related debris at all times. Storage of job related debris in locations other than dumpsters or approved staging areas shall not be permitted.

1.08 JOB CONDITIONS

- A. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for safety harnesses, safety lines, and hardhats.
- B. All applicable OSHA requirements for staging and scaffolding shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for design and certification staging, cables, tie-offs and other load bearing components for all required design loads.

- C. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.
- D. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.
- E. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Engineer a minimum 48 hours notice prior to the commencement of any demolition or construction activities.
- F. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

PART 2 - MATERIALS

2.01 MATERIALS

- A. Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion. Fasteners shall have minimum 1 1/2" penetration into sound substrate.
 - 1. Fasteners for plywood deck resecurement shall be 8d, hot dipped galvanized ring shank nails.
 - 2. Fasteners for wall sheathing resecurement shall be 8d, hot dipped galvanized ring shank nails.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the plans and specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 REMOVAL OF EXISTING MATERIALS

All work shall be performed in a first class, workmanlike manner.

BASE BID

- A. All existing shingles and underlayment shall be removed down to the structural roof deck.
- B. All existing metal flashings and other associated materials shall be removed from the shingled roof areas as required for completion of the work.
- C. All above-roof siding materials including wood corners, rakes and fascias shall be removed and disposed of.

- D. All deteriorated or delaminated plywood roof sheathing shall be removed and disposed of.
- E. Plywood roof sheathing shall be removed and disposed of in areas to receive new foam insulation materials.
- F. All deteriorated wood rakes and fascias shall be removed and disposed of.
- G. All deteriorated wood framing members shall be removed and disposed of.
- H. All surfaces to receive new materials shall be inspected and any sound structural deck shall be refastened with approved fasteners at 8" o.c. in the field and 6" o.c. at edges.
- I. All loose, wet or unsound materials and debris shall be removed from the existing deck surface to provide a smooth, sound, uniform substrate free of irregularities.
- J. A continuous 2" opening shall be cut along the ridges in areas to receive new ridge vents. All roof sheathing shall be resecured along the opening to the underlying structural members.
- K. The existing membrane roof systems on the Triplex buildings shall be removed down to the structural roof deck. This shall include, but not be limited to, membrane, insulation and underlayment.

ALTERNATE #1

- A. The designated exterior decks shall be removed and disposed of.
- B. All existing concrete footings shall be removed and disposed of. Existing footing holes shall be excavated as required to provide a minimum 48" depth to sound, undisturbed soil, or to solid ledge.

3.03 PROTECTION

- A. The Contractor shall be responsible for maintaining the watertightness of the building at all times during the work. No more materials shall be removed than can be replaced and completely flashed in the same day's work. No materials shall be removed during periods of inclement or threatening weather.
- B. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.
- C. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.
- D. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.
- E. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.04 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work. Sweep complete area with HD magnet to remove all nails or other metal debris.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work, including final clean-up, shall be required by the Owner and Engineer.

END OF SECTION

SECTION 04400
CONCRETE PAVERS

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This includes paver installation and related work. All new materials shall be installed in a first class, workmanlike manner. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this section shall be directly related to the work under the following Sections:

- Section 02050 - Demolition

The work shall include all materials, equipment and labor required to properly complete the work under this and related sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- American Society for Testing and Materials (ASTM);
- Brick Institute of America (BIA);
- Federal Specification (FS);
- Occupational Safety and Health Administration (OSHA) - Construction Standards.

1.04 SCOPE OF WORK

- A. Excavation and removal of existing fill materials as required to allow placement of the new fill materials at the required levels with proper pitch.
- B. Preparation, including proper compaction of the subgrade.
- C. Placement of proper fill materials in properly compacted lifts at the required levels with proper pitch.
- D. Placement of setting materials at the required levels.
- E. Setting of new concrete pavers and edge restraint system.
- F. Provide final clean-up.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- BIA Technical Note 14A;
- Material Manufacturer's Requirements.

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to the commencement of the work:

- Sample Paver;
- Project schedule including start dates and durations of the various phases of the work.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.
- B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.
- C. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.
- D. All materials shall be stored at temperatures between 50 and 80 degrees F.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material Manufacturer/supplier.
- F. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- G. The location of all storage facilities and staging shall be coordinated with the Owner.

1.08 JOB CONDITIONS

- A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.
- B. All new materials shall be applied only by personnel familiar with the application and handling of the specified materials and familiar with the Manufacturer's requirements.
- C. All materials shall be applied in accordance with the Manufacturer's requirements for temperature and weather conditions.
- D. Prior to and during application, all dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods.
- E. All materials shall be installed over sound, properly prepared surfaces.
- F. New masonry shall be enclosed, heated or otherwise protected to maintain a temperature above 40 degrees Fahrenheit for a minimum period of 72 hours after installation.
- G. New masonry shall be protected from direct sun or excessive heat to prevent damage to the new materials or adverse effects on curing process.
- H. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for hardhats and safety lines.
- I. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.

- J. All applicable OSHA requirements for staging, weather protection and material handling equipment shall be strictly adhered to at all times during the work. Enclosures for weather protection shall be adequately ventilated.
- K. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.
- L. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.
- M. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Engineer a minimum 48 hours notice prior to the commencement of any demolition or construction activities.
- N. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

PART 2 - MATERIALS

2.01 MATERIALS

- A. New concrete pavers shall be hydraulically pressed concrete units with a 2" thickness intended for use as a pedestrian traffic surface. Deck pavers shall be Hanover Prest Pavers as manufactured by Hanover Architectural Products, of Hanover PA, or approved equal. Color shall be selected by the Owner from the Manufacturer's standard color selection.

2.02 RELATED MATERIALS

- A. New paver edge restraint system shall be Snap Edge Paver Edging as manufactured by SEK-Surebond, of St. Charles, IL, or approved equal.
- B. Fill materials shall be 3/4" crushed stone free from fines, clay, organics, debris or other extraneous material.
- C. Sand for leveling layer shall be clean sharp sand free from fines, clay, organics, debris or other extraneous material, conforming to ASTM C-144 specifications.
- D. Filter fabric shall be 140N Filter Fabric as manufactured by Mirafi Inc of Charlotte, NC, or approved equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner.

- A. Subgrade Preparation - Subgrade materials shall be thoroughly scarified, sprinkled and compacted to a smooth, hard, even surface with 90% compaction.
- B. Fill/Base Preparation
 - 1. Fill materials shall be placed in loose lifts with a maximum depth of 6". All fill materials shall be properly compacted with suitable compaction equipment for the materials and area. General fill materials shall be compacted to 90% of the maximum dry density as determined by ASTM D-1557 Modified Proctor Analysis.
 - 2. Filter fabric shall be installed over gravel fill in continuous sheets without punctures, tears or other damage.
 - 3. Sand base shall be placed to form a level, compact base at the proper level for the new pavers.
 - 4. Fill/Base materials shall be uniformly graded to provide a smooth uniform slope of 1/8" to 1/4" per foot away from the building.
- C. Moisture Control

All fill materials shall be placed in lifts as specified with no more than 3% over, and no less than 1% under the optimal moisture content. The moisture content of all fill materials shall be maintained within the specified limits during compaction procedures.

 - 1. Provide moisture uniformly to new fill materials with inadequate moisture content as required to maintain the specified limits.
 - 2. Scarify and air dry new fill materials with excessive moisture content as required to maintain the specified limits.
- D. Paver Placement
 - 1. Pavers shall be carefully cut and fit on a properly prepared base with tight joints. Add sand to base as necessary to provide a smooth level walking surface with maximum support for pavers.
 - 2. Broadcast additional sand over paver surface as required to properly fill paver joints and produce a stable, well bound surface. Maintain sand covering over walking surface as long as practical to maximize penetration of sand into paver joints.
 - 3. Edge Restraint System shall be installed in strict accordance with the Manufacturer's recommendations with securement spikes placed no more than 12" to 18" on center.

3.03 PROTECTION

- A. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.
- B. The Contractor shall take care during staging and other operations that overloading of the structure does not occur.

- C. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.
- D. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.
- E. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.04 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

3.05 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work, including final clean-up, shall be required by the Owner and Engineer.

END OF SECTION

SECTION 06100
ROUGH CARPENTRY

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the construction of new exterior wood framed decks. All new materials shall be installed in a first class, workmanlike manner to provide a structurally sound, properly flashed deck. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this Section shall be directly related to the work under the following Sections:

- Section 02051 – Demolition

The work shall include all materials, equipment and labor required to properly complete the work under this and related Sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- American Plywood Association (APA);
- American Society for Testing and Materials (ASTM);
- American Wood Preserver's Association (AWPA);
- Federal Specification (FS);
- National Forest Products Association (NFoPA);
- Occupational Safety and Health Administration (OSHA).

1.04 SCOPE OF WORK

- A. Installation of new flashings and sealant to provide watertight connections between the new decks and existing construction.
- B. Installation of new concrete deck footings.
- C. Installation of new vertical deck posts.
- D. Construction and securement of new structural deck frames.
- E. Installation of new decking.
- F. Installation of new deck railings and privacy walls.
- G. Provide final clean-up.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- NFoPA, National Design Specification for Wood Construction;
- NFoPA-81, Design Values for Joists and Rafters;
- Material Manufacturer's Requirements.

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to the commencement of the work:

- Lumber and Mill Slips;
- Fasteners;
- Flashing Materials
- Project schedule including start dates and durations of the various phases of the work.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.
- B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.
- C. Lumber materials shall not be exposed to moisture in any form before, during or after delivery to the site. Lumber materials shall be stored in well ventilated areas without contact with the ground.
- D. All lumber shall bear a grade mark indicating grade and species of an association or agency certified by the Board of Review, American Lumber Standards Committee.
- E. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.
- F. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material Manufacturer/supplier.
- G. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- H. The location of all storage facilities and staging shall be coordinated with the Owner.

1.08 JOB CONDITIONS

- A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.
- B. All materials shall be applied in accordance with the Manufacturer's requirements for temperature and weather conditions.
- C. All materials shall be installed over dry, sound, properly prepared surfaces.
- D. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work.
- E. All work, including materials, equipment and staging shall be secured from wind blow-off at

all times.

- F. All applicable OSHA requirements for staging and material handling equipment shall be strictly adhered to at all times during the work.
- G. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.
- H. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.
- I. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Engineer a minimum 48 hours notice prior to the commencement of any demolition or construction activities.
- J. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

PART 2 - MATERIALS

2.01 MATERIALS

A. Structural Lumber

- 1. All lumber shall be new, sound, straight, of consistent size, free of stains and mildew, and kiln-dried to a moisture content of not more than 19%. Lumber shall be surfaced-four-sides and shall bear grade and trademarks.
- 2. All lumber shall be the longest practical lengths for its intended use, with single length pieces wherever possible.
- 3. Lumber dimensions shall be construed to be nominal dimensions, except as specifically noted.
- 4. General Lumber Schedule:

<u>Item</u>	<u>Grade</u>	<u>Species</u>
Lumber 2" nominal thickness or greater	No. 2 and Better	Hem-Fir or Southern Yellow-Pine
Lumber less than 2" nominal thickness	Merchantable	Hem-Fir or Spruce

- 5. All lumber for new exterior decks shall be non-arsenic and non-chromium pressure-treated wood produced in accordance with ACQ Preserve Standard ACQ-02-02 and the appropriate AWWA Standards (U1, T1, UC1, UC2, UC3A, UC3B, UC4A, UC4B), ICBO ER 4981. New lumber for exterior decks shall be preservative pressure-treated from the manufacturer. Retention shall be at least 0.40 lbs. of ACQ per cubic ft. of wood. Acceptable material for exterior wood deck construction shall be Preserve ACQ treated lumber, as manufactured by Chemical Specialties, Inc. of Charlotte, NC, or approved equal.

2.02 RELATED MATERIALS

- A. New exterior decking shall be composite wood decking. Exterior decking shall have a minimum compressive strength (length) of 3031 psi when tested in conformance with ASTM D695 requirements and a minimum tensile strength (length) of 1810 psi when tested in conformance with ASTM D638 requirements. Exterior decking shall have a flame spread rating of not more than 75 and a smoke development rating of not more than 200 when tested in conformance with ASTM E84. New exterior decking shall be TwinFinish 5/4 Plank as manufactured by the Timber Tech of Wilmington, OH, or approved equal. Color shall be selected by the Owner from the manufacturer's standard colors.
- B. New PVC deck and stair railings shall be Evernew Railings as manufactured by the Certainteed Corporation of Buffalo, NY. New railings shall be Cambridge style railings. All accessories, including support posts, fastening plates and fasteners shall be manufactured by or approved by the same manufacturer.
- C. New PVC deck privacy partitions shall be Galveston Partitions as manufactured by the Certainteed Corporation of Buffalo, NY. New privacy partitions shall be Galveston with Lattice Accent. All accessories, including support posts, fastening plates and fasteners shall be manufactured by or approved by the same manufacturer.
- D. Fasteners

Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion.

1. Fasteners for decking and baluster securement shall be stainless steel #8 deck screws. Fasteners shall have minimum 1 1/2" penetration into sound substrate.
 2. Fasteners for 2" structural lumber securement shall be 16d, galvanized steel ring shank nails. Fasteners shall be galvanized in accordance with ASTM A153 specifications. Fasteners shall have minimum 1 1/2" penetration into sound substrate.
 3. Lag screws for ledger attachment shall be 3/4" diameter galvanized steel lag screws of sufficient length to provide a minimum 3" penetration into sound materials. Lag screws shall be galvanized in accordance with ASTM A153 specifications. All lag screws shall be provided with flat washers of the proper size.
 4. Lag screws for post attachment shall be 1/2" diameter galvanized steel lag screws of sufficient length to provide a minimum 3" penetration into sound materials. Lag screws shall be galvanized in accordance with ASTM A153 specifications. All lag screws shall be provided with flat washers of the proper size.
 5. Bolts for through bolted connections shall be 1/2" diameter zinc plated steel bolts of sufficient length to provide adequate exposed threaded connection for bolting. All bolts shall be provided with steel nuts and flat washers of the proper size. Bolts and accessories shall be galvanized in accordance with ASTM A153 specifications.
- E. New joist hangers and other metal connecting devices shall be galvanized steel connectors of the proper dimensions and capacities for their intended use and design loads. Metal connectors shall be galvanized in accordance with ASTM A653, designation G185 specifications. Fasteners for metal connectors shall be by the same Manufacturer and of the proper size, type and quantity for each type of connector.

- F. Metal Flashings
1. New copper flashings shall be York Shield 106HP High Performance Copper Flashing, as manufactured by York Manufacturing, or approved equal.
 2. New lead flashings shall be 2.5 lb. sheet lead conforming to FS QQ-L-201f specifications.
 3. All flashings shall be approved by the Manufacturer for use with ACQ treated lumber.
- G. Sealant materials shall be a low modulus, one part, silicone sealant conforming to FS TT-S-001543A and ASTM C920, Type S, Grade NS Class 25 specifications. Sealant shall be Silpruf as manufactured by GE Silicones of Waterford, NY or approved equal. Color shall match the surrounding materials to the satisfaction of the Owner.
- H. Concrete shall conform to the latest ACI Code and Design Mix Specifications, meeting the following criteria:
- Concrete shall have 28 day strength of 4000 psi.
 - Aggregate size shall be maximum 3/4".
 - The air content in concrete shall be between 4% and 6%.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements.

- A. Concrete Footings
1. New deck footings shall be formed in properly excavated holes to provide a neat, finished footing of the proper dimensions.
 2. Concrete shall be handled as rapidly as practicable from the mixer to the place of final deposit by methods which prevent the separation or loss of ingredients.
 3. Concrete that has partially hardened shall not be deposited in the work. The discharge of concrete shall be started not more than 60 minutes after the introduction of mixing water. Placing of concrete shall be completed within 90 minutes of the first introduction of cement into the mix.

B. Deck Framing

1. All framing shall be plumb, properly level, and true, with tight, close fitting joints, securely attached to the surrounding construction.
2. All new framing member connections shall have maximum contact between members.
3. New members shall be secured on alternate sides to minimize cupping, bowing and twisting of the members.
4. The Contractor shall take all reasonable measures to minimize splitting of the new framing members including, but not limited to, fastening no less than 1" from member ends, predrilling and dulling fasteners before installation.
5. New decks shall be provided with a pitch of 1/8" per foot away from the building.
6. Deck frames shall be fastened into sound framing members in the existing building walls with the specified lag bolt connections.

C. All lumber shall be fastened with proper fasteners according to the schedule for individual framing members.

Joist to header, end nail (Except where joist hanger is provided)	3-16d
Built up girders and beams	3-16d @ 12" o.c.
Joist to sill or girder, toe nail 8d @ 12" o.c. (continuous)	4-8d (end)
Continuous header (two pieces)	3-12d @ 12" o.c.
Decking, nominal 4" to joist or header, face nail	2-#8 deck screws
Decking, nominal 6" or more to joist or header, face nail	3-#8 deck screws
Wall Sheathing 8"o.c.intermediate	8d @ 6"o.c.edges
Plywood Subflooring 8"o.c.intermediate all connections glued	8d annular @ 6"o.c.edges

D. Vertical Post Installation

1. Deck posts shall be plumb and have the proper length to provide proper support for the new decks.
2. Posts shall be notched around deck frame members to provide a neat, tight fitting opening for the frame member. Posts shall be notched no more than 1/8" over than the width of the frame member.
3. Post bases shall be secured with the specified anchors set in the concrete footings.

E. Decking Installation

1. Decking shall be secured to all structural framing members with the specified fasteners at the specified rates. Decking shall be installed with tight joints.
2. Decking shall be installed in strict accordance with the Manufacturer's requirements.

F. Metal connectors shall be installed in strict accordance with the Manufacturer's requirements. The Manufacturer's required fasteners shall be used at the required rates and spacing for each type of connector.

G. Metal Flashings

All flashings shall be installed as the job progresses. No metal flashings should be bent so as to weaken the material due to overstressing at the bend.

1. Provide continuous flashings between all wall surfaces and deck frames. Back seal flashings at all fastener penetrations. Provide new flashing with 3/4" lap under overlying flashing, siding or trim and 3/4" laps over underlying flashing, siding or trim. Back seal all joints in flashings. Provide flashings with minimum 2" return behind all siding or trim materials at ends of decks. Prepare and seal all joints between flashing and siding or trim materials at ends of decks.

2. Provide lead flashings at all corners and other compound angle changes. Lead shall be properly formed without overstressing or other damage to the sheet lead. Install corner flashings with 2" laps under overlying flashing, siding or trim and 2" laps over underlying flashing, siding or trim.

H. New PVC deck railings and privacy partitions shall be installed in strict accordance with the Manufacturer's requirements. New railings shall be adequate to satisfy the applicable code requirements for height and structural capacity.

1. All railing and post connections shall be fastened into sound framing members with the Manufacturer's recommended fasteners and connectors at the recommended rates.

2. Railings shall be provided with approved support posts at a maximum 6' o.c. Railing connections shall be adequate to satisfy the applicable code requirements for height and structural capacity.

3.03 PROTECTION

A. The Contractor shall be responsible for securing access to the decks under construction up to the time of final inspection and acceptance of the work. Acceptance shall include acceptance as required by the Local Building Officials.

B. The Contractor shall be responsible for maintaining the watertightness of the building at all times during the work. No more materials shall be removed than can be replaced and/or made watertight in the same day's work. No materials shall be removed during periods of inclement or threatening weather.

C. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.

D. The Contractor shall repair and/or clean all interior finishes damaged or stained as a result of the work. This shall include but not be limited to all painted, gypsum sheathing and other interior finishes.

E. The Contractor shall take care during staging and other operations that overloading of the structure does not occur.

F. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.

- G. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. This shall include all exits except those accessing decks under construction. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.
- H. The Contractor shall take all reasonable measures to secure access to decks under construction. This shall include, but not be limited to, posting notices of the work in progress on all egress to the affected decks, and securing barriers over all egress to the affected decks to prevent unauthorized access.
- I. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.04 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

3.05 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work, including final clean-up, shall be required by the Owner and Engineer.

END OF SECTION

SECTION 07200
INSULATION

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the installation of spray foam and batt insulation at designated locations in the Units. All new materials shall be installed in a first class, workmanlike manner. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this Section shall be directly related to the work under the following Sections:

- Section 02050 - Demolition
- Section 07310 - Asphalt Shingles

The work shall include all materials, equipment and labor required to properly complete the work under this and related sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- American Society for Testing and Materials (ASTM);
- Underwriters Laboratories (UL).

1.04 SCOPE OF WORK

- A. Covering of all electrical boxes to prevent foam spray penetrating boxes.
- B. Installation of 2 lb. closed cell spray foam insulation in Triplex rafter bays.
- C. Installation of .50 lb. open cell spray foam insulation in Triplex rafter bays.
- D. Provide final clean-up.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- ASTM-C-739
- Material Manufacturer's Requirements.

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to the commencement of the work:

- Manufacturer's product literature related to cellulose insulation and non-structural rigid board insulation for recessed lights.
- Manufacturer's product literature for rafter vents.
- Manufacturer's product literature for Icynene spray foam insulation
- Manufacturer's product literature for air sealing of wall and ceiling penetrations.
- Project schedule including start dates and durations of the various phases of the work.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.
- B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.
- C. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.
- D. All materials shall be stored at temperatures between 50 and 80 degrees F.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material Manufacturer/supplier.
- F. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- G. The location of all storage facilities and staging shall be coordinated with the Owner.

1.08 JOB CONDITIONS

- A. The Contractor shall coordinate all access to the work areas with the Unit Owners and the Board of Trustees.
- B. All new materials shall be applied only by personnel familiar with the application and handling of the specified materials and familiar with the Manufacturer's requirements.
- C. All materials shall be applied in accordance with the Manufacturer's requirements.
- D. All materials shall be installed over dry, sound, properly prepared surfaces.
- E. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work.
- F. All applicable OSHA requirements for staging and material handling equipment shall be strictly adhered to at all times during the work.

PART 2 - MATERIALS

2.01 MATERIALS

- A. Spray Foam Insulation shall be 2 lb. closed cell spray foam insulation and .50 lb. open cell spray foam insulation as manufactured by Icynene Inc. of Mississauga, Ontario, Canada, or approved equal.

2.02 RELATED MATERIALS

- A. Firestopping sealant shall be a non-sag, one part sealant with high temperature ceramic fibers designed for sealing penetrations in fire rated walls and floors. Firestopping sealant shall conform to applicable Code requirements for through-penetration fire stops in accordance with ASTM E814, and for flame spread, smoke contribution and fuel contribution in accordance with ASTM E84. Firestopping sealant shall be Fyre Shield as manufactured by Tremco, of Cleveland, Ohio.
- B. Rafter Vents shall be Original Accuvent Rigid Polyvinyl Chloride vents, as manufactured by Brentwood Industries of Reading PA, or approved equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements.

- A. Spray Foam Insulation
 - 1. Review designated locations to insure that the new spray foam insulation is not placed within 4" of any heat source where the temperature exceeds 200 degrees F. per ASTM C411.
 - 2. Clean designated rafter bays of all insulation and loose materials capable of interfering with insulation placement.
 - 3. Apply spray foam insulation to designated rafter bays in strict compliance with Manufacturer's specifications.
 - 4. Spray foam insulation shall be applied in lifts of not more than 3" in depth, or as recommended by the Manufacturer, and allowed to cure prior to the application of additional material.

5. Two pound closed cell spray foam insulation shall be applied to the warm side of the opening. The remainder of the opening shall be filled with one half pound open cell spray foam insulation in properly cured lifts.

3.03 PROTECTION

- A. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. If the Contractor fails to make corrective measures to any items damaged as a result of the work within seven (7) days of notice by the Owner or Engineer of items damages as a result of the Contractor's work, then the Owner may make the corrective measures, including replacement or refurbishment of damaged items, and shall deduct the cost from the contract price.
- B. The Contractor shall take care during staging and other operations that overloading of the structure does not occur.
- C. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.
- D. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.

3.04 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

3.05 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work and final clean-up, shall be required by the Owner and Engineer.

END OF SECTION

SECTION 07310
ASPHALT SHINGLES

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the installation of the new asphalt shingle roof system. All new materials shall be installed in a first class, workmanlike manner to provide a secure, watertight roof system. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this Section shall be directly related to the work under the following Sections:

- Section 02050 - Demolition
- Section 06200 - Finish Carpentry
- Section 07200 - Insulation

The work shall include all materials, equipment and labor required to properly complete the work under this and related Sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- American Society for Testing and Materials (ASTM);
- American Wood Preserver's Association (AWPA);
- Asphalt Roofing Manufacturers Association (ARMA);
- Federal Specification (FS);
- Sheet Metal & Air Conditioning Contractors National Association (SMACNA);
- Underwriters Laboratories (UL).

1.04 SCOPE OF WORK

- A. Installation of new self-adhering rubberized asphaltic membrane underlayment.
- B. Installation of metal drip edges, gutters, step flashings, vents and other flashings.
- C. Installation of skylight units.

NOTE: The Contractor shall submit a Unit Price for skylight replacement with the Bid. Replacement of one skylight per building shall be included in the Bid price. The Unit Price will be used to adjust the Contract price based on the actual number of skylights replaced.

- D. Installation of new shingles.
- E. Provide final clean-up.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- ARMA Residential Asphalt Roofing Manual;
- Material Manufacturer's Requirements;
- SMACNA Specification for Thermal and Moisture Protection.

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to the commencement of the work:

- Shingle Manufacturer's Product Literature;
- Shingle Manufacturer's Color Chart;
- Shingle Manufacturer's Sample Warranty;
- Waterproofing Membrane;
- Metal Flashings;
- Contractor's Sample Guarantee;
- Staging and scaffolding programs including current certificates of inspection for all applicable equipment;
- Project schedule including start dates and durations of the various phases of the work.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.
- B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.
- C. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.
- D. Shingles shall be handled and stored on flat, smooth surfaces to prevent cracking or other damage due to overstressing.
- E. Rolled materials shall be stored on end without damage to the ends of rolls.
- F. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- G. The location of all storage facilities and staging shall be coordinated with the Owner.

1.08 JOB CONDITIONS

- A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.
- B. All materials shall be applied in accordance with the Manufacturer's requirements for temperature and weather conditions.
- C. All materials shall be installed over dry, sound, properly prepared surfaces.
- D. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for safety harnesses, safety lines, and hardhats.

- E. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.
- F. All applicable OSHA requirements for staging and scaffolding shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for design and certification staging, cables, tie-offs and other load bearing components for all required design loads.
- G. Construction loads on roof areas shall not exceed 25 pounds per square foot. All equipment and materials shall be distributed on the roof to minimize concentrated loads to the greatest practical degree.
- H. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.
- I. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Engineer a minimum 48 hours notice prior to the commencement of any demolition or construction activities.
- J. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

PART 2 - MATERIALS

2.01 MATERIALS

- A. New asphalt roof shingles shall be random tab, self-sealing, 50 year fiberglass shingles. Shingles shall conform to ASTM D3462 and D3018, Type I Specifications, ASTM D3462 Specifications for tear resistance, Class A requirements for flammability resistance in accordance with ASTM E108 Specifications and 110 mph wind resistance in accordance with ASTM D3161 Class F.

New asphalt roof shingles shall be CertainTeed LandMark TL Premium Series Roof Shingles as manufactured by CertainTeed Corporation of Valley Forge, PA, or approved equal. Shingle color shall be selected by the Owner from the Manufacturer's standard color selection.

Accessories for asphalt roof shingles shall be manufactured by the same Manufacturer or approved for use by the same Manufacturer, including the following:

- Ridge Caps shall be Shadow Ridge Hip and Ridge Accessory Shingles as manufactured by CertainTeed Corporation of Valley Forge, PA, or approved equal;
- Starter Shingles shall be Swiftstart starter shingles as manufactured by CertainTeed Corporation of Valley Forge, PA, or approved equal;
- Fasteners for Shingle underlayment shall be 1" plastic round top nails as approved by the underlayment manufacturer.

2.02 RELATED MATERIALS

- A. Waterproofing membrane shall be self adhering rubberized asphaltic membrane with integral polyethylene sheeting with .040" thickness. Waterproofing membrane shall conform to ASTM D 412 and D146 specifications. Waterproofing membrane shall be Ice & Water Shield as manufactured by W. R. Grace or approved equal.

- B. Metal Flashings
1. New drip edge shall be 0.019" thick 3105-H 14 alloy aluminum. Finish color shall be bronze.
 2. Step flashings shall be 0.019" thick 3105-H 14 alloy aluminum extending 5" onto the roof surface and 5" up the wall. Step flashing length shall be equal to the shingle exposure plus 2" to provide a minimum 2" head lap between flashing pieces. Flashings shall be formed without overbending or other damage to metal at bends.
 3. Flashings at curb and wall corners and other areas of compound angles shall be 4 lb. sheet lead conforming to FS QQ-L-201f specifications.
 4. New vent stack flashings shall be 3003-H 14 alloy aluminum base with integral neoprene flange. Neoprene flange shall be of the proper diameter to provide adequate compression for a watertight seal around the existing vent stack.
 5. New shed peak vents shall be formed from .019 stucco embossed aluminum with a minimum 9 square inches free vent space per linear foot. Accessories, including End Plugs, shall be by the same manufacturer. Ridge Vents shall be Peak Filtervent PFV152 as manufactured by Air Vent Inc., or approved equal.
- C. New ridge vents shall be formed from high impact copolymers with a minimum 18 square inches free vent space per linear foot. Ridge vents shall be provided with baffled openings to prevent entry of wind and wind driven rain. Accessories, shall be by the same manufacturer. Ridge vents shall be Shinglevent II as manufactured by Air Vent. Inc. of Peoria Heights, IL, or approved equal.
- D. Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion.
1. Fasteners for shingle application shall be 11 gauge, barbed shank, hot dipped galvanized roof nails with 3/8" heads and minimum 1 1/2" length.
 2. Fasteners for hip and ridge cap application shall be 11 gauge, barbed shank, hot dipped galvanized roof nails with 3/8" heads and minimum 1 3/4" length.
- E. Flashing cement shall be trowel grade asphalt based plastic roof cement conforming to ASTM D 4586, Type I (Non-Asbestos) specifications.
- F. New skylights shall be Manual Deck Mount Venting Skylights (VS), as manufactured by Velux America Inc., of Greenwood, SC, or approved equal.
1. Skylights shall be provided with argon injected insulated glass with laminated tempered safety glass. Skylight insulated glass shall be ComfortPlus Glass, as manufactured by Velux America Inc., of Greenwood, SC, or approved equal.
 2. All skylight accessories including flashing kits, step flashings, and fasteners shall be by or approved by the skylight manufacturer. Skylight flashing kits shall be designed and approved by the manufacturer for flashing into asphalt shingles or metal roof panels, respectively.
- G. Sealant materials shall be a low modulus, one part, silicone sealant conforming to FS TT-S-001543A and ASTM C920, Type S, Grade NS Class 25 specifications. Sealant shall be Silpruf as manufactured by GE Silicones of Waterford, NY or approved equal. Color shall match the surrounding materials to the satisfaction of the Owner.

2.03 MANUFACTURER'S WARRANTIES

A. Shingle Warrantee

The Contractor shall provide the Owner a warrantee, furnished by the shingle manufacturer, which agrees to repair leaks and other material defects in the shingles at no additional cost to the Owner in accordance with the following conditions:

- The warrantee shall cover full replacement of the roof system for a period of 10 years.
- The warrantee shall cover the cost of replacement materials for a period of 50 years.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the plans and specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements.

A. Waterproofing Membrane

1. Waterproofing membrane shall be installed on smooth, clean roof deck surfaces free of wrinkles or other irregularities in strict accordance with the Manufacturer's requirements. Provide minimum 2" head laps and 6" end laps in waterproofing membrane.
2. Any wrinkles which occur in the membrane surface shall be cut out and patched with new waterproofing materials to provide a smooth continuous surface.
3. Underlayment shall not be used as a temporary waterproofing cover.

B. Asphalt Shingles

1. Asphalt shingles shall be installed with a 5" exposure with 2" head laps. Joints shall be staggered in pyramid fashion to provide a spacing of six courses between aligning vertical joints. There shall be no racking of shingles.

The Contractor shall take measures to ensure that new shingles are installed in straight, true courses, with shingle joints and tabs properly aligned. This shall include measuring and running horizontal and vertical chalk lines every six courses.

Shingles shall be fastened with approved fasteners at the rate of 6 fasteners per full shingle and not less than two fasteners per partial shingle. Shingle staples shall not be allowed. Fasteners shall be installed flush with the shingle surface without overdriving. Fasteners shall be located in strict accordance with the Manufacturer's requirements. There shall be no exposed fastener heads on the finished shingle roof surface.

2. Eaves - A 7" starter shingle course shall be installed below the first course of full shingles with joints offset from first full course. All fasteners and adhesive tabs shall be offset from joints and tab slots in first course of full shingles. Tabs of first course of full shingles shall be set in bead of roof cement to provide proper adhesion to starter course without Manufacturer's adhesive tabs.
3. Rakes - Install shingles along roof rakes with shingles trimmed flush with drip edge along rake. Trimmed shingle tabs shall have a minimum width of 1 1/2". Set last shingle tab in bead of roof cement to prevent wind damage.
4. Ridges - Ridge caps shall be 12" x 12" caps cut from full shingles with 5" exposure. Trim corners to ensure covered end of caps are not visible below overlying cap. Ridge caps shall be molded to the ridge without overstressing, cracking or other damage to the cap.

Ridge caps on main roof areas shall be installed with leading edge away from prevailing winds to prevent wind damage. Ridge caps on dormer roof areas shall be installed with leading edge away from the main roof areas.

Ridge caps shall be fastened 1" from bottom edge and 1" back from overlying cap edge. All fastener heads shall be covered with roof cement to provide adhesion for overlying cap. Set last cap in full bed of roof cement without exposed fasteners.

All ridge caps shall be allowed to heat adequately prior to installation to allow cap to conform properly to ridge and any other angle changes. Provide heated enclosure if exterior roof temperatures are inadequate for heating.

5. Valleys - Valleys shall be cut valleys with the shingle courses from one side of the valley extended a minimum 12" beyond center of valley. All materials extended beyond the center of the valley shall be installed and fastened on one side, thoroughly worked into the break of the valley, and fastened on the remaining side. Cut sections shall run with the flow of water from the larger or steeper of the two roof planes. Shingle courses from the cut side of the valley shall be cut 2" back from the centerline of the valley.

Valley shingles shall be fastened with 2 fasteners at the end of each shingle. All fasteners shall be minimum 6" from center of valley.

C. Ridge Vents

1. Clear all underlayment, shingles and other materials from ridge openings to provide maximum air flow. New ridge vents shall be installed over ridge openings in continuous bead of mastic below base flanges and fastened in strict accordance with the Manufacturer's requirements.
2. Cut and install shingle vent caps as required by the Manufacturer. All caps shall be allowed to heat adequately prior to installation to allow cap to conform properly to ridge and any other angle changes. Provide heated enclosure if exterior roof temperatures are inadequate for heating.

3. Terminate ridge vent 6" from gable roof end. Cover end of ridge with shingle ridge caps extended 6" inside end of ridge vent. Provide waterproofing membrane below all shingle ridge caps.

D. Metal Flashings

1. Drip Edge - Metal drip edge shall be installed along eave and rake locations with the specified fasteners at 8" o.c. Install drip edge over waterproofing membrane on roof eaves. Install drip edge over waterproofing membrane on roof rakes.
2. Step Flashings - Install step flashings below each course of shingles with lower edge of step flashing even with lower edge of shingles without exposed metal flashings. Provide minimum 2" head lap between step flashings. Fasten step flashings to roof deck with 2 fasteners set 1" below top of step flashing. Overlying shingles shall be installed with shingle tabs adhered to metal flashings.
3. Corner Flashings - Provide lead flashings at all corners and other compound angle changes. Lead shall be properly formed without overstressing or other damage to the sheet lead. Install corner flashings with 2" laps under overlying flashings and over underlying flashings. Set corner flashings in bed of roof cement.
4. Metal Flange Flashings - Shingles around metal flanged flashings, including vent stack flashings, vents and skylights, shall be trimmed as necessary for continuous shingle installation. Set base of flashing in roof cement. Overlying shingles shall be installed with shingle tabs adhered to metal flashing base.
5. Gutters - Gutters shall be formed from continuous sheets. Gutters shall be provided with a continuous pitch to downspouts and fastened @16" o.c.

Provide expansion joints @ 30' o.c. in all runs of gutter of 30' or more.

Provide 3" outlet tubes at all downspout locations with wire strainers.
6. Downspouts - Downspout joints shall be lapped a minimum of 1" in direction of flow with riveted seams. Downspouts shall be securely fastened with hangers fastened to the wall a maximum of 10' o.c.

E. Skylights

1. New skylights shall be installed plumb and square in properly prepared openings. Skylight heads and sills shall be aligned parallel and square with jambs.
2. New skylights shall be installed without springing, forcing or distorting. Fasteners and accessories shall be installed at the specified rates to provide continuous support for the new units.
3. Waterproofing membrane shall be installed on all sides of the new skylights and extended onto the skylight curbs on all sides.
4. Proper flashing kits shall be installed and flashed into the surrounding roof materials in strict accordance with the Manufacturer's recommendations.

3.03 PROTECTION

- A. The Contractor shall be responsible for maintaining the watertightness of the building at all times during the work. No more materials shall be removed than can be replaced and completely flashed in the same day's work. No materials shall be removed during periods of inclement or threatening

weather.

- B. The Contractor shall provide weathertight temporary tie-ins between the new and existing construction during the work. These tie-ins shall be adequate to prevent weather related damage to the building during periods of inclement weather.
- C. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.
- D. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.
- E. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.
- F. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.04 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

3.05 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work, including final clean-up, shall be required by the Owner and Engineer.

END OF SECTION

SECTION 07460
RIGID PVC SIDING

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the installation of the new rigid PVC siding on above-roof wall areas. All new materials shall be installed in a first class, workmanlike manner to provide a secure, watertight siding system. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this Section shall be directly related to the work under the following Sections:

- Section 02050 - Demolition
- Section 07310 - Asphalt Shingles
- Section 07530 - EPDM Membrane Roofing

The work shall include all materials, equipment and labor required to properly complete the work under this and related Sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- American Society for Testing and Materials (ASTM);
- Federal Specification (FS);

1.04 SCOPE OF WORK

- A. Installation of new siding underlayment and flashings in areas to receive new siding materials on above-roof wall areas and chimney enclosures.
- B. Installation of new starter strips, J channels and other terminations.
- C. Installation of new rigid PVC siding materials.
- D. Installation of new metal chimney cladding and caps.
- E. Provide final clean-up.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- Material Manufacturer's Requirements;

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to the commencement of the work:

- Siding Manufacturer's Product Literature;
- Siding Manufacturer's Sample Warranty;
- Siding Manufacturer's Color Chart;
- Contractor's Sample Guarantee;
- Fasteners;
- Project schedule including start dates and durations of the various phases of the work;

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.
- B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.
- C. New materials shall not be exposed to moisture in any form before, during or after delivery to the site. New materials shall be stored in well ventilated areas without contact with the ground.
- D. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.
- E. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material Manufacturer/supplier.
- F. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- G. The location of all storage facilities and staging shall be coordinated with the Owner.
- H. All trash and job related debris shall be removed from the site or stored in approved dumpsters or storage areas at the end of each day's work.
- I. The location of all dumpsters, storage areas and staging shall be coordinated with the Owner. Dumpsters shall be covered at all times other than loading or unloading.

1.08 JOB CONDITIONS

- A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.
- B. All materials shall be applied in accordance with the Manufacturer's requirements for temperature and weather conditions.
- C. All materials shall be installed over dry, sound, properly prepared surfaces.
- D. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work.
- E. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.
- F. All applicable OSHA requirements for staging and material handling equipment shall be

strictly adhered to at all times during the work.

- G. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.
- H. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.
- I. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Engineer a minimum 48 hours notice prior to the commencement of any demolition or construction activities.
- J. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

PART 2 - MATERIALS

2.01 MATERIALS

- A. New siding materials for Duplex buildings shall be solid extruded polyvinyl chloride (PVC) siding. PVC siding shall conform with ASTM D3679 requirements.

All accessories for PVC siding shall be by the same Manufacturer or approved by the Manufacturer including the following:

- Fasteners
- PVC Inside/Outside Corners
- Starter Strip
- PVC Drip Cap
- PVC Soffit
- PVC J Channel
- PVC Termination and Clip Pieces

- B. New siding for Triplex Buildings shall simulate board and batten siding with an overall width of 8" and a batten width of 1 ½". Siding shall be provided with factory formed hook strips to provide neat securement between panels. Siding shall be provided with elongated fastener slots to allow thermal movement of the panels. Color and texture of new siding shall be selected by the Owner from the Manufacturer's standard color and texture selection.

New siding for Triplex Buildings shall be Board and Batten – Single 8" Siding as manufactured by CertainTeed Corporation of Valley Forge, PA, or approved equal.

- C. New siding for Duplex Buildings shall simulate beveled clapboard siding with a 4" exposure. Siding shall be provided with factory formed hook strips to provide secure, neat, horizontal securement between panels and shall be factory notched to provide secure, neat butt joints. Siding shall be provided with elongated fastener slots to allow thermal movement of the panels. Color and texture of new siding shall be selected by the Owner from the Manufacturer's standard color and texture selection.

New siding for Duplex Buildings shall be Monogram Vinyl Siding with a nominal wall thickness of .046" as manufactured by CertainTeed Corporation of Valley Forge, PA, or approved equal.

2.02 RELATED MATERIALS

- A. Replacement trim shall be expanded rigid poly vinyl chloride material with a small-cell microstructure and density of .55 grams/cm³. PVC trim shall be AZEK® Trimboards as manufactured by Vycom Corporation, of Moosic, PA, or approved equal.

All accessories for PVC trim shall be by the same Manufacturer or approved by the Manufacturer including the following:

- Fasteners
- Adhesives
- Sealant

B. Fasteners

Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion.

1. Fasteners for siding securement shall be 11 gauge, aluminum nails with 3/8" heads and adequate length to provide 1 1/2" penetration into sound materials.

2. Fasteners for chimney cap securement and other accessories shall be brass screws with neoprene washers with a minimum 1 1/2" penetration into sound materials.

C. New chimney caps shall be shop fabricated from 20 ounce lead coated copper conforming to ASTM B-101-78, Type I, Class A specifications. Solder shall be 50% block tin and 50% pig lead conforming to FS QQ-5-571. Flux shall conform to FS O-F-506.

D. New chimney cladding, flashings and accessories shall be shop fabricated from .032" thick 3003-H 14 alloy aluminum. Panel seams shall be double lock standing seams. All accessories including anchor clips shall be fabricated from the same material as the panels. Finish shall match the color of the existing siding to the satisfaction of the Owner.

E. Siding Underlayment shall be self adhering rubberized asphaltic membrane with integral polyethylene sheeting with .040" thickness. Waterproofing membrane shall conform to ASTM D 412 and D146 specifications. Waterproofing membrane shall be Ice & Water Shield as manufactured by W. R. Grace or approved equal.

Metal chimney cladding underlayment shall be self-adhering butyl rubber based membrane with integral polyethylene sheeting with .030" thickness. Waterproofing membrane shall conform to ASTM D 412 and D 146 specifications. Waterproofing membrane shall be Grace Ultra as manufactured by W.R. Grace Construction Products or approved equal.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements.

A. Underlayment/Flashing Installation

1. Siding underlayment shall be installed in all areas receiving new siding. Underlayment shall be installed and covered with siding in the same day's work. Underlayment shall not be exposed to rain or other significant moisture prior to the installation of the siding materials.

Siding underlayment shall be installed with enough fasteners for securement on clean, smooth wall surfaces. Provide minimum 2" head laps and 4" end laps in underlayment. End laps in adjacent courses of underlayment shall be offset a minimum of 6'. Underlayment shall be installed free of wrinkles or other irregularities. All underlayment laps shall be taped with the Manufacturer's approved tape.

2. Flashings shall be installed on all corners, rakes and all sides of door, window and other wall penetrations. Flashings shall be installed in shingle fashion with head flashings overlapping jamb flashings, and jamb flashings overlapping sill flashings.

Flashings shall extend a minimum of 6" onto the exterior face of the wall and a minimum of 3" beyond siding/trim joints. Flashings shall be returned behind existing doors, windows and other through wall components wherever possible. Flashings shall be returned behind new doors, windows and other through wall components for the full width of the wall cavity.

B. Siding Installation

1. Vinyl siding materials shall be installed in strict accordance with the Manufacturer's requirements. Siding and accessories shall be installed with properly lapped joints and details to provide a secure, watertight system. All siding system components shall be provided with proper flashings along all exposed top edges to provide a completely flashed system.

All fasteners shall be installed through preformed slots intended for this purpose. There shall be no face nailing of siding materials or accessories.

Siding and accessories shall be fastened to allow adequate thermal expansion and contraction as required by the Manufacturer. Where other building components require installation of fasteners through the siding materials, provide predrilled holes, 1/4" oversized, for all fasteners. Siding shall be installed with a 1/4" clearance between panel ends and the backs of corner, J bead and other termination reveals.

2. Siding shall be installed with level, horizontal courses and plumb, straight corners and vertical trim. Provide shims below the new siding materials as necessary to provide a smooth, even finished siding surface.
3. Siding shall be installed and fastened with the specified fasteners at each underlying framing member. Fastener spacing shall be no more than 24" o.c. in any area.

Siding shall be installed in the longest practical lengths to minimize joints, with single length pieces wherever possible. Where siding can not be completed with single length pieces, individual pieces shall have lengths of not less than 36".

Siding shall be installed with a solid connection between the bottom hook and the corresponding return on the underlying panel. Siding panels shall be installed

without vertical tension which pulls or distorts the panels.

Butt joints in siding shall be installed with a 1" overlap in the exposed panel sections and a 1/2" clearance between fastened nailing flanges. All exposed butt joints shall be factory ends. Lap butt joints away from the heaviest flow of traffic. Joints in successive panel courses shall be staggered a minimum of 36".

Siding fasteners shall not be over-driven, and shall have the Manufacturer's required clearance between the fastener head and the nailing flange surface. Siding fasteners shall be installed in the preformed slots with a minimum 1/16" clearance between the fastener and either side of the fastener slot.

4. Vinyl corners (inside and outside) shall be installed and fastened with the specified fasteners into sound framing materials. Fastener spacing shall be no more than 12" o.c. on each side.

Corner fasteners shall not be over-driven, and shall have the Manufacturer's required clearance between the fastener head and the nailing flange surface. Corners shall hang on the top fastener with lower fasteners installed in the centers of the fastener slots.

Corners shall be installed in the longest practical lengths to minimize joints, with single length pieces wherever possible. Where splices are necessary, trim nailing flanges as necessary to provide a minimum 3/4" overlap in the exposed corner piece and lap top corner section over the bottom corner section in shingle fashion.

5. Vinyl J bead and other accessories shall be installed and fastened with the specified fasteners into sound framing materials. Fastener spacing shall be no more than 12" o.c. Set all J bead in a continuous bead of sealant.

J bead and other accessory fasteners shall not be over-driven, and shall have the Manufacturer's required clearance between the fastener head and the nailing flange surface. Vertical pieces shall hang on the top fastener with all other fasteners installed in the centers of the fastener slots.

J bead and other accessories shall be installed in the longest practical lengths to minimize joints, with single length pieces wherever possible. Where splices are necessary, trim nailing flanges as necessary to provide a minimum 3/4" overlap in the exposed piece and lap top section over the bottom section in shingle fashion. Trim J bead at window heads to allow tab to be turned down into jamb J beads.

6. Siding panels terminated below soffits, rakes or other overlying horizontal transitions shall be secured along the top edge with an approved finish trim piece. Finish trim shall be installed and fastened with the specified fasteners into sound framing materials. The top edge of the siding panels shall be crimped into the trim piece, or otherwise fastened to provide secure attachment and allow adequate thermal expansion and contraction as required by the Manufacturer.

C. Chimney Cladding

1. The new metal panel system shall be installed with proper seams, flashings and details to provide a secure, watertight system. All system components shall be provided with proper flashings along all exposed top edges to provide a completely flashed system.
2. Metal siding and accessories shall be installed with plumb, straight lines and corners. Horizontal system components shall be installed with level, straight lines. Vertical system components shall be installed with plumb, straight lines.

3. Install fastening clips in seams at 18" o.c. and not less than 3 clips per seam. All clips shall be fastened with a minimum of 2 fasteners per clip. There shall be no exposed fasteners in the finished panel system.

4. Metal panels shall be installed with standing seams securely locked to adjacent panels. Panels shall be installed without stressing panel seams.

D. Chimney caps shall be fabricated to fit properly over the existing chimney frames and flue stacks. New caps shall have continuous pitch on all horizontal surfaces to prevent standing water. Provide wood blocking below new chimney caps to provide a sound surface and maintain proper pitch of the cap. Secure new caps with specified fasteners at 12" o.c. Chimney cap corners shall be soldered to provide a sound, watertight joint.

3.03 PROTECTION

A. The Contractor shall be responsible for maintaining the watertightness of the building at all times during the work. No more materials shall be removed than can be replaced and/or made watertight in the same day's work. No materials shall be removed during periods of inclement or threatening weather.

B. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.

C. The Contractor shall repair and/or clean all interior finishes damaged or stained as a result of the work. This shall include but not be limited to all painted, gypsum sheathing and other interior finishes.

D. The Contractor shall take care during staging and other operations that overloading of the structure does not occur.

E. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.

F. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.

G. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.04 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

3.05 FINAL CLEAN-UP

A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.

B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.

C. All landscaped areas shall be raked clean at the end of each day's work.

D. All paved areas shall be swept clean at the end of each day's work.

SECTION 07530
EPDM MEMBRANE ROOFING

PART 1 - GENERAL

1.01 SUMMARY

The Contractor shall supply all materials, equipment and labor required for completion of the work under this section. This work includes the installation of the new fully adhered EPDM membrane roof system. All new materials shall be installed in a first class, workmanlike manner to provide a secure, watertight roof system. The Contractor shall schedule and coordinate the work to minimize any inconvenience to the building occupants and any disruption of the normal use of the building.

1.02 RELATED WORK

The work under this section shall be directly related to the work under the following Sections:

- Section 02050 - Demolition
- Section 06200 - Finish Carpentry

The work shall include all materials, equipment and labor required to properly complete the work under this and related sections. Specific details and conditions not noted in the specifications and drawings shall be completed in conformance with the material manufacturer's required details and proper construction practices.

1.03 REFERENCES

The following publications and references shall be included as part of this specification to the extent referenced:

- American Plywood Association (APA);
- American Society for Testing and Materials (ASTM);
- American Wood Preserver's Association (AWPA);
- Factory Mutual Research Laboratories (FM);
- Federal Specification (FS);
- Sheet Metal & Air Conditioning Contractors National Association (SMACNA);
- Single Ply Roofing Industry (SPRI);
- Underwriters Laboratories (UL).

1.04 SCOPE OF WORK

- A. Installation of new mechanically fastened wood blocking and sheathing as required for installation of new membrane roof system.
- B. Provide new wood blocking as required to provide a minimum 8" curb height on the existing roof curbs.
- C. Installation of new mechanically fastened roof insulation.
- D. Installation of new fully adhered EPDM single ply membrane roof system.
- E. Installation of new metal flashings.
- F. Provide final clean-up.

1.05 REQUIREMENTS OF REGULATORY AGENCIES

All work shall be in strict accordance with Local, State and Federal laws, as well as the following:

- Material Manufacturer's Requirements;
- SMACNA Specification for Thermal and Moisture Protection;
- FM Class I System Acceptance;
- FM 1-28 And 1-29 Loss Prevention Data Sheets;
- UL Class A Membrane Requirements;
- ANS/SPRI ES-1 Wind Design Standard for Edge Systems Used With Low Slope Roof Systems;
- Applicable OSHA requirements.

1.06 SUBMITTALS

The following items must be submitted to the Engineer for approval prior to the commencement of the work:

- Samples of materials to be used in the roof system including Membrane Manufacturer's Product Literature;
- Membrane Manufacturer's Sample Warranty;
- Insulation/Overlayment Materials;
- Written approval by the Insulation Manufacturer (as applicable) for use and performance of the product in the proposed system;
- Written documentation from the Roof System Manufacturer stating the required fastener spacings and patterns for the roof field, perimeters and corners based on FM 1-29 requirements for the specified Roof Field Area Design Pressures;
- Metal Flashings;
- Contractor's Sample Guarantee;
- Project schedule including start dates and durations of the various phases of the work;
- Pullout tests of fasteners to verify condition of deck/substrate as required by the Membrane Manufacturer.

1.07 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. All materials shall be new and of the best quality. All materials shall be delivered to the site in the Manufacturer's unopened containers with Manufacturer's labels intact.
- B. Materials shall be delivered to the site in sufficient quantities to allow continuity of the work.
- C. All materials shall be handled and stored in strict accordance with the Manufacturer's requirements. All materials shall be stored in dry locations, protected from the weather and elevated off the ground.
- D. Membrane rolls shall be stored lying down on pallets, and fully protected from moisture with clean canvas tarpaulins or equal.
- E. Bonding adhesives shall be stored at temperatures above 40 degrees F.
- F. All flammable materials shall be stored in a cool, dry area away from sparks and open flames. Follow precautions outlined on containers or supplied by material Manufacturer/supplier.
- G. The Contractor shall provide all storage facilities. The buildings shall not be used as storage areas.
- H. The location of all storage facilities and staging shall be coordinated with the Owner.

1.08 JOB CONDITIONS

- A. The Contractor shall provide all access to the work areas. The buildings shall not be used as access to the work areas.
- B. The new membrane roof system shall be applied only by a contractor authorized by the membrane Manufacturer. All work shall be completed by personnel authorized by the membrane Manufacturer.
- C. All materials shall be applied in accordance with the Manufacturer's requirements for temperature and weather conditions.
- D. All materials shall be installed over dry, sound, properly prepared surfaces.
- E. Prior to and during application, all dirt, debris and dust shall be removed from surfaces either by vacuuming, sweeping, blowing with compressed air and/or similar methods.
- F. Arrange work sequence to avoid use of newly-constructed roofing for storage, walking surface, and equipment movement. Where such access is absolutely required, the Contractor shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. Both plywood and polyester felt protection shall be provided for all new and existing roof areas which receive traffic during construction.
- G. The Contractor is cautioned that certain EPDM membranes are incompatible with petroleum, creosote, penta-based and oil-based materials and cements. Such materials should not come in contact with EPDM membranes at any time. If such contacts occur, the material shall be cut out and discarded. The Contractor should consult membrane Manufacturer with respect to material compatibility, precautions, and recommendations.
- H. Contaminants, such as grease, fats, oils, and solvents, shall not be allowed to come into contact with the EPDM roofing membrane.
- I. Contractor shall verify that all roof drain lines are unblocked before starting work.
- J. All applicable OSHA requirements for protective equipment for workers shall be strictly adhered to at all times during the work. Specific attention is made to the requirements for hardhats and safety lines.
- K. All work, including materials, equipment and staging shall be secured from wind blow-off at all times.
- L. All applicable OSHA requirements for staging and material handling equipment shall be strictly adhered to at all times during the work.
- M. Liquid materials such as solvents and adhesives shall be stored and used away from open flames, sparks and excessive heat.
- N. The Contractor shall be required to obtain all necessary permits. The cost of such permits shall be included in the bid price at no additional cost to the Owner.
- O. The Contractor shall coordinate all construction related activities with the Owner. The Contractor shall give the Owner and Engineer a minimum 48 hours notice prior to the commencement of any demolition or construction activities.
- P. The Contractor is cautioned that the building will be occupied during construction. The Contractor shall take all reasonable measures to minimize disruption of the normal use of the building and inconvenience to the building occupants.

PART 2 - MATERIALS

2.01 MATERIALS

- A. New single ply roof membrane shall be .060" Ethylene, Propylene, Diene Terpolymer (EPDM) membrane conforming to ASTM D4637 specifications. Membrane roof system shall be a fully adhered EPDM single ply roof system. The membrane roof system and all components shall meet or exceed the specified Roof Field Area Design Pressure of 30 psf, Perimeter Design Pressure of 60 psf, and Corner Design Pressure of 60 psf. The following manufacturers shall be acceptable:

1. Carlisle Sure-Seal Roof Systems;
2. Firestone RubberGuard Roof Systems;
3. Versico, LLC;
4. GenFlex Roofing Systems.

All accessories for EPDM membrane system shall be by the same Manufacturer including the following:

- Cured and Uncured EPDM Flashing
- Insulation and Overlayment;
- Insulation/Overlayment Adhesive;
- Bonding Adhesives;
- Primers & Cleaners;
- Water Cut-Off Mastic;
- Pourable Sealer;
- Metal Flashings;
- Edge Metal Flashings and Terminations;
- Termination Bars;
- Walkway Treads.

2.02 RELATED MATERIALS

- A. New insulation shall be isocyanurate board insulation conforming to FS 1972/GEN specifications and meeting FM Class 1 requirements. Insulation shall have a minimum compressive strength of 20 psi per ASTM D1621 criteria. Insulation shall be two layers of insulation with thickness of 1.5". Minimum board size shall be 4' x 8'.
- B. Metal edge flashings shall consist of a two piece assembly including a minimum 20 gauge steel retainer bar, corrosion resistant fasteners and a minimum .050" Kynar coated aluminum snap-on fascia cover. Metal edge flashings shall be pre-manufactured systems supplied by the membrane manufacturer and shall comply with ANSI/SPRI ES 1-98 Low Slope Roofing Edge Design Standard and FM 1-90 requirements. All edge metal flashing systems shall be covered by the membrane manufacturer's Systems Warranty. All edge metal systems shall be certified to meet or exceed the specified design pressures.
- C. Wood Nailers
- Wood nailers shall be kiln dried structural grade #2 or better lumber with a maximum moisture content of 19% by weight on a dry weight basis.
- Wood nailers shall conform to Factory Mutual's Loss Prevention Data I-49 and the requirements of the membrane manufacturer.
- D. Plywood Sheathing - Plywood shall be 5/8" C-D EXT - APA.

Plywood shall have maximum moisture content of 19% by weight on a dry weight basis.

- E. Fasteners shall be of proper length and size to provide adequate securement for their intended use. All fasteners shall be compatible with surrounding materials to prevent galvanic corrosion. All fasteners shall be acceptable to the membrane manufacturer for the membrane system and structural deck conditions.
1. Fasteners for securement of insulation and related materials into structural wooden decks shall be threaded fasteners manufactured from SAE 1022 heat treated steel with a corrosion-resistant coating. Fastener penetration into the structural deck shall be a minimum of 1 1/2".
 2. Insulation stress plates shall be 3" corrosion-resistant stress plates or approved equal.
 3. Fasteners for 2" structural wooden deck securement shall be 16d, hot dipped galvanized common nails. Fasteners for plywood structural deck securement shall be 8d, hot dipped galvanized common nails. Fasteners shall have minimum 1 1/2" penetration into sound substrate.
 4. Fasteners for aluminum flashing securement shall be 11 gauge, aluminum nails with 3/8" heads and minimum 1 1/2" length.
 5. Fasteners for membrane termination shall be 11 gauge, aluminum nails with 3/8" heads and minimum 1 1/2" length.
 6. Fasteners for securement of new blocking and sheathing to existing steel members shall be 3/16" diameter, self tapping, stainless steel screws of sufficient length to provide a minimum 1" penetration.
- F. New termination bars shall be 1" x 1/8" mill finished aluminum with prepunched holes for fasteners.
- G. Sealant materials shall be a low modulus, one part, moisture curing polyurethane terpolymer sealant conforming to FS TT-S-00230C, Type II, Class A and ASTM C920-79, Type S, Grade NS Class 25 specifications. Sealant shall be Dymonic as manufactured by Tremco, of Cleveland, Ohio. Color shall match the surrounding materials to the satisfaction of the Owner.

2.03 MANUFACTURER'S WARRANTY

A. EPDM Membrane Roof Warranty

The Contractor shall provide the Owner a 10-year Total Systems Warranty, furnished by the membrane Manufacturer, which agrees to repair leaks and other material defects in the membrane roof system at no additional cost to the Owner in accordance with the following conditions:

1. The warranty shall be for minimum period of ten (10) years from the date of Final Completion and acceptance by the Manufacturer.
2. The warranty shall cover system leaks and other material failures.
3. The warranty shall include all edge flashings, underlayment/overlayment, insulation and vapor barrier materials.
4. The warranty shall note that the roof system is installed in accordance with the specified Design Pressures noted in Section 2.01 A.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. The Contractor shall field verify all dimensions and quantities. Notify the Engineer of any discrepancies between the plans and actual conditions.
- B. The Contractor is cautioned that the Plans and Specifications have been prepared from a variety of sources. The existing conditions may vary from those shown on the drawings. The Contractor shall field verify all existing conditions. Notify the Engineer of any discrepancies between the plans and actual conditions.
- C. The Owner reserves the right to inspect the work at all times. Failure to inspect the work by the Owner does not relieve the Contractor of his responsibility to perform the work in accordance with the specifications. Any deficiency in the work noted by the Owner will be reported to the Contractor. Corrective measures for such deficiencies shall be taken by the Contractor in a timely fashion, and before final acceptance of the work.

3.02 INSTALLATION OF NEW MATERIALS

All materials shall be installed in a first class, workmanlike manner. All materials shall be installed in accordance with the Manufacturer's requirements.

A. Deck Preparation

The substrate shall be clean, smooth, dry, free of flaws, sharp edges, loose and foreign material, oil and grease. Roofing shall not start until all defects have been corrected.

1. The roof deck and existing roof construction must be structurally sound to provide proper support for the new roof system. The structure and deck must be capable of withstanding expected wind uplift forces created at fastening points. The Contractor shall perform fastener pullout tests to verify deck condition and confirm fastener pullout values as required by the Manufacturer.

B. Wood Nailer Installation

Continuous treated wood blocking shall be installed as noted on the drawings.

1. New wood blocking shall be anchored to resist a minimum force of 175 pounds per lineal foot in any direction. Individual nailer lengths shall not be less than 3' long. Fastener spacing shall be a maximum of 16" on center, with two staggered rows of fasteners. Fasteners shall be installed within 6" of each end. Spacing and fastener embedment shall conform to Factory Mutual Loss Prevention Data I-49.
2. Structural deck and other substrates shall be pre-drilled as required for proper fastener installation and pull-out resistance.
3. Wood nailers must be installed so that the top of the wood nailer is +/- 1/8" with the top surface of the membrane underlayment and the width of the wood nailer exceeds the width of the metal fastening flange.
4. Any existing wood blocking which is to be reused shall be firmly anchored in place (shall resist a minimum force of 200 pounds per lineal foot in any direction) and free of rot or other defects. Only woodwork designated to be reused in detail drawings shall be left in place and all other woodwork shall be removed.

C. Mechanically Fastened Insulation Installation

Insulation shall be installed to provide a clean, smooth, secure surface for the new membrane roof system.

1. Underlayment shall be fastened with the specified fasteners and fastener patterns as provided by the membrane manufacturer for the specified design pressure. Provide additional fasteners at roof perimeters, corners and terminations according to the underlayment Manufacturer's and membrane Manufacturer's requirements, as well as FM 1-29 requirements for the specified Design Pressures noted in Section 2.01 A.
2. Fasteners shall have a minimum 1 1/2" penetration into sound materials. Structural deck and other substrates shall be pre-drilled as required for proper fastener installation and pull-out resistance.
3. Stagger all lateral insulation joints in the same layer of insulation a minimum of 24". Offset joints in multiple insulation layers a minimum of 24" to prevent continuous joints to the roof deck surface.
4. Insulation shall be neatly cut to fit around all penetrations and projections. Fill all insulation gaps and/or voids greater than 1/4" in thickness with similar insulation materials. Insulation shall be back cut as required to insure full contact with substrate where deck slope changes.

D. Adhered EPDM Membrane Installation

1. Membrane sheets shall be loose laid on properly prepared surfaces in the largest practical sheets. Sheets will be laid out without stretching and free of wrinkles and allowed to relax for a minimum of 30 minutes.
2. Adjoining sheets shall be laid out with a minimum 4" lap for spliced seams and a minimum 5" lap for taped seams.
3. One half of the sheet shall then be rolled back, cleaned of dirt, dust and other debris and bonding adhesive applied to the sheet and insulation in strict accordance with the Manufacturer's requirements.
4. Care shall be taken that no bonding adhesive gets on any section of membrane which shall be spliced to another section of membrane or flashing membrane. Once the adhesive has properly set up, the sheet shall be rolled into place without wrinkles. These procedures shall then be repeated to the other half of the sheet. The adhered sheets shall then be broomed with a stiff push broom.

E. Membrane Splices

1. All membrane and flashing seams shall be installed with the exposed membrane edge away from the flow of water wherever possible.
2. Adhered Seams - Mating surfaces shall be cleaned, primed and the proper adhesives applied in strict accordance with the Manufacturer's requirements. Apply in-seam sealant as required by the Manufacturer. When the adhesive has properly set up, the splice surfaces shall be rolled together with a continuous adhered surface without voids or wrinkles. Roll all membrane seams with an approved roller to ensure complete bonding of the splice. Laps shall be properly prepared and lap sealant applied in strict accordance with the Manufacturer's requirements.
3. Taped Seams - Mating surfaces shall be cleaned, primed and the proper splice tapes applied in strict accordance with the Manufacturer's requirements. Splice tape shall be properly positioned, without stretching, to provide continuously bonded surfaces to

both membrane sheets, free of voids or wrinkles. Position splice tape to provide the proper amount of exposed tape on the finished splice. Roll all taped seams with an approved roller to ensure complete bonding of the tape to both membrane sheets. Provide Manufacturer's recommended patches at all end laps, "T" joints and other seam irregularities.

4. Any voids or wrinkles shall be cut out and patched with a membrane patch bonded in strict accordance with the Manufacturer's requirements. All patches must extend a minimum of 4" beyond the affected area. All patch corners shall be rounded.
 5. All membrane field seams and flashing seams shall be stripped in with 6" uncured EPDM or semi-cured seam tape in strict accordance with the Manufacturer's requirements. All seams shall be allowed to cure for a minimum 24 hours prior to the application of strip flashings.
- F. All elastomeric flashings shall be adhered to the substrate with the proper adhesives in strict accordance with Manufacturer's requirements. All flashing dimensions shall be of at least the minimum requirements of the Manufacturer.
1. Base Flashings - Base flashings shall be secured at the top edge with a continuous aluminum termination bar with approved fasteners at a minimum rate of 12" on center. Install membrane Manufacturer's mastic sealant between flashing and substrate under termination bar. Trim excess membrane from top of bar and apply sealant to exposed joint.
 2. Edge Flashings - Extend field sheet over perimeter of roof a minimum 2" in all areas and adhere to vertical surface. Metal flashing flanges shall be stripped in with 6" uncured EPDM or semi-cured flashing tape in strict accordance with Manufacturer's requirements.
 3. Corners - All corners shall be flashed with uncured EPDM flashings in strict accordance with Manufacturer's requirements. A minimum overlap of 3" is required for all flashing splices with a continuous bond between flashing components.
 4. Curb Flashings - Provide additional blocking as required to provide minimum 8" curb height wherever possible. EPDM membrane flashings shall be adhered onto and over the top of the curb in strict accordance with Manufacturer's requirements. Set unit over flashings with new fasteners with all exposed fastener heads sealed.
 5. Vent Pipe Flashing/Field Wrap - Remove existing vent pipe flashings/sleeves. Wirebrush pipe free of all dirt and corrosion. Adhere two piece uncured EPDM flashing in place in strict accordance with Manufacturer's requirements.
 6. Vent Pipe Flashing/Prefabricated Boot - Remove existing vent pipe flashings/sleeves. Wirebrush pipe free of all dirt and corrosion. Install premolded pipe boot in strict accordance with Manufacturer's requirements. Install Manufacturer's mastic sealant between boot and vent pipe and install new stainless steel clamping ring as required by the membrane Manufacturer.

G. Metal Flashings

All flashings shall be installed concurrently with the roof membrane as the job progresses. No metal flashings should be bent so as to weaken the material due to oversteering at the bend.

1. The nailing flange of the metal flashings shall be a minimum of 3 1/2" in width with a 1/4" hem.
2. All metal flashings shall be fastened into solid wood blocking with two rows of staggered fasteners, 4" on center. Fasteners shall penetrate the nailer a minimum of 1 1/4".

Fasteners shall be no less than 1/4" from flange edges.

3. New metal flashing shall not span more than 8 feet without a minimum 3" slip joint. Install membrane manufacturer's sealant at all slip joint locations. Provide 6" cover plates over panel joints. Hook cover plate onto new metal and secure at flange with 2 fasteners between main flashing panels.
4. All metal flashings shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.

H. Temporary Cut-Off

All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses.

1. When a break in the day's work occurs in the central area of a roof, a temporary waterstop shall be constructed to provide a 100% watertight seal. When work on the new system is suspended, the stagger of the insulation joints shall be maintained by installing partial fillers. The new membrane shall be carried into the waterstop. The waterstop shall be sealed to the deck and/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 roof cement of 6" girth. When work resumes, the contaminated EPDM membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and disposed of off site. None of these materials shall be used in the new work.
2. 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.
3. 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.

3.03 PROTECTION

- A. The Contractor shall be responsible for maintaining the watertightness of the building at all times during the work. No more materials shall be removed than can be replaced and completely flashed in the same day's work. No materials shall be removed during periods of inclement or threatening weather.
- B. The Contractor shall be responsible for replacement or refurbishment of any items damaged as a result of the work. This shall include damage due to construction activities, water infiltration or other conditions related to the work. The Owner will make corrective measures, including replacement or refurbishment of damaged items, and deduct the cost from the contract price.
- C. The Contractor should take care during application and storage that overloading of deck and structure does not occur.
- D. The Contractor shall provide barriers or other protective measures to segregate the work from surrounding areas.
- E. The Contractor shall take all reasonable measures to prevent blockage or disruption of exits from the building or other traffic areas adjacent to the work. Where work must be performed above or around exits or other traffic areas, the Contractor shall provide protective enclosures or barriers to prevent injury to passers-by. Specific attention is made to emergency exits.
- F. The Contractor shall have the option of, and responsibility for performing preconstruction surveys for the purpose of identifying pre-existing damage inside the building(s).

3.04 CONTRACTOR'S GUARANTEE

The Contractor shall provide the Owner a guarantee, in the specified form, guaranteeing the work to be free from material or workmanship defects.

3.05 FINAL CLEAN-UP

- A. All building and surrounding areas shall be cleaned of all trash, dirt and debris associated with the work to the satisfaction of the Owner at the end of each day's work.
- B. Any items stained, discolored or otherwise damaged as a result of the work shall be cleaned, restored or replaced to the satisfaction of the Owner.
- C. All landscaped areas shall be raked clean at the end of each day's work.
- D. All paved areas shall be swept clean at the end of each day's work.
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work, including final clean-up, shall be required by the Owner and Engineer.

END OF SECTION

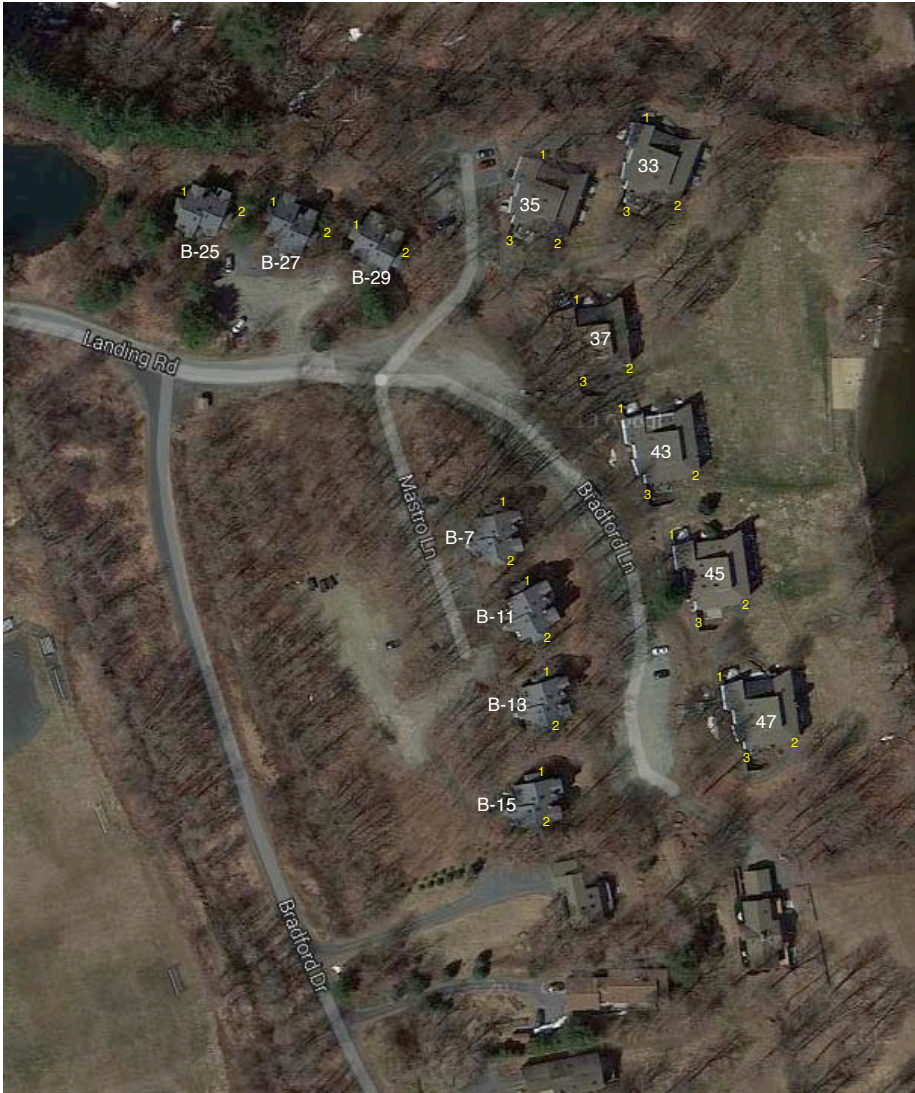
- E. Any vehicular damage to landscaped or other areas around the building shall be repaired or restored to the satisfaction of the Owner.
- F. A final inspection of the work shall be required by the Owner and Engineer.

END OF SECTION

**APPENDIX A
PLANS & DETAILS**

LIST OF DRAWINGS

S-01 SITE PLAN
A-01 DUPLEX ROOF PLAN
A-02 TRIPLEX ROOF PLAN
SK-01 ROOF DETAILS
SK-02 ROOF DETAILS
SK-03 ROOF DETAILS
SK-04 CHIMNEY DETAILS
SK-05 ROOF DETAILS
SK-10 EPDM ROOF DETAILS
S-02 SITE DECK PLAN
SK-20 DECK DETAILS
SK-21 DECK DETAILS
SK-22 PAVER DETAILS



THE **BASE BID** SHALL INCLUDE THE FOLLOWING:

- REMOVAL OF THE EXISTING SHINGLE ROOF SYSTEMS DOWN TO THE STRUCTURAL ROOF DECK;
- REMOVAL OF THE EXISTING PLYWOOD ROOF DECK AND INSULATION IN RAFTER BAYS ON TRIPLEX BUILDINGS;
- INSULATION OF RAFTER BAYS AND INSTALLATION OF PLYWOOD ROOF SHEATHING ON TRIPLEX BUILDINGS;
- INSTALLATION OF NEW UNDERLAYMENT AND WATERPROOFING MEMBRANE;
- INSTALLATION OF NEW METAL FLASHINGS;
- INSTALLATION OF NEW ASPHALT SHINGLES;
- REMOVAL AND REPLACEMENT OF SIDING AND TRIM ON ABOVE-ROOF WALLS AND CHIMNEY ENCLOSURES;
- REMOVAL AND REPLACEMENT OF METAL CHIMNEY CAPS;
- REMOVAL AND REPLACEMENT OF SINGLE PLY MEMEBRANE ROOF SYSTEMS ON TRIPLEX BUILDINGS.

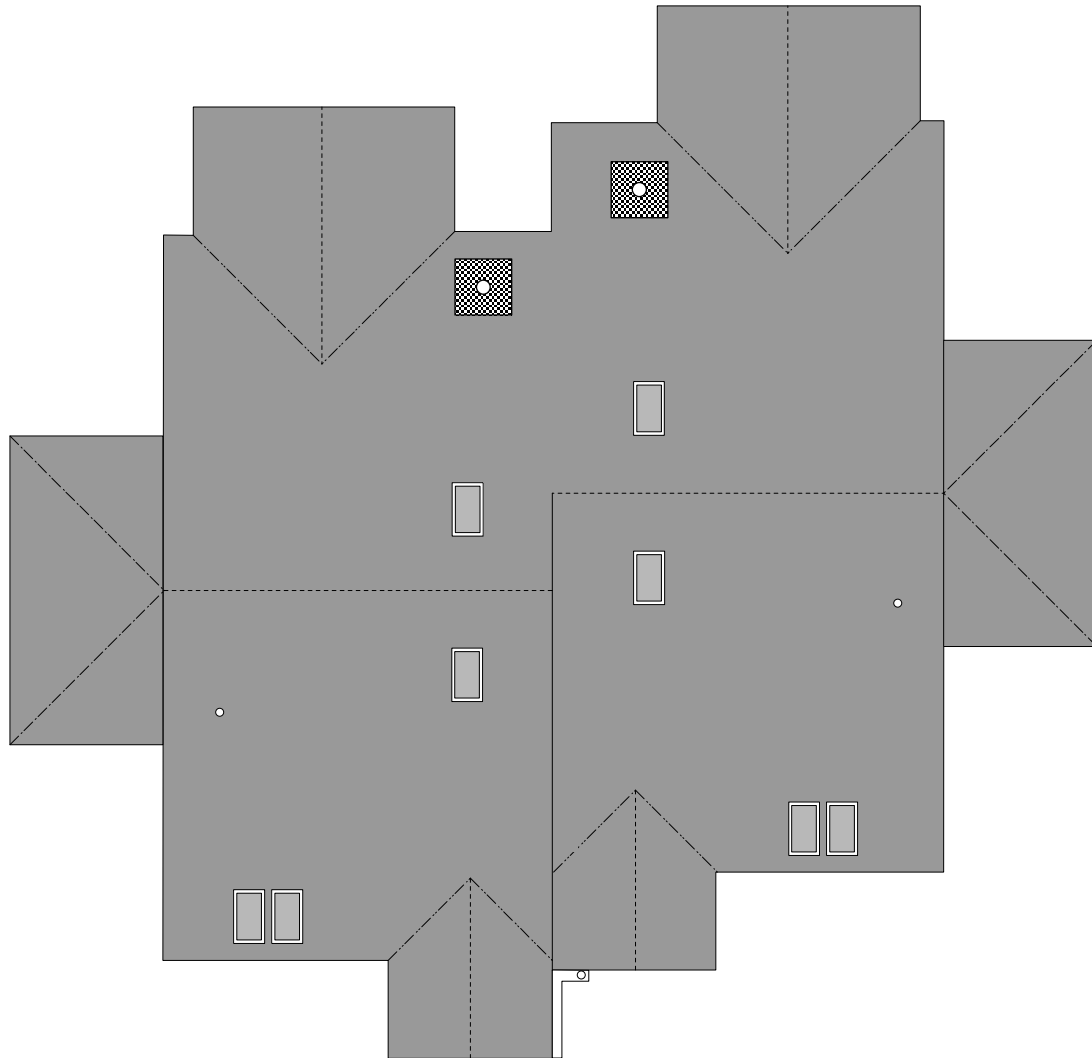
ALTERNATE #1 SHALL INCLUDE THE FOLLOWING:

- REMOVAL OF THE EXISTING WOOD FRAMED EXTERIOR DECKS ;
- INSTALLATION OF NEW FOOTINGS AND SUPPORT POSTS;
- INSTALLATION OF NEW WOOD FRAMED DECKS;
- INSTALLATION OF NEW DECKING;
- INSTALLATION OF NEW STAIRS AND RAILINGS;
- INSTALLATION OF NEW COMPACTED BASE AND PAVER SYSTEM ON DESIGNATED UNITS.

GENERAL:

- THE DRAWINGS ARE NOT TO SCALE. THEY HAVE BEEN PREPARED TO INDICATE THE GENERAL AREAS TO BE INCLUDED IN THE WORK. THE CONTRACTOR SHALL FIELD DETERMINE ALL DIMENSIONS AND QUANTITIES.
- THE CONTRACTOR IS CAUTIONED THAT THE SITE WILL BE OCCUPIED DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE DISRUPTION OF THE NORMAL USE OF THE SITE AND INCONVENIENCE TO THE RESIDENTS.

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
SITE PLAN		S-01



AREA KEY:

- ROOF AREA TO RECEIVE FOAM INSULATION, WATERPROOFING MEMBRANE & SHINGLE/METAL PITCHED ROOF SYSTEM

KEY:

- SKYLIGHT
- CHIMNEY
- VENT PIPE
- GUTTER & DOWNSPOUT

GENERAL NOTES:

ALL EXISTING SHINGLE ROOF MATERIALS AND FLASHINGS SHALL BE REMOVED AND DISPOSED OF.

ALL NEW MATERIALS SHALL BE INSTALLED OVER PROPERLY SECURED DECK SHEATHING. THE CONTRACTOR SHALL INSPECT ALL DECK SURFACES BEFORE THE INSTALLATION OF ANY NEW MATERIALS. ALL SOUND DECK MATERIALS FOUND TO BE UNSECURE SHALL BE PROPERLY FASTENED TO PROVIDE A SECURE, UNYIELDING SUBSTRATE.

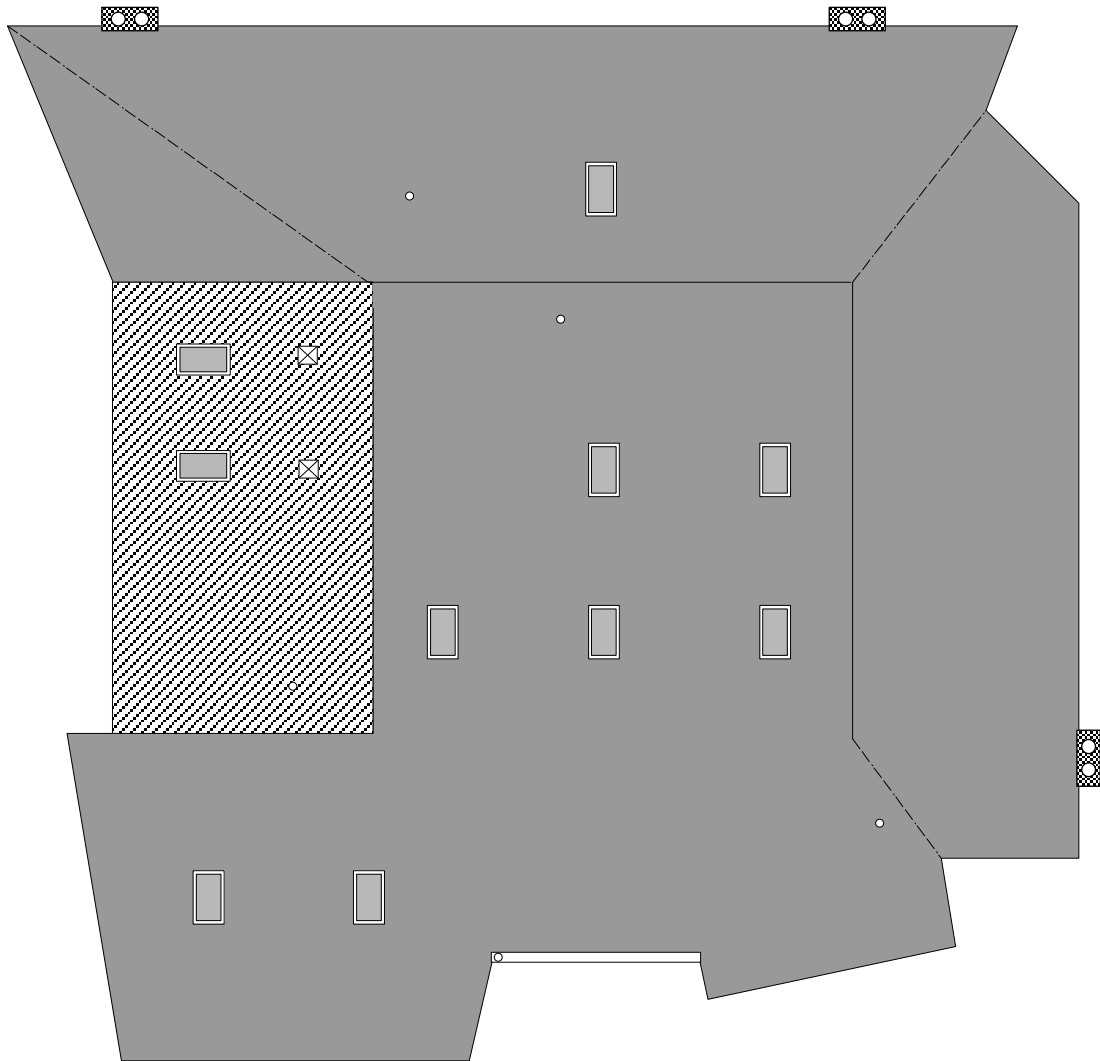
ALL DETERIORATED OR DELAMINATED PLYWOOD ROOF SHEATHING SHALL BE REMOVED AND REPLACED WITH PROPERLY FASTENED NEW SHEATHING MATERIALS TO MATCH THE ORIGINAL. REPLACEMENT OF 100 SQUARE FEET OF PLYWOOD ROOF SHEATHING PER BUILDING SHALL BE INCLUDED IN THE BID PRICE. THE CONTRACTOR SHALL SUBMIT A UNIT PRICE FOR PLYWOOD ROOF SHEATHING REPLACEMENT. THE UNIT PRICE SHALL BE USED TO ADJUST THE CONTRACT PRICE BASED ON THE ACTUAL AMOUNT OF PLYWOOD ROOF SHEATHING FOUND TO REQUIRE REPLACEMENT DURING THE WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHTNESS OF THE BUILDING AT ALL TIMES DURING THE WORK. NO MORE MATERIALS SHALL BE REMOVED THAN CAN BE REPLACED AND COMPLETELY FLASHED IN THE SAME DAY'S WORK. NO MATERIALS SHALL BE REMOVED DURING PERIODS OF INCLEMENT OR THREATENING WEATHER.



THE CONTRACTOR IS CAUTIONED THAT THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE DISRUPTION OF THE NORMAL USE OF THE BUILDING AND INCONVENIENCE TO THE BUILDING OCCUPANTS.

THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND QUANTITIES. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND ACTUAL CONDITIONS.






EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
DUPLEX ROOF PLAN		A-01



AREA KEY:

-  - ROOF AREA TO RECEIVE FOAM INSULATION, WATERPROOFING MEMBRANE & SHINGLE/METAL PITCHED ROOF SYSTEM
-  - EPDM MEMBRANE

KEY:

-  - SKYLIGHT
-  - CHIMNEY
-  - VENT PIPE
-  - GUTTER & DOWNSPOUT
-  - VENT

GENERAL NOTES:

ALL EXISTING SHINGLE ROOF MATERIALS AND FLASHINGS SHALL BE REMOVED AND DISPOSED OF.

ALL NEW MATERIALS SHALL BE INSTALLED OVER PROPERLY SECURED DECK SHEATHING. THE CONTRACTOR SHALL INSPECT ALL DECK SURFACES BEFORE THE INSTALLATION OF ANY NEW MATERIALS. ALL SOUND DECK MATERIALS FOUND TO BE UNSECURE SHALL BE PROPERLY FASTENED TO PROVIDE A SECURE, UNYIELDING SUBSTRATE.

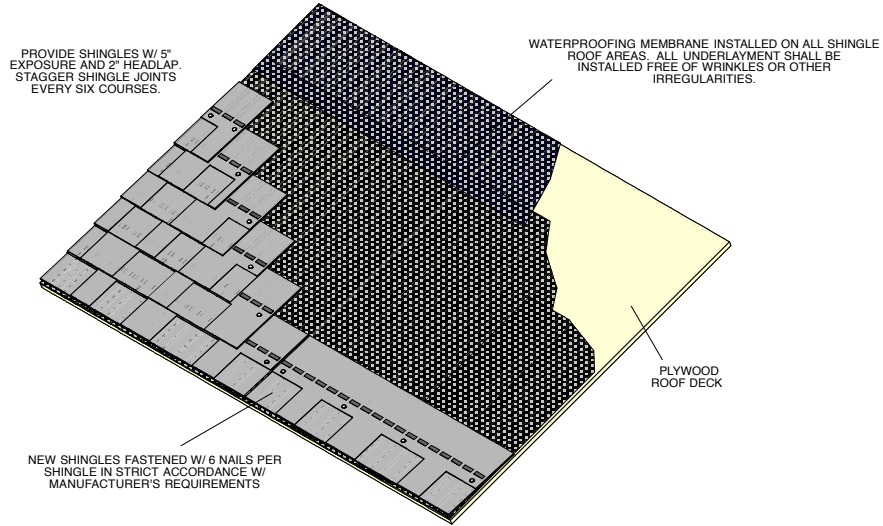
ALL DETERIORATED OR DELAMINATED PLYWOOD ROOF SHEATHING SHALL BE REMOVED AND REPLACED WITH PROPERLY FASTENED NEW SHEATHING MATERIALS TO MATCH THE ORIGINAL. REPLACEMENT OF 100 SQUARE FEET OF PLYWOOD ROOF SHEATHING PER BUILDING SHALL BE INCLUDED IN THE BID PRICE. THE CONTRACTOR SHALL SUBMIT A UNIT PRICE FOR PLYWOOD ROOF SHEATHING REPLACEMENT. THE UNIT PRICE SHALL BE USED TO ADJUST THE CONTRACT PRICE BASED ON THE ACTUAL AMOUNT OF PLYWOOD ROOF SHEATHING FOUND TO REQUIRE REPLACEMENT DURING THE WORK.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE WATERTIGHTNESS OF THE BUILDING AT ALL TIMES DURING THE WORK. NO MORE MATERIALS SHALL BE REMOVED THAN CAN BE REPLACED AND COMPLETELY FLASHED IN THE SAME DAY'S WORK. NO MATERIALS SHALL BE REMOVED DURING PERIODS OF INCLEMENT OR THREATENING WEATHER.

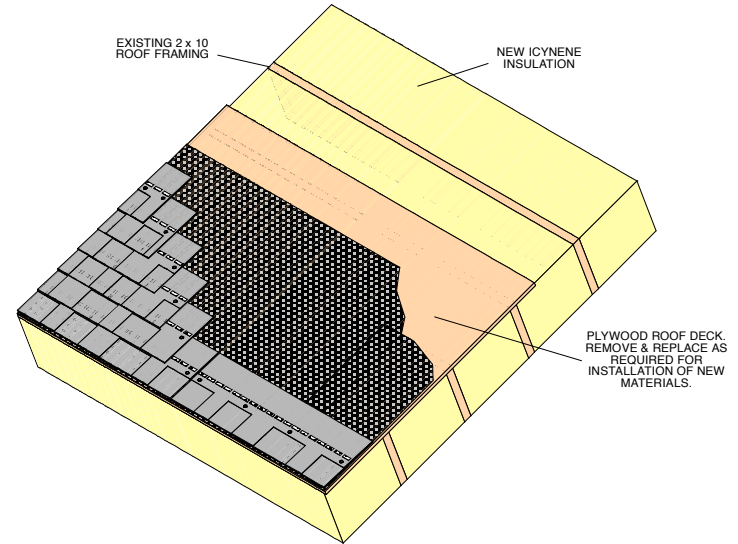
THE CONTRACTOR IS CAUTIONED THAT THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE DISRUPTION OF THE NORMAL USE OF THE BUILDING AND INCONVENIENCE TO THE BUILDING OCCUPANTS.

THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND QUANTITIES. NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS AND ACTUAL CONDITIONS.

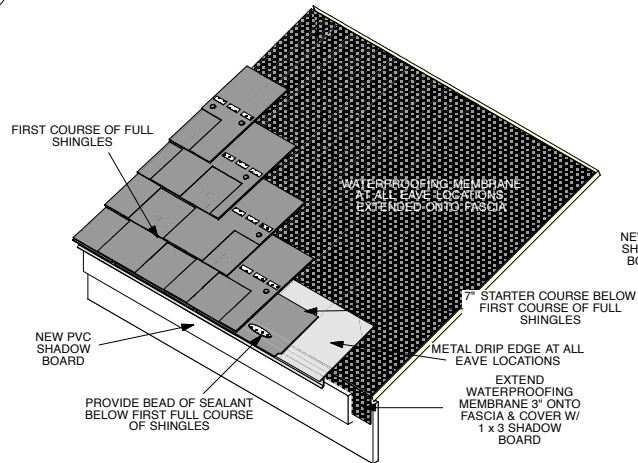
EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
TRIPLEX ROOF PLAN		A-02



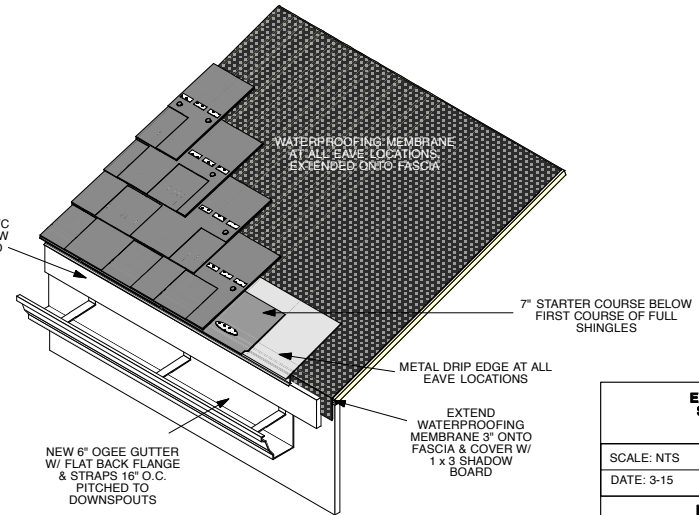
1 SHINGLE SECTION



2 TRIPLEX ROOF MODIFICATION

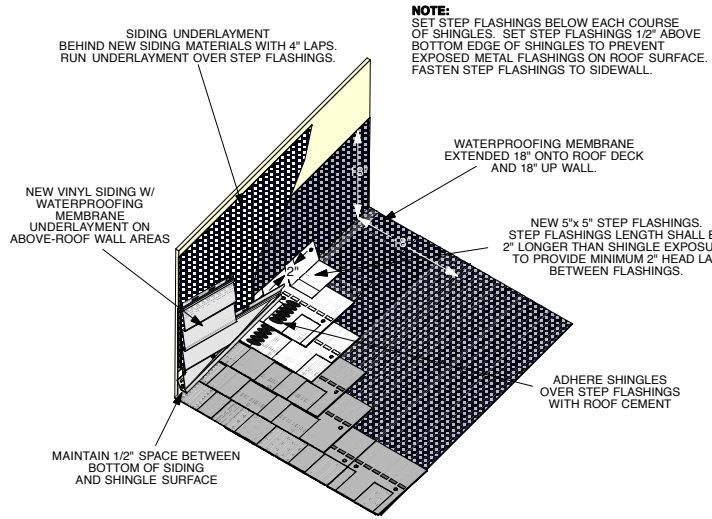


3 EAVE DETAIL - BARE FASCIA

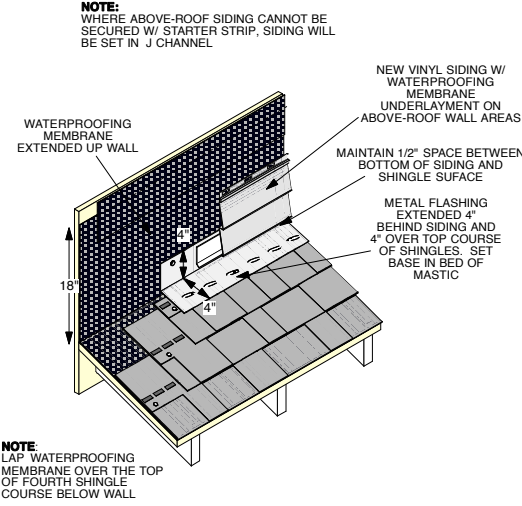


4 EAVE DETAIL - GUTTER

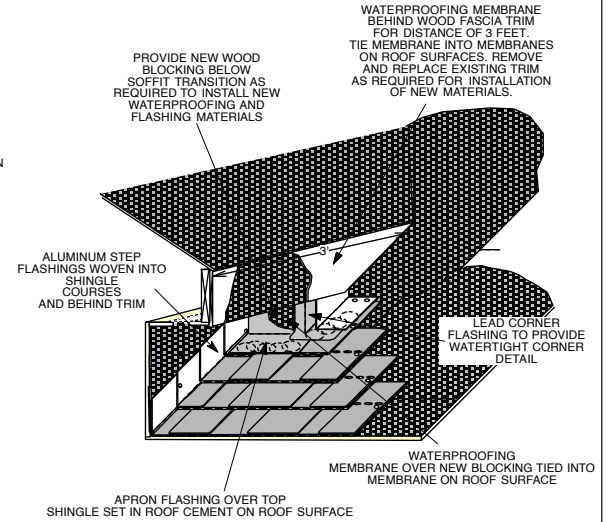
EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
ROOF DETAILS		SK-1



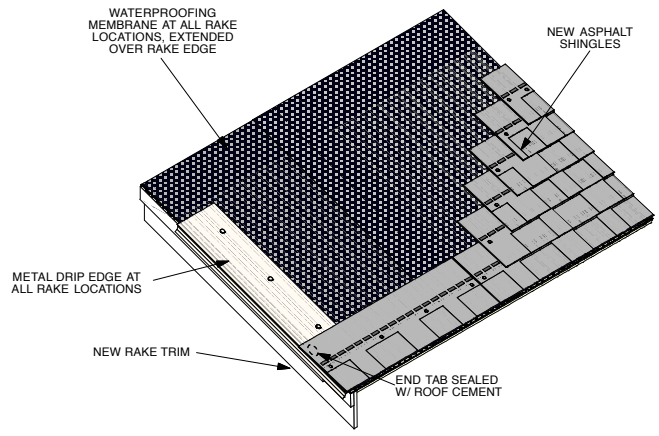
1 STEP FLASHING DETAIL



2 WALL FLASHING DETAIL



3 SOFFIT TRANSITION DETAIL

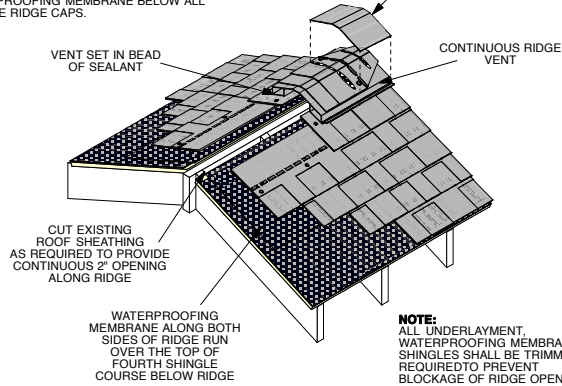


4 RAKE DETAIL

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
ROOF DETAILS		SK-02

NOTE:
TERMINATE RIDGE VENT 6" FROM GABLE ROOF
END AND 12" FROM TRANSITION FROM RIDGE
TO PITCHED SHINGLE
ROOF SECTION. COVER END OF RIDGE WITH
SHINGLE RIDGE CAPS EXTENDED 10" INSIDE
END OF RIDGE VENT. PROVIDE
WATERPROOFING MEMBRANE BELOW ALL
SHINGLE RIDGE CAPS.

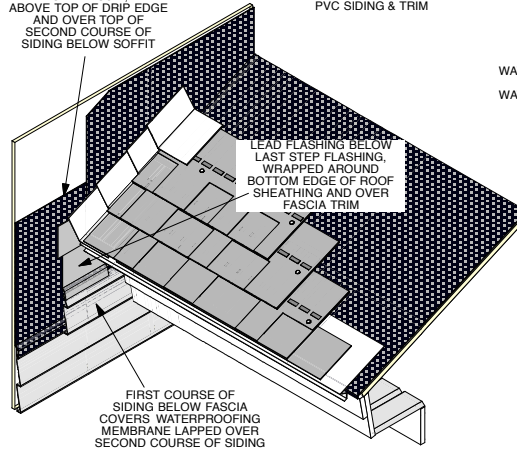
SHINGLE CAPS INSTALLED W/ FASTENERS
INTO ROOF DECK. COVER ALL FASTENER
HEADS W/ ROOF CEMENT
TO PROVIDE ADHESION FOR OVERLYING CAP.
SET LAST CAP IN FULL BED OF
ROOF CEMENT WITHOUT EXPOSED
FASTENERS.



1 RIDGE VENT FLASHING DETAIL

WATERPROOFING
MEMBRANE EXTENDED
ONTO WALL SURFACE 12"
BEYOND FASCIA, 12"
ABOVE TOP OF DRIP EDGE
AND OVER TOP OF
SECOND COURSE OF
SIDING BELOW SOFFIT

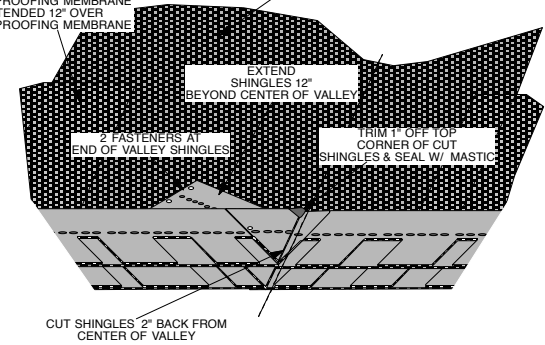
NOTE:
REMOVE AND REPLACE ALL
EXISTING SIDING AND TRIM
ABOVE ROOF LINE WITH NEW
PVC SIDING & TRIM



2 EAVE/WALL FLASHING DETAIL

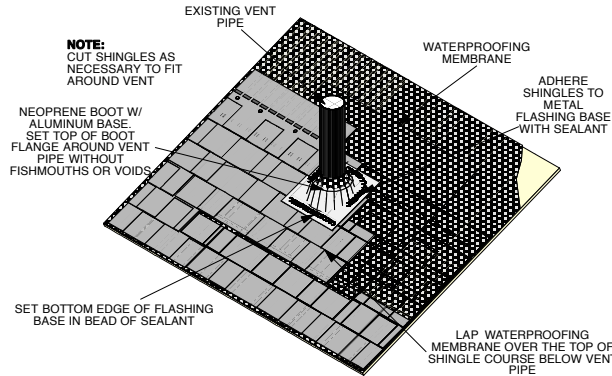
WATERPROOFING MEMBRANE
EXTENDED 12" OVER
WATERPROOFING MEMBRANE

WATERPROOFING MEMBRANE
W/ 6" END LAPS
RUN UP CENTER OF VALLEY

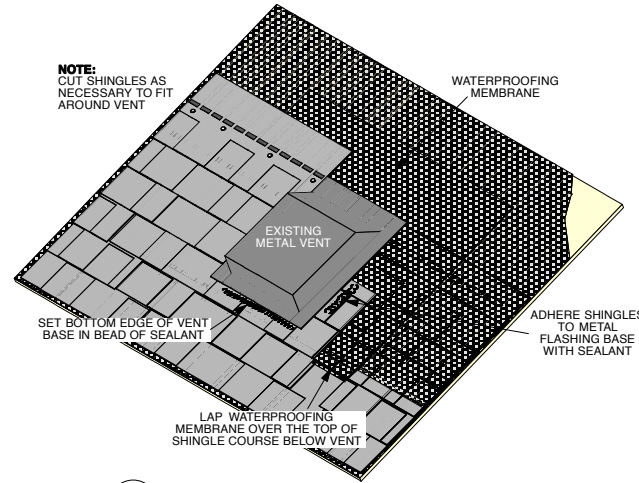


3 CUT VALLEY DETAIL

NOTE:
CUT SECTIONS SHALL RUN WITH THE
FLOW OF WATER FROM THE LARGER OR
STEEPER OF THE TWO ROOF PLANES

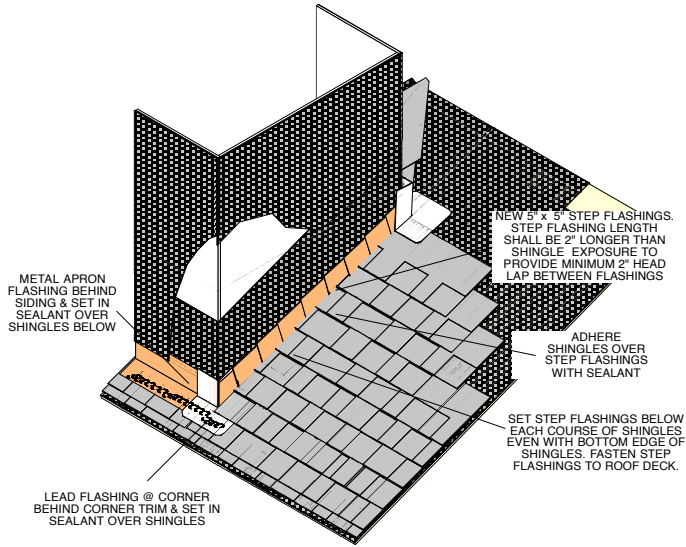


4 PLUMBING VENT PIPE FLASHING DETAIL



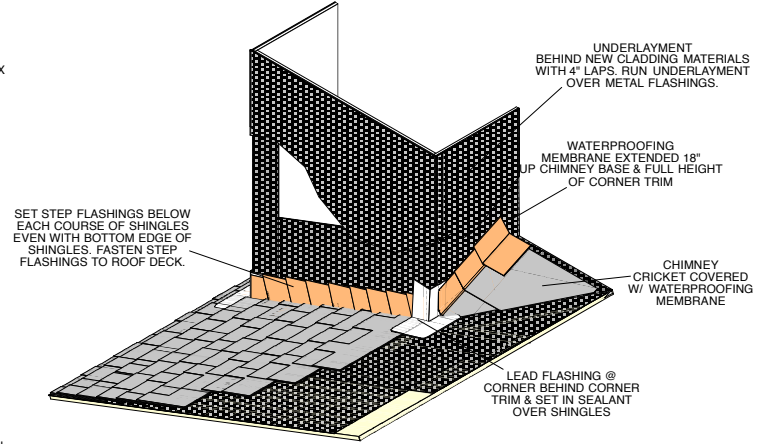
5 AIR VENT FLASHING DETAIL

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
ROOF DETAILS		SK-03



1 CHIMNEY FLASHING

NOTE:
REMOVE AND REPLACE ALL EXISTING SIDING AND TRIM ABOVE ROOF LINE ON TRIPLEX BUILDINGS AND ALL STUCCO MATERIALS ON DUPLEX BUILDINGS.

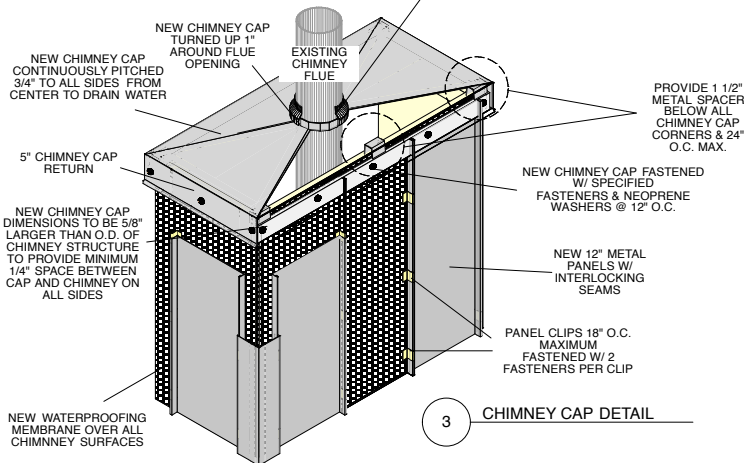


2 CHIMNEY FLASHING

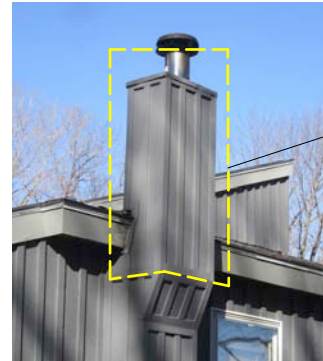
NOTE:
MAINTAIN 1/2" SPACE BETWEEN BOTTOM OF SIDING AND SHINGLES

NOTE:
NEW CHIMNEY CAP DIMENSIONS SHALL MEET THE REQUIREMENTS OF ACTUAL CHIMNEY FLUE MANUFACTURER WHERE APPLICABLE

REMOVE AND REINSTALL EXISTING RAIN COLLAR W/ NEW STAINLESS STEEL CLAMPING RING, BACKSEAL COLLAR AND SEAL TOP EDGE.



3 CHIMNEY CAP DETAIL



REMOVE & REPLACE EXISTING WOOD SIDING ON CHIMNEYS & REPLACE W/ NEW WATERPROOFING MEMBRANE & METAL CLADDING. ON CHIMNEYS WHICH EXTEND BELOW THE ROOF LINE SIDING SHALL BE REMOVED DOWN TO THE ROOF LINE, OR TO THE FIRST NATURAL BREAK WITHIN 18" OF THE ROOF LINE.

4 CHIMNEY SIDING DETAIL

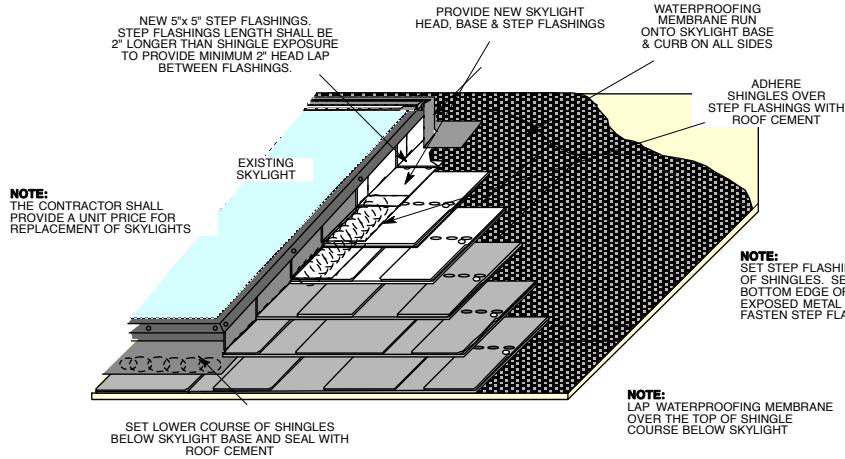
**EXTERIOR BUILDING RESTORATION
SHAKER LANDING CONDOMINIUM
ENFIELD, NEW HAMPSHIRE**

SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL

NOBLIN & ASSOCIATES, L.L.C.
CONSULTING ENGINEERS
DOVER, NEW HAMPSHIRE

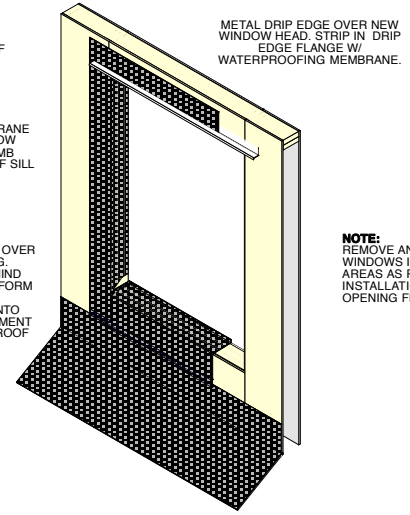
ROOF DETAILS

SK-04



1 SKYLIGHT FLASHING DETAIL

NOTE: PROVIDE NEW VINYL SIDING W/ WATERPROOFING MEMBRANE UNDERLAYMENT ON ABOVE-ROOF WALL AREAS



2 WINDOW OPENING FLASHING DETAIL

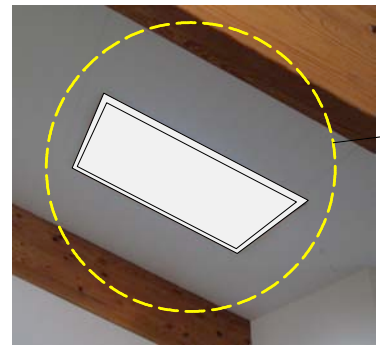
NOTE: THE CONTRACTOR SHALL PROVIDE A UNIT PRICE FOR ELIMINATION OF SKYLIGHTS

THE SCOPE OF WORK FOR ELIMINATION OF SKYLIGHTS SHALL INCLUDE:

- REMOVAL OF THE EXISTING SKYLIGHT;
- REMOVAL OF THE INTERIOR TRIM;
- INSTALLATION OF NEW FRAMING AND STRAPPING TO MATCH THE EXISTING @ 16" O.C.;
- INSULATION OF NEW RAFTER CAVITIES;
- INSTALLATION OF NEW ROOF SHEATHING TO MATCH THE EXISTING.



3 SKYLIGHT REMOVAL DETAIL



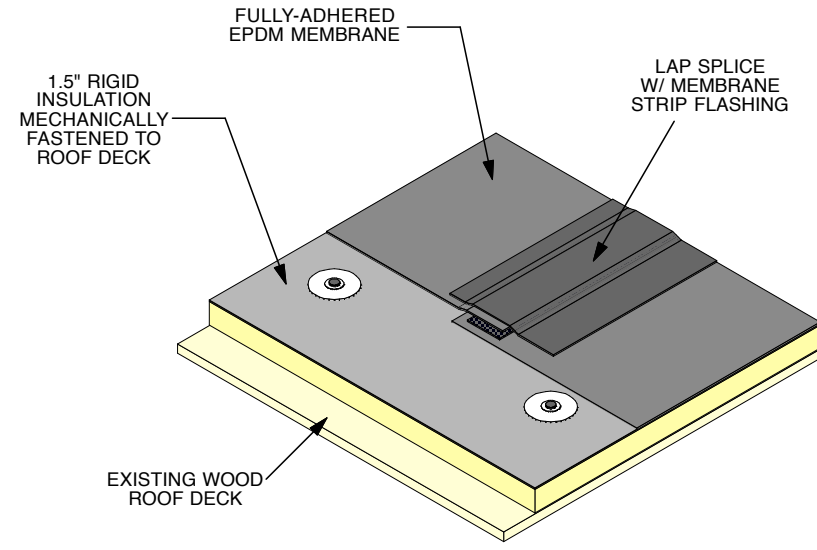
4 INTERIOR SKYLIGHT FINISHING DETAIL

THE SCOPE OF WORK FOR ELIMINATION OF SKYLIGHTS SHALL INCLUDE:

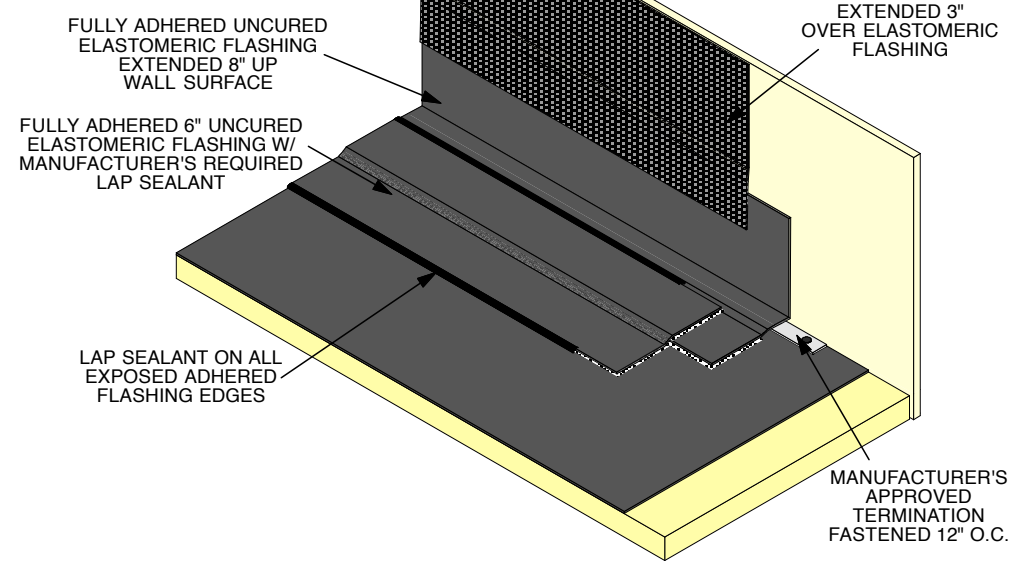
- INSTALLATION OF NEW FINISH GRADE 5/8" BIRCH PLYWOOD OVER INTERIOR OF REFRAMED OPENING;
- INSTALLATION OF NEW 2 1/2" WOOD TRIM AROUND PERIMETER OF OPENING TO COVER JOINT BETWEEN EXISTING CEILING AND NEW OPENING COVER;
- PRIMING AND PAINTING (2 COATS) OF NEW WOOD PANEL AND TRIM.

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
ROOF DETAILS		SK-05

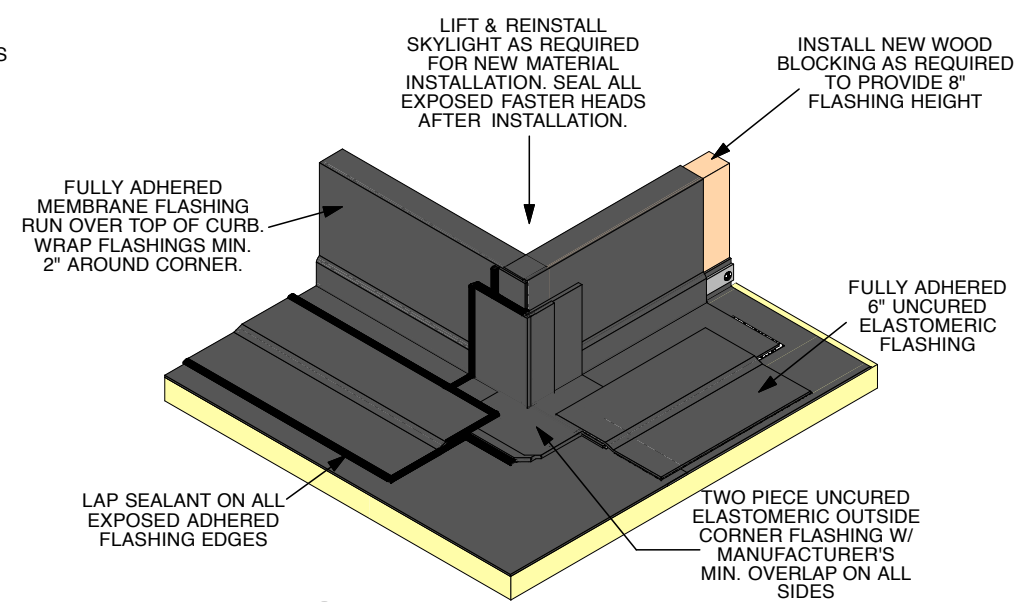
NOTE:
 REMOVE & REPLACE ALL EXISTING WOOD SIDING NEW VINYL SIDING W/ WATERPROOFING MEMBRANE UNDERLAYMENT ON ABOVE-ROOF WALL AREAS



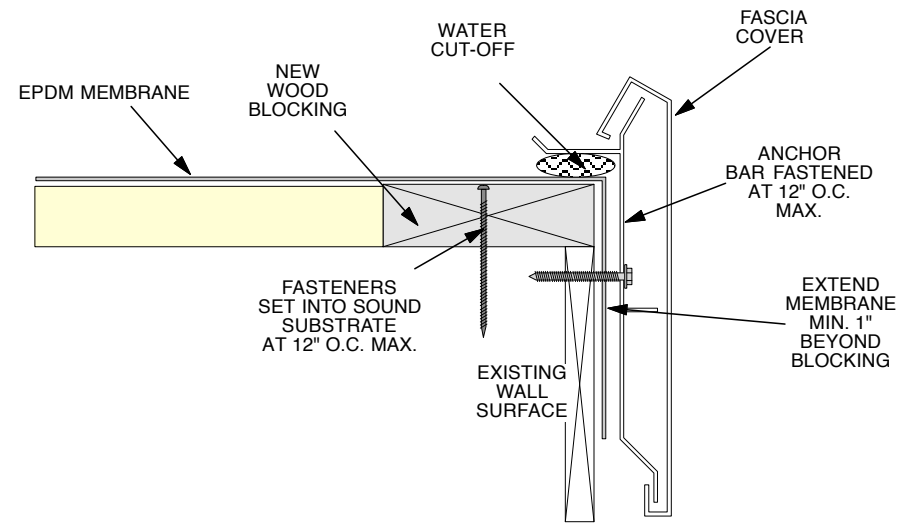
1 NEW ROOF CONFIGURATION



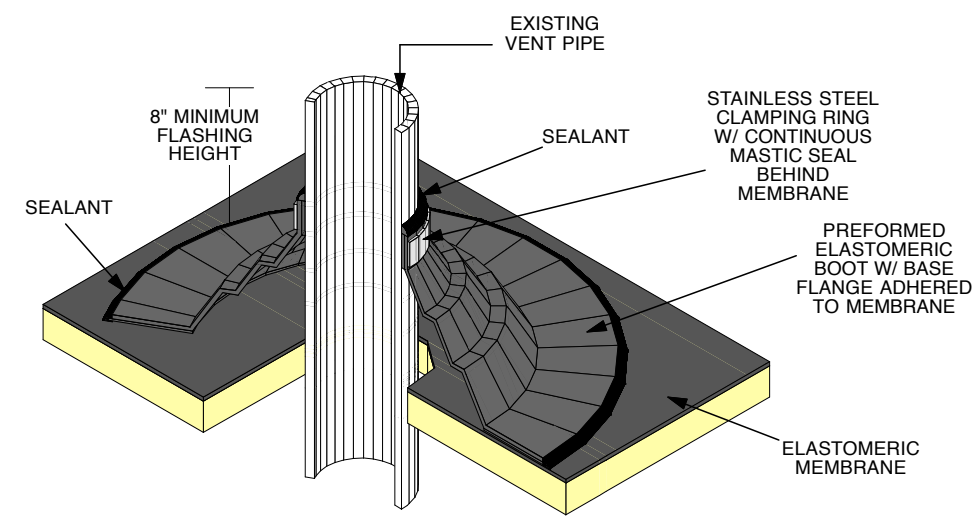
2 TYPICAL BASE FLASHING



3 SKYLIGHT CURB FLASHING



4 TYPICAL ROOF EDGE



5 VENT PIPE FLASHING

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
EPDM ROOF DETAILS		SK-11



EXTERIOR DECK SCHEDULE			
UNIT	TYPE	SIZE	NOTES
33-1	FRAMED	12'-0" x 16'-0"	
33-2	FRAMED	12'-0" x 16'-0"	4 x 4 WING
	FRAMED	12'-0" x 16'-0"	4 x 4 WING
33-3	PAVER	16'-0" x 26'-0"	16' x 10' SUNROOM
35-1	FRAMED	8'-6" x 16'-0"	
35-2	FRAMED	12'-0" x 16'-0"	4 x 4 WING
	FRAMED	12'-0" x 16'-0"	4 x 4 WING
35-3	PAVER	12'-0" x 16'-0"	
37-1	FRAMED	12'-0" x 16'-0"	4 x 4 LANDING
37-2	FRAMED	12'-0" x 16'-0"	4 x 4 WING
	FRAMED	12'-0" x 16'-0"	4 x 4 WING
37-3	PAVER	16'-0" x 25'-0"	16' x 10' SUNROOM
43-1	FRAMED	12'-0" x 16'-0"	
43-2	FRAMED	12'-0" x 16'-0"	4 x 4 WING
	FRAMED	12'-0" x 16'-0"	4 x 4 WING
43-3	PAVER	12'-0" x 16'-0"	
45-1	FRAMED	12'-0" x 16'-0"	
45-2	FRAMED	12'-0" x 16'-0"	4 x 4 WING
	FRAMED	12'-0" x 16'-0"	4 x 4 WING
45-3	PAVER	12'-0" x 16'-0"	
47-1	FRAMED	12'-0" x 15'-8"	
47-2	FRAMED	12'-0" x 19'-8"	
	FRAMED	12'-0" x 19'-8"	
47-3	PAVER	12'-0" x 16'-0"	

NOTES:

- THE ABOVE DECK DIMENSIONS ARE APPROXIMATE. NEW DECK DIMENSIONS AND CONFIGURATIONS SHALL MATCH THE EXISTING.
- EXISTING SUNROOMS SHALL REMAIN. NEW PAVERS SHALL BE INSTALLED AROUND THE SUNROOMS.

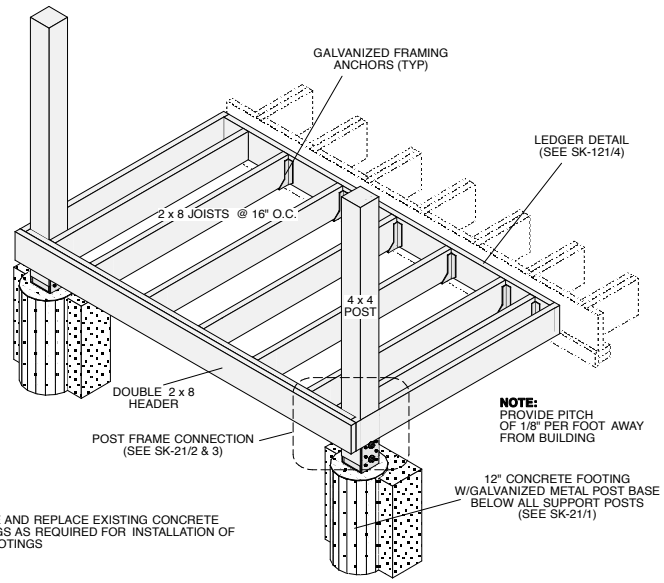
ALTERNATE #1 SHALL INCLUDE THE FOLLOWING ON TRIPLEX BUILDINGS:

- REMOVAL OF THE EXISTING WOOD FRAMED EXTERIOR DECKS.;
- INSTALLATION OF NEW FOOTINGS AND SUPPORT POSTS;
- INSTALLATION OF NEW WOOD FRAMED DECKS;
- INSTALLATION OF NEW DECKING;
- INSTALLATION OF NEW STAIRS AND RAILINGS;
- INSTALLATION OF NEW COMPACTED BASE AND PAVER SYSTEM ON DESIGNATED UNITS.

GENERAL:

- THE DRAWINGS ARE NOT TO SCALE. THEY HAVE BEEN PREPARED TO INDICATE THE GENERAL AREAS TO BE INCLUDED IN THE WORK. THE CONTRACTOR SHALL FIELD DETERMINE ALL DIMENSIONS AND QUANTITIES.
- THE CONTRACTOR IS CAUTIONED THAT THE SITE WILL BE OCCUPIED DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE ALL REASONABLE MEASURES TO MINIMIZE DISRUPTION OF THE NORMAL USE OF THE SITE AND INCONVENIENCE TO THE RESIDENTS.

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
SITE DECK PLAN		S-02



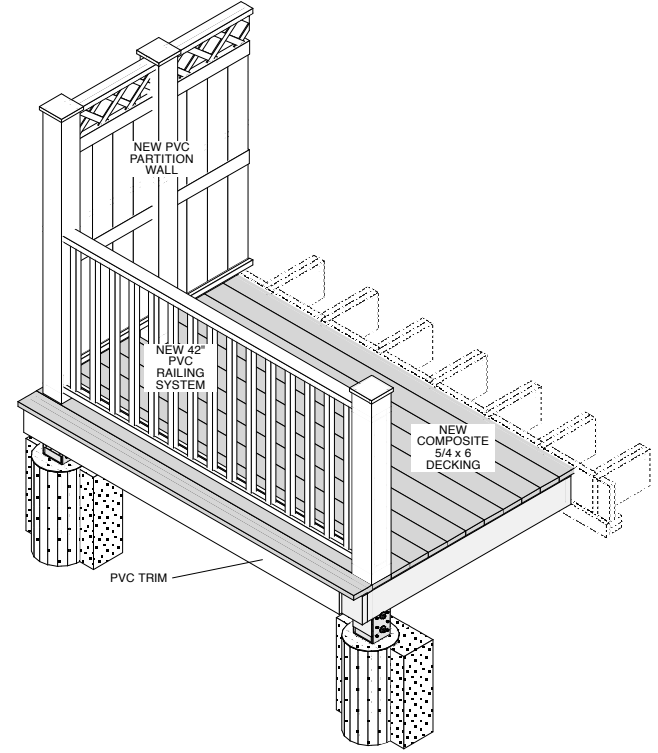
NOTE:
 NEW DECK DIMENSIONS,
 POST LOCATIONS,
 RAILING LOCATIONS,
 PRIVACY FENCE LOCATIONS
 AND STAIR LOCATIONS SHALL
 MATCH THE EXISTING

NOTE:
 PROVIDE PITCH
 OF 1/8" PER FOOT AWAY
 FROM BUILDING

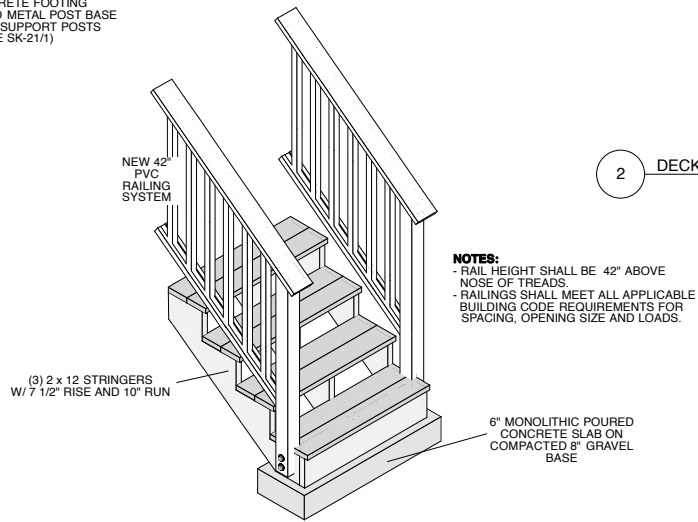
12" CONCRETE FOOTING
 W/GALVANIZED METAL POST BASE
 BELOW ALL SUPPORT POSTS
 (SEE SK-21/1)

NOTE:
 REMOVE AND REPLACE EXISTING CONCRETE
 FOOTINGS AS REQUIRED FOR INSTALLATION OF
 NEW FOOTINGS

1 EXTERIOR DECK FRAMING



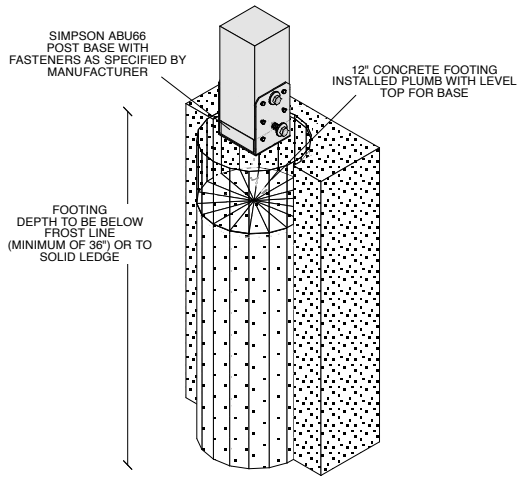
2 DECKING & RAILINGS



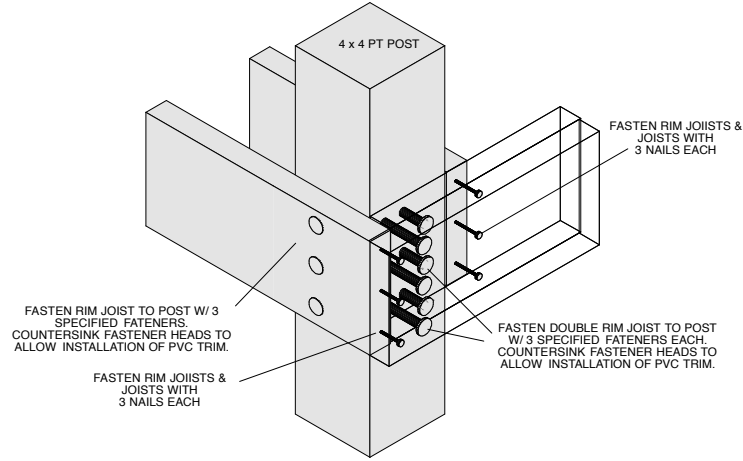
NOTES:
 - RAIL HEIGHT SHALL BE 42" ABOVE
 NOSE OF TREADS.
 - RAILINGS SHALL MEET ALL APPLICABLE
 BUILDING CODE REQUIREMENTS FOR
 SPACING, OPENING SIZE AND LOADS.

3 STAIR DETAIL

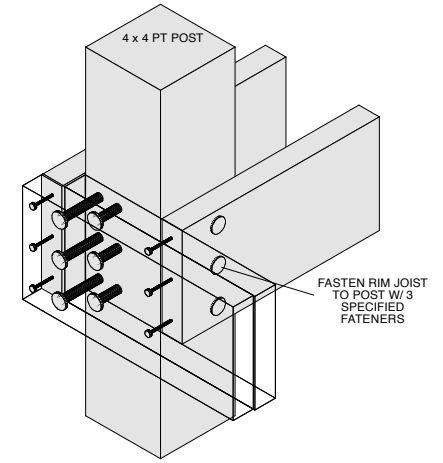
EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
DECK DETAILS		SK-20



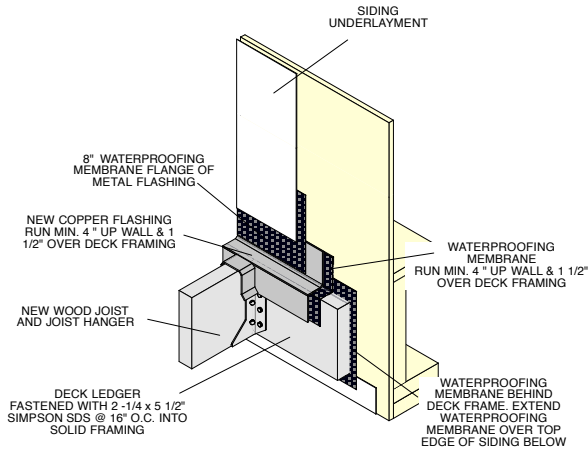
1 FOOTING DETAIL



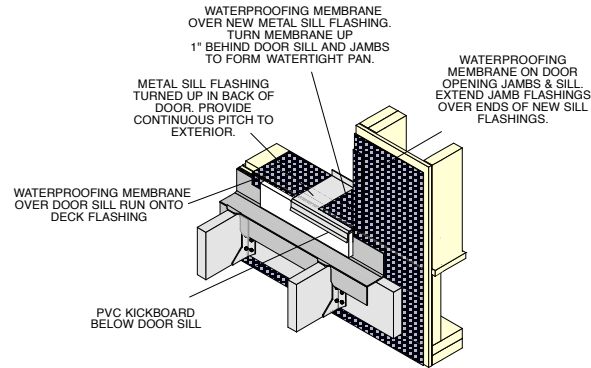
2 POST/DECK DETAIL



3 POST/DECK DETAIL



4 LEDGER DETAIL



5 BALCONY DOOR FLASHING

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
DECK DETAILS		SK-21

PROVIDE STRIP OF CLEAN GRAVEL BELOW ROOF DRIP EDGES

2" SAND BED LEVELED TO PROVIDE PROPER BED FOR NEW PAVERS. SAND BED SHALL BE DAMPENED TO PROVIDE OPTIMAL COMPACTION.

NEW 2" CONCRETE PAVERS SET WITH STONE DUST JOINTS

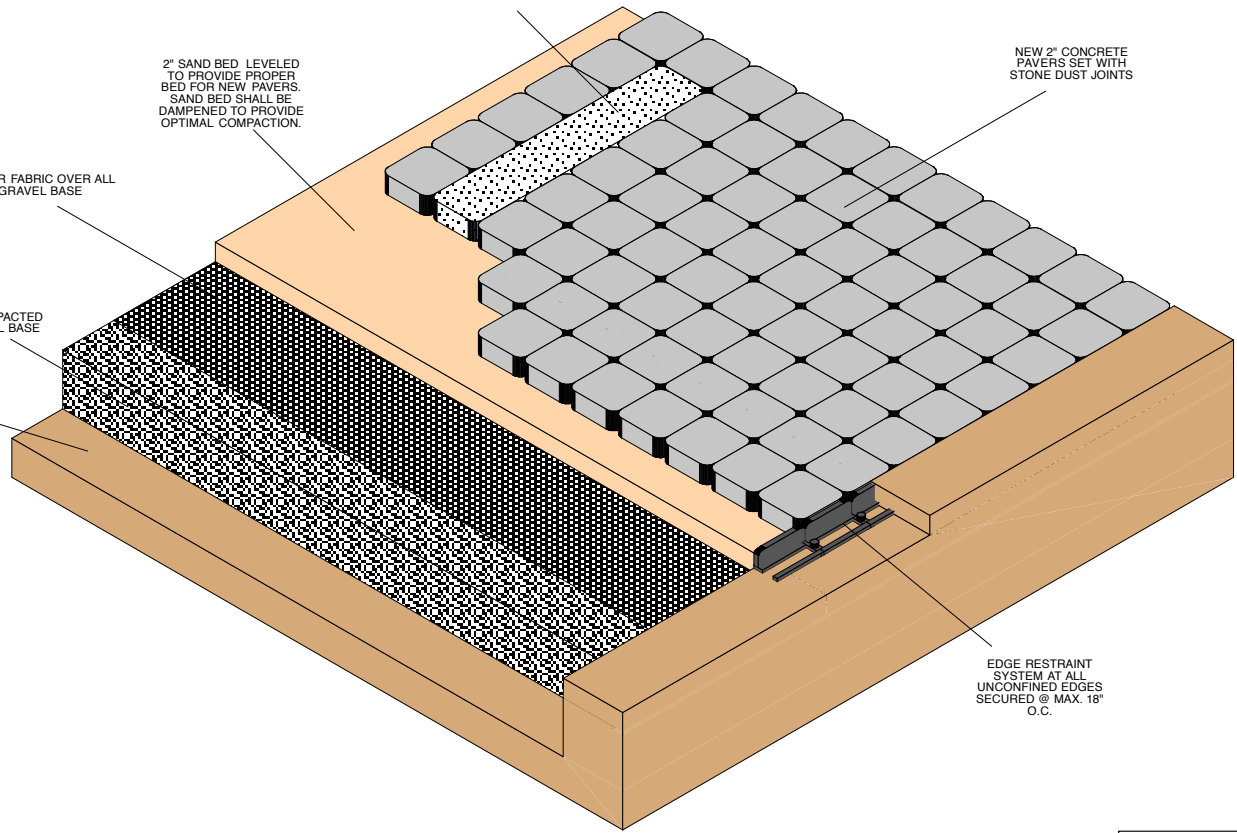
FILTER FABRIC OVER ALL GRAVEL BASE

6" COMPACTED GRAVEL BASE

EXISTING FILL MATERIALS. EXCAVATE PROPERLY SIZED BED FOR INSTALLATION OF NEW MATERIALS. EXPOSED FILL SURFACES SHALL BE PROPERLY COMPACTED PRIOR TO INSTALLATION OF NEW MATERIALS.

NOTE:
FINISHED PAVER SURFACE SHALL PITCH AWAY FROM BUILDINGS WITH A PITCH OF 1/8" TO 1/4" PER FOOT

EDGE RESTRAINT SYSTEM AT ALL UNCONFINED EDGES SECURED @ MAX. 18" O.C.



1 PAVES DETAIL

EXTERIOR BUILDING RESTORATION SHAKER LANDING CONDOMINIUM ENFIELD, NEW HAMPSHIRE		
SCALE: NTS		DRWN: PMC
DATE: 3-15		CHKD: TDL
NOBLIN & ASSOCIATES, L.L.C. CONSULTING ENGINEERS DOVER, NEW HAMPSHIRE		
PAVER DETAILS		SK-22

APPENDIX B
PARTIAL WAIVER AND RELEASE FORM

PARTIAL WAIVER AND RELEASE

The undersigned, _____ (Supplier), hereby acknowledges that _____ (Purchaser and General Contractor) has paid Supplier, TO DATE, the amount of \$_____, in full for all invoices for work and materials supplied for _____ (Owner) in _____. The Supplier does hereby waive, release and relinquish all claims against Purchaser, Owner and General Contractor and their surety, and all claims and rights of lien, and all claims upon the Purchaser's and General Contractor's bonds for work performed and materials supplied up to and including the date of _____. The Supplier certifies that payment has been received from the Purchaser through the aforementioned date in connection with the performance of this contract for all materials supplied.

Dated this _____

(Supplier)

By _____

Subscribed and sworn to and before me this _____

Notary Public _____

My Commission Expires: _____

APPENDIX C
FINAL WAIVER AND RELEASE FORM

FINAL WAIVER AND RELEASE

The undersigned, _____ (Supplier), hereby acknowledges that _____ (Purchaser and General Contractor) has paid Supplier \$_____ in full for all invoices for work and materials supplied for _____ (Owner) in _____ . The Supplier does hereby waive, release and relinquish all claims against Purchaser, Owner and General Contractor and their surety, and all claims and rights of lien, and all claims upon the Purchaser's and General Contractor's bonds for work performed and materials supplied up to and including the date of _____ . The Supplier certifies that payment has been received from the Purchaser through the aforementioned date in connection with the performance of this contract for all work and materials supplied.

Dated this _____

(Supplier)

By _____

Subscribed and sworn to and before me this _____

Notary Public _____

My Commission Expires: _____

APPENDIX D
CONTRACTOR'S GUARANTEE FORM

CONTRACTOR'S GUARANTEE

Whereas _____ of _____
herein called "Contractor" has completed construction of the following project:

Owner: SHAKER LANDING CONDOMINIUM TRUST
Address of Owner: SHAKER BLVD.
ENFIELD, NEW HAMPSHIRE

Title of Project: BUILDING ENVELOPE REPAIRS
SHAKER LANDING CONDOMINIUM
ENFIELD, NEW HAMPSHIRE

The Contractor hereby warrants, subject to the conditions herein set forth, that during a period of (2) years from the Date of Commencement of this Guarantee, the Contractor shall, at its own cost and expense (including all materials and labor), following receipt of written notice From Owner and Engineer, make or cause to be made such repairs to defects resulting from faulty workmanship and/or materials applied by or through the Contractor as may be necessary to maintain the construction in defect-free condition.

The Date of Commencement of this Guarantee shall be the date of Final Payment from the Owner to The Contractor, but not more than 30 days from the date of the Engineer's approval of Final Payment, as set forth in the Contract Documents.

This Guarantee is made subject to the following conditions:

- 1) Specifically excluded from the Guarantee is any and all damage caused by foundation settlement of the existing building, defects or failure of materials not installed by the Contractor, faulty construction materials not installed by the Contractor, fire, or acts of God. If the construction is damaged by reason of any of the foregoing, this Guarantee shall become null and void for the balance of the Guarantee until such damage is repaired.
- 2) No work shall be done on the construction unless the Contractor shall be first notified and shall be given the opportunity to make the necessary related construction thereto. Failure to observe this condition shall render this Guarantee null and void.

In Witness Whereof, this instrument has been duly executed this _____

(Contractor)

(Seal)

By: _____
(Authorized Name and Title)

(Signature)

(Date)