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**SPECIFICATIONS FOR  
NEWPORT TOWN GARAGE  
REROOFING PROJECT  
449 SOUTH MAIN STREET  
NEWPORT, NH 03773**

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**BID DOCUMENTS**

*ISSUE DATE*

September 29, 2017

David Laurin Architect PLLC  
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White River Jct., Vermont 05001  
(t):802-295-9263

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449 SOUTH MAIN STREET  
NEWPORT, NH 03773

**BID DOCUMENTS**

ISSUE DATE: SEPTEMBER 29, 2017

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**SECTION 002113 - INSTRUCTIONS TO BIDDERS****1.01      PROJECT IDENTIFICATION**

Reroofing Project – Newport Town Garage  
449 South Main Street  
Newport, NH 03773

**1.02      DOCUMENTS (Issuance and Restrictions)**

- A.      Bidding documents may be obtained from

***David Laurin Architect PLLC  
P.O. Box 1382  
White River Jct., VT 05001  
tel: 802-295-9263  
david@laurinarch.com***

- B.      Sets will be furnished for bidding purposes at a non-refundable cost.

- C.      **Bids submitted using partial sets of drawings are done so at the risk of the Contractor.**

**1.03      EXAMINATION OF DOCUMENTS AND SITE**

- A.      Each bidder shall visit the site of the proposed work, fully acquaint and familiarize himself with conditions as they exist and the character of the operations to be carried on under the proposed Contract, and make such on-site and subsurface investigations as he may see fit so that he may fully understand the facilities, difficulties, and restrictions attending the execution of the work under this Contract, including access to and conditions of the property. Bidders shall also thoroughly examine and be familiar with all of the Contract Documents, including the Specifications. The failure or omission of any bidder to receive or examine any form, instrument, or Document or any part of the Contract Documents, or to visit the site and acquaint himself with the conditions there existing, shall in no way relieve him from any obligations with respect to the performance of the proposed Contract and the contemplated work therein, for the consideration set forth in his bid.

#### 1.04 DISCREPANCIES, AMBIGUITIES AND ADDENDA

- A. No oral interpretation of the Documents or of questions concerning the Documents will be given. Submit all questions about the Scope of the Work and the Specifications to the Owner in writing. Replies will be issued to all bidders of record as addenda to the Specifications and will become part of the Contract. The Owner will not be responsible for oral clarifications.
- B. Addenda to the Contract Documents will be issued as deemed necessary by the Owner and will be sent promptly to all persons whom Documents have been issued. All such addenda shall, upon issuance, be deemed and become part of the Contract Documents. It shall be incumbent upon the bidder to make certain that he has received or has provided himself with copies of all addenda that have been issued. Proposals shall be conclusively presumed to be based upon all addenda issued up to the time of the opening of bids and must be acknowledged on the Proposal Form.
- C. After Contracts have been awarded, no consideration will be given for any misinterpretation by the bidder or any omission, discrepancies or ambiguity which may become apparent in the Documents, it being mutually understood that the tender of a Bid carried with it an agreement which implies a full understanding of the Contract Documents and that clarification of such questions rest with the Owner whose decision shall be conclusive and final.

#### 1.05 BASIS OF BIDS

- A. The bidder must include, if required, all unit cost items, completed scope of work checklist and all alternates shown on the proposal form. Failure to comply may be cause for rejection. No segregated Proposals or assignment will be considered.
- B. The bids will be received at the office of the architect. It will be a private opening and results will not be disseminated to the bidders.
- B. The Owner reserves the right to reject any or all bids and or alternates (if any), to waive any informalities, and to make the award as appears to the Owner to be in the Owner's best interest. No bid shall be withdrawn for a period of sixty (60) days subsequent to the opening of bids without the consent of the Owner.
- C. If a bidder decides for any reason not to submit a bid on the project, he should advise the Owner promptly of his decision and return the drawings and specs immediately.

**1.06     CONSTRUCTION TIME**

- A. Construction Work can begin after notice of award and **completion is to be as soon as possible as scheduled by the contractor.**

**1.07     CONSTRUCTION PROCEDURES**

- A. The Contractor shall be solely responsible for all construction means, methods, techniques, sequences and procedures, safety and programs, and for coordinating all portions of the work under this Contract.
- B. The Contractor shall not employ any labor, materials, or means whose employment or utilization during the course of the work tend to cause or result in strikes, work stoppages, delays, suspension of work or similar troubles by workmen under his subcontractors or any of the trades working in or about the premises where work under his Contract is being performed.
- C. The Contractor shall establish and maintain a rate of work progress so as to insure completion of the construction operations and occupancy of the building by the Owner.
- D. The Contractor shall install all products per the manufacturer's recommendations.

**1.08     PRE BID SITE VISIT**

There will be a site visit for all bidders to review the project conditions and scope of work. This is scheduled **for Monday October 16, 2017 at 10 AM** at the site located at 449 South Main Street, Newport, NH 03773.

**1.09     BID DUE DATE**

**Bids will be due on Thursday October 26, 2017 not later than 4:00 PM.** Bids are to be delivered to the Town Manager, Hunter Rieseberg, 15 Sunapee Street, Newport, NH. 603-863-1877. Bids shall be in a sealed envelope and marked Town of Newport Garage Reroofing project. Name of submitting contractor to be on the outside of the envelope. A bid tab with results will be distributed to all bidders after the bid but no award will be made until after review and approval by the Selectboard.

Completion time for the project will be calculated as calendar days from the date specified in the "Notice to Proceed" as follows:

\_\_\_\_\_ calendar days for substantial completion.

\_\_\_\_\_ calendar days for contract completion.

#### 1.10 Non-Discrimination in Employment

Contracts for work under this proposal will obligate the contractors and sub-contractors not to discriminate in employment practices.

**End of Section 002113**

## DOCUMENT 004113 - BID FORM - STIPULATED SUM (SINGLE-PRIME CONTRACT)

## 1.1 BID INFORMATION

- A. Bidder: \_\_\_\_\_.
- B. Project Name: Reroofing Project – Newport Town Garage
- C. Project Location: 449 South Main Street, Newport, NH 03773
- D. Owner: Town of Newport, NH
- E. Architect: David Laurin Architect PLLC

## 1.2 CERTIFICATIONS AND BASE BID

- A. Base Bid, Single-Prime (All Trades) Contract: The undersigned Bidder, having carefully examined the Procurement and Contracting Requirements, Conditions of the Contract, Drawings, Specifications, and all subsequent Addenda, as prepared by David Laurin Architect PLLC and Architect's consultants, having visited the site, and being familiar with all conditions and requirements of the Work, hereby agrees to furnish all material, labor, equipment and services, including all scheduled allowances, necessary to complete the construction of the above-named project, according to the requirements of the Procurement and Contracting Documents, for the stipulated sum of:
  - 1. \_\_\_\_\_ Dollars (\$\_\_\_\_\_).

## 1.3 SUBCONTRACTORS AND SUPPLIERS

- A. The following companies shall execute subcontracts for the portions of the Work indicated:
  - 1. Roofing Work: \_\_\_\_\_.
  - 2. Insulation Work:

## 1.4 TIME OF COMPLETION

- A. The undersigned Bidder proposes and agrees hereby to commence the Work of the Contract Documents on a date specified in a written Notice to Proceed to be issued by Architect, and shall fully complete the Work within <Insert number> calendar days.

## 1.5 ACKNOWLEDGEMENT OF ADDENDA

- A. The undersigned Bidder acknowledges receipt of and use of the following Addenda in the preparation of this Bid:

1. Addendum No. 1, dated \_\_\_\_\_.
2. Addendum No. 2, dated \_\_\_\_\_.
3. Addendum No. 3, dated \_\_\_\_\_.
4. Addendum No. 4, dated \_\_\_\_\_.

## 1.6 CONTRACTOR'S LICENSE

- A. The undersigned further states that it is a duly licensed contractor, for the type of work proposed, in New Hampshire and that all fees, permits, etc., pursuant to submitting this proposal have been paid in full.

## 1.7 SUBMISSION OF BID

- A. Respectfully submitted this \_\_\_\_ day of \_\_\_\_\_, 2017.
- B. Submitted By \_\_\_\_\_ (Name of bidding firm or corporation).
- C. Authorized Signature: \_\_\_\_\_ (Handwritten signature).
- D. Signed By: \_\_\_\_\_ (Type or print name).
- E. Title: \_\_\_\_\_ (Owner/Partner/President/Vice President).
- F. Witness By: \_\_\_\_\_ (Handwritten signature).
- G. Attest: \_\_\_\_\_ (Handwritten signature).
- H. By: \_\_\_\_\_ (Type or print name).
- I. Title: \_\_\_\_\_ (Corporate Secretary or Assistant Secretary).
- J. Street Address: \_\_\_\_\_.
- K. City, State, Zip \_\_\_\_\_.
- L. Phone: \_\_\_\_\_.
- M. License No.: \_\_\_\_\_.
- N. Federal ID No.: \_\_\_\_\_ (Affix Corporate Seal Here).

END OF DOCUMENT 004113

**NOTICE TO CONTRACTORS:**

**The use of asbestos or asbestos products will not be permitted  
in any form in the construction project**

**Reroofing Project - Newport Town Garage  
449 South Main Street  
Newport, NH 03773**

**End of notice to Contractors.**

## SECTION 011000 - SUMMARY

## PART 1 - GENERAL

## 1.1 SUMMARY

## A. Section Includes:

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

## B. Related Requirements:

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

## 1.2 PROJECT INFORMATION

A. Project Identification: **Reroofing Project – Newport Town Garage**

1. Project Location: **449 South Main Street, Newport, NH 03773**

B. Owner: Town of Newport NH  
15 Sunapee Street  
Newport, NH 03773

1. Owner's Representative: Hunter Rieseberg, Town Manager

C. Architect: David Laurin Architect PLLC  
P.O. Box 1382  
White River Jct., VT 05001  
(o) 802-295-9263  
(c) 603-443-3867  
david@laurinarch.com

## 1.3 WORK COVERED BY CONTRACT DOCUMENTS

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

1. Demolition of existing roofing as described and installation of new insulation, membrane roofing, flashing, wood blocking, fasteners, repair of existing wood decking, and structural improvements and reinforcing, and other work as described.

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.4 PHASED CONSTRUCTION

- A. The Work shall be conducted in a single phase.
- B. Before commencing the Work submit a copy of Contractor's construction schedule showing the sequence, commencement and completion dates for the Work.

1.5 WORK UNDER SEPARATE CONTRACTS

- A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying Work under this Contract or other contracts. Coordinate the Work of this Contract with work performed under separate contracts.

1.6 ACCESS TO SITE

- A. General: **Each** Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Use of Site: Limit use of Project site to **Work in areas** indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
  1. Driveways, Walkways, and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
- C. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.7 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and **existing** building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

## 1.8 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
  - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 7 a.m. to 5 p.m., Monday through Friday, unless otherwise indicated.
- C. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after providing temporary utility services according to requirements indicated:
  - 1. Notify **Owner** not less than **two** days in advance of proposed utility interruptions.
  - 2. Obtain **Owner's** written permission before proceeding with utility interruptions.
- D. Restricted Substances: Use of alcohol, tobacco products of any kind, and other controlled substances **on Project site** is not permitted.

## 1.9 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
  - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
  - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

## SECTION 012600 - CONTRACT MODIFICATION PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.
- B. Related Sections include the following:
  - 1. Division 01 Section "Allowances" for procedural requirements for handling and processing allowances.
  - 2. Division 01 Section "Unit Prices" for administrative requirements for using unit prices.
  - 3. Division 01 Section "Product Requirements" for administrative procedures for handling requests for substitutions made after Contract award.

## 1.3 MINOR CHANGES IN THE WORK

- A. Architect will issue **through the General Contractor** supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on **AIA Document G710, "Architect's Supplemental Instructions."**

## 1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: **Architect** and or **General Contractor** will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
  - 1. Proposal Requests issued by **Architect** and or **General Contractor** are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
  - 2. Within **time specified in Proposal Request or no more than 10 days** after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.

- a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  - c. Include costs of labor and supervision directly attributable to the change.
  - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
- B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to **Architect** and **General Contractor**.
1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
  2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
  3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
  4. Include costs of labor and supervision directly attributable to the change.
  5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
  6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

## 1.5 ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, base each Change Order proposal on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
1. Include installation costs in purchase amount only where indicated as part of the allowance.
  2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
  3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
  4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the Purchase Order amount or Contractor's handling, labor, installation, overhead, and profit. Submit claims within 30 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. Owner will reject claims submitted later than 60 days after such authorization.
  - 1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
  - 2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

#### 1.6 CHANGE ORDER PROCEDURES

- A. On Owner's approval of a Proposal Request, **General Contractor** will issue a Change Order for signatures of Owner, Architect, and Contractor on **AIA Document G701**.

#### 1.7 CONSTRUCTION CHANGE DIRECTIVE

- A. **Construction** Change Directive: **General Contractor** may issue a **Construction** Change Directive on **AIA Document G714**. **Construction** Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
  - 1. **Construction** Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.
- B. Documentation: Maintain detailed records on a time and material basis of work required by the **Construction** Change Directive.
  - 1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600

## SECTION 012900 - PAYMENT PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.
- B. Related Sections include the following:
  - 1. Division 01 Section "Allowances" for procedural requirements governing handling and processing of allowances.
  - 2. Division 01 Section "Contract Modification Procedures" for administrative procedures for handling changes to the Contract.
  - 3. Division 01 Section "Unit Prices" for administrative requirements governing use of unit prices.
  - 4. Division 01 Section "Construction Progress Documentation" for administrative requirements governing preparation and submittal of Contractor's Construction Schedule and Submittals Schedule.

## 1.3 DEFINITIONS

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

## 1.4 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.
  - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
    - a. Application for Payment forms with Continuation Sheets.
    - b. Submittals Schedule.
    - c. Contractor's Construction Schedule.

2. Submit the Schedule of Values to Architect **through General Contractor** at earliest possible date but no later than **seven** days before the date scheduled for submittal of initial Applications for Payment.
  3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
1. Identification: Include the following Project identification on the Schedule of Values:
    - a. Project name and location.
    - b. Name of Architect.
    - c. Architect's project number.
    - d. Contractor's name and address.
    - e. Date of submittal.
  2. Submit draft of **AIA Document G703 Continuation Sheets**.
  3. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
    - a. Related Specification Section or Division.
    - b. Description of the Work.
    - c. Name of subcontractor.
    - d. Name of manufacturer or fabricator.
    - e. Name of supplier.
    - f. Change Orders (numbers) that affect value.
    - g. Dollar value.
      - 1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.
  4. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. **Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.**
  5. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
  6. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
    - a. Differentiate between items stored on-site and items stored off-site. If specified, include evidence of insurance or bonded warehousing.

7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Allowances: Provide a separate line item in the Schedule of Values for each allowance. Show line-item value of unit-cost allowances, as a product of the unit cost, multiplied by measured quantity. Use information indicated in the Contract Documents to determine quantities.
9. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.
  - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
10. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

#### 1.5 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified by Architect **and General Contractor** and paid for by Owner.
  1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.
- C. Payment Application Times: Progress payments shall be submitted to Architect by the 1st **day** of the month. The period covered by each Application for Payment is one month, ending on the **last day of the month**.
- D. Payment Application Forms: Use **AIA Document G702/CMa** and **AIA Document G703 Continuation Sheets** as form for Applications for Payment.
- E. Payment Application Forms: Use forms provided by Owner for Applications for Payment. Sample copies are included at end of this Section.
- F. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. **Architect** will return incomplete applications without action.
  1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
  2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

- G. Transmittal: Submit [3] signed and notarized original copies of each Application for Payment to **Architect** and **General Contractor** by a method ensuring receipt. One copy shall include waivers of lien and similar attachments if required.
1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.
- H. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- I. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's liens from subcontractors, sub-subcontractors, and suppliers for construction period covered by the previous application.
1. Submit partial waivers on each item for amount requested in previous application, after deduction for retainage, on each item.
  2. When an application shows completion of an item, submit final or full waivers.
  3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
  4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
  5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- J. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
1. List of subcontractors.
  2. Schedule of Values.
  3. Contractor's Construction Schedule (preliminary if not final).
  4. Products list.
  5. Schedule of unit prices.
  6. Submittals Schedule (preliminary if not final).
  7. List of Contractor's staff assignments.
  8. List of Contractor's principal consultants.
  9. Copies of building permits.
  10. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
  11. Initial progress report.

12. Report of preconstruction conference.
  13. Certificates of insurance and insurance policies.
  14. Performance and payment bonds.
  15. Data needed to acquire Owner's insurance.
  16. Initial settlement survey and damage report if required.
- K. Application for Payment at Substantial Completion: After issuing the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
  2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- L. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
  2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
  3. Updated final statement, accounting for final changes to the Contract Sum.
  4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
  5. AIA Document G706A, "Contractor's Affidavit of Release of Liens."
  6. AIA Document G707, "Consent of Surety to Final Payment."
  7. Evidence that claims have been settled.
  8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
  9. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900

## SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. Coordination Drawings.
  - 2. Administrative and supervisory personnel.
  - 3. Project meetings.
  - 4. Requests for Interpretation (RFIs).
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections include the following:
  - 1. Division 01 Section "Multiple Contract Summary" for a description of the division of Work among separate contracts and responsibility for coordination activities not in this Section.
  - 2. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
  - 3. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
  - 4. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

## 1.3 DEFINITIONS

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

## 1.4 COORDINATION

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

- B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.
1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
  2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
  3. Make adequate provisions to accommodate items scheduled for later installation.
  4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
- C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
  2. Preparation of the Schedule of Values.
  3. Installation and removal of temporary facilities and controls.
  4. Delivery and processing of submittals.
  5. Progress meetings.
  6. Preinstallation conferences.
  7. Project closeout activities.
  8. Startup and adjustment of systems.
  9. Project closeout activities.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

## 1.5 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Content: Project-specific information, drawn accurately to scale. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
    - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
    - b. Indicate required installation sequences.
    - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
  2. Sheet Size: At least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
  3. Number of Copies: Submit **three** opaque copies of each submittal. Architect **through General Contractor**, will return **two copies**.
    - a. Submit **three** copies where Coordination Drawings are required for operation and maintenance manuals. Architect **and General Contractor** will retain **two** copies; remainder will be returned. **Mark up and retain one returned copy as a Project Record Drawing.**
  4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
- B. Key Personnel Names: Within **15** days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

## 1.6 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

## 1.7 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Architect, within **three** days of the meeting.
- B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner, **General Contractor**, and Architect. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, **General Contractor**, Architect, and their consultants; Contractor superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Discuss items of significance that could affect progress, including the following:
    - a. Tentative construction schedule.
    - b. Phasing.
    - c. Critical work sequencing and long-lead items.
    - d. Designation of key personnel and their duties.
    - e. Procedures for processing field decisions and Change Orders.
    - f. Procedures for RFIs.
    - g. Procedures for testing and inspecting.
    - h. Procedures for processing Applications for Payment.
    - i. Distribution of the Contract Documents.
    - j. Submittal procedures.
    - k. Preparation of Record Documents.
    - l. Use of the premises **and existing building**.
    - m. Work restrictions.
    - n. Owner's occupancy requirements.
    - o. Responsibility for temporary facilities and controls.
    - p. Construction waste management and recycling.
    - q. Parking availability.
    - r. Office, work, and storage areas.
    - s. Equipment deliveries and priorities.
    - t. First aid.
    - u. Security.
    - v. Progress cleaning.
    - w. Working hours.

3. Minutes: **General Contractor** will **Record** and distribute meeting minutes.
- C. Preinstallation Conferences: Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect **and Owner** of scheduled meeting dates.
  2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
    - a. The Contract Documents.
    - b. Options.
    - c. Related RFIs.
    - d. Related Change Orders.
    - e. Purchases.
    - f. Deliveries.
    - g. Submittals.
    - h. Review of mockups.
    - i. Possible conflicts.
    - j. Compatibility problems.
    - k. Time schedules.
    - l. Weather limitations.
    - m. Manufacturer's written recommendations.
    - n. Warranty requirements.
    - o. Compatibility of materials.
    - p. Acceptability of substrates.
    - q. Temporary facilities and controls.
    - r. Space and access limitations.
    - s. Regulations of authorities having jurisdiction.
    - t. Testing and inspecting requirements.
    - u. Installation procedures.
    - v. Coordination with other work.
    - w. Required performance results.
    - x. Protection of adjacent work.
    - y. Protection of construction and personnel.
  3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
  4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at **weekly** intervals. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to representatives of Owner, **General Contractor**, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
  - a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - 1) Review schedule for next period.
  - b. Review present and future needs of each entity present, including the following:
    - 1) Interface requirements.
    - 2) Sequence of operations.
    - 3) Status of submittals.
    - 4) Deliveries.
    - 5) Off-site fabrication.
    - 6) Access.
    - 7) Site utilization.
    - 8) Temporary facilities and controls.
    - 9) Work hours.
    - 10) Hazards and risks.
    - 11) Progress cleaning.
    - 12) Quality and work standards.
    - 13) Status of correction of deficient items.
    - 14) Field observations.
    - 15) RFIs.
    - 16) Status of proposal requests.
    - 17) Pending changes.
    - 18) Status of Change Orders.
    - 19) Pending claims and disputes.
    - 20) Documentation of information for payment requests.
3. Minutes: **General Contractor** will **Record** the meeting minutes.
4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
  - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

- E. Coordination Meetings: Conduct Project coordination meetings at **weekly** intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
1. Attendees: In addition to representatives of Owner, **General Contractor**, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
  2. Agenda: Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
    - a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
    - b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
    - c. Review present and future needs of each contractor present, including the following:
      - 1) Interface requirements.
      - 2) Sequence of operations.
      - 3) Status of submittals.
      - 4) Deliveries.
      - 5) Off-site fabrication.
      - 6) Access.
      - 7) Site utilization.
      - 8) Temporary facilities and controls.
      - 9) Work hours.
      - 10) Hazards and risks.
      - 11) Progress cleaning.
      - 12) Quality and work standards.
      - 13) Change Orders.
  3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

#### 1.8 REQUESTS FOR INTERPRETATION (RFIs)

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

1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
  2. Date.
  3. Name of Contractor.
  4. Name of Architect **and General Contractor**.
  5. RFI number, numbered sequentially.
  6. Specification Section number and title and related paragraphs, as appropriate.
  7. Drawing number and detail references, as appropriate.
  8. Field dimensions and conditions, as appropriate.
  9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
  10. Contractor's signature.
  11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
    - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Hard-Copy RFIs: **CSI Form 13.2A**.
1. Identify each page of attachments with the RFI number and sequential page number.
- D. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- E. Architect's **and General Contractor's** Action: Architect **and General Contractor** will review each RFI, determine action required, and return it. Allow three working days for Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.
    - c. Requests for coordination information already indicated in the Contract Documents.
    - d. Requests for adjustments in the Contract Time or the Contract Sum.
    - e. Requests for interpretation of Architect's actions on submittals.
    - f. Incomplete RFIs or RFIs with numerous errors.

2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."
  - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect **and General Contractor** in writing within **5** days of receipt of the RFI response.
- F. On receipt of Architect's **and General Contractor's** action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect **and General Contractor** within three days if Contractor disagrees with response.
- G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log **weekly. Include the following:**
  1. Project name.
  2. Name and address of Contractor.
  3. Name and address of Architect **and General Contractor**.
  4. RFI number including RFIs that were dropped and not submitted.
  5. RFI description.
  6. Date the RFI was submitted.
  7. Date Architect's **and General Contractor's** response was received.
  8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.
  9. Identification of related Field Order, Work Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013100

## SECTION 013300 - SUBMITTAL PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. Related Sections include the following:
  - 1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
  - 2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
  - 3. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
  - 4. Division 01 Section "Quality Requirements" for submitting test and inspection reports.
  - 5. Division 01 Section "Closeout Procedures" for submitting warranties.
  - 6. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 7. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
  - 8. Division 01 Section "Demonstration and Training" for submitting videotapes of demonstration of equipment and training of Owner's personnel.
  - 9. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

## 1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Architect's **and General Contractor's** responsive action.
- B. Informational Submittals: Written information that does not require Architect's **and General Contractor's** responsive action. Submittals may be rejected for not complying with requirements.

## 1.4 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. **Architect and General Contractor reserve** the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on **Architect's** receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.
  - 1. Initial Review: Allow 5 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. **Architect** and or **General Contractor** will advise Contractor when a submittal being processed must be delayed for coordination.
  - 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  - 3. Resubmittal Review: Allow **5** days for review of each resubmittal.
- E. Identification: Place a permanent label or title block on each submittal for identification.
  - 1. Indicate name of firm or entity that prepared each submittal on label or title block.
  - 2. Provide a space approximately **6 by 8 inches (150 by 200 mm)** on label or beside title block to record Contractor's review and approval markings and action taken by **Architect and General Contractor**.
  - 3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of **Architect and General Contractor**.
    - d. Name and address of Contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.

- g. Name of manufacturer.
  - h. Submittal number or other unique identifier, including revision identifier.
    - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (e.g., 06100.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., 06100.01.A).
  - i. Number and title of appropriate Specification Section.
  - j. Drawing number and detail references, as appropriate.
  - k. Location(s) where product is to be installed, as appropriate.
  - l. Other necessary identification.
- F. Deviations: **Highlight, encircle**, or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect **or General Contractor** observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
- 1. Submit one copy of submittal to concurrent reviewer in addition to specified number of copies to Architect **and General Contractor**.
  - 2. Additional copies submitted for maintenance manuals will be marked with action taken and will be returned.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect **and General Contractor** will **return submittals, without review**, received from sources other than Contractor.
- 1. Transmittal Form: Provide locations on form for the following information:
    - a. Project name.
    - b. Date.
    - c. Destination (To:).
    - d. Source (From:).
    - e. Names of subcontractor, manufacturer, and supplier.
    - f. Category and type of submittal.
    - g. Submittal purpose and description.
    - h. Specification Section number and title.
    - i. Drawing number and detail references, as appropriate.
    - j. Transmittal number, **numbered consecutively**.
    - k. Submittal and transmittal distribution record.
    - l. Remarks.
    - m. Signature of transmitter.
  - 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect **and General Contractor** on previous submittals, and deviations from requirements in the

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

- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
  - 1. Note date and content of previous submittal.
  - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - 3. Resubmit submittals until they are marked with **approval notation from Architect's and General Contractor's action stamp**."
- J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- K. Use for Construction: Use only final submittals with mark indicating **approval notation from Architect's and General Contractor's action stamp**.

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

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

## PART 2 - PRODUCTS

### 2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
  - 1. Submit electronic submittals directly to extranet specifically established for Project.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include the following information, as applicable:
    - a. Manufacturer's written recommendations.
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.

- f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operation and maintenance manuals.
    - k. Compliance with specified referenced standards.
    - l. Testing by recognized testing agency.
    - m. Application of testing agency labels and seals.
    - n. Notation of coordination requirements.
  - 4. Submit Product Data before or concurrent with Samples.
  - 5. Number of Copies: Submit **three** copies of Product Data, unless otherwise indicated. Architect, **through General Contractor**, will return **two** copies. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, **unless submittal of Architect's CAD Drawings are otherwise permitted.**
- 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Dimensions.
    - b. Identification of products.
    - c. Fabrication and installation drawings.
    - d. Roughing-in and setting diagrams.
    - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
    - f. Shopwork manufacturing instructions.
    - g. Templates and patterns.
    - h. Schedules.
    - i. Design calculations.
    - j. Compliance with specified standards.
    - k. Notation of coordination requirements.
    - l. Notation of dimensions established by field measurement.
    - m. Relationship to adjoining construction clearly indicated.
    - n. Seal and signature of professional engineer if specified.
    - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
  - 2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least **8-1/2 by 11 inches (215 by 280 mm)** but no larger than **30 by 40 inches (750 by 1000 mm)**.
  - 3. Number of Copies: Submit two opaque (bond) copies of each submittal. Architect, **through General Contractor**, will return one copy.
  - 4. Number of Copies: Submit **three** opaque copies of each submittal, unless copies are required for operation and maintenance manuals. Submit three copies where copies are required for operation and maintenance manuals. Architect **and General Contractor**

will retain copies; remainder will be returned. **Mark up and retain one returned copy as a Project Record Drawing.**

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

- 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least **three** sets of paired units that show approximate limits of variations.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
1. Type of product. Include unique identifier for each product.
  2. Number and name of room or space.
  3. Location within room or space.
  4. Number of Copies: Submit **three** copies of product schedule or list, unless otherwise indicated. Architect, **through General Contractor**, will return **two** copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Construction Manager's action.
- G. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- H. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."
- I. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."
- J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
1. Name, address, and telephone number of entity performing subcontract or supplying products.
  2. Number and title of related Specification Section(s) covered by subcontract.
  3. Drawing number and detail references, as appropriate, covered by subcontract.
  4. Number of Copies: Submit **three** copies of subcontractor list, unless otherwise indicated. Architect, **through General Contractor**, will return **two** copies.
    - a. Mark up and retain one returned copy as a Project Record Document.
- K. Material Safety Data Sheets (MSDSs) for LEED Certification: Submit information necessary to show compliance with LEED certification requirements, which will be the limit of the Architect's review.

## 2.2 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.

1. Number of Copies: Submit **two** copies of each submittal, unless otherwise indicated. Architect **and General Contractor** will not return copies.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.

- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
1. Name of evaluation organization.
  2. Date of evaluation.
  3. Time period when report is in effect.
  4. Product and manufacturers' names.
  5. Description of product.
  6. Test procedures and results.
  7. Limitations of use.
- M. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
- S. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
  2. Required substrate tolerances.
  3. Sequence of installation or erection.
  4. Required installation tolerances.
  5. Required adjustments.

6. Recommendations for cleaning and protection.
- T. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- U. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.

### PART 3 - EXECUTION

#### 3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect **and General Contractor**.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

#### 3.2 ARCHITECT'S AND GENERAL CONTRACTOR'S / ACTION

- A. General: Architect **and General Contractor** will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect **and General Contractor** will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect **and General Contractor** will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken.
- C. Informational Submittals: Architect **and General Contractor** will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect **and General Contractor** will forward each submittal to appropriate party.

- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

## SECTION 014200 - REFERENCES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Architect's action on Contractor's submittals, applications, and requests, "approved" is limited to Architect's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Architect. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

## 1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if

bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
  - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
- D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA)	(800) 872-2253
	Architectural Barriers Act (ABA)	(202) 272-0080
	Accessibility Guidelines for Buildings and Facilities Available from Access Board <a href="http://www.access-board.gov">www.access-board.gov</a>	
CFR	Code of Federal Regulations	(866) 512-1800
	Available from Government Printing Office  <a href="http://www.gpoaccess.gov/cfr/index.html">www.gpoaccess.gov/cfr/index.html</a>	(202) 512-1800
DOD	Department of Defense Military Specifications and Standards	(215) 697-6257
	Available from Department of Defense Single Stock Point <a href="http://dodssp.daps.dla.mil">http://dodssp.daps.dla.mil</a>	
DSCC	Defense Supply Center Columbus (See FS)	
FED-STD	Federal Standard (See FS)	
FS	Federal Specification	(215) 697-6257
	Available from Department of Defense Single Stock Point <a href="http://dodssp.daps.dla.mil">http://dodssp.daps.dla.mil</a>	

Available from Defense Standardization Program  
[www.dps.dla.mil](http://www.dps.dla.mil)

Available from General Services Administration (202) 619-8925  
[www.gsa.gov](http://www.gsa.gov)

Available from National Institute of Building Sciences (202) 289-7800  
[www.nibs.org](http://www.nibs.org)

FTMS Federal Test Method Standard  
 (See FS)

MIL (See MILSPEC)

MIL-STD (See MILSPEC)

MILSPEC Military Specification and Standards (215) 697-6257  
 Available from Department of Defense Single Stock Point  
<http://dodssp.daps.dla.mil>

UFAS Uniform Federal Accessibility Standards (800) 872-2253  
 Available from Access Board (202) 272-0080  
[www.access-board.gov](http://www.access-board.gov)

#### 1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Thomson Gale's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AA Aluminum Association, Inc. (The) (703) 358-2960  
[www.aluminum.org](http://www.aluminum.org)

AAADM American Association of Automatic Door Manufacturers (216) 241-7333  
[www.aaadm.com](http://www.aaadm.com)

AABC Associated Air Balance Council (202) 737-0202

[www.aabchq.com](http://www.aabchq.com)

AAMA	American Architectural Manufacturers Association <a href="http://www.aamanet.org">www.aamanet.org</a>	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials <a href="http://www.transportation.org">www.transportation.org</a>	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) <a href="http://www.aatcc.org">www.aatcc.org</a>	(919) 549-8141
ABAA	Air Barrier Association of America <a href="http://www.airbarrier.org">www.airbarrier.org</a>	(866) 956-5888
ABMA	American Bearing Manufacturers Association <a href="http://www.abma-dc.org">www.abma-dc.org</a>	(202) 367-1155
ACI	ACI International (American Concrete Institute) <a href="http://www.aci-int.org">www.aci-int.org</a>	(248) 848-3700
ACPA	American Concrete Pipe Association <a href="http://www.concrete-pipe.org">www.concrete-pipe.org</a>	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) <a href="http://www.aeic.org">www.aeic.org</a>	(205) 257-2530
AF&PA	American Forest & Paper Association <a href="http://www.afandpa.org">www.afandpa.org</a>	(800) 878-8878 (202) 463-2700
AGA	American Gas Association <a href="http://www.aga.org">www.aga.org</a>	(202) 824-7000
AGC	Associated General Contractors of America (The) <a href="http://www.agc.org">www.agc.org</a>	(703) 548-3118
AHA	American Hardboard Association (Now part of CPA)	
AHAM	Association of Home Appliance Manufacturers <a href="http://www.aham.org">www.aham.org</a>	(202) 872-5955
AI	Asphalt Institute <a href="http://www.asphaltinstitute.org">www.asphaltinstitute.org</a>	(859) 288-4960
AIA	American Institute of Architects (The) <a href="http://www.aia.org">www.aia.org</a>	(800) 242-3837 (202) 626-7300

AISC	American Institute of Steel Construction <a href="http://www.aisc.org">www.aisc.org</a>	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute <a href="http://www.steel.org">www.steel.org</a>	(202) 452-7100
AITC	American Institute of Timber Construction <a href="http://www.aitc-glulam.org">www.aitc-glulam.org</a>	(303) 792-9559
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)	
ALSC	American Lumber Standard Committee, Incorporated <a href="http://www.alsc.org">www.alsc.org</a>	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. <a href="http://www.amca.org">www.amca.org</a>	(847) 394-0150
ANSI	American National Standards Institute <a href="http://www.ansi.org">www.ansi.org</a>	(202) 293-8020
AOSA	Association of Official Seed Analysts, Inc. <a href="http://www.aosaseed.com">www.aosaseed.com</a>	(505) 522-1437
APA	APA - The Engineered Wood Association <a href="http://www.apawood.org">www.apawood.org</a>	(253) 565-6600
APA	Architectural Precast Association <a href="http://www.archprecast.org">www.archprecast.org</a>	(239) 454-6989
API	American Petroleum Institute <a href="http://www.api.org">www.api.org</a>	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute <a href="http://www.ari.org">www.ari.org</a>	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association <a href="http://www.asphalтроofing.org">www.asphalтроofing.org</a>	(202) 207-0917
ASCE	American Society of Civil Engineers <a href="http://www.asce.org">www.asce.org</a>	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers <a href="http://www.ashrae.org">www.ashrae.org</a>	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) <a href="http://www.asme.org">www.asme.org</a>	(800) 843-2763 (973) 882-1170

ASSE	American Society of Sanitary Engineering <a href="http://www.asse-plumbing.org">www.asse-plumbing.org</a>	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) <a href="http://www.astm.org">www.astm.org</a>	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industry International) <a href="http://www.awci.org">www.awci.org</a>	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (Now WCSC)	
AWI	Architectural Woodwork Institute <a href="http://www.awinet.org">www.awinet.org</a>	(800) 449-8811 (703) 733-0600
AWPA	American Wood-Preservers' Association <a href="http://www.awpa.com">www.awpa.com</a>	(334) 874-9800
AWS	American Welding Society <a href="http://www.aws.org">www.aws.org</a>	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association <a href="http://www.awwa.org">www.awwa.org</a>	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association <a href="http://www.buildershardware.com">www.buildershardware.com</a>	(212) 297-2122
BIA	Brick Industry Association (The) <a href="http://www.bia.org">www.bia.org</a>	(703) 620-0010
BICSI	BICSI <a href="http://www.bicsi.org">www.bicsi.org</a>	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) <a href="http://www.bifma.com">www.bifma.com</a>	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee <a href="http://www.bissc.org">www.bissc.org</a>	(866) 342-4772
CCC	Carpet Cushion Council <a href="http://www.carpetcushion.org">www.carpetcushion.org</a>	(203) 637-1312
CDA	Copper Development Association <a href="http://www.copper.org">www.copper.org</a>	(800) 232-3282 (212) 251-7200

CEA	Canadian Electricity Association <a href="http://www.canelect.ca">www.canelect.ca</a>	(613) 230-9263
CFFA	Chemical Fabrics & Film Association, Inc. <a href="http://www.chemicalfabricsandfilm.com">www.chemicalfabricsandfilm.com</a>	(216) 241-7333
CGA	Compressed Gas Association <a href="http://www.cganet.com">www.cganet.com</a>	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association <a href="http://www.cellulose.org">www.cellulose.org</a>	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association <a href="http://www.cisca.org">www.cisca.org</a>	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute <a href="http://www.cispi.org">www.cispi.org</a>	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute <a href="http://www.chainlinkinfo.org">www.chainlinkinfo.org</a>	(301) 596-2583
CPA	Composite Panel Association <a href="http://www.pbmdf.com">www.pbmdf.com</a>	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association <a href="http://www.cppa-info.org">www.cppa-info.org</a>	(800) 510-2772 (202) 462-9607
CRI	Carpet & Rug Institute (The) <a href="http://www.carpet-rug.com">www.carpet-rug.com</a>	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute <a href="http://www.crsi.org">www.crsi.org</a>	(847) 517-1200
CSA	CSA International (Formerly: IAS - International Approval Services) <a href="http://www.csa-international.org">www.csa-international.org</a>	(866) 797-4272 (416) 747-4000
CSI	Cast Stone Institute <a href="http://www.caststone.org">www.caststone.org</a>	(770) 972-3011
CSI	Construction Specifications Institute (The) <a href="http://www.csinet.org">www.csinet.org</a>	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau <a href="http://www.cedarbureau.org">www.cedarbureau.org</a>	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)	(281) 583-4087

	<a href="http://www.cti.org">www.cti.org</a>	
DHI	Door and Hardware Institute <a href="http://www.dhi.org">www.dhi.org</a>	(703) 222-2010
EIA	Electronic Industries Alliance <a href="http://www.eia.org">www.eia.org</a>	(703) 907-7500
EIMA	EIFS Industry Members Association <a href="http://www.eima.com">www.eima.com</a>	(800) 294-3462 (770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee <a href="http://www.ejdc.org">www.ejdc.org</a>	(703) 295-5000
EJMA	Expansion Joint Manufacturers Association, Inc. <a href="http://www.ejma.org">www.ejma.org</a>	(914) 332-0040
ESD	ESD Association <a href="http://www.esda.org">www.esda.org</a>	(315) 339-6937
FIBA	Federation Internationale de Basketball Amateur (The International Basketball Federation) <a href="http://www.fiba.com">www.fiba.com</a>	41 22 545 00 00
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation) <a href="http://www.fivb.ch">www.fivb.ch</a>	41 21 345 35 35
FMG	FM Global (Formerly: FM - Factory Mutual System) <a href="http://www.fmglobal.com">www.fmglobal.com</a>	(401) 275-3000
FMRC	Factory Mutual Research (Now FMG)	
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. <a href="http://www.floridarooft.com">www.floridarooft.com</a>	(407) 671-3772
FSA	Fluid Sealing Association <a href="http://www.fluidsealing.com">www.fluidsealing.com</a>	(610) 971-4850
FSC	Forest Stewardship Council <a href="http://www.fsc.org">www.fsc.org</a>	49 228 367 66 0
GA	Gypsum Association <a href="http://www.gypsum.org">www.gypsum.org</a>	(202) 289-5440
GANA	Glass Association of North America	(785) 271-0208

	<a href="http://www.glasswebsite.com">www.glasswebsite.com</a>	
GRI	(Now GSI)	
GS	Green Seal <a href="http://www.greenseal.org">www.greenseal.org</a>	(202) 872-6400
GSI	Geosynthetic Institute <a href="http://www.geosynthetic-institute.org">www.geosynthetic-institute.org</a>	(610) 522-8440
HI	Hydraulic Institute <a href="http://www.pumps.org">www.pumps.org</a>	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute <a href="http://www.gamanet.org">www.gamanet.org</a>	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association <a href="http://www.hpva.org">www.hpva.org</a>	(703) 435-2900
HPW	H. P. White Laboratory, Inc. <a href="http://www.hpwhite.com">www.hpwhite.com</a>	(410) 838-6550
IAS	International Approval Services (Now CSA International)	
IBF	International Badminton Federation <a href="http://www.intbadfed.org">www.intbadfed.org</a>	(6-03) 9283-7155
ICEA	Insulated Cable Engineers Association, Inc. <a href="http://www.icea.net">www.icea.net</a>	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. <a href="http://www.icri.org">www.icri.org</a>	(847) 827-0830
IEC	International Electrotechnical Commission <a href="http://www.iec.ch">www.iec.ch</a>	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) <a href="http://www.ieee.org">www.ieee.org</a>	(212) 419-7900
IESNA	Illuminating Engineering Society of North America <a href="http://www.iesna.org">www.iesna.org</a>	(212) 248-5000
IEST	Institute of Environmental Sciences and Technology <a href="http://www.iest.org">www.iest.org</a>	(847) 255-1561

IGCC	Insulating Glass Certification Council <a href="http://www.igcc.org">www.igcc.org</a>	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance <a href="http://www.igmaonline.org">www.igmaonline.org</a>	(613) 233-1510
ILI	Indiana Limestone Institute of America, Inc. <a href="http://www.iliai.com">www.iliai.com</a>	(812) 275-4426
ISO	International Organization for Standardization <a href="http://www.iso.ch">www.iso.ch</a>	41 22 749 01 11
	Available from ANSI <a href="http://www.ansi.org">www.ansi.org</a>	(202) 293-8020
ISSFA	International Solid Surface Fabricators Association <a href="http://www.issfa.net">www.issfa.net</a>	(877) 464-7732 (702) 567-8150
ITS	Intertek <a href="http://www.intertek.com">www.intertek.com</a>	(800) 345-3851 (713) 407-3500
ITU	International Telecommunication Union <a href="http://www.itu.int/home">www.itu.int/home</a>	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association <a href="http://www.kcma.org">www.kcma.org</a>	(703) 264-1690
LMA	Laminating Materials Association (Now part of CPA)	
LPI	Lightning Protection Institute <a href="http://www.lightning.org">www.lightning.org</a>	(800) 488-6864 (804) 314-8955
MBMA	Metal Building Manufacturers Association <a href="http://www.mbma.com">www.mbma.com</a>	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association, Inc. <a href="http://www.maplefloor.org">www.maplefloor.org</a>	(847) 480-9138
MFMA	Metal Framing Manufacturers Association <a href="http://www.metalframingmfg.org">www.metalframingmfg.org</a>	(312) 644-6610
MH	Material Handling (Now MHIA)	
MHIA	Material Handling Industry of America <a href="http://www.mhia.org">www.mhia.org</a>	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America	(440) 250-9222

	<a href="http://www.marble-institute.com">www.marble-institute.com</a>	
MPI	Master Painters Institute <a href="http://www.paintinfo.com">www.paintinfo.com</a>	(888) 674-8937
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc. <a href="http://www.mss-hq.com">www.mss-hq.com</a>	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers <a href="http://www.naamm.org">www.naamm.org</a>	(312) 332-0405
NACE	NACE International (National Association of Corrosion Engineers International) <a href="http://www.nace.org">www.nace.org</a>	(800) 797-6623 (281) 228-6200
NADCA	National Air Duct Cleaners Association <a href="http://www.nadca.com">www.nadca.com</a>	(202) 737-2926
NAGWS	National Association for Girls and Women in Sport <a href="http://www.aahperd.org/nagws/">www.aahperd.org/nagws/</a>	(800) 213-7193, ext. 453
NAIMA	North American Insulation Manufacturers Association <a href="http://www.naima.org">www.naima.org</a>	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. <a href="http://www.nbgqa.com">www.nbgqa.com</a>	(800) 557-2848
NCAA	National Collegiate Athletic Association (The) <a href="http://www.ncaa.org">www.ncaa.org</a>	(317) 917-6222
NCMA	National Concrete Masonry Association <a href="http://www.ncma.org">www.ncma.org</a>	(703) 713-1900
NCPI	National Clay Pipe Institute <a href="http://www.ncpi.org">www.ncpi.org</a>	(262) 248-9094
NCTA	National Cable & Telecommunications Association <a href="http://www.ncta.com">www.ncta.com</a>	(202) 775-3550
NEBB	National Environmental Balancing Bureau <a href="http://www.nebb.org">www.nebb.org</a>	(301) 977-3698
NECA	National Electrical Contractors Association <a href="http://www.necanet.org">www.necanet.org</a>	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association <a href="http://www.nelma.org">www.nelma.org</a>	(207) 829-6901

NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (303) 697-8441
NFHS	National Federation of State High School Associations www.nfhs.org	(317) 972-6900
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818
NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association) www.nofma.org	(901) 526-5016
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736 (540) 751-0930
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)	

NWWDA	National Wood Window and Door Association (Now WDMA)	
OPL	Omega Point Laboratories, Inc. (Acquired by ITS - Intertek) www.opl.com	(800) 966-5253 (210) 635-8100
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting & Decorating Contractors of America www.pdca.com	(800) 332-7322 (314) 514-7322
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute http://pgi-tp.ce.uiuc.edu	(217) 333-3929
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America) www.landcarenetwork.org	(800) 395-2522 (703) 736-9666
PTI	Post-Tensioning Institute www.post-tensioning.org	(602) 870-7540
RCSC	Research Council on Structural Connections www.boltcouncil.org	(800) 644-2400 (312) 670-2400
RFCI	Resilient Floor Covering Institute www.rfci.com	(301) 340-8580
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
RTI	(Formerly: NTRMA - National Tile Roofing Manufacturers Association) (Now TRI)	
SAE	SAE International www.sae.org	(877) 606-7323 (724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(516) 294-5424

SGCC	Safety Glazing Certification Council <a href="http://www.sgcc.org">www.sgcc.org</a>	(315) 646-2234
SIA	Security Industry Association <a href="http://www.siaonline.org">www.siaonline.org</a>	(703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)	
SJI	Steel Joist Institute <a href="http://www.steeljoist.org">www.steeljoist.org</a>	(843) 626-1995
SMA	Screen Manufacturers Association <a href="http://www.smacentral.org">www.smacentral.org</a>	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association <a href="http://www.smacna.org">www.smacna.org</a>	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers <a href="http://www.smpte.org">www.smpte.org</a>	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division) <a href="http://www.sprayfoam.org">www.sprayfoam.org</a>	(800) 523-6154
SPIB	Southern Pine Inspection Bureau (The) <a href="http://www.spib.org">www.spib.org</a>	(850) 434-2611
SPRI	Single Ply Roofing Industry <a href="http://www.spri.org">www.spri.org</a>	(781) 647-7026
SSINA	Specialty Steel Industry of North America <a href="http://www.ssina.com">www.ssina.com</a>	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings <a href="http://www.sspc.org">www.sspc.org</a>	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute <a href="http://www.steeltank.com">www.steeltank.com</a>	(847) 438-8265
SWI	Steel Window Institute <a href="http://www.steelwindows.com">www.steelwindows.com</a>	(216) 241-7333
SWRI	Sealant, Waterproofing, & Restoration Institute <a href="http://www.swrionline.org">www.swrionline.org</a>	(816) 472-7974

TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Truss Plate Institute, Inc. www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrassod.org	(847) 649-5555
TRI	Tile Roofing Institute (Formerly: RTI - Roof Tile Institute) www.tilerroofing.org	(312) 670-4177
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USAV	USA Volleyball www.usavolleyball.org	(888) 786-5539 (719) 228-6800
USGBC	U.S. Green Building Council www.usgbc.org	(202) 828-7422
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Now WCSC)	
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 297-2109

WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WIC	Woodwork Institute of California (Now WI)	
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 570-5441
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

- C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc. (See ICC)	
IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICBO	International Conference of Building Officials (See ICC)	
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)	
ICC	International Code Council www.iccsafe.org	(888) 422-7233 (703) 931-4533
ICC-ES	ICC Evaluation Service, Inc. www.icc-es.org	(800) 423-6587 (562) 699-0543

SBCCI Southern Building Code Congress International, Inc.  
(See ICC)

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers <a href="http://www.usace.army.mil">www.usace.army.mil</a>	
CPSC	Consumer Product Safety Commission <a href="http://www.cpsc.gov">www.cpsc.gov</a>	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce <a href="http://www.commerce.gov">www.commerce.gov</a>	(202) 482-2000
DOD	Department of Defense <a href="http://dodssp.daps.dla.mil">http://dodssp.daps.dla.mil</a>	(215) 697-6257
DOE	Department of Energy <a href="http://www.energy.gov">www.energy.gov</a>	(202) 586-9220
EPA	Environmental Protection Agency <a href="http://www.epa.gov">www.epa.gov</a>	(202) 272-0167
FAA	Federal Aviation Administration <a href="http://www.faa.gov">www.faa.gov</a>	(866) 835-5322
FCC	Federal Communications Commission <a href="http://www.fcc.gov">www.fcc.gov</a>	(888) 225-5322
FDA	Food and Drug Administration <a href="http://www.fda.gov">www.fda.gov</a>	(888) 463-6332
GSA	General Services Administration <a href="http://www.gsa.gov">www.gsa.gov</a>	(800) 488-3111
HUD	Department of Housing and Urban Development <a href="http://www.hud.gov">www.hud.gov</a>	(202) 708-1112
LBL	Lawrence Berkeley National Laboratory <a href="http://www.lbl.gov">www.lbl.gov</a>	(510) 486-4000
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology <a href="http://www.nist.gov">www.nist.gov</a>	(301) 975-6478

OSHA	Occupational Safety & Health Administration <a href="http://www.osha.gov">www.osha.gov</a>	(800) 321-6742 (202) 693-1999
PBS	Public Building Service (See GSA)	
PHS	Office of Public Health and Science <a href="http://www.osophs.dhhs.gov/ophs">www.osophs.dhhs.gov/ophs</a>	(202) 690-7694
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department <a href="http://www.state.gov">www.state.gov</a>	(202) 647-4000
TRB	Transportation Research Board <a href="http://www.nas.edu/trb">www.nas.edu/trb</a>	(202) 334-2934
USDA	Department of Agriculture <a href="http://www.usda.gov">www.usda.gov</a>	(202) 720-2791
USPS	Postal Service <a href="http://www.usps.com">www.usps.com</a>	(202) 268-2000

- E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CBHF	State of California, Department of Consumer Affairs  Bureau of Home Furnishings and Thermal Insulation  <a href="http://www.dca.ca.gov/bhfti">www.dca.ca.gov/bhfti</a>	(800) 952-5210 (916) 574-2041
CPUC	California Public Utilities Commission  <a href="http://www.cpuc.ca.gov">www.cpuc.ca.gov</a>	(415) 703-2782
TFS	Texas Forest Service  Forest Resource Development <a href="http://txforestservation.tamu.edu">http://txforestservation.tamu.edu</a>	(936) 639-8180

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

## SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Related Sections include the following:
  - 1. Division 01 Section "Summary" for limitations on utility interruptions and other work restrictions.
  - 2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
  - 3. Division 01 Section "Execution" for progress cleaning requirements.
  - 4. Divisions 02 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.

## 1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

## 1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, **Owner**, testing agencies, and authorities having jurisdiction.
- B. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

## 1.5 QUALITY ASSURANCE

- A. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

## 1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## PART 2 - PRODUCTS

### 2.1 TEMPORARY FACILITIES

- A. Common-Use Field Office: Of sufficient size to accommodate needs of construction personnel. Keep office clean and orderly.
- B. Storage: Provide storage containers sized, furnished, and equipped to accommodate materials and equipment for construction operations.
  - 1. Store combustible materials apart from building.

### 2.2 EQUIPMENT

- A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.
- B. HVAC Equipment:
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

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

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

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
  - 1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
- B. Sanitary Facilities:
  - 1. Toilets: Use of Owner's existing toilet facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.
- C. Heating: Provide temporary heating as required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
- D. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.
- E. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- F. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
  - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
  - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- B. Parking: **Use designated areas of Owner's existing** parking areas for construction personnel.

- C. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
  - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Existing Elevator Use: Use of Owner's existing elevators will be permitted, as long as elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.
  - 1. Do not load elevators beyond their rated weight capacity.
  - 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.
- G. Existing Stair Usage: Use of Owner's existing stairs will be permitted, as long as stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.
  - 1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.
- H. Temporary Use of Permanent Stairs: Cover finished, permanent stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
  - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- B. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

- C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.
- E. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by **Owner** from fumes and noise.
  - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.
  - 2. Construct dustproof partitions with 2 layers of 3-mil (0.07-mm) polyethylene sheet on each side. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheet, extending sheets 18 inches (460 mm) up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.
    - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches (1219 mm) between doors. Maintain water-dampened foot mats in vestibule.
  - 3. Insulate partitions to provide noise protection to occupied areas.
  - 4. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
  - 5. Protect air-handling equipment.
  - 6. Weather strip openings.
  - 7. Provide walk-off mats at each entrance through temporary partition.
- F. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  - 1. Prohibit smoking in building and on site.
  - 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
  - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
  - 4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

### 3.5 OPERATION, TERMINATION, AND REMOVAL

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

- B. Maintenance: Maintain facilities in good operating condition until removal.
1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
  3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

## SECTION 016000 - PRODUCT REQUIREMENTS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
  - 1. Division 01 Section "Allowances" for products selected under an allowance.
  - 2. Division 01 Section "Alternates" for products selected under an alternate.
  - 3. Division 01 Section "References" for applicable industry standards for products specified.
  - 4. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
  - 5. Divisions 02 through 49 Sections for specific requirements for warranties on products and installations specified to be warranted.

## 1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility, **except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise.** Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

- B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.
- C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

#### 1.4 SUBMITTALS

- A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.
  - 1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.
  - 2. Form: Tabulate information for each product under the following column headings:
    - a. Specification Section number and title.
    - b. Generic name used in the Contract Documents.
    - c. Proprietary name, model number, and similar designations.
    - d. Manufacturer's name and address.
    - e. Supplier's name and address.
    - f. Installer's name and address.
    - g. Projected delivery date or time span of delivery period.
    - h. Identification of items that require early submittal approval for scheduled delivery date.
  - 3. Initial Submittal: Within **30** days after date of award of the contract, submit **3** copies of initial product list. Include a written explanation for omissions of data and for variations from Contract requirements.
    - a. At Contractor's option, initial submittal may be limited to product selections and designations that must be established early in Contract period.
  - 4. Completed List: Within **60** days after date of award of contract, submit **3** copies of completed product list. Include a written explanation for omissions of data and for variations from Contract requirements.
  - 5. Architect's Action: Architect will respond in writing to Contractor within **10** days of receipt of completed product list. Architect's response will include a list of unacceptable product selections and a brief explanation of reasons for this action. Architect's response, or lack of response, does not constitute a waiver of requirement to comply with the Contract Documents.
- B. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Documentation: Show compliance with requirements for substitutions and the following, as applicable:
    - a. Statement indicating why specified material or product cannot be provided.
    - b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.
    - c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
    - d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.
    - e. Samples, where applicable or requested.
    - f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.
    - g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.
    - h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.
    - i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.
    - j. Cost information, including a proposal of change, if any, in the Contract Sum.
    - k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.
    - l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
  2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within **7** days of receipt of a request for substitution. Architect will notify Contractor **through General Contractor** of acceptance or rejection of proposed substitution within **15** days of receipt of request, or **7** days of receipt of additional information or documentation, whichever is later.
    - a. Form of Acceptance: Change Order.
    - b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.
- C. Comparable Product Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.
1. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product

request. Architect will notify Contractor **through General Contractor** of approval or rejection of proposed comparable product request within **10** days of receipt of request, or **5** days of receipt of additional information or documentation, whichever is later.

- a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
- b. Use product specified if Architect cannot make a decision on use of a comparable product request within time allocated.

- D. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

## 1.5 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
  - 1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
  - 2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

## 1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions.
- B. Delivery and Handling:
  - 1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
  - 3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
- C. Storage:
  - 1. Store products to allow for inspection and measurement of quantity or counting of units.
  - 2. Store materials in a manner that will not endanger Project structure.
  - 3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
  - 4. Store cementitious products and materials on elevated platforms.

5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.
8. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

## 1.7 PRODUCT WARRANTIES

- A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.
  1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
  2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.
- B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.
  1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
  2. Specified Form: When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
  3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.
- C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

## PART 2 - PRODUCTS

### 2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
  1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.

3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
7. Or Equal: Where products are specified by name and accompanied by the term "or equal" or "or approved equal" or "or approved," comply with provisions in Part 2 "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.
5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed, or an unnamed manufacturer, that complies with requirements. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system. Comply with provisions in Part 2 "Product Substitutions" Article for consideration of an unnamed product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with provisions in Part 2 "Comparable Products" Article for consideration of an unnamed product by the other named manufacturers.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
  - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.

10. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
  - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
  - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

## 2.2 PRODUCT SUBSTITUTIONS

- A. Timing: Architect will consider requests for substitution if received within **60** days after **the Notice of Award**. Requests received after that time may be considered or rejected at discretion of Architect.
- B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:
  1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.
  2. Requested substitution does not require extensive revisions to the Contract Documents.
  3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
  4. Substitution request is fully documented and properly submitted.
  5. Requested substitution will not adversely affect Contractor's Construction Schedule.
  6. Requested substitution has received necessary approvals of authorities having jurisdiction.
  7. Requested substitution is compatible with other portions of the Work.
  8. Requested substitution has been coordinated with other portions of the Work.
  9. Requested substitution provides specified warranty.
  10. If requested substitution involves more than one contractor, requested substitution has been coordinated with other portions of the Work, is uniform and consistent, is compatible with other products, and is acceptable to all contractors involved.

## 2.3 COMPARABLE PRODUCTS

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

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

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000

**SECTION 016100 - CONTRACT AND BOND FORMS****1.01     Contract Between Owner & Contractor:**

The Contract will be executed on the 2007 edition of A101, "Owner Contractor Agreement as published and copyrighted by the American Institute of Architects, Washington, DC.

**1.02     Performance and Payment Bonds:**

The General Contractor will be required to furnish Performance, Guarantee and Labor-Materials Bonds in the amount of 100% of the contract sum. The text of the bond shall be approved by the Project Manager and the Owners, AIA Form A311 or similar.

A.     Bid Bonds: A Bid Bond is not required.

**END OF SECTION 016100.**

**SECTION 017200 - GENERAL CONDITIONS OF THE CONTRACT**

The 2007 edition of AIA Document A201, "General Conditions of the Contract for Construction," is included in this Specification, and may be viewed at the Architect's office or is available for purchase from the AIA.

**END OF SECTION 017200**

**SECTION 017210 - SUPPLEMENTARY GENERAL CONDITIONS**

General: The Supplementary General Conditions, hereinafter abbreviated as SGC, shall modify the General Conditions of the Contract for Construction, AIA Document A201, 2007 edition. The unaltered or unmodified portions of the AIA General Conditions shall remain in full effect.

The paragraph numbers in the SGC correspond to or are in consecutive order with those in the General Conditions.

**Article 1 - GENERAL PROVISIONS**

Add the following subparagraph:

1.2.1.2. In the event that the requirements of the Contract Documents exceed the minimum content of applicable codes or regulations, the Contract Documents shall govern.

1.2.4 Add the following subparagraph 1.2.4:

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

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

**Article 3 - CONTRACTOR**

3.10 Add new subparagraph 3.10.1.1 as follows:

- .1 The Progress Schedule shall include an estimated cash flow schedule showing anticipated monthly expenditures throughout the duration of the Contract based on the Schedule of Values required under Paragraph 9.2, herein. The Construction Schedule shall be updated each month and submitted to the Architect at time of application for payment.

3.12.6 Change subparagraph 3.12.6 to read as follows:

3.12.6 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals the Contractor thereby represents that the Contractor has determined and verified all dimensions, quantities, field dimensions, relations to existing work, coordination with work to be installed later, coordination with information on previously accepted Shop Drawings, Product Data, Samples or similar submittals and verification of compliance with all the requirements of the Contract Documents. The accuracy of all such information is the responsibility of the Contractor. In reviewing Shop Drawings, Product Data, Samples, and similar submittals the Architect shall be entitled to rely upon the Contractor's representation that such information is correct and accurate.

3.13.1 Add new subparagraph 3.13.1 to read as follows:

3.13.1 The right of possession of the premises and the improvements made thereon by the Contractor shall remain at all times in 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 the Contractor's apparatus, the storage of materials and the operations of the Contractor's workmen to limits indicated by law, ordinances, the Contract Documents and permits and/or directions of the Architect and shall not unreasonably encumber the premises with the Contractor's materials. The Owner shall have no responsibility or liability to the Contractor or anyone else with respect to or by reason of the conditions, as to safety of the site where the work is performed.

3.18.1 At the end of par. 3.18.1, add the following:

The Contractor's indemnification shall include without limiting the generalities of the foregoing, all claims, damages, losses and expenses arising out of the provisions of **New Hampshire's** Workmen's Compensation Laws.

#### Article 4 -ADMINISTRATION OF THE CONTRACT

4.2.15 Add subparagraph 4.2.15 to read as follows:

4.2.15 If the Contractor claims that any acts or omissions of the Owner or the Architect, including any instructions or orders, whether oral, written, by Drawings or otherwise, involve extra cost or time, and the Contractor has not received a written acknowledgment by the Owner or Architect that extra payment will be made or time extended on account thereof, the contractor shall promptly notify the Architect in writing of such Claim and shall not proceed with the Work relating to such Claim until the Contractor has received a further written order to proceed as provided in

Paragraph 10.3, in the case of an emergency affecting life or property. No Claim by the Contractor on account of such acts, omissions, instructions or orders shall be valid unless the Contractor has so notified the Architect, before proceeding, and has received the further written order to proceed.

#### Article 5 - SUBCONTRACTORS

No change.

#### Article 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

No change.

#### Article 7 - CHANGES IN THE WORK

7.3.3 Delete sub paragraphs .1, .2, .3, & .4 and add the following:

The allowance for overhead and profit combined, included in the total cost to the Owner, shall be based on the following schedule:

- .1 For the Contractor, for any work performed by the Contractor's own forces, ten percent (10%) of the cost.
- .2 For the Contractor, for work performed by his Subcontractor, ten percent (10%) of the amount due the Subcontractor.
- .3 For each Subcontractor or Sub-Subcontractor involved, for any work performed by that Contractor's own forces, ten percent (10%) of the cost.
- .4 For each Subcontractor, for work performed by his Sub-Subcontractors ten percent (10%) of the amount due the Sub-subcontractor.
- .5 In order to facilitate checking of quotations for extras or credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials and subcontracts. Labor and materials shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also. in no case will a change involving over \$200.00 be approved without such itemization.
- .6 No percentage for overhead and profit will be allowed on changes in the work which are set forth as Unit Price items, as the percentage for same shall be included in said Unit Prices.

Article 8 - TIME

8.3.1 Change subparagraph 8.3.1 and add new subparagraphs 8.3.4 and 8.3.5 as follows:

8.3.1 No claim for delay shall be allowed on account of failure of the Architect to furnish Drawings, Specifications or Instructions or to return Shop Drawings or Samples until 15 days after receipt by the Architect by registered or certified mail of written demand for such Instructions, Drawings or Samples, and not then unless such claim be reasonable.

8.3.4 No extension of time shall be granted because of seasonal or abnormal variations in temperature, humidity or precipitation, which condition shall be wholly at the risk of the Contractor, whether occurring within the time originally scheduled for completion or within the period of any extension granted. There shall be no increase in the Contract Sum on account of any additional costs of operations or conditions resulting therefrom.

8.3.5 The Contractor hereby agrees that the Contractor shall have no claim for damages of any kind against the Owner or the Architect on account of any delay in the commencement of the Work and/or any delay or suspension of any portion of the Work, whether such delay is caused by the Owner, the Architect, or otherwise. The Contractor acknowledges that the Contractor's sole remedy for any such delay and/or suspension will be an extension of time as provided in this Article.

Article 9 - PAYMENTS AND COMPLETION

9.2 Add new subparagraphs 9.2.1 and 9.2.2 as follows:

9.2.1 The schedule of values shall include a separate line for each Section of the Specifications, unless otherwise approved by Architect, appropriate lines for the contractor's overhead costs, and a line for the Contractor's fee or profit. All line items valued in excess of \$25,000.00 shall be supported by a separate schedule, broken down by appropriate work functions, such that no item in such schedule shall exceed \$25,000.00 in cost. In general, line items on summary sheet shall be of adequate specificity so that they may readily be used to evaluate the progress of the work in preparing and reviewing periodic applications for payments to the satisfaction of the Architect.

9.2.2 The schedule of values shall be revised to reflect Change Orders and/or when found by the Architect to be inaccurate or incomplete.

9.3.1 Delete subparagraph 9.3.1 and substitute the following subparagraph:

9.3.1 On or before the 25th day of each month, the Contractor shall submit to the Architect an itemized partial payment request supported by such data substantiating the Contractor's right to payment as the Owner and Architect may require, for work completed during the current calendar month, and an estimate of the cost of work to be completed during the following month. The form of Application for Payment shall be a notarized AIA Document G702, Application and Certification for Payment, supported by AIA Document G703, Continuation Sheet."

9.3.4 Add the following subparagraph:

9.3.4 Contractor's partial payment requests shall be based upon 100% of the work installed and for the actual invoice amount of material suitably stored and protected at the site less 10% retainage. The first payment shall be made to the contractor without lien waivers. Subsequent partial payment requests must be accompanied by lien waivers from the Contractor, his subcontractors, sub-subcontractors, and suppliers for the principal portions of the work, amounting to 100% of the partial payment that was paid to the contractor for the previous calendar month. All lien waivers must show the amount paid. The full Contract retainage may be reinstated if the manner of completion of the work and its progress do not remain satisfactory to the Architect, if the Surety withholds its consent, or for other good and sufficient reasons.

9.6.1 Add the following to subparagraph:

When the total construction has proceeded to about the half-way mark to the complete satisfaction of the Owner and the Architects, the Owner may agree not to retain 10% of the remaining monthly certificate amounts during the balance of the construction period. Otherwise, the Owner may retain 10% of all previous and remaining progress payments.

Upon completion of the work the total amount retained by the Owner may amount to 5% of the contract price. This retainage will be paid within (30) thirty days of the date of final completion, in accordance with the Architects' final "Certificate of Payment", provided all work be then fully completed and the contract fully performed.

9.8.4 Add a new subparagraph 9.8.4.1 as follows:

9.8.4.1 The Owner reserves the right to receive, place and install equipment and furnishings prior to the date of substantial completion in such a manner that will not cause serious interference with the Contractor's work. Such preliminary occupancy shall not be construed as acceptance by Owner of any work. The Owner shall notify

the Contractor, in writing, of intention to take such partial occupancy not less than thirty (30) days before the desired date of occupancy and the Contractor shall, in writing, confirm or request postponement of the date not later than five (5) days after the receipt of the notice.

#### Article 10 - PROTECTION OF PERSONS AND PROPERTY

##### 10.5 Add new paragraph 10.5 as follows:

- .1 Removal of existing asbestos or polychlorinated biphenyl (PCB) materials shall not be included in the work of the contract. Should existing asbestos and/or polychlorinated biphenyl (PCB) materials be encountered during the course of the work which, by the nature of the work, must be disturbed, damaged, or removed, then the work in that particular area shall be immediately stopped and the Architect and Owner immediately notified. Arrangements will then be made to have the asbestos and/or polychlorinated biphenyl (PCB) materials removed by the Owner under a separate contract. Do not proceed with work in any such area until the asbestos and/or polychlorinated biphenyl (PCB) removal work under the separate contract has been completed.

#### Article 11 - INSURANCE AND BONDS

##### 11.1.3 Add the following to paragraph 11.1.3:

- .1 Contractor shall not commence work until the required forms of insurance have been obtained with insurance companies acceptable to Owner and for limits not less than those specified below in each case. The Contractor shall not commence work until each Subcontractor he intends to use on the work has obtained insurance of the same types and minimum amounts and has filed with the Contractor Certificates of Insurance similar to those described in paragraph 11.1.3, with the same required provisions, copies of which shall be sent to the Owner.

##### 1. Workmen's Compensation and Employer's Liability:

##### **Workmen's Compensation: Statutory**

##### **Employer's Liability:**

**Bodily Injury by Accident: \$1,000,000 minimum**

**Disease Limit per Person      \$500,000**

**Disease Policy Limit                      \$500,000**

2. Commercial General Liability (including Premises-Operations; Independent Contractor's Protective; Products and Completed Operations; Broad Form Property Damage):

General Aggregate: \$2,000,000

Products-Completed Operations Aggregate: \$2,000,000

Personal & Advertising Injury: \$1,000,000

Each Occurrence: \$1,000,000

Fire Damage: \$100,000 minimum

Medical Expense: \$5,000

- a. Property Damage Liability Insurance will provide X, C or U coverage as applicable.
- b. Explosion, collapse and undermining, and damage to underground utilities and property.
- c. Contractual Liability

**3. Commercial Automobile Liability:**

- a. Bodily Injury:  
\$1,000,000 per occurrence combined single limit

4. Subcontractors must carry the same insurance and minimum limits as Contractor in 1, 2, and 3 above or Contractor must insure activities of subcontractors in his own policy.

**5. Umbrella Policy: \$2,000,000**

6. Contractor shall secure, pay for, and maintain All-Risk Insurance as necessary to protect himself against loss of owned or rented capital equipment and tools, equipment and scaffolding, staging, towers and forms owned or rented by contractor with provisions for waiver of subrogation against Owner.

7. General:

- 1. **Town of Newport NH** shall be named as additional insured as pertains to the Work.

**2. Town of Newport NH shall be held-harmless.**

11.3.7 Add the following paragraph to 11.3.7:

Exercise caution to assure that the waiver of subrogation provisions do not negate insurance coverage by violating insurance requirements.

11.4 Add new subparagraph to Paragraph 11.4:

11.4.3 Bonds

- a. Performance Bond and Payment will be required.
- b. Required bonds shall be in the amount of:
  - Performance: 100% of contract sum
  - Payment: 100% of contract sum
- c. Form of bonds shall be:
  - AIA Document A312 (Performance Bond and Payment Bond)

Article 12 - UNCOVERING AND CORRECTION OF WORK

12.2.2.1 Delete the following in the first sentence:  
"the Date of Substantial Completion"

and substitute:

"the Date of Final Completion and Acceptance by the Owner."

Article 13 - MISCELLANEOUS PROVISIONS

13.8 Add new paragraph 13.8 LIMITATION OF LIABILITY

13.8.1 The Owner shall be liable only to the extent of its interest in the Project; and no officer, director, partner, agent or employee of the Owner (or any partner of a partner or any agent or employee of a partner) shall ever be personally or individually liable with respect to this Contract or the Work. Each Subcontract shall include the foregoing limitation, which shall be effective if the Owner ever succeeds to the Contractor's rights and obligations under a Subcontract.

Article 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

No changes

Article 15 – Claims and Disputes

No Changes

ARTICLE 16 - ADDITIONAL PROVISIONS

Add the following paragraphs:

16.1 Material and Substitution:

16.1.1 When a substitution of a material, system or method of construction proposed by the Contractor is duly approved, but such substitution requires modifications in the Contract Documents, whether relative to that item or to related work, the cost of making the modifications shall be borne by the Contractor.

16.1.2 If such substitution by the Contractor requires additional cost in the work of related trades, the Contractor shall bear such cost without penalizing the Owner in any way.

ARTICLE 17 - DRAWINGS

Add the following paragraph:

17.1 See Final Drawing List in Specification Book.

**END OF SECTION 017210**

## SECTION 017300 - EXECUTION

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. General installation of products.
  - 4. Coordination of Owner-installed products.
  - 5. Progress cleaning.
  - 6. Starting and adjusting.
  - 7. Protection of installed construction.
  - 8. Correction of the Work.
- B. Related Sections include the following:
  - 1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
  - 2. Division 01 Section "Submittal Procedures" for submitting surveys.
  - 3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
  - 4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

## 3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and

verify the existence and location of mechanical and electrical systems and other construction affecting the Work.

1. Before construction, verify the location and points of connection of utility services.
- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
  1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
    - a. Description of the Work.
    - b. List of detrimental conditions, including substrates.
    - c. List of unacceptable installation tolerances.
    - d. Recommended corrections.
  2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
  3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to **Owner** that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include

a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

### 3.3 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  - 1. Make vertical work plumb and make horizontal work level.
  - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- G. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
  - 1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
  - 2. Allow for building movement, including thermal expansion and contraction.
  - 3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.
- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

### 3.4 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.
  - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
  - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  - 1. Remove liquid spills promptly.
  - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

### 3.5 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

### 3.6 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

### 3.7 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
  - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 017300

## SECTION 017329 - CUTTING AND PATCHING

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
  - 1. Division 01 Section "Selective Structure Demolition" for demolition of selected portions of the building.
  - 2. Divisions 2 through 49 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
  - 3. Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

## 1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

## 1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least **5** days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.
  - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be

relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. **Construction Manager's Approval:** Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

## 1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. **Operating elements include the following:**
  1. Primary operational systems and equipment.
  2. Air or smoke barriers.
  3. Fire-suppression systems.
  4. Mechanical systems piping and ducts.
  5. Control systems.
  6. Communication systems.
  7. Conveying systems.
  8. Electrical wiring systems.
  9. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. **Miscellaneous elements include the following:**
  1. Water, moisture, or vapor barriers.
  2. Membranes and flashings.
  3. Equipment supports.
  4. Piping, ductwork, vessels, and equipment.
  5. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential

interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

## 1.6 WARRANTY

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

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
  - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
  - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

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

### 3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  3. **Concrete** and or **Masonry**: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
  4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
  5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329

## SECTION 017700 - CLOSEOUT PROCEDURES

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Inspection procedures.
  - 2. Warranties.
  - 3. Final cleaning.
- B. Related Sections include the following:
  - 1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
  - 2. Division 01 Section "Execution" for progress cleaning of Project site.
  - 3. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
  - 4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 5. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
  - 6. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

## 1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
  - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
  - 2. Advise Owner of pending insurance changeover requirements.
  - 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion, damage or settlement surveys, property surveys, and similar final record information.
  6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
  7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  8. Complete startup testing of systems.
  9. Submit test/adjust/balance records.
  10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  11. Advise Owner of changeover in heat and other utilities.
  12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
  13. Complete final cleaning requirements, including touchup painting.
  14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect **and Construction Manager** will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
  2. Results of completed inspection will form the basis of requirements for Final Completion.

#### 1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
  2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  4. Submit pest-control final inspection report and warranty.

5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. **Submit demonstration and training videotapes.**
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect **and Construction Manager** will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
  1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

#### 1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit **three** copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  1. Organize list of spaces in sequential order.
  2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Architect **and Construction Manager**.
    - d. Name of Contractor.
    - e. Page number.

#### 1.6 WARRANTIES

- A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.
- B. Partial Occupancy: Submit properly executed warranties within **15** days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
  1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive **8-1/2-by-11-inch (215-by-280-mm)** paper.
  2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or

installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

## PART 3 - EXECUTION

### 3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
  1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
    - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
    - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
    - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.
    - f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.

- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
  - h. Sweep concrete floors broom clean in unoccupied spaces.
  - i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
  - j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
  - k. Remove labels that are not permanent.
  - l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
    - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
  - m. Wipe surfaces of mechanical and electrical equipment, **elevator equipment**, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
  - n. Replace parts subject to unusual operating conditions.
  - o. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
  - p. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
  - q. Clean ducts, blowers, and coils if units were operated without filters during construction.
  - r. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
  - s. Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

## SECTION 017839 - PROJECT RECORD DOCUMENTS

## PART 1 - GENERAL

## 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

## 1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
  - 1. Record Drawings.
  - 2. Record Specifications.
  - 3. Record Product Data.
- B. Related Sections include the following:
  - 1. Division 01 Section "Closeout Procedures" for general closeout procedures.
  - 2. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
  - 3. Divisions 02 through 49 Sections for specific requirements for Project Record Documents of the Work in those Sections.

## 1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit **one** set(s) of marked-up Record Prints and
    - 1) Electronic Media: **CD-R**.
- B. Record Specifications: Submit **one copy** of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit **one copy** of each Product Data submittal.
  - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

## PART 2 - PRODUCTS

## 2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
    - b. Accurately record information in an understandable drawing technique.
    - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
  2. Content: Types of items requiring marking include, but are not limited to, the following:
    - a. Dimensional changes to Drawings.
    - b. Revisions to details shown on Drawings.
    - c. Depths of foundations below first floor.
    - d. Locations and depths of underground utilities.
    - e. Revisions to routing of piping and conduits.
    - f. Revisions to electrical circuitry.
    - g. Actual equipment locations.
    - h. Duct size and routing.
    - i. Locations of concealed internal utilities.
    - j. Changes made by Change Order or [**Construction**] [**Work**] Change Directive.
    - k. Changes made following Architect's written orders.
    - l. Details not on the original Contract Drawings.
    - m. Field records for variable and concealed conditions.
    - n. Record information on the Work that is shown only schematically.
  3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
  4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
  5. Mark important additional information that was either shown schematically or omitted from original Drawings.
  6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Transparencies: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect **and Construction Manager**.

When authorized, prepare a full set of corrected transparencies of the Contract Drawings and Shop Drawings.

1. Incorporate changes and additional information previously marked on Record Prints. Erase, redraw, and add details and notations where applicable.
  2. Refer instances of uncertainty to Architect **through Construction Manager** for resolution.
  3. Owner will furnish Contractor one set of transparencies of the Contract Drawings for use in recording information.
  4. Print the Contract Drawings and Shop Drawings for use as Record Transparencies. Architect will make the Contract Drawings available to Contractor's print shop.
- C. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Architect **and Construction Manager**. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:
1. Format: **DWG** operating system.
  2. Incorporate changes and additional information previously marked on Record Prints. Delete, redraw, and add details and notations where applicable.
  3. Refer instances of uncertainty to Architect **through Construction Manager** for resolution.
  4. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.
    - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
    - b. CAD Software Program: The Contract Drawings are available in AutoCadd.
- D. Newly Prepared Record Drawings: Prepare new Drawings instead of preparing Record Drawings where Architect determines that neither the original Contract Drawings nor Shop Drawings are suitable to show actual installation.
1. New Drawings may be required when a Change Order is issued as a result of accepting an alternate, substitution, or other modification.
  2. Consult Architect **and Construction Manager** for proper scale and scope of detailing and notations required to record the actual physical installation and its relation to other construction. Integrate newly prepared Record Drawings into Record Drawing sets; comply with procedures for formatting, organizing, copying, binding, and submitting.
- E. Format: Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize Record Prints and newly prepared Record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
  2. Record Transparencies: Organize into unbound sets matching Record Prints. Place transparencies in durable tube-type drawing containers with end caps. Mark end cap of each container with identification. If container does not include a complete set, identify Drawings included.

3. Record CAD Drawings: Organize CAD information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each CAD file.
4. Identification: As follows:
  - a. Project name.
  - b. Date.
  - c. Designation "PROJECT RECORD DRAWINGS."
  - d. Name of Architect **and Construction Manager**.
  - e. Name of Contractor.

## 2.2 RECORD SPECIFICATIONS

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

## 2.3 RECORD PRODUCT DATA

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

## 2.4 MISCELLANEOUS RECORD SUBMITTALS

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

## PART 3 - EXECUTION

## 3.1 RECORDING AND MAINTENANCE

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

END OF SECTION 017839

# **Sarnafil® S327**

# **RhinoBond System**

## DISCLAIMER

All information provided by Sika Corporation ("Sika") concerning Sika products, including but not limited to, any recommendations and advice relating to the application and use of Sika products, is given in good faith based on Sika's current experience and knowledge of its products when properly stored, handled and applied under normal conditions in accordance with Sika's instructions. In practice, the differences in materials, substrates, storage and handling conditions, actual site conditions and other factors outside of Sika's control are such that Sika assumes no liability for the provision of such information, advice, recommendations or instructions related to its products, nor shall any legal relationship be created by or arise from the provision of such information, advice, recommendations or instructions related to its products. The user of the Sika product(s) must test the product(s) for suitability for the intended application and purpose before proceeding with the full application of the product(s). Sika reserves the right to change the properties of its products without notice. All sales of Sika product(s) are subject to its current terms and conditions of sale which are available at [usa.sarnafil.sika.com](http://usa.sarnafil.sika.com) or by calling 800-451-2504.

**Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's most current Product Data Sheet, product label and Safety Data Sheet which are available online at [usa.sarnafil.sika.com](http://usa.sarnafil.sika.com) or by calling Sika's Technical Service Department at 800-451-2504. Nothing contained in any Sika materials relieves the user of the obligation to read and follow the warnings and instruction for each Sika product as set forth in the current Product Data Sheet, product label and Safety Data Sheet prior to product use.**

Sika warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within shelf life. User determines suitability of product for intended use and assumes all risks. Buyer's sole remedy shall be limited to the purchase price or replacement of product exclusive of labor or cost of labor.

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## **INTRODUCTION**

### **Sarnafil S327 RhinoBond System Description**

The RhinoBond System is a non-membrane penetrating system that uses 3 inch (76 mm) diameter polymer coated metal discs, fastened into the deck through the insulation / roof board and allows membrane panels to overlap in any direction. The Sarnafil S327 membrane is then induction welded to the RhinoBond plate.

The advantages of the RhinoBond System are speed at which a building can be “dried-in”, simplicity of design, cost-effective and minimizes sheet flutter.

Sarnafil S327 utilizes a high-strength polyester reinforcement that allows the RhinoBond system to exceed Factory Mutual requirements for wind uplift testing. The manufacturing process imparts dimensional stability and minimizes water-wicking by the reinforcement. Sarnafil S327 is lacquer-coated on the weathering surface to reduce dirt pick up; a Sarnafil membrane exclusive feature. It is available in EnergySmart® white and in other colors. Sarnafil S327 is marked at the factory with seam overlap lines for ease of installation.

We welcome you to review the following Sika Corporation - Roofing Specification and we ask that you contact us if you have any questions or need any additional information.

The proceeding specification should be amended as required to meet the project's needs.

**Thank you for choosing Sika Corporation for your roofing needs.**

**REGIONAL OFFICES**

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Canton, MA 02021  
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Fax:(781) 821-9205

**SOUTHWEST REGION**

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**EASTERN REGION**

One Park Way 3<sup>rd</sup> Floor  
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Salt Lake City, UT 84119  
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200 W. 22nd St., Suite 216  
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**SECTION 075419  
THERMOPLASTIC MEMBRANE ROOFING  
SARNAFIL S327 RHINO BOND SYSTEM**

**PART 1 - GENERAL CONDITIONS****1.01 DESCRIPTION****A. Scope**

To install a complete Sarnafil S327 RhinoBond system including membrane, flashings and other components.

**B. Related Work**

The work includes but is not limited to the installation of:

1. Removal of Existing EPDM Roofing, fiberboard, existing T & G roofing, roof edge, to the existing plywood deck, and any other components of the existing roofing system required to be removed in order to install the new roofing system.
2. Substrate Preparation
3. Wood Blocking
4. Insulation;
5. Roof Membrane
6. Fasteners
7. Adhesive for Flashings
8. Roof Membrane Flashings
9. Edge protection warning tape.
10. Metal Flashings
11. Sealants
12. Flashing of all penetrations / vents / electrical conduits etc. whether shown on the drawings or not

**C. Upon successful completion of work the following warranties may be obtained:**

1. Sika Corporation Warranty
2. Roofing Applicator Warranty

**1.02 QUALITY ASSURANCE**

- A.** This roofing system shall be applied only by a Roofing Applicator authorized by Sika Corporation prior to bid (Sika Corporation "Applicator").
- B.** Upon completion of the installation and the delivery to Sika Corporation by the Applicator of certification that all work has been done in strict accordance with the contract specifications and Sika Corporation's requirements, a Sika Corporation Technical Service Representative will review the installed roof system wherever a System Warranty has been specified.
- C.** There shall be no deviation made from the Project Specification or the approved shop drawings without prior written approval by the Owner, the Owner's Representative and Sika Corporation.
- D.** All work pertaining to the installation of Sarnafil membrane and flashings shall only be completed by Applicator personnel trained and authorized by Sika Corporation in those procedures.
- E.** Roofing membrane manufacturer must have a demonstrated performance history of producing PVC roof membranes no less, in duration of years, than the warranty duration specified.
- F.** Product to be manufactured by membrane supplier and not private labeled.

- G. Manufacturer to have a minimum of five years' experience recycling their membranes at the end of their service life back into new membrane products. Provide a minimum of five reference projects.

**1.03 SUBMITTALS**

At the time of bidding, the Applicator shall submit to the Owner (or Representative) the following:

- A. Copies of Specification.
- B. Samples of each primary component to be used in the roof system and the manufacturer's current literature for each component.
- C. Written approval by the insulation manufacturer (as applicable) for use and performance of the product in the proposed system.
- D. Sample copy of Sika Corporation's warranty.
- E. Sample copy of Applicator's warranty.
- F. Dimensioned shop drawings which shall include:
  - 1. Outline of roof with roof size and elevations shown.
  - 2. Profile details of flashing methods for penetrations.
- G. Certifications by manufacturers of roofing and insulating materials that all materials supplied comply with all requirements of the identified ASTM and other industry standards or practices.
- H. Certification from the Applicator that the system specified meets all identified code and insurance requirements as required by the Specification.
- I. Safety Data Sheets (SDS)

**1.04 CODE REQUIREMENTS**

The Applicator shall submit evidence that the proposed roof system meets the requirements of the local building code and has been tested and approved or listed by the following test organizations. These requirements are minimum standards and no roofing work shall commence without written documentation of the system's compliance, as required in the "Submittals" section of this specification.

- A. System shall be designed to meet a minimum wind design requirements of the most recent version of ASCE 7.

**1.05 PRODUCT DELIVERY, STORAGE AND HANDLING**

- A. All products delivered to the job site shall be in the original unopened containers or wrappings bearing all seals and approvals.
- B. Handle all materials to prevent damage. Place all materials on pallets and fully protect from moisture.
- C. Membrane rolls shall be stored lying down on pallets and fully protected from the weather with clean canvas tarpaulins. Unvented polyethylene tarpaulins are not accepted due to the accumulation of moisture beneath the tarpaulin in certain weather conditions that may affect the ease of membrane weldability.
- D. As a general rule all adhesives shall be stored at temperatures between 40°F (4°C) and 80°F (27°C). Read instructions contained on adhesive canister for specific storage instructions.
- 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. Any materials which the Owner's representative or Sika Corporation determine to be damaged are to be removed from the job site and replaced at no cost to the Owner.
- G. The existing EPDM roof membrane and fiberboard is to be removed. The existing T & G roof system below the EPDM membrane is to be removed down to the existing plywood deck. Applicator is responsible for all costs associated with removing the membrane and properly disposing of same and all other existing roof materials.

**1.06 JOB CONDITIONS**

- A. Sika Corporation materials may be installed under certain adverse weather conditions but only after consultation with Sika Corporation, as installation time and system integrity may be affected.
- B. Only as much of the new roofing as can be made weathertight each day, including all flashing and detail work, shall be installed. All seams shall be cleaned and heat welded before leaving the job site that day.
- C. All work shall be scheduled and executed without exposing the interior building areas to the effects of inclement weather. The existing building and its contents shall be protected against all risks.
- D. All surfaces to receive new insulation, membrane or flashings shall be dry. Should surface moisture occur, the Applicator shall provide the necessary equipment to dry the surface prior to application.
- E. All new and temporary construction, including equipment and accessories, shall be secured in such a manner as to preclude wind blow-off and subsequent roof or equipment damage.
- F. Uninterrupted waterstops shall be installed at the end of each day's work and shall be completely removed before proceeding with the next day's work. Waterstops shall not emit dangerous or unsafe fumes and shall not remain in contact with the finished roof as the installation progresses. Contaminated membrane shall be replaced at no cost to the Owner.
- G. The Applicator is cautioned that certain Sarnafil membranes are incompatible with asphalt, coal tar, heavy oils, roofing cements, creosote and some preservative materials. Such materials shall not remain in contact with Sarnafil membranes. The Applicator shall consult Sika Corporation regarding compatibility, precautions and recommendations.
- H. Arrange work sequence to avoid use of newly constructed roofing as a walking surface or for equipment movement and storage. Where such access is absolutely required, the Applicator shall provide all necessary protection and barriers to segregate the work area and to prevent damage to adjacent areas. A substantial protection layer consisting of plywood over Sarnafelt or plywood over insulation board shall be provided for all new and existing roof areas that receive rooftop traffic during construction.
- I. Prior to and during application, all dirt, debris and dust shall be removed from surfaces by vacuuming, sweeping, blowing with compressed air or similar methods.
- J. The Applicator shall follow all safety regulations as required by OSHA and any other applicable authority having jurisdiction.
- K. All roofing, insulation, flashings and metal work removed during construction shall be immediately taken off site to a legal dumping area authorized to receive such materials. Hazardous materials, such as materials containing asbestos, are to be removed and disposed of in strict accordance with applicable City, State and Federal requirements.
- L. All new roofing waste material (i.e., scrap roof membrane, empty cans of adhesive) shall be immediately removed from the site by the Applicator and properly transported to a legal dumping area authorized to receive such material.
- M. The Applicator shall take precautions that storage and application of materials and equipment does not overload the roof deck or building structure.

- N. Installation of a Sarnafil membrane over coal tar pitch or a resaturated roof requires special consideration to protect the Sarnafil membrane from volatile fumes and materials. Consult Sika Corporation for precautions prior to bid.
- O. Flammable adhesives and deck primers shall not be stored and not be used in the vicinity of open flames, sparks and excessive heat.
- P. All rooftop contamination that is anticipated or that is occurring shall be reported to Sika Corporation to determine the corrective steps to be taken.
- Q. The Applicator shall verify that all roof drain lines are functioning correctly (not clogged or blocked) before starting work. Applicator shall report any such blockages in writing (letter copy to Sika Corporation) to the Owner's Representative for corrective action prior to the installation of the Sika Corporation roof system.
- R. Applicator shall immediately stop work if any unusual or concealed condition is discovered and shall immediately notify Owner of such condition in writing for correction at the Owner's expense (letter copy to Sika Corporation).
- S. Site cleanup, including both interior and exterior building areas that have been affected by construction, shall be completed to the Owner's satisfaction.
- T. All landscaped areas damaged by construction activities shall be repaired at no cost to the Owner.
- U. The Applicator shall conduct fastener pullout tests in accordance with the latest version of the SPRI/ANSI Fastener Pullout Standard to verify condition of the deck/substrate and to confirm expected pullout values.
- V. The Sarnafil membrane shall not be installed under the following conditions without consulting Sika Corporation's Technical Dept. for precautionary steps:
  - 1. The roof assembly permits interior air to pressurize the membrane underside.
  - 2. Any exterior wall has 10 percent or more of the surface area comprised of opening doors or windows.
  - 3. The wall/deck intersection permits air entry into the wall flashing area.
- W. Precautions shall be taken when using Sarnacol adhesives at or near rooftop vents or air intakes. Adhesive odors could enter the building. Coordinate the operation of vents and air intakes in such a manner as to avoid the intake of adhesive odor while ventilating the building. Keep lids on unused cans at all times.
- X. Protective wear shall be worn when using solvents or adhesives or as required by job conditions.
- Y. Sarnafil membranes are slippery when wet or covered with snow, frost, or ice. Working on surfaces under these conditions is hazardous. Appropriate safety measures must be implemented prior to working on such surfaces. Always follow OSHA and other relevant fall protection standards when working on roofs.

## **1.07 BIDDING REQUIREMENTS**

### **A. Pre-Bid Meeting:**

A pre-bid meeting shall be held with the Owner's Representative and involved trades to discuss all aspects of the project. The Applicator's field representative or roofing foreman for the work shall be in attendance. Procedures to avoid rooftop damage by other trades shall be determined.

### **B. Site Visit:**

Bidders shall visit the site and carefully examine the areas in question as to conditions that may affect proper execution of the work. All dimensions and quantities shall be determined or verified by the Applicator. No claims for extra costs will be allowed because of lack of full knowledge of the existing conditions unless agreed to in advance with the Owner or Owner's Representative.

**1.08 WARRANTIES****A. Sika Corporation Warranty**

Upon successful completion of the work to Sika Corporation's satisfaction and receipt of final payment, the Sika Corporation Warranty shall be issued.

1. Membrane Warranty
2. System Warranty (only products purchased from Sika Corporation are covered under System Warranty)

**B. Applicator/Roofing Contractor Warranty**

Applicator shall supply Owner with a separate workmanship warranty. In the event any work related to roofing, flashing, or metal is found to be within the Applicator warranty term, defective or otherwise not in accordance with Contract Documents, the Applicator shall repair that defect at no cost to the Owner. Applicator's warranty obligation shall run directly to Owner, and a copy shall be sent to Sika Corporation.

**C. Owner Responsibility**

Owner shall notify both Sika Corporation and the Applicator of any leaks as they occur during the time period when both warranties are in effect.

**1.09 WARRANTY DURATIONS**

A. Sika Corporation's warranty shall be in effect for a **20** year duration; 90 MPH.

B. Applicator's/Roofing Contractor's Warranty shall be in effect for a **5** year duration.

**PART 2 - PRODUCTS****2.02 GENERAL**

A. Components of the roof system are to be products of Sika Corporation as indicated on the Detail Drawings and specified in the Contract Documents.

B. Components to be used that are other than those supplied or manufactured by Sika Corporation may be submitted for review and acceptance by Sika Corporation. Sika Corporation's acceptance of any other product is only for a determination of compatibility with Sika Corporation products and not for inclusion in the Sika Corporation warranty. The specifications, installation instructions, limitations, and restrictions of the respective manufacturers must be reviewed by the Owner's Representative for acceptability for the intended use with Sika Corporation products.

C. Special consideration should be given to construction related moisture. An example is the significant amount of moisture generated when concrete floor slabs are poured after the roof has been installed. Sika Corporation is not responsible for damage to the insulation when exposed to construction related moisture.

D. Consult respective product data sheets for additional information.

**2.03 MEMBRANE**

A. Membrane shall conform to:

1. ASTM D4434 (latest version), "Standard for Polyvinyl Chloride Sheet Roofing". Classification: Type III.
2. NSF/ANSI Standard 347, "Sustainability Assessment for Single Ply Roofing Membranes". Certification Level: Platinum.

3. The manufacture to guarantee that the membrane thickness meets or exceeds [the specified thickness] when tested according to ASTM D751
- B. Sarnafil S327 thermoplastic membrane with polyester reinforcement and lacquer coating.
- C. Thickness
1. Sarnafil S327-15, 60 mil (1.5 mm) Minimum.
- D. Color of Membrane
1. EnergySmart White, initial solar reflectance of 0.83, emittance of 0.90, and solar reflective index (SRI) of 104 (ENERGY STAR listed).
- E. Typical Physical Properties <sup>(1)</sup>

Property	ASTM Test Method	ASTM Typelll D-4434 Spec. Requirement	Typical Results			
Overall Thickness, mil	D751	45	<b>48</b>	<b>60</b>	<b>72</b>	<b>80</b>
Thickness Over Scrim, mil	--	16	21	27	35	40
Reinforcing Material	--	--	Polyester	Polyester	Polyester	Polyester
Felt Weight, oz/yd <sup>2</sup> (feltback membrane only)	--	--	9	9	9	9
Breaking Strength, lbf/in (N)	D751	200 (890)	295 (1312)	305 (1356)	315 (1401)	325 (1445)
Elongation at Break, %	D751	15 & 15	27.5 &	28.5 &	29 & 30	29.5 &
M. D. <sup>1</sup> & C.M.D. <sup>1</sup>	D751	15 & 15	28.5	29.5	29 & 30	30.5
Seam Strength, % of original <sup>2</sup>	D751	75	Pass	Pass	Pass	Pass
Retention of Properties After Heat Aging	D3045	--	--	--	--	--
Tensile Strength, % of original	D751	90	Pass	Pass	Pass	Pass
Elongation, % of original	D751	90	Pass	Pass	Pass	Pass
Tearing Resistance, lbf (N)	D1004	45 (200)	47 (209)	48 (213)	48.5 (216)	49 (218)
Low Temperature Bend, -40°F (-40°C)	D2136	Pass	Pass	Pass	Pass	Pass
Accelerated Weathering Test (Florescent Light UV exposure), Hours	G154	5,000	10,000	10,000	10,000	10,000
Cracking (7x magnification)	--	None	None	None	None	None
Discoloration (by observation)	--	Negligible	Negligible	Negligible	Negligible	Negligible
Crazing (7x magnification)	--	None	None	None	None	None
Linear Dimensional Change, %	D1204	0.5	-0.10	-0.12	-0.13	-0.14
Weight Change After Immersion in Water, %	D570	± 3.0	2.2	2.0	1.8	1.8
Static Puncture Resistance	D5602	Pass	Pass	Pass	Pass	Pass
Dynamic Puncture Resistance, ft-lbf (J)	D5635	14.7 (20)	Pass	Pass	Pass	Pass
Recycled Content (10' & 5' sheet only)		9% Pre-Consumer / 1% Post-Consumer				

\* Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions, and curing conditions.

<sup>1</sup> M.D. = Machine Direction, C.M.D. = Cross Machine Direction

<sup>2</sup> Failure occurs through membrane rupture not seam failure.

## 2.04 FLASHING MATERIALS

### A. Wall / Curb Flashing

1. Sarnafil G410 Membrane

- A fiberglass reinforced membrane adhered to approved substrates using Sarnacol adhesive.
2. G459 Flashing Membrane

A fiberglass reinforced membrane adhered to asphalt, other contaminated surfaces, or approved substrates using Sarnacol adhesive. G459 comes in 6.5' and 3.25' widths and is 60 mil (1.5mm) thick. The standard color is white on tan. The tan side of the membrane must be the side exposed to the contamination.
  3. Sarnaclad

A PVC-coated, heat-weldable sheet metal capable of being formed into a variety of shapes and profiles. Sarnaclad is a 24 gauge, G90 galvanized metal sheet with a 20 mil (0.5 mm) unsupported Sarnafil membrane laminated on one side. The dimensions of Sarnaclad are 4 ft x 8 ft (1.2 m x 2.4 m) or 4 ft x 10 ft (1.2 m x 3.0 m).
- B. Perimeter Edge Flashing
1. Edge: Shop fabricated PVC clad 24 gauge dark bronze colored perimeter metal.
- C. Miscellaneous Flashing
1. Detail Membrane

A 60 mil (1.5 mm) fiberglass reinforced membrane, available 12" x 50' (30.5 cm x 15.2 m) roll and 24" x 50' (61 cm x 15.2 m) roll, more pliable than Sarnafil G410 membrane, good use for flashing pipes, corners, and unusual shaped penetrations.
  2. Sarnacircles

A 60 mil (1.5mm) thick prefabricated 4 1/2 in. round circle patch injection molded.
  3. Sarnacorners - Inside

A 60 mil (1.5 mm) thick prefabricated inside corner injection molded.
  4. Sarnacorners - Outside

A 60 mil (1.5 mm) thick prefabricated outside corner injection molded.
  5. Sarnastack Universal, A, B, or C

A 60 mil (1.5 mm) thick prefabricated stack/pipe boot injection molded.
  6. Open Post Flashing

A 48 mil (1.2 mm) thick prefabricated flashing using weld technology convenient to flash obstructed rooftop conduits and pipes. Open post flashings are fabricated with an open seam and are available in different sizes.
  7. Sarnareglet

A heavy-duty, extruded aluminum flashing termination reglet used at walls and large curbs. Sarnareglet is produced from 6063-T5, 0.10 inch to 0.12 inch (2.5 mm to 3.0 mm) thick extruded aluminum. Sarnareglet has a 2-1/4 inch (57 mm) deep profile, and is provided in 10 foot (3 m) lengths. Use prefabricated Sarnareglet mitered inside and outside corners where walls intersect.

## 8. Sarnacol 2170 Adhesive

A solvent-based reactivating adhesive used to attach membrane to flashing substrate. Typical flashing substrate coverage rate is 45-60ft<sup>2</sup> /gal (1.10–1.47m<sup>2</sup>/L) .

## 9. Sarnacol 2170 VC Adhesive

A solvent-based, VOC compliant, reactivating adhesive used to attach membrane to flashing substrate. Typical flashing substrate coverage rate is 45-60ft<sup>2</sup> /gal (1.10–1.47m<sup>2</sup>/L).

## 10. Sarnafelt

A leveling and/or separation layer that is necessary behind Sarnafil G410 or G459 Flashing Membrane when the flashing substrates are rough or incompatible with the flashing membrane. When Sarnafelt is used as a leveling and/or separating layer a 2nd coat on the dried substrate at the same rate is required to adhere the felt and then the membrane.

## 11. Sarnafil S327 Coverstrip

9 inch (0.23m) wide precut flashing made from Sarnafil S327 polyester reinforced membrane. Use as coverstrip over Sarnabars.

**2.05 INSULATIONS / ROOF BOARDS**

## D. ACFoam HD Coverboard

½" thick manufactured to ASTM C1289 standards, Type II, Class 4, Grade 1 panels. 80 PSI min. to 110 PSI compressive strength.

**2.06 ATTACHMENT COMPONENTS**

## A. Sarnadisc RhinoBond

A high strength plate with a polymer coating used with various Sarnafasteners to attach insulation boards to the roof deck and as a substrate to induction weld S327 membrane, Sarnadisc RhinoBond is a 3 inch (75 mm) round, 22 gauge corrosion resistant steel plate.

## B. Sarnafastener #14

A #14 corrosion-resistant fastener used with Sarnaplates to attach insulation and/or roof boards to structural concrete or wood roof decks. Sarnafastener #14 has a shank diameter of 0.190 inch (4.8 mm), a thread diameter of 0.245 inch (6.2 mm) and a #3 Phillips drive head with a diameter of 0.435 inch (11 mm).

## C. Sarnafastener #15 XP

A #15 corrosion-resistant fastener used with Sarnaplates to attach insulation and/or roof boards to steel roof decks. Sarnafastener #15 XP has a shank diameter of approximately 0.21 inch (5.3 mm) and the thread diameter is approximately 0.26 inch (6.6 mm). The driving head has a diameter of approximately 0.435 inch (11 mm) with a #3 Phillips recess for positive engagement.

**2.07 MISCELLANEOUS ACCESSORIES**

## A. Sarnamatic 641mc, 661, or 681

220 volt, self-propelled, hot-air welding machine used to seal Sarnafil membrane seams.

**B. RhinoBond Induction Welder**

A 110 volt induction welding device that creates a radio frequency that allows the membrane to be welded to a specially coated plate.

**C. Aluminum Tape**

A 2 inch (50 mm) wide pressure-sensitive aluminum tape used as a separation layer between small areas of asphalt contamination and the membrane and as a bond-breaker under the coverstrip at Sarnaclad joints.

**D. Multi-Purpose Tape**

A high performance sealant tape used with metal flashings as a preventive measure against air and wind blown moisture entry.

**E. Perimeter Warning Tape**

Designed for use on PVC membranes as a reflective, highly visible pressure sensitive tape used to draw attention to roof perimeters and potential hazardous areas. The tape is available in 2 inch wide rolls by 30 feet long and comes on a release liner for easy application. Perimeter Warning Tape exceeds reflectivity 3 requirements and Federal spec. L-S-300, Class 1. Install 10' in from roof edge at entire perimeter.

**F. Seam Cleaner**

Seam Cleaner is used on PVC membranes to clean the in the seam area only.

**2.08 SEALANTS AND PITCH POCKET FILLERS****A. Sikaflex-1a (for termination details and pitch pocket toppings).****B. Sarnafiller (two-component urethane adhesive for pitch pocket toppings).****C. Mastic**

A cold applied, fiber reinforced high strength SBS modified bitumen mastic that is specially formulated to detail around penetrations and flashings where Sika vapor retarders and hybrid system ply sheets are used.

**D. Depending on substrates, the following sealants are options for temporary overnight tie-ins:**

1. Type III hot asphalt conforming to ASTM D312 (latest version).
2. Sarnafiller.
3. Multiple layers of roofing cement and felt.
4. Spray-applied, water-resistant urethane foam.
5. Mechanical attachment with rigid bars and compressed sealant.

**2.09 MISCELLANEOUS FASTENERS AND ANCHORS**

All fasteners, anchors, nails, straps, bars, etc. shall be post-galvanized steel, aluminum or stainless steel. Mixing metal types and methods of contact shall be assembled in such a manner as to avoid galvanic corrosion. Fasteners for attachment of metal to masonry shall be expansion type fasteners with stainless steel pins. All concrete fasteners and anchors shall have a minimum embedment of 1-1/4 inch (32 mm) and shall be approved for such use by the fastener manufacturer. All miscellaneous wood fasteners and anchors used for flashings shall have a minimum embedment of 1 inch (25 mm) and shall be approved for such use by the fastener manufacturer.

**2.10 RELATED MATERIALS****A. Wood Nailer**

Treated wood nailers shall be installed into the structural purlins at the perimeter of the entire roof and

around such other roof projections and penetrations as specified on Project Drawings. Thickness of nailers must match the insulation thickness to achieve a smooth transition. Wood nailers shall be treated for fire and rot resistance (wolmanized or osmose treated) and be #2 quality or better lumber. Creosote or asphalt-treated wood is not acceptable. Wood nailers shall conform to Factory Mutual Loss Prevention Data Sheet 1-49. All wood shall have a maximum moisture content of 19 percent by weight on a dry-weight basis.

**B. Plywood**

When bonding directly to plywood, a minimum 1/2 inch (12 mm) CDX (C side out), smooth-surfaced exterior grade plywood with exterior grade glue shall be used. Rough-surfaced plywood or high fastener heads will require the use of Sarnafelt behind the flashing membrane. Plywood shall have a maximum moisture content of 19 percent by weight on a dry weight basis.

**PART 3 - EXECUTION**

**3.01 PRE-CONSTRUCTION CONFERENCE**

- A. The Applicator, Owner's Representative/Designer and Manufacturer(s) shall attend a pre-construction conference.
- B. The meeting shall discuss all aspects of the project including but not limited to:
  - 1. Safety
  - 2. Set up
  - 3. Construction schedule
  - 4. Contract conditions
  - 5. Coordination of the work

**3.02 SUBSTRATE CONDITION**

- A. Applicator shall be responsible for acceptance or provision of proper substrate to receive new roofing materials.
- B. Applicator shall verify that the work done under related sections meets the following conditions:
  - 1. Roof curbs, nailers, equipment supports, vents and other roof penetrations are properly secured and prepared to receive new roofing materials.
  - 2. All surfaces are smooth and free of dirt, debris and incompatible materials.
  - 3. All roof surfaces shall be free of water, ice and snow.

**3.03 SUBSTRATE PREPERATION**

The roof deck and existing roof construction must be structurally sound to provide support for the new roof system. The Applicator shall load materials on the rooftop in such a manner as to eliminate risk of deck overload due to concentrated weight. The Owner's Representative shall ensure that the roof deck is secured to the structural framing according to local building code and in such a manner as to resist all anticipated wind loads in that location.

**A. Reroofing with Removal of Existing Single Ply Roofing**

General Criteria:

Remove existing epdm membrane, fiberboard, existing T & G roofing, all flashings, etc., down to existing wood deck and properly dispose of same.

Remove existing perimeter metal roof edge.

Surfaces on which the new membrane is to be applied shall be compatible, clean, smooth, free of sharp edges, loose and foreign material, oil, grease, and bitumen.

**3.04 SUBSTRATE INSPECTION**

- A. A dry, clean and smooth substrate shall be prepared to receive the Sika Corporation Sarnafast mechanically-attached roof system.
- B. The Applicator shall inspect the substrate for defects such as excessive surface roughness, contamination, structural inadequacy, or any other condition that will adversely affect the quality of work.
- C. 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.
- D. All roof surfaces shall be free of water, ice and snow.
- E. Sika Corporation shall be applied over compatible or acceptable substrates only.

**3.05 WOOD NAILER INSTALLATION**

- A. Install continuous code compliant wood nailers at the perimeter of the entire roof and around roof projections and penetrations as shown on the Detail Drawings.
- B. Nailers shall be anchored to the structural elements to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons per lineal meter) in any direction. Individual nailer lengths shall not be less than 3 feet (0.9 meter) long. Nailer fastener spacing shall be no more than 12 inches (0.3 m) on center or at a distance to match the structural framing. Fasteners shall be staggered 1/3 the nailer width and installed within 6 inches (0.15 m) of each end. Two fasteners shall be installed at ends of nailer lengths. Nailer attachment shall also meet the requirements of the current Factory Mutual Loss Prevention Data Sheet 1-49.
- C. Thickness shall be as required to match the total substrate and insulation height to allow a smooth transition.
- D. Any existing nailer woodwork which is to remain shall be firmly anchored in place to resist a minimum force of 300 pounds per lineal foot (4,500 Newtons per lineal meter) in any direction and shall be free of rot, excess moisture or deterioration. Only woodwork shown to be reused in Detail Drawings shall be left in place. All other nailer woodwork shall be removed.
- E. Stainless steel, corrosion resistant, fasteners are required when mechanically attaching any Sika Corporation product to wood nailers and wood products treated with ACQ (Alkaline copper Quaternary). When ACQ treated wood is used on steel roof decks or with metal edge detailing, a separation layer must be placed between the metal and ACQ treated wood.

**3.06 INSULATION / ROOF BOARD INSTALLATION**

General Criteria:

- 2. Fasteners Insulation shall be installed according to insulation manufacturer's instructions.
  - 3. Use Insulation shall be neatly cut to fit around penetrations and projections.
  - 4. Insulation shall be installed according to insulation manufacturer's instructions.
  - 5. Do not install more insulation board than can be covered with Sarnafil membrane by the end of the day or the onset of inclement weather.
- A. Mechanical Attachment
    - 1. Boards shall be mechanically fastened to the deck with approved fasteners and with the Sarnadisc RhinoBond in a 2 by 2 foot ( 0.6 by 0.6 m) or 2 by 3 foot (0.6 by 0.9 m) grid pattern according to Sika Corporation's and the wind design requirements. Fasteners must be tight enough that the disc does not turn, but not so tight as to deform.
    - 2. Perimeter and Corner Areas

The perimeter and corner area will be determined by building height and width and other conditions according to ASCE 7 guidelines, Sika Corporation Technical or FM LPDS 1-29 if insured by Factory Mutual. To meet the perimeter and corner uplift requirements, increase fastener density by decreasing the spacing between fastener points in one or both directions. The total tributary area to each fastener is no more than 60 percent for the perimeter and 40 percent for corners, based on the field of roof fastening density. See Detail Drawings.

Notes:

- a) Perimeter area is defined as the outer boundary of the roof. If the roof is broken into different levels, each roof area shall be treated as an individual roof with its outer boundary being treated as a perimeter. Typically, internal expansion joints and firewalls are not considered to be full perimeters. Refer to Factory Mutual's Data Sheet 1-28 for more information.
  - b) The ridge area is defined as the high point in the roof area formed by two intersecting planes. When the sum of the slopes is a minimum of 4 inches in 12 inches (30 degrees), each side of the ridge shall be treated as a perimeter area.
3. Fasteners are to be installed consistently in accordance with fastener manufacturer's recommendations. Fasteners are to have minimum penetration of 1 inch (25 mm) through the structural deck.
  4. Use fastener tools with a depth locator and torque-limiting attachment as recommended or supplied by fastener manufacturer to ensure proper installation.

### 3.07 SARNAFIL S327 MEMBRANE INSTALLATION

The surface of the insulation or substrate shall be inspected prior to installation of the Sarnafil roof membrane. The substrate shall be clean, dry, free from debris and smooth with no surface roughness or contamination. Broken, delaminated, wet or damaged insulation boards shall be removed and replaced. Sarnafil S327 membrane shall be attached with Sarnafasteners and Sarnadisc RhinoBond according to Sika Corporation's and wind uplift requirements per ASCE 7 or Factory Mutual.

#### A. RhinoBond - Membrane Attachment to Structural Deck (Documented Pullout Tests Required)

##### 1. General

- a) Sarnafil S327 full width rolls shall be placed over the installed boards. Membrane overlaps shall be shingled with the flow of water where possible. Seam overlaps may be placed over Sarnadisc RhinoBond plate. Welding of the plate will not be affected.
- b) **Tack welding of the membrane for purposes of temporary restraint during installation is not permitted and may result in voiding of Sika Corporation warranty.** Consult Sika Corporation's Technical Department for further information.

##### 2. Field, Perimeter and Corner Areas

Over the properly prepared, installed and attached substrate surface following either the 2 by 2 foot (0.6 by 0.6 m) or 2 by 3 foot (0.6 by 0.9 m) grid pattern, S327 full-width rolls are to be installed so as to properly shed water. See Detail Drawings for fastener layouts. Refer to FM LPDS 1-29 for their requirements for perimeter and corner enhancements.

##### 3. Securement Around Rooftop Penetrations

- a) Around all perimeters, at the base of walls, drains, curbs, vent pipes, or any other roof penetrations, Sarnafasteners and Sarnadisc RhinoBond, Sarnadiscs or Sarnabars shall be installed according to perimeter rate of attachment. Fasteners shall be installed according to the manufacturer's instructions. Fasteners shall be installed using the fastener manufacturer's recommended torque-sensitive fastening tools with depth locators. If Sarnadisc RhinoBond is not used, the fasteners shall clamp the Sarnafil membrane tightly to the substrate.

- a) Sarnafil membrane flashings shall extend 2-1/2 inches (63 mm) past Sarnadisc and be hot-air welded to the Sarnafil deck membrane.

### **3.08 RHINO BOND INDUCTION WELDING**

#### **A. General**

1. Welding equipment shall be provided by or approved by Sika Corporation. All mechanics intending to use the equipment shall have successfully completed a training course provided by a Sika Corporation Technical Service Representative prior to welding.
2. All membrane to be welded shall be clean and dry.

#### **B. Induction Welding**

1. Activate the weld between membrane and plate using approved portable induction device. The induction coil must be positioned over the center of the Sarnadisc RhinoBond, +/- 1 inch (25 mm). Portable induction device must elevate the temperature of the Sarnadisc RhinoBond from ambient to 400 – 500 degree F (204 – 260 degree C). Cycle time will be affected by available power, use a heavy gauge power cord, at a minimum 12 gauge by 100 feet.
2. When the induction welding cycle is complete, immediately place a Cool & Clamp magnetic weight on the welded assembly. This device must be left in place for at least 60 seconds.

#### **C. Quality Control of Induction Welding**

1. The Applicator shall check all induction welds each day. Check welds by using an ordinary plunger centered over the welded plate and pull straight up. Correct welds shall have no separation between the plate and membrane.

### **3.09 HOT-AIR WELDING OF SEAM OVERLAPS**

#### **A. General**

1. All seams shall be hot-air welded. All membrane to be welded shall be clean and dry.
1. All mechanics intending to use hot-air welding equipment shall have successfully completed a training course provided by a Sika Corporation Technical Service Representative prior to welding.
2. Hot-air welding equipment shall be allowed to warm up for at least one minute prior to welding.
3. Seam overlaps should be 3 inches (76 mm) wide when automatic machine-welding and 4 inches (100 mm) wide when hand-welding, except for certain details.

#### **B. Hand-Welding**

1. The back edge of the seam shall be welded with a narrow but continuous weld to prevent loss of hot air during the final welding.
2. The nozzle shall be inserted into the seam at a 45 degree angle to the edge of the membrane. Once the proper welding temperature has been reached and the membrane begins to "flow", the hand roller is positioned perpendicular to the nozzle and rolled lightly. For straight seams, the 1-1/2 inch (40 mm) wide nozzle is recommended for use. For corners and compound connections, the 3/4 inch (20 mm) wide nozzle shall be used.

#### **C. Machine Welding**

1. Machine welded seams are achieved by the use of approved automatic welding equipment. When using this equipment, all instructions shall be followed and local codes for electric supply, grounding and over current protection observed. Dedicated circuit house power or a dedicated portable generator is recommended. No other equipment shall be operated simultaneously off the generator.
2. Metal tracks may be used over the deck membrane and under the machine welder to minimize or eliminate wrinkles.

#### **D. Quality Control of Welded Seams**

1. The Applicator shall check all welded seams for continuity using a rounded screwdriver. Visible

evidence that welding is proceeding correctly is smoke during the welding operation, shiny membrane surfaces, and an uninterrupted flow of dark gray material from the underside of the top membrane. On-site evaluation of welded seams shall be made daily by the Applicator at locations as directed by the Owner's Representative or Sika Corporation's representative. One inch (25 mm) wide cross-section samples of welded seams shall be taken at least three times a day. Correct welds display failure from shearing of the membrane prior to separation of the weld. Each test cut shall be patched by the Applicator at no extra cost to the Owner.

### **3.10 MEMBRANE FLASHING INSTALLATION**

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Approval shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing, the affected area shall be removed and replaced at the Applicator's expense. Flashing shall be adhered to compatible, dry, smooth, and solvent-resistant surfaces. Use caution to ensure adhesive fumes are not drawn into the building.

#### **A. Sarnacol Adhesive for Membrane Flashings**

1. Over the properly installed and prepared flashing substrate, Sarnacol adhesive shall be applied according to instructions found on the Product Data Sheet. The Sarnacol adhesive shall be applied in smooth, even coats with no gaps, globs or similar inconsistencies. Only an area which can be completely covered in the same day's operations shall be flashed. The bonded sheet shall be pressed firmly in place with a hand roller.
2. No adhesive shall be applied in seam areas that are to be welded. All panels of membrane shall be applied in the same manner, overlapping the edges of the panels as required by welding techniques.

#### **B. Install Sarnabar/Sarnacord according to the Detail Drawings with approved fasteners into the structural deck at the base of parapets, walls and curbs. Sarnabars may be required by Sika Corporation at the base of all tapered edge strips and at transitions, peaks, and valleys according to Sika Corporation's details.**

#### **C. Sika Corporation's requirements and recommendations and the specifications shall be followed. All material submittals shall have been accepted by Sika Corporation prior to installation.**

#### **D. All flashings should extend a minimum of 8 inches (0.2 m) above roofing level, exceptions to this might be pipe boots and/or sealant pockets, etc. If in question, submit in writing to the Owner's Representative and Sika Corporation Technical Department for signed approval.**

#### **E. All flashing membranes shall be consistently adhered to substrates. All interior and exterior corners and miters shall be cut and hot-air welded into place. No bitumen shall be in contact with the Sarnafil membrane.**

#### **F. All flashing membranes shall be mechanically fastened along the counter-flashed top edge with Sarnastop at 6-8 inches (0.15-0.20 m) on center.**

#### **G. Sarnafil flashings shall be terminated according to Sika Corporation recommended details.**

#### **H. All adhered flashings that exceed 30 inches (0.75 m) in height shall receive additional securement. Consult Sika Corporation Technical Department for securement methods.**

### **3.11 METAL FLASHING INSTALLATION**

#### **A. Metal details, fabrication practices and installation methods shall conform to the applicable requirements of the following:**

1. Factory Mutual Loss Prevention Data Sheet 1-49 (latest issue).
2. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - latest issue.

#### **B. Metal, other than that provided by Sika Corporation, is not covered under the Sika Corporation warranty.**

- C. Complete all metal work in conjunction with roofing and flashings so that a watertight condition exists daily.
- D. Metal shall be installed to provide adequate resistance to bending to allow for normal thermal expansion and contraction.
- E. Metal joints shall be watertight.
- F. Metal flashings shall be securely fastened into solid wood blocking. Fasteners shall penetrate the wood nailer a minimum of 1 inch (25 mm).
- G. Airtight and continuous metal hook strips are required behind metal fascias. Hook strips are to be fastened 12 inches (0.3 m) on center into the wood nailer or masonry wall.
- H. Counter flashings shall overlap base flashings at least 4 inches (100 mm).
- I. Hook strips shall extend past wood nailers over wall surfaces by 1-1/2 inch (38 mm) minimum and shall be securely sealed from air entry.

### 3.12 SARNACLAD METAL BASE FLASHINGS / EDGE METAL INSTALLATION

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.

- A. Sarnaclad metal flashings shall be formed and installed per the Detail Drawings.
  - 1. All metal flashings shall be fastened into solid wood nailers with two rows of post galvanized flat head annular ring nails, 4 inches (100 mm) on center staggered. Fasteners shall penetrate the nailer a minimum of 1 inch (25 mm).
  - 2. Metal shall be installed to provide adequate resistance to bending and allow for normal thermal expansion and contraction.
- B. Adjacent sheets of Sarnaclad shall be spaced 1/4 inch (6 mm) apart. The joint shall be covered with 2 inch (50 mm) wide aluminum tape. A 4 inch minimum (100 mm) wide strip of Sarnafil flashing membrane shall be hot-air welded over the joint.

### 3.13 EDGE METAL INSTALLATION

All flashings shall be installed concurrently with the roof membrane as the job progresses. No temporary flashings shall be allowed without the prior written approval of the Owner's Representative and Sika Corporation. Acceptance shall only be for specific locations on specific dates. If any water is allowed to enter under the newly completed roofing due to incomplete flashings, the affected area shall be removed and replaced at the Applicator's expense.

### 3.14 PERIMETER WARNING INSTALLATION

- A. Tape / Membrane

Areas of membrane where to be applied must be cleaned to a "like new" condition. Failure to properly clean the membrane will result in less than satisfactory adhesion or welding. The membrane should be cleaned as follows:

- 1) New membrane: Remove loose dirt and dust by wiping clean with water. For areas where dirt is embedded, scrub the application area with a commercial cleaner such as Simple Green, 409 or other similar all-purpose cleaner using a Scotch Brite scrubbing pad or similar product. Wash away residual cleaning material with clean water.

- 2) Weathered membrane: For older membranes or areas where there is excessive dirt buildup, use the above cleaning procedure followed by cleaning with a natural fiber rag wet with Seam Cleaner, and wipe away all residual cleaning solution and remaining dirt until membrane has a "like new" appearance.

After surface is clean and dry, apply:

- 1) Tape: Apply tape to membrane taking care to avoid trapping air and creating blisters as tape is smoothed over with hand pressure. If a chalk line is used, be sure to keep chalk dust clear of application area. Do not apply Perimeter Warning Tape to surfaces where the temperature is below 40°F (4°C).
- 2) Membrane: Perimeter Warning Membrane is hot-air welded to the top of PVC roofing membrane in the areas required.

Perimeter Warning Tape or Membrane may be slippery when wet.

### **3.01 TEMPORARY CUT-OFF**

All flashings shall be installed concurrently with the roof membrane in order to maintain a watertight condition as the work progresses. All temporary waterstops shall be constructed to provide a 100 percent watertight seal. The stagger of the insulation joints shall be made even by installing partial panels of insulation. The new membrane shall be carried into the waterstop. Waterstop shall be sealed to the deck and substrate so that water will not be allowed to travel under the new or existing roofing. The edge of the membrane shall be sealed in a continuous heavy application of sealant as described in Section 2.08. When work resumes, the contaminated membrane shall be cut out. All sealant, contaminated membrane, insulation fillers, etc. shall be removed from the work area and properly disposed of off-site. None of these materials shall be used in the new work.

If inclement weather occurs while a temporary waterstop is in place, the Applicator shall provide the labor necessary to monitor the situation to maintain a watertight condition.

If any water is allowed to enter under the newly-completed roofing, the affected area shall be removed and replaced at the Applicator's expense.

### **3.02 COMPLETION**

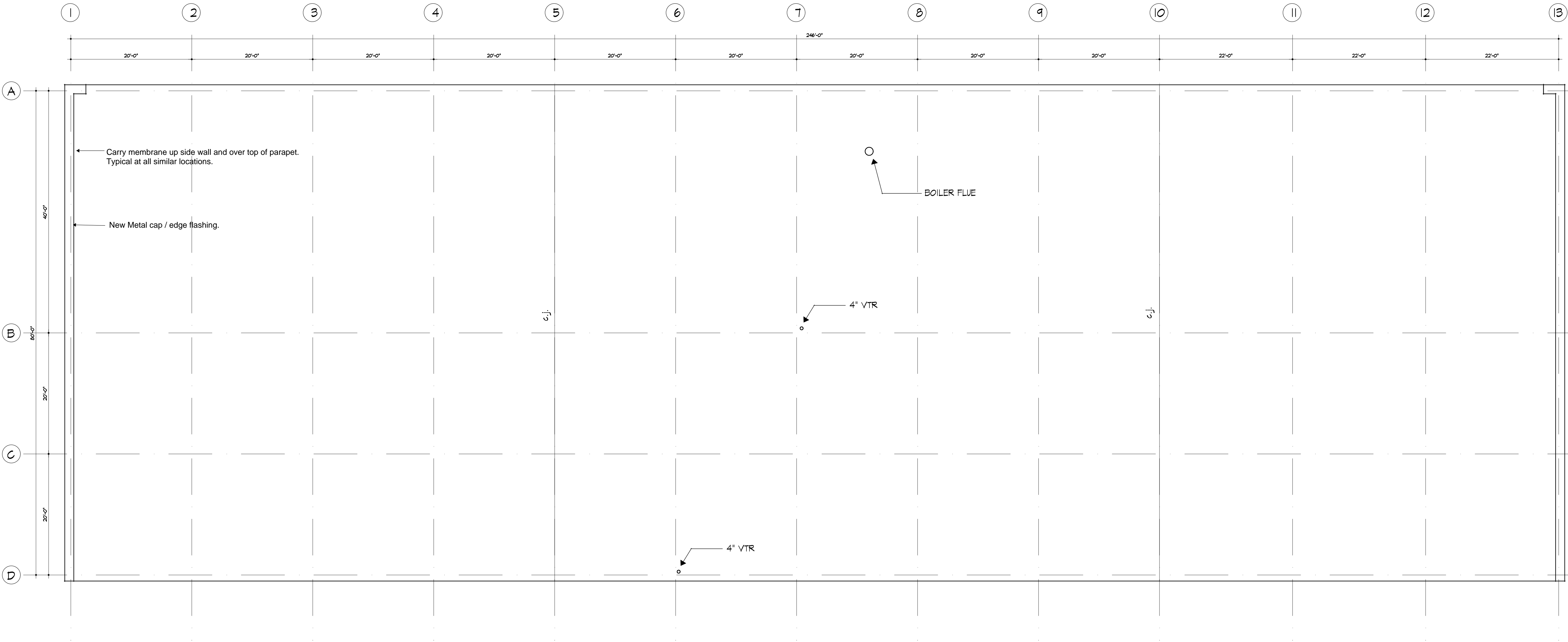
Prior to demobilization from the site, the work shall be reviewed by the Owner's Representative and the Applicator. All defects noted and non-compliances with the Specifications or the recommendations of Sika Corporation shall be itemized in a punch list. These items must be corrected immediately by the Applicator to the satisfaction of the Owner's Representative and Sika Corporation prior to demobilization.

All Warranties referenced in this Specification shall have been submitted and have been accepted at time of contract award.

### **3.03 DETAILS**

Refer to Typical System Details section or [usa.sarnafil.sika.com](http://usa.sarnafil.sika.com).

- General Scope of Work:
- 1. Remove existing EPDM membrane, fiberboard underlayment, existing T & G roof, edge metal, flashings, etc to existing roof deck and properly dispose of same.
  - 2. See structural drawings for deck replacement and reinforcement requirements and details.
  - 3. Install 1/2" high density polyisocyanurate roof insulation board over plywood deck.
  - 4. Install new mechanically fastened 60 mil PVC membrane with hot air welded seams.
  - 5. Install shop fabricated PVC clad, 24 gauge, dark bronze colored perimeter flashing and caps.
  - 6. Provide all flashings per roofing manufacturers recommendations and details for all penetrations.



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

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Reroofing Project  
NEWPORT TOWN GARAGE  
448 South Main Street  
NEWPORT, NH 05773

Roof Plan

29 September 2017

R1

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1. GENERAL NOTES

1. ALL STRUCTURAL WORK SHALL CONFORM TO THE PROJECT SPECIFICATIONS, DRAWINGS, AND THE 2015 INTERNATIONAL BUILDING CODE.
2. CONTRACTOR SHALL COORDINATE STRUCTURAL WORK WITH RELATED TRADES AND WITH ARCHITECTURAL AND MECHANICAL REQUIREMENTS PRIOR TO SUBMITTING SHOP DRAWINGS FOR APPROVAL. CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ARCHITECT AND ENGINEER.
3. DEVIATIONS OR CHANGES FROM THE APPROVED DESIGN AND "RELEASED FOR PRODUCTION" SHOP DRAWINGS SHALL NOT BE PERMITTED WITHOUT APPROVAL OF THE STRUCTURAL ENGINEER. SUBMIT AND PROPOSED CHANGES TO THE ENGINEER FOR REVIEW PRIOR TO PROCEEDING WITH THE CHANGES.
4. STRUCTURAL STABILITY DURING CONSTRUCTION – THE STRUCTURAL ELEMENTS OF THE PROJECT AS SHOWN IN THE CONSTRUCTION DOCUMENTS HAVE BEEN DESIGNED FOR THE SPECIFIED VERTICAL AND LATERAL FORCES ACTING ON THE COMPLETED BUILDING. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO DESIGN AND PROVIDE ALL REQUIRED SHORING AND BRACING NEEDED DURING CONSTRUCTION TO MAINTAIN THE STABILITY AND SAFETY OF THE PARTIALLY-COMPLETED STRUCTURE AND FOR CONSTRUCTION LOADINGS THAT EXCEED THE SPECIFIED DESIGN LOADS.
5. OPENINGS SHALL NOT BE MADE IN ANY STRUCTURAL MEMBER UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS OR APPROVED IN ADVANCE BY THE STRUCTURAL ENGINEER.
6. DETAILS LABELED "TYPICAL DETAILS" ON THE DRAWINGS SHALL APPLY TO ALL SITUATIONS OCCURRING ON THE PROJECT THAT ARE THE SAME OR SIMILAR TO THOSE SPECIFICALLY DETAILED. THE APPLICABILITY OF THE TYPICAL DETAIL IS TO BE DETERMINED BY THE TITLE OF THE TYPICAL DETAIL. SUCH TYPICAL DETAILS SHALL APPLY WHETHER OR NOT THEY ARE KEYED IN AT EACH LOCATION IN THE DRAWINGS.
7. THE CONTRACTOR SHALL CONDUCT A THOROUGH REVIEW OF ALL EXISTING PLAN INFORMATION ON FILE WITH THE TOWN AND COMPLETE A SITE VISIT TO VIEW EXISTING CONDITIONS PRIOR TO SUBMITTING A BID.

2. EXISTING BUILDING/SELECTIVE DEMOLITION

EXISTING BUILDING:

1. DIMENSIONS, ELEVATIONS, MEMBER SIZES, AND DETAILS OF EXISTING STRUCTURE SHOWN IN THE STRUCTURAL DRAWINGS HAVE BEEN EXTRACTED FROM RECORD DRAWINGS. AS SUCH THEY ARE NOT TO BE CONSIDERED SUITABLY ACCURATE FOR ANY CONSTRUCTION WORK SHOWN, INCLUDING FABRICATIONS, SUBMITTALS, ETC. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS OF THE EXISTING CONSTRUCTION, INCLUDING PLUMBNESS OR FLATNESS OF WALLS, FLOORS, ETC. AT THE JOB SITE PRIOR TO SUBMITTAL, FABRICATION, OR CONSTRUCTION WORK. ANY DEVIATIONS FOUND IN THE FIELD FROM WHAT IS SHOWN ON THE DRAWINGS SHALL BE REPORTED TO THE ARCHITECT AND ENGINEER PRIOR TO FABRICATION OR CONSTRUCTION.
2. REPORT EXISTING CONDITIONS UNCOVERED, REVEALED, FOUND OR DEVELOPED DURING CONSTRUCTION INDICATIVE OF STRUCTURAL INTEGRITY LOSS OR DETERIORATION, UNLESS SPECIFICALLY NOTED ON THE DRAWINGS.
3. DO NOT CUT, DRILL, OR ALTER ANY EXISTING STRUCTURAL ELEMENTS UNLESS SHOWN OR NOTED ON THE STRUCTURAL DRAWINGS WITHOUT NOTIFICATION OF THE ENGINEER AND ARCHITECT FOR REVIEW, INCLUDING TEMPORARY MEASURES OR FOR THE INSTALLATION OF OTHER DESIGN DISCIPLINE WORK.
4. MONITORING OF CONSTRUCTION WORK SHALL INCLUDE, BUT IS NOT LIMITED TO FIRE WATCH DURING AND AT LEAST 24 HOURS AFTER ALL STEEL WELDING OR DRILLING, WOOD DRILLING, OR HEAT TRANSFERRING CONSTRUCTION MEASURES. DO NOT ALLOW HEAT OR ENERGY FORM EQUIPMENT TO DAMAGE OR OTHERWISE ALTER EXISTING STRUCTURAL ELEMENTS TO REMAIN.
5. FOR EXISTING STEEL ELEMENTS, DO NOT ALLOW THE THROUGH-THICKNESS TEMPERATURE OF THE STEEL TO EXCEED 300 DEGREES FAHRENHEIT DURING WELDING PROCESSES UNLESS SPECIFICALLY NOTED OTHERWISE. USE ACTIVE, OBSERVABLE SURFACE MONITORING METHODS.

SELECTIVE DEMOLITION:

- 1.1 EXAMINATION

A. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED BEFORE STARTING SELECTIVE DEMOLITION OPERATIONS.

B. REVIEW RECORD DOCUMENTS OF EXISTING CONSTRUCTION PROVIDED BY OWNER.

C. SURVEY EXISTING CONDITIONS AND CORRELATE WITH REQUIREMENTS INDICATED TO DETERMINE EXTENT OF SELECTIVE DEMOLITION REQUIRED.

D. WHEN UNANTICIPATED MECHANICAL, ELECTRICAL, OR STRUCTURAL ELEMENTS THAT CONFLICT WITH INTENDED FUNCTION OR DESIGN ARE ENCOUNTERED, INVESTIGATE AND MEASURE THE NATURE AND EXTENT OF CONFLICT. PROMPTLY SUBMIT A WRITTEN REPORT TO ARCHITECT AND ENGINEER.
- 1.2 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

E. EXISTING SERVICES/SYSTEMS TO BE REMOVED, RELOCATED, OR ABANDONED: LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF INDICATED UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS SERVING AREAS TO BE SELECTIVELY DEMOLISHED. RETAIN ONE OF FIRST TWO SUBPARAGRAPHS BELOW TO SUIT PROJECT.

1. OWNER WILL ARRANGE TO SHUT OFF INDICATED SERVICES/SYSTEMS WHEN REQUESTED BY CONTRACTOR.

2. ARRANGE TO SHUT OFF INDICATED UTILITIES WITH UTILITY COMPANIES.
- 1.3 PREPARATION

F. TEMPORARY SHORING: PROVIDE AND MAINTAIN SHORING, BRACING, AND STRUCTURAL SUPPORTS AS REQUIRED AT LOCATIONS SHOWN ON THE STRUCTURAL DRAWINGS OR REQUIRED BY FIELD OBSERVATIONS AFTER FINISHES ARE REMOVED – TO PRESERVE STABILITY AND PREVENT MOVEMENT, SETTLEMENT, OR COLLAPSE OF CONSTRUCTION AND FINISHES TO REMAIN, AND TO PREVENT UNEXPECTED OR UNCONTROLLED MOVEMENT OR COLLAPSE OF CONSTRUCTION BEING DEMOLISHED.

1. STRENGTHEN OR ADD NEW SUPPORTS WHEN REQUIRED DURING PROGRESS OF SELECTIVE DEMOLITION.
- 1.4 SELECTIVE DEMOLITION, GENERAL

A. GENERAL: DEMOLISH AND REMOVE EXISTING CONSTRUCTION ONLY TO THE EXTENT REQUIRED BY NEW CONSTRUCTION AND AS INDICATED. USE METHODS REQUIRED TO COMPLETE THE WORK WITHIN LIMITATIONS OF GOVERNING REGULATIONS AND AS FOLLOWS:

1. PROCEED WITH SELECTIVE DEMOLITION SYSTEMATICALLY, FROM HIGHER TO LOWER LEVEL. COMPLETE SELECTIVE DEMOLITION OPERATIONS ABOVE EACH FLOOR OR TIER BEFORE DISTURBING SUPPORTING MEMBERS ON THE NEXT LOWER LEVEL.

2. NEATLY CUT OPENINGS AND HOLES PLUMB, SQUARE, AND TRUE TO DIMENSIONS REQUIRED. USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR ADJOINING CONSTRUCTION. USE HAND TOOLS OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING AND CHOPPING, TO MINIMIZE DISTURBANCE OF ADJACENT SURFACES. TEMPORARILY COVER OPENINGS TO REMAIN.

3. CUT OR DRILL FROM THE EXPOSED OR FINISHED SIDE INTO CONCEALED SURFACES TO AVOID MARRING EXISTING FINISHED SURFACES.

4. DO NOT USE CUTTING TORCHES UNTIL WORK AREA IS CLEARED OF FLAMMABLE MATERIALS. AT CONCEALED SPACES, SUCH AS DUCT AND PIPE INTERIORS, VERIFY CONDITION AND CONTENTS OF HIDDEN SPACE BEFORE STARTING FLAME-CUTTING OPERATIONS. MAINTAIN FIRE WATCH AND PORTABLE FIRE-SUPPRESSION DEVICES DURING FLAME-CUTTING OPERATIONS.

5. MAINTAIN ADEQUATE VENTILATION WHEN USING CUTTING TORCHES.

6. REMOVE DECAYED, VERMIN-INFESTED, OR OTHERWISE DANGEROUS OR UNSUITABLE MATERIALS AND PROMPTLY DISPOSE OF OFF-SITE.

7. REMOVE STRUCTURAL FRAMING MEMBERS AND LOWER TO GROUND BY METHOD SUITABLE TO AVOID FREE FALL AND TO PREVENT GROUND IMPACT OR DUST GENERATION.

8. LOCATE SELECTIVE DEMOLITION EQUIPMENT AND REMOVE DEBRIS AND MATERIALS SO AS NOT TO IMPOSE EXCESSIVE LOADS ON SUPPORTING WALLS, FLOORS, OR FRAMING.

9. DISPOSE OF DEMOLISHED ITEMS AND MATERIALS PROMPTLY.

B. EXISTING ITEMS TO REMAIN: PROTECT CONSTRUCTION INDICATED TO REMAIN AGAINST DAMAGE AND SOILING DURING SELECTIVE DEMOLITION. WHEN PERMITTED BY ARCHITECT, ITEMS MAY BE REMOVED TO A SUITABLE, PROTECTED STORAGE LOCATION DURING SELECTIVE DEMOLITION AND CLEANED AND REINSTALLED IN THEIR ORIGINAL LOCATIONS AFTER SELECTIVE DEMOLITION OPERATIONS ARE COMPLETE.

3. STRUCTURAL STEEL

SUBMITTALS FOR REVIEW

1. SHOP DRAWINGS: INDICATE PROFILES, SIZES, SPACING, LOCATIONS OF STRUCTURAL MEMBERS, DECKING, OPENINGS, ATTACHMENTS, AND FASTENERS. SHOW ALL CONNECTION DETAILS. PROVIDE DESIGN OF CONNECTIONS NOT DETAILED ON DRAWINGS. INDICATE WELDED CONNECTIONS WITH AWS A2.0 WELDING SYMBOLS. INDICATE NET WELD LENGTHS.

SUBMITTALS FOR INFORMATION

1. MANUFACTURER'S MILL CERTIFICATE: CERTIFY THAT PRODUCTS MEET OR EXCEED SPECIFIED REQUIREMENTS.
2. MILL TEST REPORTS: SUBMIT INDICATING STRUCTURAL STRENGTH, DESTRUCTIVE AND NON-DESTRUCTIVE TEST ANALYSIS.
3. WELDERS CERTIFICATES: CERTIFY WELDERS EMPLOYED ON THE WORK, VERIFYING AWS QUALIFICATION WITHIN THE PREVIOUS 12 MONTHS.

QUALITY ASSURANCE

1. FABRICATE STRUCTURAL STEEL MEMBERS IN ACCORDANCE WITH AISC CODE OF STANDARD PRACTICE.
2. FABRICATOR AND ERECTOR: COMPANY SPECIALIZING IN PERFORMING THE WORK OF THIS SECTION WITH MINIMUM FIVE YEARS EXPERIENCE.

MATERIALS

1. STRUCTURAL STEEL WIDE FLANGE MEMBERS: ASTM A992/A572, GRADE 50
2. ANGLES, CHANNELS, PLATE AND OTHER HOT ROLLED SHAPES: ASTM A36
3. STRUCTURAL TUBING: ASTM A500, GRADE B.
4. PIPE COLUMNS: ASTM A53 GRADE B.
5. BOLTS, NUTS, AND WASHERS: MINIMUM 3/4" DIAMETER ASTM A325 BOLTS, ASTM A563 NUTS WITH HARDENED WASHERS, GALVANIZED TO ASTM A153 FOR GALVANIZED STRUCTURAL MEMBERS. ASTM A490 BOLTS REQUIRED WHERE NOTED ON DRAWINGS.
6. ANCHOR BOLTS: ASTM A-307 FOR HEADED BOLT, ASTM A-36 FOR THREADED ROD
7. WELDING MATERIALS: AWS D1.1; TYPE REQUIRED FOR MATERIALS BEING WELDED.
8. SHOP AND TOUCH-UP PRIMER: TNEMC SERIES FM88 OR APPROVED EQUIVALENT.
9. TOUCH-UP PRIMER FOR GALVANIZED SURFACES: TNEMC SERIES 37, ZINC RICH RED APPROVED EQUIVALENT.

FINISH

1. PREPARE STRUCTURAL COMPONENT SURFACES IN ACCORDANCE WITH SSPC SP-2 FOR ENCLOSED STEEL TO RECEIVE STANDARD PRIMER AND SSPC SP-6 FOR STEEL TO RECEIVE ZINC-RICH PRIMER. ALL COATING COLORS SHALL BE COORDINATED WITH THE ARCHITECT.
2. SHOP PRIME STRUCTURAL STEEL MEMBERS. DO NOT PRIME SURFACES THAT WILL BE FIREPROOFED, FIELD WELDED, IN CONTACT WITH CONCRETE.
3. WHERE INDICATED, STRUCTURAL STEEL MEMBERS ARE TO BE GALVANIZED IN ACCORDANCE WITH ASTM A123. PROVIDE MINIMUM 1.25 OZ/SQ FT GALVANIZED COATING.
4. ALL STEEL EXPOSED TO THE EXTERIOR OR EXTENDING THROUGH THE BUILDING ENVELOPE SHALL BE GALVANIZED.

ERECTION

1. ALLOW FOR ERECTION LOADS, AND FOR SUFFICIENT TEMPORARY BRACING TO MAINTAIN STRUCTURE SAFE, PLUMB, AND IN TRUE ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRACING.
2. FIELD WELD COMPONENTS INDICATED ON DRAWINGS AND SHOP DRAWINGS.
3. DO NOT FIELD CUT OR ALTER STRUCTURAL MEMBERS WITHOUT APPROVAL OF ARCHITECT/ENGINEER.
4. AFTER ERECTION, PRIME WELDS, ABRASIONS, AND SURFACES NOT SHOP PRIMED, EXCEPT SURFACES TO BE IN CONTACT WITH CONCRETE.

4. WOOD FRAMING AND SHEATHING

GENERAL

1. UNLESS OTHERWISE SPECIFIED, EACH PIECE OF LUMBER SHALL BEAR THE GRADE MARK, STAMP, OR OTHER IDENTIFYING MARKS INDICATING GRADES OF MATERIAL, AND RULES OR STANDARDS UNDER WHICH PRODUCED. SUCH IDENTIFYING MARKS ON A MATERIAL SHALL BE IN ACCORDANCE WITH THE RULE OR STANDARD UNDER WHICH MATERIAL IS PRODUCED, INCLUDING REQUIREMENTS FOR QUALIFICATIONS AND AUTHORITY OF THE INSPECTION ORGANIZATION, USAGE OF AUTHORIZED IDENTIFICATION, AND INFORMATION INCLUDED IN THE IDENTIFICATION. THE INSPECTION AGENCY FOR LUMBER SHALL BE APPROVED BY THE BOARD OF REVIEW, AMERICAN LUMBER STANDARDS COMMITTEE, TO GRADE SPECIES USED.
2. PROTECT LUMBER AND OTHER PRODUCTS FROM DAMPNESS BOTH DURING AND AFTER DELIVERY AT THE SITE. PILE SHEATHING AND LUMBER IN STACKS IN SUCH A MANNER AS TO PROVIDE ADEQUATE AIR CIRCULATION AND TO PREVENT WARPING. LOCATE STACKS IN WELL DRAINED AREAS, SUPPORTED AT LEAST SIX INCHES ABOVE GRADE AND COVER WITH WELL VENTILATED SHEDS HAVING A FIRMLY CONSTRUCTED OVERHANGING ROOF AS WELL AS SUFFICIENT END WALL TO PROTECT LUMBER FROM DRYING RAIN.
3. STORE SEASONED MATERIALS IN DRY PORTIONS OF BUILDING.
4. PROTECT SHEET MATERIALS FROM CORNERS BREAKING AND DAMAGING SURFACES WHILE UNLOADING.
5. NOMINAL SIZES ARE INDICATED EXCEPT AS SHOWN BY DETAIL DIMENSIONS. PROVIDE ACTUAL SIZES AS REQUIRED BY PRODUCT STANDARD 20, DEPARTMENT OF COMMERCE.
6. MAXIMUM MOISTURE CONTENT SHALL NOT EXCEED 19%.

MATERIALS

1. BEARING WALLS: SPRUCE-PINE-FIR NO.1/NO.2 AS GRADED BY NLGA
2. STRUCTURAL ROOF AND FLOOR FRAMING: SPRUCE-PINE-FIR NO.1/NO.2 AS GRADED BY NLGA UNLESS NOTED OTHERWISE.
3. PRESERVATIVE PRESSURE TREATED LUMBER: SOUTHERN PINE NO. 2, AS GRADED BY SP1B
4. LAMINATED VENEER LUMBER (LVL):

a. PROVIDE LVL HEADERS AND BEAMS AS INDICATED.

b. LVL FRAMING SHALL BE LAMINATED DOUGLAS FIR OR SOUTHERN PINE (GP LAM BY GEORGIA PACIFIC OR MICROLAM BY TRUS-JOIST OR EQUAL) MEETING THE FOLLOWING MINIMUM ALLOWABLE STRESS CRITERIA:

FB (BENDING STRESS) = 2600 PSI

FV (HORIZ. SHEAR STRESS) = 285 PSI

E (MODULUS OF ELASTICITY) = 2,000,000 PSI

FC (COMPRESSION PERPENDICULAR TO GRAIN) = 750 PSI
5. MISCELLANEOUS LUMBER: PROVIDE WOOD FOR SUPPORT OR ATTACHMENT OF THE WORK INCLUDING NON-BEARING PARTITIONS, CANT STRIPS, BUCKS, NAILERS, BLOCKING, FURRING, GROUNDS, STRIPPING AND SIMILAR MEMBERS. PROVIDE LUMBER OF SIZES AND SHAPES INDICATED. GRADE: SPRUCE-PINE-FIR STUD GRADE AS GRADED BY NLGA.
6. ROOF, FLOOR AND WALL SHEATHING: APA RATED OR ADVANTECH VIP+ SHEATHING, THICKNESS AS INDICATED, SPAN RATING AS REQUIRED TO SUIT SUPPORT SPACING INDICATED, EXPOSURE DURABILITY 1, THREE SPAN MINIMUM.
7. PLYWOOD UNDERLAYMENT: APA RATED SHEATHING, 3/4", TONGUE AND GROOVE, SPAN RATING AS REQUIRED TO SUPPORT SPACING INDICATED; EXPOSURE DURABILITY 1; SANDED.
8. FASTENERS AND ANCHORS: FURNISH ITEMS OF ROUGH HARDWARE, METAL CONNECTORS, BOLTS, ETC., REQUIRED TO COMPLETE THE WORK. BOLTS, NUTS AND WASHERS SHALL BE HOT DIPPED ELECTRO GALVANIZED STEEL. FASTENERS AND ANCHORS IN CONTACT WITH PRESSURE TREATED LUMBER SHALL BE STAINLESS STEEL OR STEEL HOT DIP GALVANIZED TO G-185. SIMPSON STRONG-TIE CONNECTORS SHALL CONFORM TO MANUFACTURER'S COATING RECOMMENDATIONS.
9. SILL GASKET ON TOP OF FOUNDATION WALL: 1/4 INCH THICK, PLATE WIDTH WIDE, CLOSED CELL POLYETHYLENE URETHANE FOAM FROM CONTINUOUS ROLLS.
10. SUBFLOOR GLUE: APA AFG-01, WATERPROOF OF WATER SOLVENT BASE, AIR CURE TYPE, CARTRIDGE DISPENSED.
11. WOOD PRESERVATIVE (PRESSURE TREATMENT): AMPA TREATMENT ACO USING WATER BORNE PRESERVATIVE WITH 0.40 PERCENT RETENAGLE.
12. GLULAM MEMBERS:

a. PROVIDE GLULAM BEAMS AND COLUMNS AS INDICATED BY AN AITC OR APA-LICENSED FIRM.

b. GLULAM BEAMS SHALL BE SP-V4.

c. GLULAM COLUMNS SHALL BE SOUTHERN PINE, SPECIES COMBINATION NO. 48.

d. EACH GLULAM MEMBER SHALL INCLUDE A FACTORY MARK WITH AITC QUALITY MARK OR APA-EWS TRADEMARK. PLACE MARK ON SURFACES THAT WILL NOT BE EXPOSED IN THE COMPLETED WORK.

e. PROVIDE TREATED GLULAM MEMBERS WHERE INDICATED.
13. PREFABRICATED WOOD FLOOR TRUSSES AS INDICATED BY A FIRM WHICH IS A MEMBER OF THE WOOD TRUSS COUNCIL OF AMERICA. (WTCA):

a. WOOD FLOOR TRUSSES SHALL BE DESIGNED TO SUPPORT THE LOADS AS INDICATED ON SHEET S1.6 AND THE BASIS OF DESIGN.

EXECUTION

1. SET STRUCTURAL MEMBERS LEVEL AND PLUMB, IN CORRECT POSITION.
2. MAKE PROVISIONS FOR ERECTION LOADS, AND FOR SUFFICIENT TEMPORARY BRACING TO MAINTAIN STRUCTURE SAFE, PLUMB, AND IN TRUE ALIGNMENT UNTIL COMPLETION OF ERECTION AND INSTALLATION OF PERMANENT BRACING.
3. PLACE HORIZONTAL MEMBERS, CROWN SIDE UP.
4. CONSTRUCT LOAD BEARING FRAMING AND CURB MEMBERS FULL LENGTH WITHOUT SPLICES.
5. BRIDGE JOISTS AND RAFTER FRAMING IN EXCESS OF 8 FEET SPAN AT MID-SPAN AND WHERE SHOWN ON DRAWINGS. FIT SOLID BLOCKING OR BRIDGING AT ENDS OF MEMBERS.
6. SECURE ROOF SHEATHING WITH LONGER EDGE PERPENDICULAR TO FRAMING MEMBERS AND WITH ENDS STAGGERED AND SHEET ENDS OVER BEARING.
7. PROVIDE SOLID EDGE BLOCKING BETWEEN SHEATHING SHEETS.
8. WHERE TONGUE AND GROOVE PLYWOOD IS USED, FULLY ENGAGE TONGUE AND GROOVE EDGES.
9. SECURE WALL SHEATHING WITH LONG DIMENSION PERPENDICULAR TO WALL STUDS, WITH ENDS OVER FIRM BEARING AND STAGGERED.
10. SECURE SUB-FLOOR SHEATHING WITH LONGER EDGE PERPENDICULAR TO FLOOR FRAMING AND WITH END JOINTS STAGGERED AND SHEET ENDS OVER BEARING. ATTACH WITH SUB-FLOOR GLUE AND DRYWALL SCREWS.
11. PLACE BUILDING PAPER BETWEEN FLOOR UNDERLAYMENT AND SUB-FLOORING.
12. INSTALL FLOORING UNDERLAYMENT AFTER DUST AND DIRT GENERATING ACTIVITIES HAVE CEASED AND PRIOR TO APPLICATION OF FINISHED FLOORING. APPLY PERPENDICULAR TO SUB-FLOORING, STAGGER JOINTS OF UNDERLAYMENT. SECURE WITH DRYWALL SCREWS AND GLUE.
13. TOLERANCES:

a. FRAMING MEMBERS: 1/4 INCH FROM TRUE POSITION, MAXIMUM.

b. SURFACE FLATNESS OF FLOOR: 1/4 INCH IN 10 FEET MAXIMUM, AND 1/2 INCH IN 30 FEET MAXIMUM.
14. ALL POSTS AND COLUMNS FROM HEADERS AND BEAMS SHALL BEAR CONTINUOUSLY TO CONCRETE FOUNDATIONS INCLUDING BLOCKING IN FLOOR AND ROOF SPACES. BLOCKING SHALL BE OF THE SIZE AND SHAPE TO CARRY THE REQUIRED LOADING.
15. ALL BEARING WALLS SHALL BE BLOCKED AT 4'-0" ON CENTER, VERTICALLY, UNLESS NOTED OTHERWISE.
16. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESERVATIVE PRESSURE TREATED, P.P.T.

5. IBC FASTENING SCHEDULE

- NOTES:
1. SHOWN HERE FOR INFORMATION ONLY
2. ALL SPECIFICATIONS, DRAWING NOTES AND DETAILS SHALL GOVERN

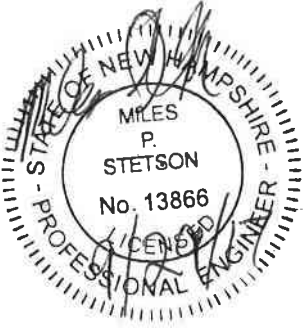
FASTENING SCHEDULE (IBC 2015 CH23 WOOD)		
CONNECTION	FASTENING <sup>1,2</sup>	LOCATION
1. JOIST TO SILL OR GIRDER	(3) 8d COMMON (2-1/2" x 0.131") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAIL
2. BRIDGING TO JOIST	(2) 8d COMMON (2-1/2" x 0.131") (2) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAIL EACH END
3. 1" x 6" SUBFLOOR OR LESS TO EACH JOIST	(2) 8d COMMON (2-1/2" x 0.131")	FACE NAIL
4. WIDER THAN 1" x 6" SUBFLOOR TO EACH JOIST	(3) 8d COMMON (2-1/2" x 0.131")	FACE NAIL
5. 2" SUBFLOOR TO JOIST OR GIRDER	(2) 16d COMMON (3-1/2" x 0.162")	BLIND AND FACE NAIL
6. SOLE PLATE TO JOIST OR BLOCKING	16d (3-1/2" x 0.131") AT 16"oc 3" x 0.131" NAILS AT 8"oc 3" x 14 GAGE STAPLES AT 12"oc	TYPICAL FACE NAIL
SOLE PLATE TO JOIST OR BLOCKING AT BRACED WALL PANEL	1/2" x 0.131") AT 16"oc (4) 3" x 0.131" NAILS AT 16"oc (4) 3" x 14 GAGE STAPLES AT 16"oc	BRACE WALL PANELS
7. TOP PLATE TO STUD	(2) 16d COMMON (3-1/2" x 0.162") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	END NAIL
8. STUD TO SOLE PLATE	(2) 16d COMMON (3-1/2" x 0.162") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	END NAIL
9. DOUBLE STUDS	16d (3-1/2" x 0.131") AT 24"oc 3" x 0.131" NAIL AT 8"oc 3" x 14 GAGE STAPLE AT 8"oc	FACE NAIL
10. DOUBLE TOP PLATES	16d (3-1/2" x 0.131") AT 16"oc 3" x 0.131" NAIL AT 12"oc 3" x 14 GAGE STAPLE AT 12"oc	TYPICAL FACE NAIL
DOUBLE TOP PLATES	(6) 16d COMMON (3-1/2" x 0.162") (12) 3" x 0.131" NAILS (12) 3" x 14 GAGE STAPLES	LAP SPRUCE
11. BLOCKING BETWEEN JOISTS OR RAFTERS TO TOP PLATE	(3) 8d COMMON (2-1/2" x 0.131") AT 24"oc 1" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAIL
12. RIM JOIST TO TOP PLATE	8d (2-1/2" x 0.131") AT 16"oc 3" x 0.131" NAIL 8"oc 3" x 14 GAGE STAPLE AT 8"oc	TOENAIL
13. TOP PLATES, LAPS AND INTERSECTIONS	(2) 16d COMMON (3-1/2" x 0.162") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	FACE NAIL
14. CONTINUOUS HEADER, TWO PIECES	16d COMMON (3-1/2" x 0.162")	16"oc ALONG EDGE
15. CEILING JOISTS TO PLATE	(3) 8d COMMON (2-1/2" x 0.131") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAIL
16. CONTINUOUS HEADER TO STUD	(4) 8d COMMON (2-1/2" x 0.131")	TOENAIL
17. CEILING JOISTS, LAPS OVER PARTITIONS (SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	(3) 16d COMMON (3-1/2" x 0.162") MINIMUM, TABLE 2308.10.4.1 (4) 3" x 0.131" NAILS (4) 3" x 14 GAGE STAPLES	FACE NAIL
18. CEILING JOISTS TO PARALLEL RAFTERS (SEE SECTION 2308.10.4.1, TABLE 2308.10.4.1)	(3) 16d COMMON (3-1/2" x 0.162") MINIMUM, TABLE 2308.10.4.1 (4) 3" x 0.131" NAILS (4) 3" x 14 GAGE STAPLES	FACE NAIL
19. RAFTER TO PLATE (SEE SECTION 2308.10.1, TABLE 2308.10.1)	(3) 8d COMMON (2-1/2" x 0.131") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAIL
20. 1" DIAGONAL BRACE TO EACH STUD AND PLATE	(2) 8d COMMON (2-1/2" x 0.131") (2) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	FACE NAIL
21. 1" x 8" SHEATHING TO EACH BEARING	(3) 8d COMMON (2-1/2" x 0.131")	FACE NAIL
22. WIDER THAN 1" x 8" SHEATHING TO EACH BEARING	(3) 8d COMMON (2-1/2" x 0.131")	FACE NAIL
23. BUILT-UP CORNER STUDS	16d COMMON (3-1/2" x 0.162") (3) x 0.131" NAILS 3" x 14 GAGE STAPLES	24"oc 16"oc 16"oc
24. BUILT-UP GIRDER AND BEAMS	20d COMMON (4" x 0.192") AT 32"oc 3" x 0.131" NAILS 3" x 14 GAGE STAPLES	FACE NAIL AT TOP AND BOTTOM STAGGERED ON OPPOSITE SIDES
	(2) 20d COMMON (4" x 0.192") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	FACE NAIL NAIL AT ENDS AND AT EACH SPLICE
25. 2" PLANKS	16d COMMON (3-1/2" x 0.162")	AT EACH BEARING
26. COLLAR TIE TO RAFTER	(3) 10d COMMON (3" x 0.149") (4) 3" x 0.131" NAILS (4) 3" x 14 GAGE STAPLES	FACE NAIL
27. JACK RAFTER TO HP	(3) 10d COMMON (3" x 0.149") (4) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAILS
	(2) 16d COMMON (3-1/2" x 0.162") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	FACE NAIL
28. ROOF RAFTER TO 2-by RIDGE BEAM	(2) 16d COMMON (3-1/2" x 0.162") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	TOENAILS
	(2) 16d COMMON (3-1/2" x 0.162") (3) 3" x 0.131" NAILS (3) 3" x 14 GAGE STAPLES	FACE NAIL
29. JOIST TO BAND JOIST	(3) 16d COMMON (3-1/2" x 0.162") (4) 3" x 0.131" NAILS (4) 3" x 14 GAGE STAPLES	FACE NAIL
30. LEDGER STRIP	(3) 16d COMMON (3-1/2" x 0.162") (4) 3" x 0.131" NAILS (4) 3" x 14 GAGE STAPLES	FACE NAIL AT EACH JOIST
31. WOOD STRUCTURAL PANELS AND PARTICLEBOARD <sup>1</sup> SUBFLOOR, ROOF AND WALL SHEATHING (TO FRAMING)	1/2" AND LESS 6d <sup>1,2</sup> 2-3/8" x 0.113 NAIL <sup>1</sup> 1-3/4" 16 GAGE 19/32" TO 3/4" 8d <sup>1</sup> OR 6d <sup>1</sup> 2-3/8" x 0.113 NAIL <sup>1</sup> 2" 16 GAGE <sup>1</sup>	
SINGLE FLOOR (COMBINATION SUBFLOOR-UNDERLAYMENT TO FRAMING)	7/8" TO 1" 8d <sup>1</sup> 1-1/8" TO 1-1/4" 10d <sup>1</sup> OR 8d <sup>1</sup>	
32. PANEL SIDING (TO FRAMING)	3/4" AND LESS 6d <sup>1</sup> 7/8" TO 1" 8d <sup>1</sup> 1-1/8" TO 1-1/4" 10d <sup>1</sup> OR 8d <sup>1</sup>	
33. FIBERBOARD SHEATHING	1/2" OR LESS 6d <sup>1</sup> 5/8" 8d <sup>1</sup>	
34. INTERIOR PANELING	1/2" 6d <sup>1</sup> 3/8" 6d <sup>1</sup>	

FOR SEE: 1" = 25.4 mm  
a. COMMON OR BOX NAILS ARE PERMITTED TO BE USED EXCEPT WHERE OTHERWISE STATED.

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REVISION	DATE	COMMENTS

PROJECT:

TOWN OF NEWPORT NH  
TOWN GARAGE REPAIRS

ISSUED:  
BIDDING/CONSTRUCTION

DRAWING TITLE:

NOTES AND BASIS OF DESIGN

DATE: SEPTEMBER 29, 2017

SHEET NUMBER:

S0.1

ROOF LIVE LOAD . . . . . 20 psf

TEMPERATURE FACTOR,  $\theta$  1.1 (NOTED ABOVE)

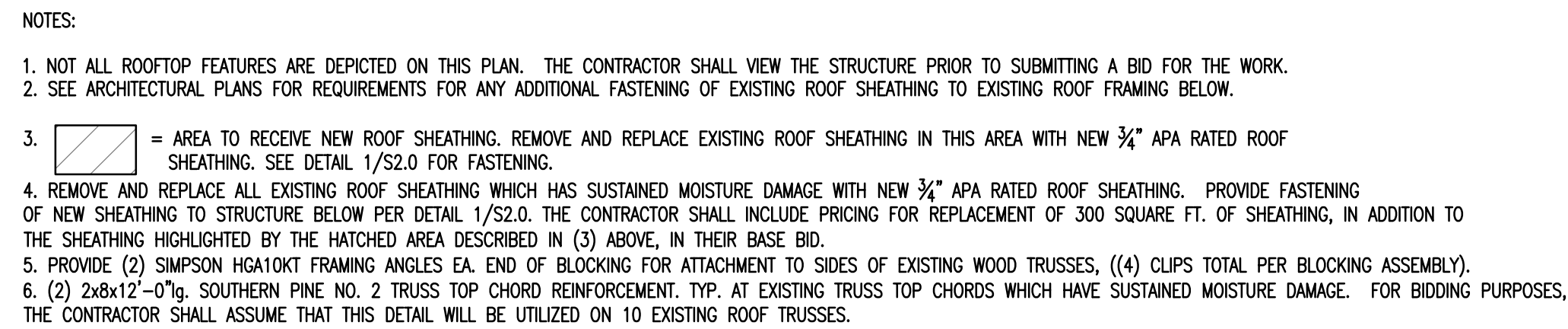
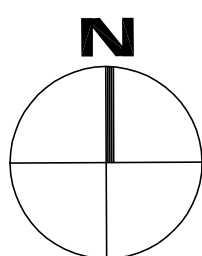
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MINIMUM COMPONENTS AND CLADDING WIND PRESSURE: . . . . .	REFER

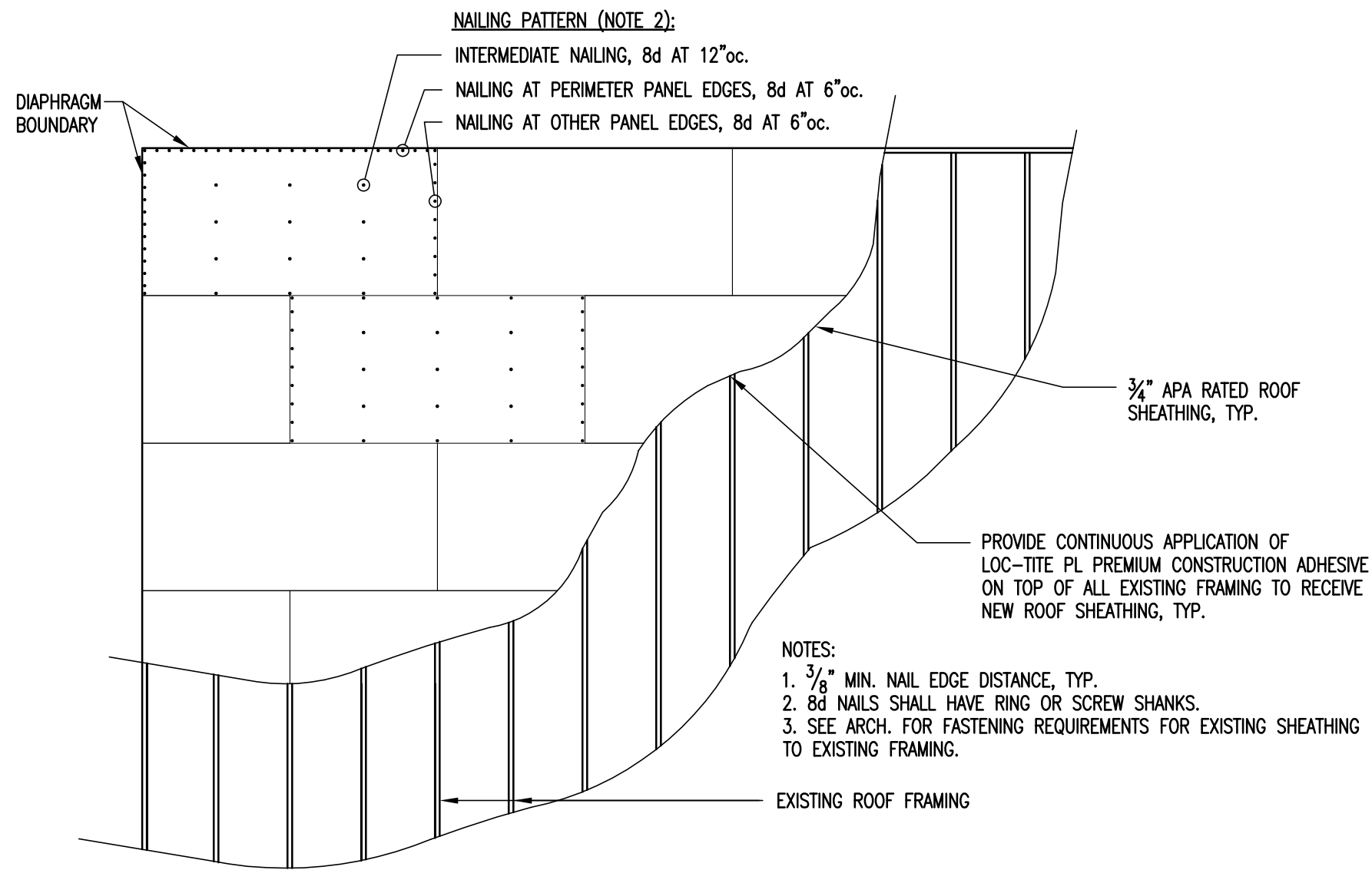
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NOTES AND BASIS OF DESIGN

SHEET NUMBER

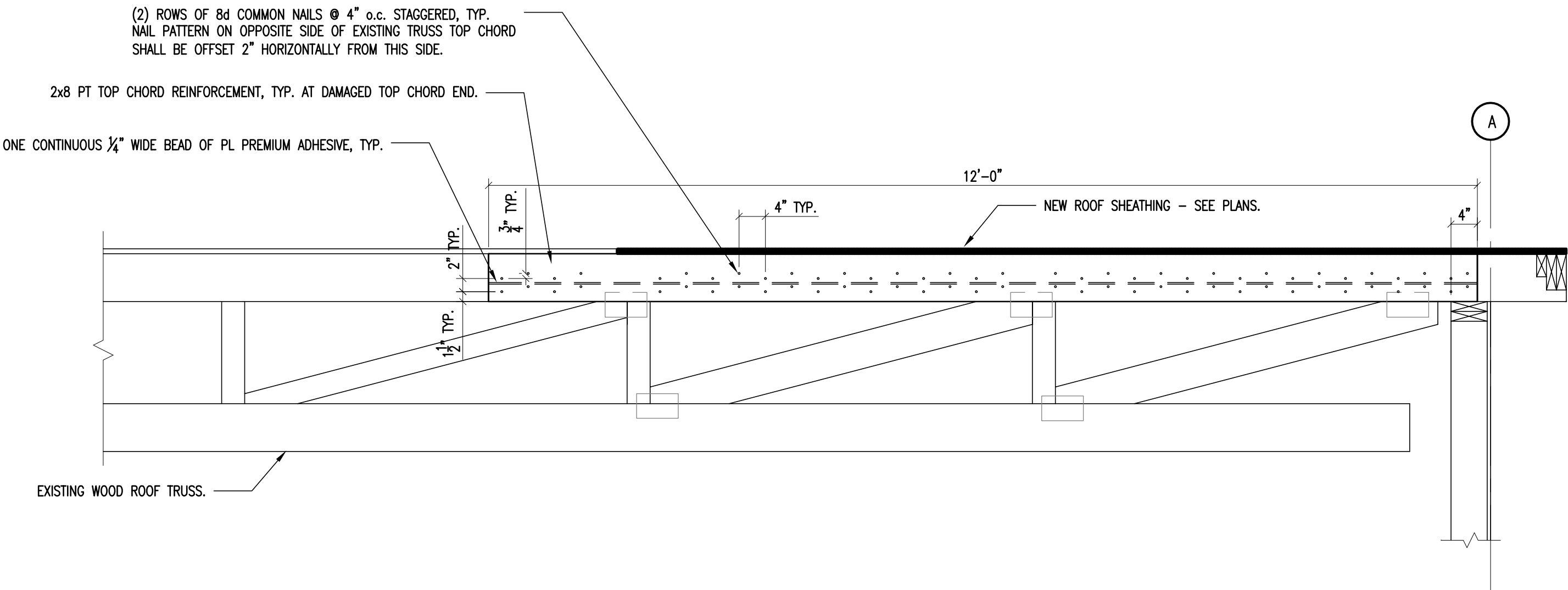
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$$3/32'' = 1' - 0''$$




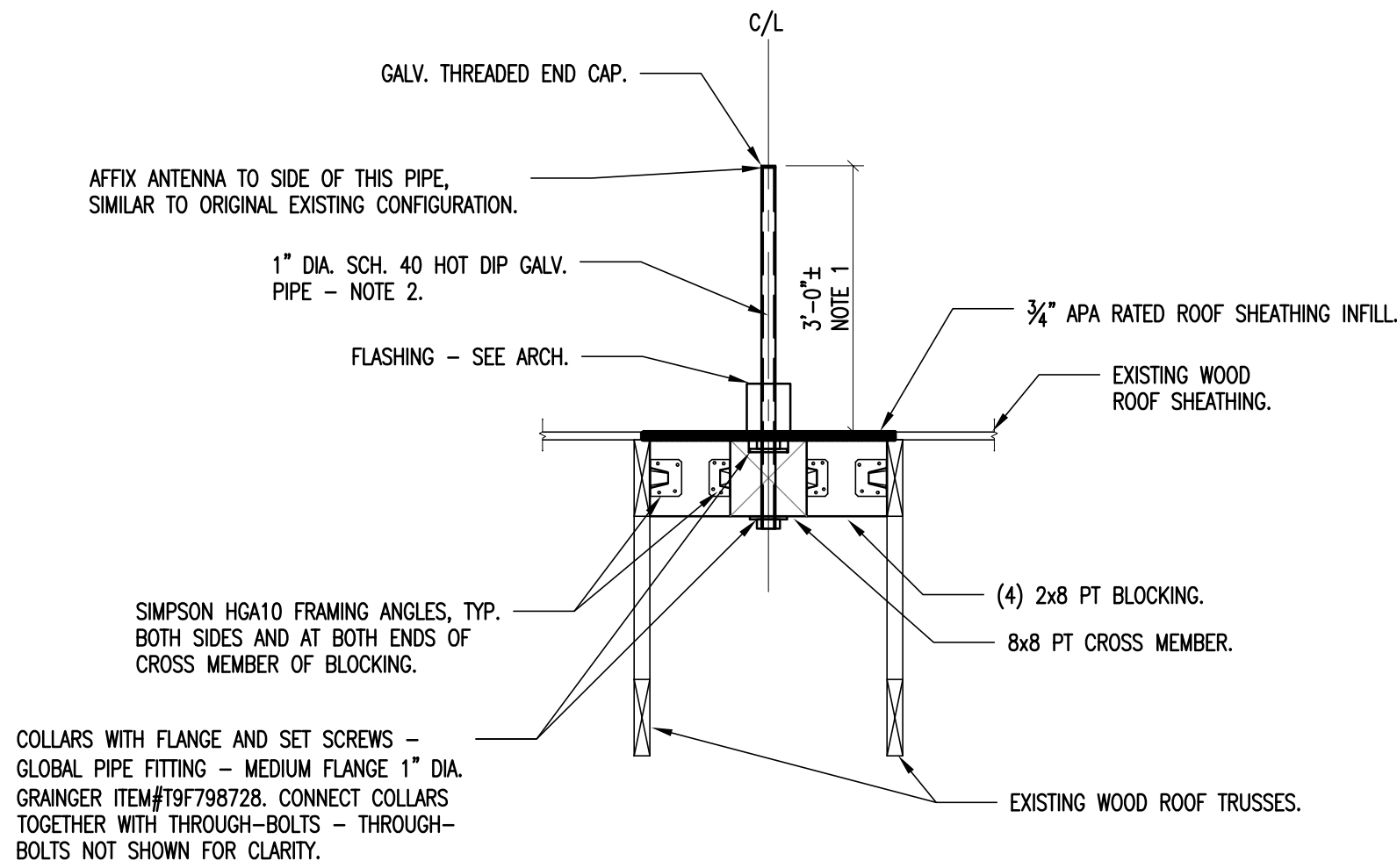
TYPICAL DETAIL: LAYOUT AND NAILING FOR NEW ROOF SHEATHING

3/4" = 1'-0"



TYPICAL DETAIL: DAMAGED ROOF TRUSS END REINFORCEMENT

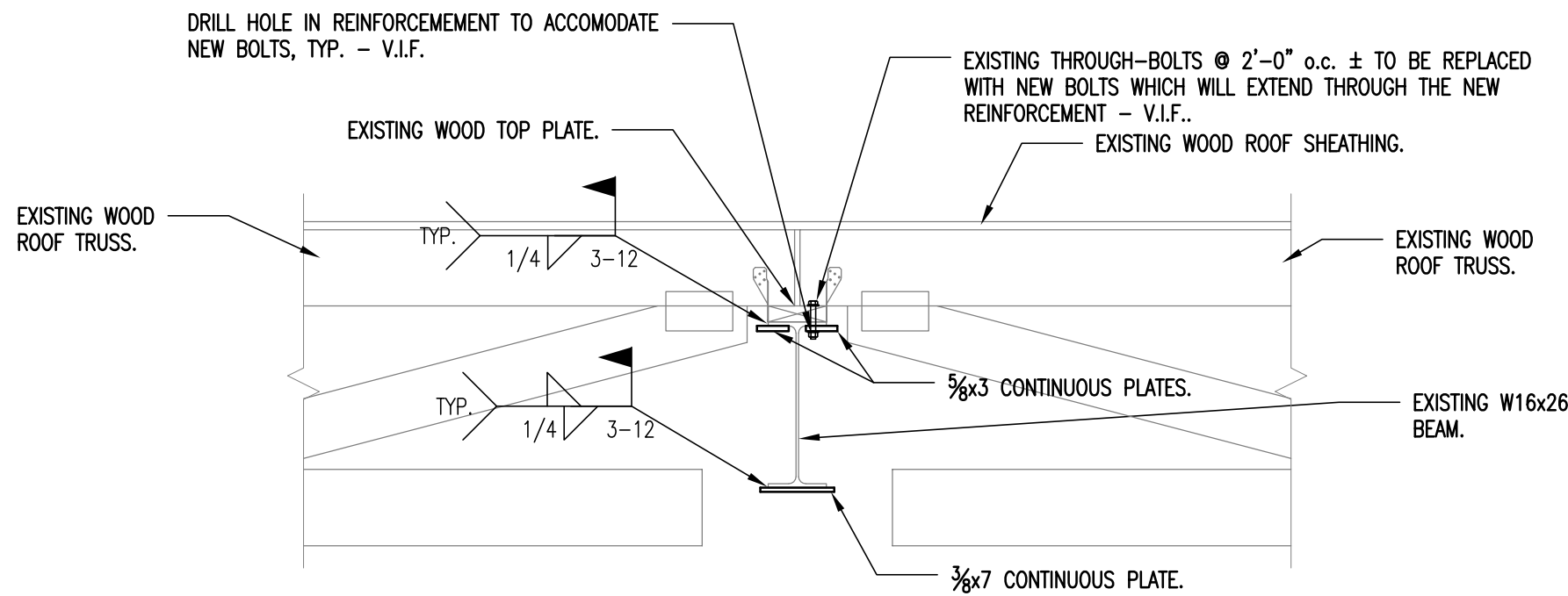
3/4" = 1'-0"



- NOTES:
- HEIGHT OF NEW PIPE ABOVE TOP OF ROOF TO MATCH HEIGHT OF ORIGINAL EXISTING PIPE ABOVE ROOF - V.I.F.
  - PROVIDE CLIPS, FASTENERS, ETC. AS REQUIRED FOR PROPER ATTACHMENT OF EXISTING ANTENNA EQUIPMENT TO NEW PIPE.

ATTACHMENT DETAILS FOR EXISTING ANTENNA

3/4" = 1'-0"



- NOTES:
- NEW CONTINUOUS PLATES SHALL EXTEND TO WITHIN 1'-6" OF C/L OF EXISTING COLUMNS.
  - ROOF SHALL BE FREE OF SNOW WHILE REINFORCEMENT IS BEING ADDED.

STEEL BEAM FLANGE REINFORCEMENT

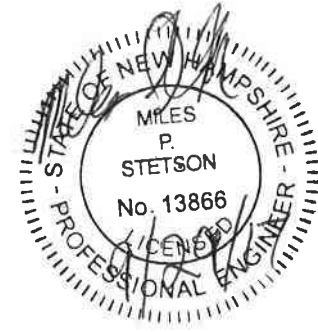
3/4" = 1'-0"

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REVISION	DATE	COMMENTS

PROJECT:

TOWN OF NEWPORT NH  
TOWN GARAGE REPAIRS

ISSUED:  
BIDDING/CONSTRUCTION

DRAWING TITLE:

STRUCTURAL DETAILS

DATE:

SEPTEMBER 29, 2017

SHEET NUMBER:

S2.0