

WALLINGFORD TOWN HALL
BOILER REPLACEMENT
PROJECT

WALLINGFORD, VERMONT



Engineering Services
of Vermont, LLC

Mechanical-Electrical Consulting Engineers

9 Washington St.
Rutland, VT 05702-6562
Phone: 802 855.8091
Email: Daniel.Dupras@esvllc.com

MAY 2024

PROJECT MANUAL INDEX

Invitation to Bid

Division 0 - Bidding and Contract Documents

Section 00 0100	Instructions to Bidders AIA A701, 1997 Edition (Referenced only, Entire Document incorporated)
Section 00 0120	Supplementary Instructions to Bidders
Section 00 0300	Bid Form
Section 00 0500	AIA Document A 101, 1997 Edition – Stipulated Sum (Referenced only, Entire Document incorporated)
Section 00 0700	AIA Document A 201, 1997 Edition (Referenced only, Entire Document incorporated)
Section 00 0800	Supplementary General Conditions

Division 1 - General Requirements

Section 01 10 00	Summary of Work
Section 01 29 00	Applications for Payment
Section 01 30 00	Administrative Requirements
Section 01 50 00	Temporary Facilities and Controls
Section 01 60 00	Project Requirements
Section 01 70 00	Execution and Closeout Requirements
Section 01 73 29	Cutting and Patching
Section 01 74 00	Construction Waste Management
Section 01 60 00	Materials and Equipment

Division 3- Concrete

Section 03 30 00	Cast-In Place Concrete
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Division 9- Finishes

Section 09 25 55	Repair of Gypsum Board
Section 09 09 00	Painting

Division 23- Mechanical

Refer to Drawings

Division 26- Electrical

Refer to Drawings

Drawing List

Mechanical – Basement Plan
Mechanical Details and Specification

M1
M2

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

INVITATION TO BID
Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

The Town of Wallingford invites Contractors to bid on the Boiler Replacement Project at the Wallingford Town Hall, Wallingford , VT. Work includes removal and replacement of existing oil fired boiler, piping, valves, insulation and controls including electrical, general construction work including, cutting, patching and painting.

Sealed bids will be received electronically by the **Engineering Services of Vermont Daniel Dupras**, daniel.dupras@esvtllc.com, until Monday July 15 at 9:00 AM.

Electronic bid specifications and plans will be available on June 15, 2024. Sets will be distributed via email. Printed copies are the responsibility of the bidder. Please contact Daniel W. Dupras at Engineering Services of VT, LLC, Telephone 1-802-855-8091.

A mandatory Pre-Bid Conference will be held on June 24, 2024 at 9:00AM at the site. Please meet at the front entrance.

Construction is anticipated to start following approval of bid, and shall be substantially complete on or before September 15, 2024.

The Owner reserves the right to reject any or all bids and to accept informality and irregularity in the bids.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

AIA DOCUMENT A 701
INSTRUCTIONS TO BIDDERS
1997 EDITION

SECTION 00 12 00 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS

1. THE WORK

- A. This project includes renovations to the Wallingford Town Hall to replace the existing boiler.

2. SECURING DOCUMENTS

- B. Obtain Contract documents as described in the Invitation to Bid

3. BID FORM

- A. In order to receive consideration, make bids in strict accordance with the following:
 - 1. Make bid upon the forms provided herein, properly signed and with all items completed. Do not change the wording of the bid form, and do not add words to the bid form. Unauthorized conditions, limitations, or provisions attached to the bid may be cause for rejection of the bid. If alterations by erasure or interlineation are made for any reason, explain such erasure or interlineation with a signed statement from the bidder.
 - 2. No telegraphic bid or telegraphic modification of a bid will be considered. No bids received after the time fixed for receiving them will be considered. Late bids will be returned unopened.
 - 3. Enclose each bid in a sealed envelope bearing the title of the work, the name of the bidder, and the date and hour of the bid opening. Submit only the original signed copy of the bid. It is the sole responsibility of the bidder to see that his bid is received on time.

5. EXAMINATION OF DOCUMENTS AND SITE OF WORK

- A. Before submitting a bid, each bidder shall examine the Drawings carefully, shall read the Specifications and all other proposed Contract Documents, and shall visit the site of the Work. Each bidder shall fully inform himself prior to bidding as to existing conditions and limitations under which the work is to be performed, and shall include in his bid a sum to cover the cost of items necessary to perform the Work as set forth in the proposed Contract Documents. No allowance will be made to a bidder because of lack of such examination or knowledge. The submission of a bid will be considered as conclusive evidence that the bidder has made such examination.

6. WITHDRAWAL OF BIDS

- A. A bidder may withdraw his bid, either personally or by written request, at any time prior to the scheduled time for opening bids.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- B. No bidder may withdraw his bid for a period of sixty (60) calendar days after the date set for opening thereof, and bids shall be subject to acceptance by the Owner during this period.

7. AWARD OR REJECTION OF BIDS

- A. The Contract, if awarded, will be awarded to the bidder who has proposed the lowest qualified contract sum, subject to the Owner's right to reject any or all bids and to accept informality and irregularity in the bids and in the bidding. The owner reserves to its sole discretion the right to reject any proposal that fails to demonstrate satisfactory compliance or competence with respect to any of these criteria:
 - 1. Cost competitiveness
 - 2. Completeness of the proposal
 - 3. Qualifications and references
- B. Credit will be given for demonstrated familiarity, background and experience with similar projects that would materially contribute to the success of the project or have a likelihood of saving time and expenses. The Owner reserves the right to reject any or all bids and to accept informality and irregularity in the bids and in the bidding.
- C. Notice will be given to each respondent on or within 60 business days of receipt of a proposal.

8. EXECUTION OF AGREEMENT

- A. The form of Agreement which the successful bidder will be required to execute is included in the Project Manual.
- B. The bidder to whom the Contract is awarded shall, within fifteen (15) calendar days after notice of award and receipt of agreement forms from the Owner, sign and deliver required copies to the Owner.
- C. At or prior to delivery of the signed Agreement, the bidder to whom the Contract is awarded shall deliver to the Owner those Certificates of Insurance required by the Contract Documents as are required by the Owner.
- D. Certificates of Insurance shall be approved by the Owner before the successful bidder may proceed with the work. Failure or refusal to provide Certificates of Insurance in a form satisfactory to the Owner shall subject the successful bidder to loss of time from the allowable construction period equal to the time of delay in furnishing the required material.

9. INTERPRETATION OF CONTRACT DOCUMENTS PRIOR TO BIDDING

- A. If any person contemplating submitting a bid for construction of the Work is in doubt as to the true meaning of any part of the proposed Contract Documents, or finds discrepancies in or omissions from any part of the proposed Contract Documents, he may submit to the Architect a written request for interpretation thereof not later than four (4) days before bids will be opened. The person submitting the request shall be responsible for its prompt delivery.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- B. Interpretation or correction of proposed Contract Documents will be made only by Addendum and will be mailed or delivered to each general contract bidders of record. The Owner will not be responsible for any other explanations or interpretations of the proposed Contract Documents.
- C. Omissions from the drawings and/or the specifications or the misdescription of details of work which are manifestly necessary to carry out the intent of the drawings and specifications, shall not relieve the Contractor from performing such omitted or misdescribed details of the work; but shall be performed as if fully and correctly set forth and described in the drawings and specifications using the most appropriate method, with final approval issued by the Architect to alleviate conflicts of scheduling, drawings, details and/or specifications.
- D. Design Intent:
 - 1. Purpose of drawings is to graphically depict characteristics and extent of The Project.
 - 2. Specifications included as part of Project Manual are provided to state materials type, function and source of materials.
 - 3. Reference standards are used in Specifications to describe, by inference, specific materials and may include recommended methods of installation or application based on industry standards.

10. PRE-BID CONFERENCE

- A. On the date and at the time given in the Invitation to Bid, a Site Inspection and MANDATORY Pre-Bid Conference will be held for the purpose of considering questions posed by the bidders. The conference will be open to qualified General Contractors and Subcontractor bidders.

11. REQUIREMENTS FOR RETAINAGE

- A. Until final payment, the Owner will pay Ninety percent (90%) of the amount due to the contractor on account of progress payments, unless otherwise specified in the Contract.
- B. At the Owner's discretion; the retainage may be reduced to two times the value of the punchlist at Substantial Completion.

12. The Owner reserves the right to modify the Contract Documents and rebid the project, if necessary, to meet the Owner's budgetary or financing requirements. The Owner further reserves the right to waive irregularities in the bids in the best interest of the project, or to reject any and all bids.

13. DAVIS-BACON

- A. This Project is not subject to Davis-Bacon requirements.

END OF SECTION 00 01 20

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

BID FORM

TO:

Town of Wallingford
75 School Street
Wallingford, VT 05773

1. Pursuant to and in compliance with the Invitation to Bid and the proposed Contract Documents relating to the Construction of:

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

The undersigned, having become thoroughly familiar with the terms and conditions of the proposed Contract Documents and with the local conditions affecting the performance and costs of the work at the place where work is to be performed, and having fully inspected the site in all particulars, hereby proposes and agrees to fully perform the Work within the time stated and in strict accordance with the Contract Documents, including furnishing any and all labor and materials, and to do all the Work required to construct and complete said Work in accordance with the Contract Documents, for the following sum of money:

1. **BASE BID:** All labor, materials, services, and equipment necessary for the completion of all Work shown on the Drawings and in the Specifications.

The Sum of: _____ Dollars (\$ _____)

2. The undersigned acknowledges receipt of the following addendum issued during the period of bidding, and understands that they shall be made part of the Contract.

Addenda No. _____ Dated _____

Addenda No. _____ Dated _____

Addenda No. _____ Dated _____

3. The undersigned acknowledges the Owner's right to reject this bid and that this bid shall remain open and not be withdrawn for a period of thirty (30) days from the date prescribed for its receipt.
4. In the event the Contractor proposes or is requested or required by the Owner to supply labor, equipment, material or subcontract services in conjunction with a Change to the Work, reimbursement shall be based upon an actual and reasonable cost plus a mark-up of _____ percent to cover Contractor's overhead and profit. The Owner will require verification terms of invoices, wage rates, time records, etc.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

5. Construction is anticipated to start as soon as possible after notice to proceed and be substantially complete as specified in the invitation to bid.

Respectfully Submitted,

By: _____

Name of Company

Business Address

City State Zip

(seal, if bid is by corporation)

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

AIA DOCUMENT A101
STANDARD FORM OF
AGREEMENT BETWEEN OWNER
AND CONTRACTOR
2017 EDITION

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

AIA DOCUMENT A201
GENERAL CONDITIONS OF THE
CONTRACT FOR CONSTRUCTION
2017 EDITION

SECTION 00 80 00 - SUPPLEMENTARY GENERAL CONDITIONS

1. STANDARD AIA FORMS

- A. General Conditions of the Contract for Construction, Standard Form A201, 2017 edition, and Standard Form of Agreement Between Owner and Contractor, Standard Form A101, 2017 edition where the basis for payment is a stipulated sum, all published by the American Institute of Architects are hereby made a part of the Contract to the same extents as if bound herein. These printed General Conditions, including modifications hereinafter listed shall apply to all contractors and subcontractors.

2. MODIFICATIONS TO STANDARD AIA GENERAL CONDITIONS

- A. The following supplements modify the "General Conditions of the Contract for Construction", AIA Document A201, 2017 edition. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions shall remain in effect.

Delete and replace paragraph 3.7.1: Refer to Section 01 30 00 – Administrative Requirements for permit requirements.

Add paragraph 3.12.11: Refer to Section 01 30 00 – Administrative Requirements for additional Shop Drawing requirements.

Delete and replace paragraph 7.2.1: A Change Order is a written instrument prepared by the Contractor and signed by the Owner, Contractor and Architect stating their agreement upon all of the following:

Add paragraph 7.2.2: Refer to Section 01 2000 – Price and Payment Procedures for Change Order processing requirements.

Add paragraph 9.3.1.1: Refer to Section 01 20 00 – Price and Payment Procedures for Application for Payment processing requirements.

Add paragraph 9.3.1.3: Until Substantial Completion, the Owner shall pay ninety percent (90%) of the amount due the Contractor on account of progress payments.

Add the following sentence to paragraph 9.8.5: the payment shall be sufficient to increase the total payments to one hundred percent (100%) of the Contract Sum, less two times the amount as the Architect shall determine for incomplete Work and unsettled claims.

Add paragraph 9.10.2.1: Before final payment, the Contractor shall furnish complete Waivers of Lien for all major suppliers of materials and/or labor used by him in the work. Additional waivers may be requested during the course of construction. If so requested, progress payment processing will not proceed until such waiver or waivers are supplied.

Add paragraph 10.3.1.11: Refer to Section 01 70 00 – Execution and Closeout Requirements for additional hazardous materials requirements.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

Delete paragraph 11.1.2: The Owner shall NOT require a Performance Bond and a Labor and Materials Payment Bond.

Add paragraph 11.1.5.1 and the following subparagraphs: Contractor shall provide herein cited policies and certify to the existence of the same, subject to the conditions herein set forth. The policies are as follows:

- 11.1.5.1.1 General Liability Insurance shall be provided as specified below:
- | | | |
|----|---|--------------|
| a. | General aggregate | \$ 2,000,000 |
| b. | Products & completed operations aggregate | \$ 2,000,000 |
| c. | Personal & Advertising injury | \$ 2,000,000 |
| d. | Each occurrence | \$ 1,000,000 |
| e. | Fire damage (any one fire) | \$ 100,000 |
| f. | Medical expenses (any one person) | \$ 5,000 |
| g. | Umbrella | \$ 3,000,000 |
- Assignment Limits: Project CG2503
Assignment Limits: Location CG2504

11.1.5.1.2 Business Auto Policy – Limits required are \$1,000,000 CSL. Coverage shall extend to hired and non-owned vehicles and employees of the insurers should be initially named.

11.1.5.1.3 Workers Compensation Coverage including the voluntary compensation endorsement subject to the Vermont Statutory Provisions and Employers Liability of an amount of not less than \$100,000 bodily injury, each accident, \$100,000 by disease, each employee, \$500,000 policy aggregate limit by disease.

11.1.5.1.4 All policies covering the jobsite must meet the basic provisions set forth relative to the builder's risk: An A.M. Best Rating of A12 or better, and an admitted carrier in the State of Vermont.

11.1.5.1.5 A Certificate of Insurance must be rendered to the Owner and must specify written notice of cancellation per Vermont State requirements. The Contractor shall be responsible for all its subcontractors providing certificates of insurance to the Owner. All certificates must be in the Owner's possession before the Contractor is allowed on the jobsite.

11.1.5.1.6 The Contractor is solely responsible for the well being of his equipment and the equipment of his subcontractors at the job site.

Delete and replace paragraph 11.2.1: The Owner shall purchase and maintain insurance, including property insurance, once known as Builder's Risk, of the type and limits of liability as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the project is located.

Add paragraph 13.6: All work shall be done in accordance with applicable national, state and local codes. All items necessary to complete the work in this manner are to be provided and installed as part of this Contract.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

Add paragraph 13.7: A copy or copies of the plans and specifications shall be on the job site at all times and shall be protected from the weather and other deleterious aspects of the construction process. They shall be available at all times in their entirety to the Architect, Owner, and Contractor or others who may wish to review them in an appropriate well-lighted place.

Add paragraph 13.8: It is hereby understood that the Contractor has carefully reviewed the project and fully understands the contract documents and their intent. If there are any questions whatsoever concerning the project, the contract documents or their intent, the Contractor shall contact the Architect for clarification of the point(s) in question. No additional project cost will be allowed because of discrepancies in the contract documents that have not been brought to the attention of and clarified by the Architect.

Add paragraph 13.9: Where specifications differ between sheet, general details, other written specifications or the drawings, the more costly and difficult solution shall apply.

Add paragraph 13.10: All dimensions shall be checked and verified in the field by the Contractor. Any errors found on the drawings shall be brought to the attention of the Architect before construction.

END OF SECTION 00 08 00

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

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Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

FORM OF GUARANTEE

The guarantor is to provide to the Architect in duplicate a written guarantee on his own letterhead incorporating the following text and providing as shown pertinent information:

(Owner's Project)

(Date of Issuance)

(Owner's Address)

(Gentlemen or Sir:)

(We or I) as (General Contractor or Subcontractor) for (all work or give category of work) for the (name of project and location of project) hereby guarantee all work performed by us and our subcontractors for a period of one (1) year (or state longer period as may be required by specific Section of the Specification and guarantor is a subcontractor) from (give date of Substantial Completion as determined by the Architect).

All defects in the aforesaid work which may develop within the specified period, due to faults in materials and/or workmanship (add any specific requirements mentioned in Section of Specifications when special guarantee is required) will be repaired and corrected without extra cost to the Owner, within seven (7) days after receipt of the Owner's written notice.

Nothing herein intends or implies that this guarantee shall apply to work which has been abused or Neglected by you, the Owner, or your successor in interest.

(Name of Contractor or Subcontractor)

By: _____
(Individual or Officer)

(Title)

(Name of General Contractor)
(If name above is a subcontractor)

By: _____
(Individual or Officer)

(Title)

SECTION 01 10 00 - SUMMARY OF WORK

PART I GENERAL

1.1 PROJECT

A. Project Name:

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

1. Owner: Town of Wallingford
2. Engineers Name: Engineering Services of Vermont, LLC
 - a. Engineers Contact: Daniel Dupras, P.E., phone: 802-855-8091
3. Contract Documents, dated May 2024, were prepared for the Project by Engineering Services of Vermont, 9 Washington Street, Rutland, Vermont 05701.
4. The work, in general the project consists of the following:
 - a. Demolition work including removal of existing boiler and fuel oil systems, including cutting patching and painting as necessary to install new boiler and piping systems.
 - b. New pumps, piping and accessories.
 - c. Installation of intake and exhaust vent.
 - d. Installation of new boiler unit.
 - e. New controls for boilers, pumps and water heaters.
 - f. Connection to new building gas regulator provided by the owners gas company.
 - g. Patching and painting of existing finishes affected by new work, including repainting of the existing radiation enclosures.
 - h. Electrical work as required for new work.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

1.2 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on a Stipulated Price as described in Document 00 05 00 - Agreement Form will be utilized for the project.

1.3 OWNER OCCUPANCY

- A. Owner will partially occupy the building during construction.
- B. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

1.4 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to portion of building and site under construction.
- B. Arrange use of site and premises to allow:
 - 1. Owner limited occupancy.
 - 2. Use of site and premises by the public.
- C. Provide access to and from site as required by law and by Owner:
- D. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
- E. Do not obstruct roadways, sidewalks, or other public ways except for the entrance affected by this project.
- F. Existing building spaces may be used for storage as arranged with the Owner and identified at the Pre-Bid Conference.
- G. Time Restrictions: 7:00 AM to 6:00 PM, weekdays.
- H. Utility Outages and Shutdown:
 - 1. Do not disrupt or shut down life safety systems, including but not limited to fire sprinklers and fire alarm system, without 7 days' notice to Owner and authorities having jurisdiction.
 - 2. Limit shutdown of utility services to 4 hours at a time.
 - 3. Prevent accidental disruption of other utility services.

1.5 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.
- B. These conventions include:
 - 1. Imperative mood and streamlined language are generally used in the specifications. The words "shall," "shall be," or "shall comply with," depending on 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.
 - 3. Abbreviated Language: Language used in the specifications and other contract documents is often abbreviated. Words and meanings shall be interpreted as appropriate with Architect as final arbiter. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural, and plural words shall be interpreted as singular where applicable as the context of the Contract Documents indicates.
 - 4. Occasionally, the indicative or subjunctive mood may be used for clarity to describe responsibilities that must be fulfilled indirectly by Contractor.
- A. Definitions:
 - 1. Furnish (used interchangeably with Supply): Purchase of materials or systems and delivery to the site, including payment of cost of transport, handling and storage and payment of related taxes, governmental fees and design fees. Quantities shall include industry standard allowance for waste. Delivery shall be coordinated with and avoid delay of construction progress. Furnishing shall include providing shop drawings and installation instructions.
 - a. Furnished material or systems shall not include those requiring a certified installer or special conditions related to warranty, unless contractual arrangements are agreed upon.
 - 2. Install: Incorporation of a material or system into the Work. Installation shall include the cost of preparation and testing, specified or required by the manufacturer. Installation shall include all permits, permit fees and inspections. Installation shall include installation materials such as fasteners, adhesives, leveling compounds, grouts, hardwired connections, pigtails, plugs (to match receptacle configuration), range/oven tip preventer, nipples, iron pipe, drip legs, flex pipe, shut-off valves, drain assemblies, sealed rigid metal ductwork, wall caps, filters, finish trims, sealants, anchors, levelers, batteries, lamps and special tools required for installation.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

a. Installation shall comply with the manufacturer's warranty requirements.

3. Provide: Furnish and install.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 10 00

SECTION 01 20 00 – PRICE AND PAYMENT PROCEDURES

PART I GENERAL

1.1 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Documentation of changes in Contract Sum and Contract Time.
- C. Change procedures.
- D. Correlation of Contractor submittals based on changes.
- E. Procedures for preparation and submittal of application for final payment.

1.2 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information shall be considered in lieu of standard form specified; submit draft to Architect for approval.
- B. Forms filled out by hand shall not be accepted.
- C. Submit proposed Schedule of Values electronically within 5 days after date of Owner-Contractor Agreement.
- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification section. Identify site mobilization and insurance.

1.3 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Form to be used: AIA G702 and G703.
 - 1. Electronic media printout including equivalent information shall be considered in lieu of standard form specified; submit sample of form to Architect for approval not less than 20 days prior to application for payment
- C. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- D. Forms filled out by hand will not be accepted.
- E. Execute certification by signature of authorized officer.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- F. Submit two copies of each Application for Payment.
- G. Application for Payment for Materials Stored Off-site:
 - 1. Submit Certificate of Insurance
 - 2. Submit shipping invoice with value of materials
 - 3. Allow Architect access to stored materials
- H. Do not submit application for payment for materials stored more than 20 miles from job site.
- I. When Engineer requires substantiating information, submit data justifying dollar amounts in question.

1.4 MODIFICATION PROCEDURES

- A. For minor changes not involving an adjustment to the Contract Sum or Contract Time, Architect will issue instructions directly to Contractor.
- B. For other required changes, Architect shall issue a Construction Change Directive signed by Owner instructing Contractor to proceed with the change. Contractor shall subsequently issue a Change Order consistent with the CCD.
 - 1. The CCD shall include an estimate of change in Contract Sum and Contract Time. The Contractor shall inform the Owner of deviation from estimate within 7 days.
- C. For changes for which advanced pricing is desired, Architect shall issue documents describing the changes. Contractor shall prepare and submit a fixed price quotation within 7 days.
 - 1. The Contractor shall not proceed with work related to the change until directed to do so by Owner.
- D. Computation of Change in Contract Sum: As specified in the Agreement and Conditions of the Contract.
 - 1. Contractor's price quotation shall be based on substantiated direct cost of labor and material plus the percentage indicated in the Contract for the Contractor's overhead and profit. Contractor's overhead includes Contractor's office and management expenses, insurance, bonds and fees.
 - 2. For unit prices and alternates listed in Contract.
- E. Substantiation of Costs: Provide full information required for evaluation.
 - 1. Time records and wage rates paid.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

2. Invoices and receipts for products and equipment.
 3. Invoices from subcontracts including time records, wage rates paid, invoices and receipts for products and equipment.
- F. Execution of Change Orders: Contractor shall issue Change Orders for signature of parties as provided in the Conditions of the Contract. Multiple Construction Change Directives may be include in a Change Order only with the permission of the Architect. Do not include a Change Order in an application for payment until signed by all parties.
1. Change Order Form: AIA G701
- G. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- H. Promptly revise progress schedules to reflect any changes in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION 01 20 00

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

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SECTION 01 30 00 – ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Preconstruction Meeting
- B. Progress meetings.
- C. Construction progress schedule.
- D. Submittals for review, information and project closeout.
- E. Submittal procedures.

PART 2 –PRODUCTS – NOT USED

PART 3 –EXECUTION

3.1 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Engineer.
 - 3. Contractor.
- C. Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission insurance certificates.
 - 3. Submission of list of Subcontractors, schedule of values, and progress schedule.
 - 4. Designation of personnel representing the parties to Contract, and Architect.
 - 5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 6. Scheduling.
 - 7. Permit Procedures.
- D. Contractor will record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

3.2 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum bi-weekly intervals.
- B. Contractor will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede, or will impede, planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Maintenance of progress schedule.
 - 7. Corrective measures to regain projected schedules.
 - 8. Planned progress during succeeding work period.
 - 9. Maintenance of quality and work standards.
 - 10. Effect of proposed changes on progress schedule and coordination.
 - 11. Other business relating to Work.
- E. Contractor will record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.3 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 days after joint review, submit complete schedule.
- B. Submit updated schedule with each Application for Payment.

3.4 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents. Architect will mark each submittal with an action stamp indicating action taken as follows:

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

1. "No Exceptions Taken" The Work covered by the submittal may proceed provided it complies with the Contract Documents.
 2. "Approved as Noted" The Work covered by the submittal may proceed provided it complies with the Architect's notes and the Contract Documents.
 3. "Revise and Resubmit" Do not proceed with the Work covered by the submittal including purchasing, fabrication, delivery or any other related activity. Revise and prepare a new submittal according to the Architect's notes.
 4. "Rejected-Resubmit" Do not proceed with the Work covered by the submittal. Prepare a new submittal for Work that conforms to the Contract Documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.

3.3 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
1. Design data.
 2. Certificates.
 3. Test reports.
 4. Inspection reports.
 5. Manufacturer's instructions.
 6. Manufacturer's field reports.
 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.4 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout:
1. Project record documents.
 2. Operation and maintenance data.
 3. Warranties.
 4. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

3.5 SUBMITTAL PROCEDURES

- A. Documents: Submit each submittal with submittal form in a single PDF file. An electronically-marked up file will be returned after review. The contractor shall provide his sub-contractors and suppliers with electronic or printed copies of the reviewed submittal and retain a copy with his record drawings.
 - 1. Electronic File Name: Include Section number, sequential number, revision number and section name as follows: 08-7100-1-1 Door Hardware
 - 2. Upload submittals in drop box established and maintained by ESVT
- B. Identify Project, Contractor, Subcontractor, and supplier; pertinent drawing and detail number, and specification section number as appropriate on each PDF file.
- C. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, integration with adjacent construction and coordination of information is in accordance with the requirements of the Contract Documents.
 - 1. Clearly identify variations from Contract Documents and include a written description of proposed variance.
- D. Documents: Create electronically-generated PDFs at native size, in order, and right side up.
- E. Scanned and illegible files shall be rejected. Un-flattened files may be rejected. Contractor's marks shall be black or a single color. Provide space for Architect's review stamp.
- F. Deliver samples to job site office trailer. If there is no job site office trailer, deliver samples to Architect's office. One of each sample may be retained by Architect.
- G. Allow 15 days excluding delivery time to and from the Contractor for review of each submittal.
- H. When revised for resubmission, identify all changes made since previous submission.
- I. Submittals not requested, submittals related to worker's safety and MSDS sheets shall not be recognized or processed.

END OF SECTION 01 30 00

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 -GENERAL

1.1 SECTION INCLUDES

- A. Temporary utilities.
- B. Temporary telecommunications services.
- C. Temporary sanitary facilities.
- D. Temporary Controls: Signage, Barriers, enclosures, and fencing.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

1.2 TEMPORARY UTILITIES

- A. Owner will provide the following:
 - 1. Electrical power and metering, consisting of connection to existing facilities.
 - a. Do not use electric resistance heat.
 - 2. Water supply, consisting of connection to existing facilities.
- B. Provide and pay for all heating and cooling and ventilation required for construction purposes.

1.3 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services.
- B. Telecommunications services shall include:
 - 1. Provide Superintendent with cellular telephone on-site and in service at all times during construction activities.

1.4 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain temporary sanitary facilities and enclosures in compliance with authority having jurisdiction. Provide at the time of mobilization. Use of existing facilities is not permitted.
- B. Maintain daily in clean and sanitary condition.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

1.5 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- C. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.6 FENCING

- A. Construction: Provide around all construction activity areas.

1.7 INTERIOR ENCLOSURES

- A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:

1.8 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Existing parking areas identified at the Pre-Bid Conference may be used for construction parking.

1.9 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids.

**Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT**

- C. If material to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable materials outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Comply with relevant waste recycling and disposal regulations including Vermont Act 148.

1.10 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, and prior to Substantial Completion inspection.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition.

PART 2 –PRODUCTS – NOT USED

PART 3 –EXECUTION - NOT USED

END OF SECTION 01 50 00

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

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SECTION 01 60 00 – PROJECT REQUIREMENTS

PART 1 -GENERAL

1.1 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations and procedures.

PART 2 –PRODUCTS

2.1 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. Where all other criteria are met, Contractor shall give preference to products that:
 - 1. If used on interior, have lower emissions.
 - 2. If wet-applied, have lower VOC content.
 - 3. Have a published GreenScreen Chemical Hazard Analysis.

2.2 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products specified by naming one or more manufacturers: Use a product complying with specifications by of one of the manufacturers named.
 - 1. No substitutions are allowed where so indicated in individual specification sections.
 - 2. Inclusion of a manufacturer on a list of acceptable manufacturers does not infer that The manufacturer has an acceptable product.
 - 3. Submit a request for substitution for any manufacturer not named.
- C. Where a “Basis of Design” product is listed in individual specification sections, all other equal products proposed by the Bidder will be considered substitutions.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

1. Where there is conflict between “Basis of Design Product” and the specifications herein, “Basis of Design” product characteristics published by the manufacturer shall govern.
 2. Where indicated in individual specification sections, some substitutions must be submitted and reviewed prior to the Bid and, if accepted, will be included by addendum.
 3. A substitution may be rejected, if the proposed product does not offer the same range of color, finish and other aesthetic and performance characteristics.
- D. Submit a request for substitution for any manufacturer not named.

PART 3 –EXECUTION

3.1 SUBSTITUTION PROCEDURES

- A. Submit request for substitutions in a timely manner that does not affect the progress of the work; allowing 7 working days for Architects review.
- B. Document each request with complete data substantiating compliance of the proposed substitution with the Contract Documents.
- C. A request for substitution constitutes a representation that the submitter:
 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 2. Will provide the same warranty for the substitution as for the specified product.
 3. Will coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
 4. Waives claims for additional costs or time extension that may subsequently become apparent.
 5. Will reimburse Owner and Architect for review or redesign services associated with re-approval by authorities.
- D. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- E. Substitution Submittal Procedure:
 1. Submit PDF copies of request for substitution for consideration. Limit each request to one proposed substitution.
 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 3. The Architect will notify Contractor in writing of decision to accept or reject request.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

3.2 TRANSPORTATION AND HANDLING

- A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- B. Transport and handle products in accordance with manufacturer's instructions.
- C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.3 STORAGE AND PROTECTION

- A. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- F. Prevent contact with material that may cause corrosion, discoloration, or staining.
- G. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- H. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION 01 50 00

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

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SECTION 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 -GENERAL

1.1 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition.
- C. Cutting and patching.
- D. Cleaning and protection.
- E. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.2 RELATED REQUIREMENTS

- A. It is hereby understood that the Contractor has carefully reviewed the project and fully understands the contract documents and their intent. If there are any questions whatsoever concerning the project, the contract documents, or their intent, the Contractor shall contact the Architect for clarification of the point(s) in question. No additional project cost will be allowed because of discrepancies in the contract documents that have not been brought to the attention of and clarified by the Architect.
- B. When discrepancies have not been brought to the attention of and clarified by the Architect in a timely manner, the more costly and difficult solution shall apply.
- C. All dimensions shall be checked and verified in the field by the Contractor. Any errors found on the drawings shall be brought to the attention of the Architect for correction.

1.3 PROJECT CONDITIONS

- A. Hazardous Materials: Refer to the Owner's hazardous materials survey.
 - 1. There may be lead-containing paint. Execute demolition operations or surface preparation for refinishing affecting lead-containing paint coated surfaces in accordance with all state and federal regulations.
 - 2. Hazardous materials, other than lead-containing paint, will be removed by Owner before start of Work.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

3. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Owner. Allow for the removal of unforeseen hazardous materials by Owner under separate contract.
- B. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- C. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.

PART 2 –PRODUCTS

2.1 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 60 00 - Product Requirements.

PART 3 -EXECUTION

3.1 EXAMINATION

- A. Verify that existing conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting or patching. After uncovering existing work assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.
- G. Warranties: Obtain from Owner copies of warranties on existing materials or systems affected by the Work. Comply with warranty conditions so as to have no deleterious effect on the Owner's warranty rights.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.4 ALTERATIONS

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
 - 1. Verify that construction and utility arrangements are as shown.
 - 2. Report discrepancies to Architect before disturbing existing installation.
 - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Keep areas in which alterations are being conducted separated from other areas that are still occupied.
 - 1. Provide, erect, and maintain temporary dustproof partitions to isolate work areas from construction areas.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- C. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
 - 1. Where openings in exterior enclosure exist, provide construction to make exterior enclosure weatherproof.
 - 2. Insulate existing ducts or pipes that are exposed to outdoor ambient temperatures by alterations work.
- D. Remove existing work as indicated and as required to accomplish new work.
 - 1. Remove items indicated on drawings.
 - 2. Relocate items indicated on drawings.
 - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
 - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- E. Protect existing work to remain.
 - 1. Prevent movement of structure; provide shoring and bracing if necessary.
 - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
 - 3. Repair adjacent construction and finishes damaged during removal work.
- F. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- G. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.
- H. Refinish existing surfaces as indicated:
 - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
 - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- I. Clean existing systems and equipment.
- J. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- K. Do not begin new construction in alterations areas before demolition is complete.
- L. Comply with all other applicable requirements of this section.

3.5 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching. B. See Alterations article above for additional requirements.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-conforming work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- D. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- E. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- F. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material, to full thickness of the penetrated element.
- G. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.6 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.7 ENERGY CODE COMPLIANCE CERTIFICATION

- A. Perform and pay for all testing and inspections to demonstrate compliance with 2020 Vermont Commercial Building Energy Standards.
- B. Complete the Compliance Certificate and Construction Affidavit. Affix one copy of each to the inside of the main electrical panel. Submit one copy of each to the Vermont Department of Public Service and Town Clerk of the town in which the project is located.
 - 1. Obtain receipts from Vermont Department of Public Service and Town Clerk. Submit receipts to Architect.

3.8 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.9 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

3.10 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

END OF SECTION 01 70 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 GENERAL PROVISIONS

- A. Contractor shall be responsible for all cutting, fitting and patching to complete the work. The Contractor shall submit a proposal describing procedures in advance of the time cutting and patching will be performed. Request approval to proceed. Include the following:
1. Describe extent of cutting and patching. Show how it will be performed and indicate why it cannot be avoided.
 2. Describe changes to existing construction. Include changes to structural elements and operating components and changes in the building's appearance and other significant visual elements.
 3. List products to be used and firms that will perform Work.
 4. Indicate dates when cutting and patching will be performed.
 5. Utilities: List utilities that will be disturbed or relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
 6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.
 7. Approval to proceed does not waive the Engineer's right to later require complete removal and replacement of unsatisfactory work.
- B. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.
1. Obtain approval before cutting and patching the following structural elements:
 - a. Foundation construction (if applicable)
 - b. Bearing and retaining walls.
 - c. Miscellaneous structural metals.
 - d. Steel and steel framing members. (if applicable)
 - e. Reinforced concrete slabs. (if applicable)
- C. Operational Limitations: Do not cut and patch operating elements in a manner that would reduce their capacity to perform as intended. Do not cut and patch operating elements in a manner that would increase maintenance or decrease operational life or

**Wallingford Town Hall
Boiler Replacement Project**
Wallingford, VT

safety.

1. Obtain approval before cutting and patching the following operating elements or safety related systems:
 - a. Primary operational systems and equipment
 - b. Membrane and flashings
 - c. Fire protection systems.
 - d. Electrical wiring systems.
 - e. Control Systems

- D. Visual Requirements: Do not cut and patch construction exposed in a manner that would, in the Engineer's opinion, reduce the building's aesthetic qualities. Do not cut and patch in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

- E. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged in such a manner as not to void warranties.

PART 2- PRODUCTS

2.1 GENERAL

- A. Use materials identical to existing materials. For exposed surfaces use materials that visually match existing adjacent surfaces to the fullest extent possible. If identical materials are unavailable use materials whose installed performance will equal or surpass that of existing materials.

PART 3- EXECUTION

3.1 GENERAL

- A. Examine surfaces to be cut and patched and conditions under which work is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action.
 1. Before proceeding, meet at the project site with parties involved in cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

- B. Temporary Support: Provide temporary support of work to be cut.

- C. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- D. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- E. Avoid cutting pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.
- F. Performance: Employ skilled workmen to perform cutting and patching. Proceed at the earliest feasible time and complete without delay.
 - 1. Cut construction to install other components or perform other construction and subsequent fitting and patching required to restore surfaces to their original condition.
- G. Cutting: Cut using methods that will not damage elements retained or adjoining construction. Comply with the original Installer's recommendations.
 - 1. Use hand or small power tools designed for sawing or 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. To avoid marring finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
 - 4. Where services are required to be removed, relocated, or abandoned, by-pass utility services before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.
- H. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 1. Inspect and test patched areas to demonstrate integrity of the installation.
 - 2. 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.
 - 3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove floor and wall coverings and replace with new materials to achieve uniform color and appearance.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

4. Patch, repair, or rehang ceilings as necessary to provide an even-plane surface of uniform appearance.
 5. Where patching occurs in a smooth painted surface, extend final paint coat over entire surface containing the patch after the area has received primer and second coat.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or finishing materials. Restore damaged pipe covering to its original condition.
 - J. Fire Sealing: Any new hole made in existing fire rated assemblies shall be fire sealed with U.L. Listed materials to maintain fire rating. Smoke seal all other penetrations to maintain integrity of smoke partition, use U.L. Listed fire sealants.

END OF SECTION 01 73 29

SECTION 01 74 00 – CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 WASTE MANAGEMENT REQUIREMENTS

- A. Owner requires that this project generate the least amount of trash and waste possible.
- B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.
- C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.
- D. Required Recycling, Salvage, and Reuse: Provide recycling for the following materials:
 - 1. Aluminum and plastic beverage containers.
 - 2. Corrugated cardboard.
 - 3. Wood pallets.
 - 4. Clean dimensional wood, use for blocking and furring where possible.
 - 5. Land clearing debris, including brush, branches, logs and stumps.
 - 6. Concrete.
 - 7. Concrete masonry units.
 - 8. Asphalt paving.
 - 9. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, concrete reinforcing, doors and door frames, and other items made of steel, iron, aluminum, copper, zinc, lead, brass and bronze.
 - 10. Glass.
 - 11. Gypsum drywall and plaster.
 - 12. Carpet, carpet cushion, both new and removed: DuPont (<http://flooring.dupont.com>) and Interface (www.interfaceinc.com) conduct reclamation programs.
 - 13. Mechanical and electrical equipment.
 - 14. Fluorescent light bulbs.
- E. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements using Vermont Agency of Natural Resources, Waste Management and Prevention Division, Construction Site Reduction Plan dated March 2015.
- F. The following sources may be useful in developing the Waste Management Plan:
 - 1. Meyers Recycling Center.
 - 2. Casella Waste Management.
- G. Methods of trash/waste disposal that are not acceptable:
 - 1. Burning on the project site.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

2. Burying on the project site.
 3. Dumping or burying on other property, public or private.
 4. Other illegal dumping or burying.
- H. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to, Federal, State and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.2 SUBMITTALS

- A. See Section 01 30 00 – Administrative Requirements, for submittal procedure.
- B. Submit Waste Management Plan, including the following information:
1. Analysis of trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
 2. Landfill Options: The name, address and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
 3. Landfill Alternatives: List all waste materials that will be diverted from the landfills by reuse, salvage, or recycling.
 4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse and disposal.
 5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities, including separation procedures for recyclables, storage and packaging.
 6. Transportation: Identify the destination and means of transportation of materials to be recycled, whether the material will be site-separated and self-hauled to designated centers or whether mixed materials will be collected by waste hauler.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 WASTE MANAGEMENT PLAN IMPLEMENTATION

- A. Manager: Designate an on-site person(s) responsible for instructing workers and overseeing and documenting results of Waste Management Plan.
- B. Communication: Distribute copies of Waste Management Plan to job site foreman, each subcontractor, Owner and Architect.
- C. Instruction: Provide on-site instruction of appropriate separation, handling and recycling, salvage, reuse, and return methods to be reused by all parties at the appropriate stages of the project.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- D. Meetings: Discuss trash/waste management goals and issues at project meetings:
 - 1. Pre-construction meeting.
 - 2. Regular job-site meetings.

- E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return and disposal for use by all contractors and installer.
 - 1. Provide containers as required. Provide weathertight containers.
 - 2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
 - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

- F. Recycling: Separate, store, protect and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling center.

END OF SECTION 01 74 00

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

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SECTION 03 03 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section.

1.2 SUMMARY

- A. Extent of Cast-In-Place concrete work is shown on drawings, in general this work includes new concrete pad for outdoor condensing units support as indicated on the drawings.

1.3 SUBMITTALS

- A. Product Data: Submit data for proprietary materials and items, including reinforcement and forming accessories, and others as requested by Engineer.
- B. Shop Drawings; Reinforcement: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of concrete reinforcement. Include special reinforcement required for openings through concrete structures.
- C. Laboratory Test Reports: Submit laboratory test reports for concrete materials and mix design test.
- D. Materials Certificates: Provide materials certificates in lieu of materials laboratory test reports when permitted by Engineer. Materials certificates shall be signed by manufacturer and Contractor, certifying that each material item complies with, or exceeds, specified requirements. Provide certification from admixture manufacturers that chloride content complies with specification requirements.

1.4 QUALITY ASSURANCE

- A. Codes and Standards: Comply with provisions of following codes, specifications, and standards, except where more stringent requirements are shown or specified:
 - 1. ACI 301 "Specifications for Structural Concrete for Buildings."
 - 2. ACI 318 "Building Code Requirements for Reinforced Concrete."
 - 3. Concrete Reinforcing Steel Institute (CRSI), "Manual of Standard Practice."

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

PART 2 - PRODUCTS

2.1 REINFORCING MATERIALS

- A. Reinforcing Bars: ASTM A 615, Grade 60, deformed.
- B. For Slabs-on-Grade: Use supports with sand plates or horizontal runners where base material will not support chair legs.

2.2 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I. Use one brand of cement throughout project, unless otherwise acceptable to Engineer.
- B. Normal Weight Aggregates: ASTM C 33, and as herein specified. Provide aggregates from a single source for exposed concrete.
- C. Water: Drinkable.
- D. Air-Entraining Admixture: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- E. Water-Reducing Admixture: ASTM C 494, Type A, and containing not more than 0.1 percent chloride ions.
- F. High-Range Water-Reducing Admixture (Super Plasticizer): ASTM C 494, Type F or Type G and containing not more than 0.1 percent chloride ions.
- G. Water-Reducing, Non-Chloride Accelerator Admixture: ASTM C 494, Type E, and containing not more than 0.1 percent chloride ions.
- H. Water-Reducing, Retarding Admixture: ASTM C 494, Type D, and containing not more than 0.1 percent chloride ions.
- I. Prohibited Admixtures: Calcium chloride thycyanates or admixtures containing more than 0.1 percent chloride ions are not permitted.

2.3 RELATED MATERIALS

- A. Non-Shrink Grout: CRD-C 621, factory pre-mixed grout.
- B. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 oz. per sq. yd., complying with AASHTO M 182, Class 2.
- C. Moisture-Retaining Cover: One of the following, complying with ASTM C 171:
 - 1. Waterproof paper.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

2. Polyethylene film.
 3. Polyethylene-coated burlap.
- D. Liquid Membrane-Forming Curing Compound: Liquid type membrane-forming curing compound complying with ASTM C 308, Type I, Class A. Moisture loss not more than 0.055 gr./sq. cm. when applied at 200 sq. ft./gal.

2.4 PROPORTIONING AND DESIGN OF MIXES

- A. General: Prepare design mixes for each type and strength of concrete by either laboratory trial batch or field experience methods as specified in ACI 301. If trial batch method used, use an independent testing facility acceptable to Engineer for preparing and reporting proposed mix design. The testing facility shall not be the same as used for field quality control testing.
1. Submit written reports to Engineer of each proposed mix for each class of concrete at least 15 days prior to start of work. Do not begin concrete production until mixes have been reviewed by Engineer.
- B. Design Mixes: Provide normal weight concrete with the following properties:
1. 3000 psi 28-day compressive strength; W/C ratio, 0.58 maximum (non-air-entrained), 0.46 maximum (air entrained): walls and footings.
- C. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, job condition, weather, test results, or other circumstances warrant; at no additional cost to Owner and as accepted by Engineer. Laboratory test data for revised mix design and strength results must be submitted to and accepted by Engineer before using in work.
- D. Water-Cement Ratio: Provide concrete for following conditions with maximum water-cement (W/C) ratios as follows:
1. Subjected to freezing and thawing: W/C 0.50
 2. Subjected to deicers/watertight: W/C 0.45.
- E. Slump Limits: Proportion and design mixes to result in concrete slump point of placement as follows:
1. Slabs, and sloping surfaces; not more than 3".
- F. Ready-Mix Concrete: Comply with requirements of ASTM C 94. During hot weather, or under conditions contributing to rapid setting of concrete, a shorter mixing time than specified in ASTM C 94 may be required.

PART 3 - EXECUTION

3.1 GENERAL

- A. Coordinate the installation of joint materials and vapor retarders with placement of forms and reinforcing steel.

3.2 PLACING REINFORCEMENT

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
 - 1. Clean reinforcement of loose rust and mill scale, earth, ice and other materials which reduce or destroy bond with concrete.
 - 2. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.
 - 3. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

3.3 CONCRETE PLACEMENT

- A. Preplacement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
- B. General: comply with ACI 304 "Recommended Practice for Measuring, Mixing, Transporting, and Placing Concrete", and as herein specified.
 - 1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.
- C. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures for consolidation of concrete in accordance with ACI 309.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- D. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within limits of construction joints, until the placing of a panel or section is completed.
- E. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
- F. Bring slab surfaces to correct level with straightedge and strike-off. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not disturb slab surfaces prior to beginning finishing operations.
- G. Maintain reinforcing in proper position during concrete placement operations.
- H. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
- I. Do not use calcium chloride, salt, and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

3.4 SLAB FINISHES

- A. After screeding, consolidating, and leveling concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Check and level surface plane to tolerances of 1/4"-10'-0". Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surface to a uniform, smooth, granular texture.
- B. Trowel Finish: Apply trowel finish to monolithic slab surfaces to be exposed-to-view, and slab surfaces to be covered with resilient flooring, carpet, ceramic or quarry tile, paint, or other thin film finish coating system.
- C. Immediately after float finishing, slightly roughen concrete surface by brooming with fiber bristle broom perpendicular to main traffic route. Coordinate required final finish with Engineer before application.

3.5 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
 - 1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
 - 2. Begin final curing procedures immediately following initial curing and before

**Wallingford Town Hall
Boiler Replacement Project**
Wallingford, VT

concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.

- B. Curing Methods: Perform curing of concrete by curing and sealing compound, by moist curing, by moisture-retaining cover curing, and by combinations thereof, as herein specified. Provide moisture curing by following methods:
1. Keep concrete surface continuously wet by covering with water.
 2. Covering concrete surface with specified absorptive cover, thoroughly saturating cover with water and keeping continuously wet. Place absorptive cover to provide coverage of concrete surfaces and edges, with 4" lap over adjacent absorptive covers.
 3. Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width with sides and ends lapped at least 3" and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during period using cover material and waterproof tape.

3.6 MISCELLANEOUS CONCRETE ITEMS

- A. Filling-In: Fill-in holes and openings left in concrete structures for passage of work by other trades, unless otherwise shown or directed, after work of other trades is in place. Mix, place, and cure concrete as herein specified, to blend with in-place construction. Provide other miscellaneous concrete filling shown or required to complete work.

END OF SECTION 03 03 00

SECTION 09 02 55 – REPAIR OF GYPSUM BOARD ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division I Specification sections apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. General: The extent of the gypsum board assemblies is limited to patching of existing gypsum wall systems affected by the work; and is hereby defined to include wall and ceiling finish with gypsum board manufactured for direct application of decorative finishes, including a joint treatment system known as "drywall finishing", and other drywall systems. The types of work required include the following:
 - 1. Gypsum board assemblies attached to wood framing.
 - 2. Gypsum board assemblies attached to concrete or block substrates.
 - 3. Trim accessories which are installed prior to or concurrent with gypsum board.

1.3 QUALITY ASSURANCE

- A. Industry Standard: Comply with applicable requirements of GA-216 "Application and Finishing of Gypsum Board" by the Gypsum Association, except where more detailed or more stringent requirements are indicated including the recommendations of the manufacturer.
- B. Allowable Tolerances: 1/8" offsets between planes of board faces, and 1/4" in 8'-0" for plumb, level, warp and bow.
- C. Obtain gypsum boards, trim accessories, adhesives and joint treatment products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.

1.4 SUBMITTALS

- A. For information only, submit two (2) copies of manufacturer's product specifications and installation instructions for each gypsum drywall component, including other data as may be required to show compliance with these specifications. Distribute an additional copy of each installation instruction to the Installer.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

1.5 PRODUCT HANDLING

- A. Deliver gypsum drywall and other gypsum materials in sealed containers and bundles, fully identified with manufacturer's name, brand, type and grade; store in dry, well ventilated space, protected from weather, under cover and off the ground.

1.6 JOB CONDITIONS

- A. General: Installer must examine the substrates and the spaces to receive gypsum drywall, and the conditions under which gypsum drywall is to be installed, and shall notify the Contractor, in writing, of conditions detrimental to the proper and timely completion of the work. Do not proceed with the installation until unsatisfactory conditions have been corrected in a manner acceptable to the Installer.
- B. Maintain ambient temperatures at not less than 55°F for the period of 24 hours before drywall finishing, during installation and until components are dry.

PART 2 - PRODUCTS

2.1 GYPSUM BOARD PRODUCTS

- A. General: To extent not otherwise indicated, comply with GA-216, as specified and recommended.
- B. Exposed Gypsum Wallboard: With tapered long edges or tapered rounded edges. Provide water-resistant type where indicated.
- C. Sizes:
 - 1. Sheet Size: Maximum length available which will minimize end joints.
 - 2. Thickness: 5/8" @ walls and ceilings unless otherwise indicated.

2.2 TRIM ACCESSORIES

- A. General: Manufacturer's standard galvanized steel beaded units with flanges for concealment in joint compound, including corner beads, edge trim and control joints.

2.3 JOINT TREATMENT MATERIALS

- A. General: ASTM C 475; type recommended by manufacturer for the application indicated, except as otherwise indicated.
- B. Joint Tape: Perforated type.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- C. Joint Compound: Ready-mixed, 2 separate grades; one specifically for bedding tapes and filling depressions, and one for topping and sanding.
 - 1. For bedding and filling, provide chemical-hardening-type; ready -mixed vinyl-tape or non-casein-type for topping.

2.4 MISCELLANEOUS MATERIALS

- A. General: Provide auxiliary materials for gypsum drywall work of type and grade recommended by the manufacturer of the gypsum board.
- B. Laminating Adhesives: Special adhesive or joint compound specifically recommended for laminating gypsum board.
- C. Gypsum Board Fasteners: Comply with GA-216, and ASTM C 646.

PART 3 - EXECUTION

3.1 GENERAL GYPSUM BOARD INSTALLATION REQUIREMENTS

- A. Pre-Installation Conference: Meet at the project site with the installers of related work and review the coordination and sequencing of work to ensure that everything to be concealed by gypsum drywall has been accomplished, and the chases, access panels, openings, supplementary framing and blocking and similar provisions have been completed, and that installation of insulations and vapor barriers have been completed and inspected.
- B. General Standards: In addition to compliance with GA-216, comply with manufacturer's instructions and requirements for fire-resistance ratings, whichever is most stringent.
 - 1. Install ceiling boards in the direction and manner which will minimize the number of end-butt joints, and which will avoid end joints in the central area of each ceiling.
 - 2. Install wall/partition boards parallel to framing to avoid end-butt joints wherever possible.
 - 3. Form control joints and expansion joints with space between edges of boards, prepared to receive trim accessories.
 - 4. Cover both faces of studs with gypsum board in concealed spaces (above ceilings, etc.).
 - 5. Space fasteners in gypsum boards in accordance with GA-216 and manufacturer's recommendations.

3.2 INSTALLATION OF DRYWALL TRIM ACCESSORIES

- A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

required to fasten gypsum board to the supports. Otherwise, fasten flanges by screwing in accordance with manufacturer's instructions and recommendations. Crimp installation not allowed.

1. Install metal corner beads at external corners of drywall work.
2. Install metal edge trim wherever edge of gypsum board would otherwise be exposed. Provide type with face flange to receive joint compound. Install L-type trim where work is tightly abutted to other work, and install special kerf-type where other work is kerfed to received long leg of L-type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints). ALL CORNER BEADS TO BE SCREWED NOT NAILED.

3.3 INSTALLATION OF DRYWALL FINISHING

- A. General: Apply treatment at gypsum board joints (both directions) flanges of trim accessories, penetrations, fastener heads, surface defects and elsewhere as required to prepare work for decoration. Pre-fill open joints and rounded or beveled edges using type of compound recommended by manufacturer.
- B. Apply joint tape at joints between gypsum boards, except where a trim accessory is indicated.
 1. Apply joint tape at ceiling joints between gypsum boards and concrete.
 2. Apply joint compound in three (3) coats (not including pre-fill of openings in base), and sand between last two coats and after last coat.

3.4 PROTECTION OF WORK

- A. Contractor shall protect gypsum drywall work from damage and deterioration during the remainder of the construction period.

END OF SECTION 09 02 55

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

SECTION 09 09 00 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

1.2 DESCRIPTION OF WORK

- A. General: The extent of painting work is shown on the Drawings and schedules, and as herein specified.
- B. Work Included: The work includes painting and refinishing of existing areas, items and surfaces resulting from cutting and patching operations.
 - 1. Touch up and painting of surfaces affected the demolition and repair of construction affected by the new work, including surface preparation, priming and coats of paint.
 - 2. The work includes field painting of all exposed mechanical and electrical equipment including piping, hangers, conduit, steel and iron work, and primed metal surfaces of equipment installed under the electrical work, except as otherwise indicated. Items located in mechanical and electrical spaces not in finished spaces will not require painting.
 - 3. "Paint" as used herein means all coating systems materials, including primers, emulsion, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.
 - 4. Paint all exposed surfaces whether or not colors are designated in "schedules", except where the natural finish of the material is specifically noted as a surface not to be painted. Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color or finish is not designated, the Engineer will select these from standard colors available for the materials systems specified.

1.3 PAINTING NOT INCLUDED

- A. The following categories of work are not included as part of the field-applied finish work, or are included in other sections of these Specifications.
 - 1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer finishing is specified.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, foundation spaces, furred areas, utility tunnels, pipe spaces, duct shafts.
3. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting, unless otherwise indicated.
4. Operating Parts and Labels: Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts **will not** require finish painting, unless otherwise indicated. Do not paint over any code required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name, or nomenclature plates.

1.4 SUBMITTALS

- A. Manufacturer's Data: For information only, submit two copies of manufacturer's technical information including paint label analysis and application instructions for each material proposed for use. Transmit a copy of each manufacturer's instructions to the paint Applicator.
- B. Samples: Submit samples for Engineer's review of color and texture only. Compliance with all other requirements is the exclusive responsibility of the Contractor. Provide a listing of the material and application for each coat of each finish sample.
 1. On actual wall surfaces and other exterior and interior building components duplicate painted finishes of the prepared samples. On at least 100 sq. ft. of surface as directed, provide full coat finish samples until required sheen, color, and texture is obtained; simulate finished lighting conditions for review of in-place work.

1.5 DELIVERY AND STORAGE

- A. Deliver all materials to the job site in original, new and unopened packages and containers bearing manufacturer's name and label.

1.6 JOB CONDITIONS

- A. All primers and paints applied on site at this project shall be non-VOC paint
- B. Water-Base Paint: Apply water base paints only when the temperature of surfaces to be painted and the surrounding air temperatures are between 50 deg. F and 90 deg. F, unless otherwise permitted by the paint manufacturer's printed instructions.
- C. Solvent-Thinned Paint: Apply solvent-thinned paint only when the temperatures are between 45 deg. F and 95 deg. F, unless otherwise permitted by the paint

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

manufacturer's printed instructions.

- D. Weather Conditions: Do not apply paint in snow, rain, fog, or mist, or when relative humidity exceeds 85%; or to damp or wet surfaces; unless otherwise permitted by the paint manufacturer's printed instructions. Painting may be continued during inclement weather only if the areas and surfaces to be painted are enclosed and heated within the temperature limits specified by the paint manufacture during applications and drying periods.

PART 2 - PRODUCTS

2.1 COLORS AND FINISHES

- A. General: Surface treatments and finishes are indicated in the "Schedules" of the Contract Documents.
 - 1. Use representative colors when preparing samples for review.
 - 2. Final acceptance of colors will be from samples applied on the job.
- B. Color Pigments: Pure, non-fading, applicable types to suit the substrates and service indicated.
- C. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these Specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and re-prime as required. Notify the Engineer in writing of any anticipated problems using specified coating systems with substrates primed by others.

2.2 MATERIAL QUALITY

- A. General: Provide the best quality grade of the various type of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying the manufacturer's identification as a standard best-grade product, will not be acceptable.
 - 1. Proprietary names used to designate colors or materials are not intended to imply that products of the named manufacturers are required to the exclusion of equivalent products of other manufacturers.
 - 2. Provide undercoat paint produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer and use only within recommended limits.

2.3 INTERIOR PAINT SYSTEMS

- A. General: All interior paint systems shall be non VOC. Provide the following paint

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

systems for the various substrates as indicated:

- B. Existing Natural Finished Woodwork: 2 finish coats over primed sanded existing varnish.

Primer – Non VOC Alkyd Undercoater.
First Coat - Odorless, semigloss, alkyd interior enamel.
Second Coat - Odorless, semigloss, alkyd interior enamel.

Not less than 2.5 mils dry film thickness.

- C. New Gypsum Drywall: 2 finish coats over primer.

Primer - Latex primer (FS TT-P-650).
First Coat - Interior latex emulsion, satin (FS TT-P-29).
Second Coat - Interior latex emulsion, satin (FS TT-P-29).

Not less than 2.5 mils dry film thickness.

- D. Existing Gypsum Drywall: 1 finish coat over existing.

Finish Coat - Interior latex emulsion, satin (FS TT-P-29).
Finish patches as defined for new.

- E. New Painted Woodwork: 1 finish coat over primer, and undercoat.

Primer - Latex primer (FS TT-P-650). Unless preprimed.
Undercoat - Interior latex emulsion, flat (FS TT-P-29).
Finish coat - Interior latex emulsion, enamel (FS TT-P-29).

Not less than 3.5 mils dry film thickness.

- F. Existing Painted Woodwork: 1 finish coat over existing finish.

Finish Coat - Interior latex emulsion, enamel (FS TT-P-29).
Finish patches as defined for new.

- G. Previously Painted Metal: 1 coat over sanded finish.

Finish coat: Odorless, semi-gloss, alkyd interior enamel.

2.4 EXTERIOR PAINT SYSTEMS

- A. General: Provide the following paint systems for the various substrates, as indicated: Interior of addition shall be considered a part of exterior paint systems.

- B. New Wood & Plywood: 2 finish coats over primer, prime and backprime.

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

Primer - Exterior alkyd wood primer (FS TT-P-25).
First Coat - Exterior acrylic emulsion (FS TT-P-19).
Second Coat - Exterior acrylic emulsion (FS TT-P-19).

- C. New Wood: 2 finish coats over primer, prime and backprime prior to installation.

Primer - Exterior alkyd wood primer (FS TT-P-25).
First Coat - Exterior acrylic emulsion (FS TT-P-19).
Second Coat - Exterior acrylic emulsion (FS TT-P-19).

- D. Previously Painted Existing Wood Panels & Trim: 1 finish coats over primed abraded areas.

Primer - Exterior alkyd wood primer (FS TT-P-25).
Top Coat - Exterior acrylic emulsion (FS TT-P-19).
Finish patches as defined for new.

- E. Ferrous Metal and Aluminum: 2 finish coats over primer.

Primer - Alkyd-type zinc chromate primer (FS TT-P-645).
First Coat - Waterless alkyd enamel (FS TT-E-527).
Second Coat - Waterless alkyd enamel (FS TT-F-527).

- F. Zinc Coated Metal: 2 finish coats over primer.

Primer - Galvanized metal primer (FS TT-P-641) unless pre-primed.
First Coat - Alkyd enamel (FS TT-P-489).
Second Coat - Alkyd enamel (FS TT-P-489).

PART 3 - EXECUTION

3.1 INSPECTION

- A. General: Applicator must examine the areas and conditions under which painting work is to be applied and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the Applicator.
1. Starting of painting work will be construed as the Applicator's acceptance of the surfaces and conditions within any particular area.
 2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to the formation of a durable paint film.

3.2 SURFACE PREPARATION

- A. General: Perform preparation and cleaning procedures in strict accordance with the paint manufacturer's instructions and as herein specified, for each particular substrate

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

condition.

1. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for the complete painting of the items and adjacent surfaces. Following completion of painting of each space or area, re-install the removed items by workmen skilled in the trades involved. Do not commence painting until all cleaning and dust producing activities in the area have ceased.
 2. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program the cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly painted surfaces.
- B. Wood: Clean surfaces to be painted of all dirt, oil, or other foreign substances with scrapers, mineral spirits, and sandpaper, as required. Sandpaper smooth those finished surfaces exposed to view, and dust off. Scrape and clean small, dry seasoned knots and apply a thin coat of primer. After priming, fill holes and imperfections in finish surfaces with putty or plastic wood filler. Sandpaper smooth when dried.
- C. Ferrous Metal: Clean ferrous surfaces of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.
1. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these Specifications. Clean and touch-up with the same type shop primer.
- D. Galvanized Surfaces: Clean free of oil and surface contaminants with an acceptable non-petroleum based solvent.

3.3 MATERIAL PREPARATION

- A. General: Mix and prepare paint material in accordance with manufacturer's direction.
1. Store materials not in actual use in tightly covered containers. Maintain containers used in storage, mixing, and application of paint in a clean condition, free of foreign materials and residue.
 2. Stir materials before application to produce a mixture of uniform density, and stir as required during the application of the materials. Do not stir surface film into the material. Remove the film and if necessary, strain the material before using.

3.4 APPLICATION

- A. General: Apply paint in accordance with the manufacturer's directions. Use applicators and techniques best suited for the substrate and type of material being applied.
1. Apply additional coats when undercoats, stains or other conditions show through

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

- the final coat of paint, until the paint film is of uniform finish, color, and appearance. Give special attention to ensure that all surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surface.
2. Paint surface behind movable equipment and furniture the same as similar exposed surfaces. Paint surfaces behind permanently fixed equipment or furniture with prime coat only before the final installation of equipment.
 3. Paint the back sides of access panels, and removable or hinged covers to match the exposed surfaces.
 4. Sand lightly between each succeeding enamel coat.
 5. Omit the first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise directed.
- B. Scheduled Painting: Apply the first coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.
1. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and the application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.
- C. Minimum Coating Thickness: Apply each material at not less than the manufacturer's recommended spreading rate, to establish a total dry film thickness as indicated or, if not indicated, as recommended by the coating manufacturer.

3.5 CLEAN-UP AND PROTECTION

- A. Clean-Up: During the progress of the work, remove from the site all discarded paint materials, rubbish, cans, and rags at the end of each work day.
1. Upon completion of painting work, clean window glass and other paint-splattered surfaces. Remove splattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.
- B. Protecting: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to the Engineer.
1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protection wrapping provided by others for protection of their work, after completion of painting operations.
 2. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION 09 09 00

Wallingford Town Hall
Boiler Replacement Project
Wallingford, VT

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