

Task III - Window Restoration/ Weatherization Project

Northbridge Memorial Town Hall Northbridge, Massachusetts



Historic Photograph of Northbridge Memorial Town Hall, ca. 1899



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SECTION 02090 - LEAD-CONTAINING PAINT CONSIDERATIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This Section specifies furnishing all labor, worker training, materials, equipment and tools for the minimum requirements needed for demolition impacting lead based paint prior to existing structures which may impact the substrates found to contain lead based paint.

1.2 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specifications Sections, apply to this Section.

1.3 RELATED WORK

- A. Work in this Section is related to and shall be coordinated and performed with work specified in: SECTION 02091 – PAINT REMOVAL and is performed by specialist under:

SECTION 08610 – WINDOW RESTORATION
SECTION 09910 – FIELD PAINTING

1.4 WORK INCLUDED

- A. Provide all labor, materials, services, insurance and equipment necessary to perform the work in accordance with these Specifications and with all applicable local, state and federal regulations.
- B. The work of this Section specifies minimum requirements for the disturbance, removal, containment and disposal of lead-containing paint and associated waste generated as a result of renovation/demolition activities as outlined in the Specification.
- C. Because of the building's age, lead based paint has been assumed to be present in the following areas:
Northbridge Memorial Town Hall, 7 Main Street, Whitinsville, MA.
NOTE: Any amount of lead present on painted surfaces requires compliance with 29 CFR 1926.62 OSHA "Lead in Construction; Interim Final Rule".
- D. Determining airborne lead concentrations for each work method performed which will impact the lead painted surfaces in accordance with the methods specified in Section 2.4 (E) of this document.
- E. Preparation of each work area location in accordance with the methods described in Section 3.1 of this document.
- F. Conduct the work in each work area using appropriate respiratory protection, protective clothing, and engineering controls to minimize the exposure of employees and the public in areas of the tower adjacent to work areas to airborne lead particulate.
- G. Proper clean-up procedures, handling and disposal of the waste generated in accordance with the methods described in Section 3.03 of this document.

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- H. Periodic visual inspection of surfaces outside of the work area shall be performed by the Contractor to identify any visible suspect lead dust, debris, or particulate. Ambient air monitoring should be performed by the contractor to document airborne lead levels during construction activities. If any visible suspect lead dust or debris is observed, an immediate clean-up of the area shall be performed using HEPA-filtered vacuums and Tri-Sodium Phosphate solution in accordance with the methods described in Section 3.03 of this document.
- I. All debris generated from activities which disturb lead based paint shall be collected using HEPA-filtered vacuums or other appropriate methods. Disposal of all lead contaminated waste shall be in accordance with applicable Federal, State and local regulations. Disposal shall be based on results of TCLP analysis.

1.5 STANDARDS AND GUIDELINES

- A. The Contractor(s) shall comply with all federal, state and local regulations pertaining to the Contract. These regulations include but are not limited to:

Code Of Federal Regulations (CFR)

| | |
|------------------|--|
| CFR 29 Part 1910 | Occupational Safety and Health Standards |
| CFR 29 Part 1926 | Safety and Health Regulations for Construction |
| CFR 40 Part 148 | Hazardous Waste Injection Restrictions |
| CFR 40 Part 260 | Hazardous Waste Management System: General |
| CFR 40 Part 261 | Identification and Listing of Hazardous Waste |
| CFR 40 Part 262 | Standards Applicable to Generators of Hazardous Waste |
| CFR 40 Part 263 | Standards Applicable to Transporters of Hazardous Waste |
| CFR 40 Part 264 | Standards for Owners and Operations of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| CFR 40 Part 265 | Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities |
| CFR 40 Part 268 | Land Disposal Restrictions |
| CFR 49 Part 172 | Hazardous Material Table, Special Provisions, Hazardous Material Communications, Emergency Response Information, and Training Requirements |
| CFR 49 Part 178 | Specifications for Packaging |

Commonwealth of Massachusetts

| | |
|---------------|--|
| 454 CMR 22.00 | Deleading Regulations and all policy statements. |
| 310 CMR 30.00 | Hazardous Waste Regulations |

National Fire Protection Association (NFPA)

| | |
|---------------|---|
| NFPA 701-1989 | Methods of Fire Test for Flame-Resistant Textiles and Films |
|---------------|---|

National Institute For Occupational Safety And Health (NIOSH)

| | |
|-------------------------|----------------------|
| NIOSH OSHA Booklet 3142 | Lead in Construction |
|-------------------------|----------------------|

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Underwriters Laboratories(UL)

UL 586-1990 High-Efficiency, Particulate, Air Filter Units

American National Standards Institute

9.2-1979(R1991) Fundamentals Governing the Design and Operation of Local
Exhaust Systems

Z88.2-1992 Respiratory Protection

1.6 CONTRACTOR RESPONSIBILITY

- A. Prior to performance of work activities which will disturb lead based paint, provide workers with a comprehensive medical examination as required by 29 CFR 1926.62 (I) (1) (i) & (ii). The examination shall not be required if adequate records show that employees have been examined as required by 29 CFR 1926.62(I) within the last year.

- B. Medical Records. Maintain complete and accurate medical records of employees in accordance with 29 CFR 1910.20.

- C. The Contractor shall employ a competent person who will be responsible for the following.
 - 1. Employee Training in accordance with 29 CFR 1926.62.
 - 2. Directing air monitoring.
 - 3. Ensuring work is performed in strict accordance with specifications at all times.
 - 4. Ensuring hazardous exposure to personnel and to the environment are adequately controlled at all times.

- D. Respiratory Protection Program:
 - 1. Furnish each employee required to wear a negative pressure respirator or other appropriate type with a respirator fit test at the time of initial fitting and at least every 6 months thereafter as required by 29 CFR 1926.62.

 - 2. Establish and implement a respiratory protection program as required by 29 CFR 1910.134, 29 CFR 1910.1025, and 29 CFR 1926.62.

- E. Hazard Communication Program: Establish and implement a Hazard Communication Program as required by 29 CFR 1910.1200.

- F. Hazardous Waste Management: The Hazardous Waste Management plan shall comply with applicable requirements of Federal, State, and local hazardous waste regulations and address.
 - 1. Identification of hazardous wastes associated with the work.
 - 2. Estimated quantities of wastes to be generated and disposed of.
 - 3. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and a 24-hour point of contact. Furnish a copy of the EPA hazardous waste permits and EPA Identification number.
 - 4. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.

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5. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
6. Spill prevention, containment, and cleanup contingency measures to be implemented.
7. Work plan and schedule for waste containment, removal and disposal. Wastes shall be cleaned up and containerized daily.
8. Cost for hazardous waste disposal according to this plan.

G. Site specific Health and Safety Plan.

1.7 SUBMITTALS

- A. Submittals shall be in accordance with General Conditions Division I, SUBMITTALS.
- B. The Contractor shall provide three (3) copies of the following submittals prior to commencement of work.
 1. Notifications, permits, licenses, and application as required by all Federal, State and local regulations.
 2. A written project schedule including proposed workshift size and work hours.
 3. Medical records as required by 29 CFR 1926.62 including results of venous blood lead and ZPP levels. Blood lead level test must have been conducted within thirty (30) days of project commencement.
 4. Name, address, and EPA Identification Numbers of the hazardous waste transporter and disposal facility (if applicable).
 5. Hazard Communication Program.
 6. Hazardous Waste Management Program.

PART 2 - PRODUCTS

2.1 QUALITY ASSURANCE

- A. All materials and work shall be subject to acceptance by the Owner or the Owner's Representative. Contractor shall submit a listing of all pertinent material and equipment prior to start of abatement.

2.2 MATERIALS

- A. The following materials and equipment will be provided by the Contractor during work on this project:
 1. Washing agent: 5% tri-sodium phosphate at one ounce per gallon of water.
 2. Polyethylene sheeting: 6-mil conforming to ASTM EI54, C-156, D-124B, D-2103 and D-4379.
 3. Disposal Drums or other Containers: Per EPA, DEP, and DOT regulations.
 4. Spray encapsulant: Spray material that encases lead dust particles in an adhesive matrix.
 5. Spray adhesive: To assist adhesion in areas (i.e., concrete, etc.) that are otherwise difficult for duct tape alone.
 6. Duct tape: Aluminum backed high adhesion tape.

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7. Vacuum equipment: All vacuum equipment employed in the work area shall utilize HEPA filtration systems 99.97% efficient to 0.3 microns particulate size.
 8. Lead warning and health signs: Submit samples
 9. Barrier tape: 2 inch wide, yellow, non-adhesive tape with the words "CAUTION - LEAD PAINT ABATEMENT"
- B. Replacement and covering materials shall be approved per requirements of the contract document.
 - C. Polyethylene sheeting for segregating lead contaminated work areas (where applicable) shall be a minimum of 6-mil thickness and shall be fire resistant in accordance with applicable local fire codes.
 - D. Polyethylene sheeting for shower enclosures (where applicable) shall be opaque white or black in color.
 - E. Disposal drums (where applicable) shall meet all applicable EPA, MA DEP and US DOT regulations.
 - F. Appropriate labels as per applicable EPA, DOT, OSHA and MA DPH regulations shall be permanently affixed to all waste disposal containers (if applicable).
 - G. Lead contamination warning signs (where applicable) shall be in conformance with OSHA 29 CFR 1926.62 (R)(2)(i).
 - H. ABC type fire extinguishers, properly pressurized and in good working condition shall be conspicuously located in all work areas.
 - I. An adequately stocked first aid kit shall be conspicuously located in all work areas.
 - J. Only non-caustic strippers shall be allowed for use in this project.

2.3 NOTIFICATIONS

- A. The Contractor shall give a minimum of five (5) days advance notice to the Owner and Owner Representative of the date abatement will commence, the estimated completion date, and the method of abatement.

2.4 EQUIPMENT

- A. Provide approved respirators and protective clothing to all workers and all representatives of the Authority who may inspect the work site.
- B. Protective clothing requirements:
 1. Full body coveralls, including head covering, ("TYVEK" or a material equally resistant to dust penetration): these coveralls will be worn one time only and properly disposed of; hard hats, eye protection, and gloves.

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2. All disposable protective clothing shall be disposed of as hazardous waste unless TCLP analysis is performed and the clothing is found to be below the threshold for hazardous disposal.

C. Require that ALL persons wear all appropriate protective equipment during all facets of work where lead exposure may exceed the OSHA PEL.

D. Respiratory protective equipment shall be according to OSHA Regulations: 29 CFR 1926.62, 29 CFR 1910.134 and ANSI Z88.2-1980. Respirators must also be NIOSH approved for protection against lead exposure.

E. Respirators:

1. Respirator selection shall be according to the following table:

| Airborne Concentration of Lead | Respirator Type |
|--|---|
| Not in excess of 500 $\mu\text{g}/\text{m}^3$ | <ul style="list-style-type: none"> • 1/2 mask air purifying respirator with high efficiency filters. • 1/2 mask supplied air respirator operated in demand (negative pressure) mode. |
| Not in excess of 1,250 $\mu\text{g}/\text{m}^3$ | <ul style="list-style-type: none"> • Loose fitting hood or helmet powered air purifying respirator with high efficiency filters. • Hood or helmet supplied air respirator operated in a continuous-flow mode - e.g., type CE abrasive blasting respirators operated in a continuous-flow mode. |
| Not in excess of 2,500 $\mu\text{g}/\text{m}^3$ | <ul style="list-style-type: none"> • Full facepiece air purifying respirator with high efficiency filters. • Tight fitting powered air purifying respirator with high efficiency filters. • Full facepiece supplied air respirator operated in demand mode. • 1/2 mask or full facepiece supplied air respirator operated in a continuous-flow mode. • Full facepiece self-contained breathing apparatus (SCBA) operated in demand mode. |
| Not in excess of 50,000 $\mu\text{g}/\text{m}^3$ | <ul style="list-style-type: none"> • 1/2 mask supplied air respirator operated in pressure demand or other positive-pressure mode. |
| Not in excess of 100,000 $\mu\text{g}/\text{m}^3$ | <ul style="list-style-type: none"> • Full facepiece supplied air respirator operated in pressure demand or other positive-pressure mode - e.g., type CE abrasive blasting respirators operated in a positive-pressure mode. |
| Greater than 100,000 $\mu\text{g}/\text{m}^3$ or unknown concentration | <ul style="list-style-type: none"> • Full facepiece SCBA operated in pressure demand or other positive-pressure mode. |

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2. The Contractor is responsible for determining airborne lead concentrations in each work area for each phase of work, i.e. demolition, clean-up, transport from building, cutting, etc. Personal air sampling shall be conducted at the start of each phase of work. Each personal air sample shall run a minimum of seven hours at a minimum of 2 liters per minute. It is the responsibility of the Contractor to insure that workers wear suitable respiratory protection at all times if exposure to airborne lead is a possibility. Daily air monitoring (personal) shall be conducted. Written results shall be submitted to the Owner or the Owner's representative within 48 hours of the sampling period. If these sample results are not submitted within 48 hours of their collection the work will stop until the air sample results are submitted.
 3. Workers shall perform positive and negative air pressure fit tests each time a respirator is put on, whenever the respirator's design so permits. Powered air-purifying respirators shall be tested for adequate flow each time upon entry to the work area as specified by the manufacturer.
 4. Workers shall be given a qualitative fit test in accordance with procedures detailed in appendix D, OSHA 29 CFR 1926.62 for all 1/2 face, negative pressure respirators to be used on this project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.
 5. Documentation of adequate respirator fit shall be submitted to the Authority prior to beginning work.
 6. No one wearing a beard shall be permitted to wear a negative pressure respirator and enter the work area.
- F. Ventilation devices where applicable, shall include filters capable of filtering particles of 0.3μ diameter at 99.97% efficiency (HEPA filters). Air filtering devices must be approved by the environmental consultant on-site. The ventilation units must be exhausted outside of the building away from walkways and building air intakes unless on-site, in position DOP tests (conforming to ANSI N-S10) certify that filters are functioning as specified. The environmental consultant may, at any time, require DOP testing of any or all HEPA filtered equipment. Reasons for requiring on-site, in position DOP tests may include, but are not limited to:
1. Obvious holes or gouges in HEPA filter
 2. Cracked, brittle or otherwise inferior exhaust flex ducts
- G. All vacuums used to clean protective clothing or surfaces within lead contaminated work areas must be equipped with HEPA filters (99.97% efficient at 0.3μ diameter).
- H. All equipment shall be used according to OSHA Safety and Health Standards for the Construction Industry (29 CFR, Part 1926).
- I. Any equipment which cannot be adequately cleaned before removal from the work area (brushes, vacuum wands, gloves, etc.) shall be placed into (2) 6-mil thickness polyethylene bags that shall be sealed airtight before removal from the work area.

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PART 3 - EXECUTION

3.1 PREPARATION

- A. Post caution signs meeting the specifications of OSHA 29 CFR 1926.62 (k) at any location or approach to a location where airborne lead concentrations may exceed $30 \mu\text{g}/\text{m}^3$. Caution signs shall be posted at a sufficient distance from the work area to permit an employee to read the sign and take the necessary protective measures to avoid exposure. Additional caution signs may need to be posted following construction of workplace enclosure barriers (if applicable).
- B. Contractor shall evaluate each task required to complete the work described herein and in other sections of the contract documents to determine if employee exposure to lead may occur.
- C. Until the Contractor documents that employee exposures are below the PEL for each type of activity where lead is present including manual demolition of structures (dry wall, plasters, wood, etc.), preparation of surfaces for painting, clean-up activities, or at any other time when exposure to lead is a possibility, the Contractor shall provide the following:
 - 1. Appropriate respiratory equipment as specific herein and as required by OSHA 29 CFR 1926.62 (f).
 - 2. Appropriate personal protective equipment as specific herein and as required by 29 CFR 1926.62 (g).
 - 3. Change areas as required by 29 CFR 1926.62 (i)(2).
 - 4. Hand washing facilities as required by 29 CFR 1926.62 (i)(5).
 - 5. Biological monitoring as required by 29 CFR 1926.62 (j)(1)(i).
 - 6. Training as required by 29 CFR 1926.62 (l)(1)(i), 29 CFR 1926.62 (l)(2)(ii)(c) and 29 CFR 1926.21.

3.2 CONDUCTING THE WORK

- A. Contractor shall provide appropriate respiratory and other personal protective equipment to all employees who may be exposed to airborne lead in excess of $50 \mu\text{g}/\text{m}^3$.
- B. Lead based paint removal operations where airborne lead concentrations exceed $30 \mu\text{g}/\text{m}^3$ shall be fully contained and separated from other areas by polyethylene sheeting forming a work enclosure and requires decontamination facilities.
- C. Lead based paint removal operations where airborne lead concentrations exceed $50 \mu\text{g}/\text{m}^3$ shall be fully contained and separated from other areas by polyethylene sheeting forming a work enclosure, be under negative pressure and require decontamination facilities.
- D. Demolition activity shall be engineered and conducted such that the least amount of airborne dust is generated. The following work practices shall be employed when demolition of building components which contain lead paint is performed.

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1. No person under the age of 18 years shall be permitted to work on renovation and/or rehabilitation projects.
2. Whenever there is an exposure to lead dust, a respirator and personal protective clothing such as those listed in 454 CMR 22.00 shall be worn.
3. The employer shall not permit employees to eat, drink, smoke, chew (gum or tobacco), or apply cosmetics in any work area.
4. When tools and/or equipment are removed from the work area, they shall be cleaned with a solution of tri-sodium phosphate or vacuumed with a HEPA vacuum. All work areas shall be cleaned at the end of the job with a HEPA vacuum.
5. Adequate precautions shall be implemented to insure that the outside environment is protected, according to applicable EPA and DEP regulations.
6. To prevent contamination of adjacent areas, the employer shall seal off the work areas, in accordance with 454 CMR 22.11.
7. The preparation, transportation and disposal of waste material containing lead shall follow the work practice requirements set forth in 454 CMR 22.00.

3.3 CLEAN-UP AND DISPOSAL OR SALVAGE

- A. Clean-up activities shall include the use of HEPA filtered vacuums and a 5% solution of Tri-sodium Phosphate to clean all surfaces within the work area which may be contaminated with lead dust or particulate.
- B. Prior to disposal, any debris which may contain lead shall be analyzed to determine the quantity of lead which may leach from the debris if it were buried in a conventional landfill. This analytical procedure is called toxicity characteristic leachate procedure (TCLP) and is required by US EPA regulation. The US EPA requires that materials which, when analyzed using TCLP, leach greater than 5 milligrams lead per liter of water (mg/L), be disposed of as hazardous waste.
- C. All wastes shall be sampled using TCLP to determine if the material is hazardous waste. These wastes may include, but may not be limited to, disposable protective clothing, waste water, paint chips, polyethylene sheeting used as work area barriers, etc. Contractor shall provide analytical results to the Authority's Representative prior to disposal of said wastes.
- D. Materials which have salvage value shall be appropriately salvaged. Salvage site shall be informed, in writing, of lead content of materials from this site to be salvaged.
- E. Clean-up of the work area shall be conducted until a level of no visible suspect paint chips or dust is achieved on the interior horizontal and vertical surfaces, including the floor, desks, and cabinets.
- F. If visible suspect debris is observed outside of the work area, re-cleaning will be required until a level of no visible suspect lead dust or debris is achieved.

END OF SECTION

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SECTION 02091 - PAINT REMOVAL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. The drawings and general provisions of the contract, including General and Supplementary Conditions, Division 1 Specification Sections and relevant sections of these Specifications, apply to the work specified in this section.

1.2 DESCRIPTION OF WORK

- A. The work of this Section shall be performed as stated herein. And includes:
- a. Complete removal of paint from all window sashes (**excluding frames**) prior to window restoration. Contractor shall remove the windows, and transport them to an off-site facility for paint removal.
 - b. Prep the work area as required including providing and installing polyethylene barriers at access / egress points, ventilation, changing areas and other preparations required by Federal, State, or local regulations.
 - c. Cleanup and decontaminate according to procedures described herein. Install a secured centralized shower facility on the site equipped with hot and cold running water, for workers to decontaminate at the end of the work shift. Water shall be filtered through a five micron filtration unit prior to containing the water for waste disposal testing.
 - d. Dispose of all removal materials in accordance with all federal RCRA requirements and State and local regulations.
 - f. All removal procedures must comply to 105 CMR 460.000 and 454 CMR 22.00.
 - g. Approvals and Inspections: All work procedures, temporary facilities, equipment, material and services must meet all the requirements of this Section, as well as all applicable local, State and Federal regulations and guidelines. Where an overlap exists, the most stringent shall apply.

1.3 PRE-CONSTRUCTION MEETING:

- A. Pre-Construction Meeting

Meet with the Owner and Architect and any major trades, for a Pre-Construction Meeting prior to commencing work of the project. The meeting shall be at the facility of the Owner at a mutually convenient time and date to be determined by Owner and Architect. At the Meeting, the Paint Removal Contractor shall be represented by authorized representatives and the supervisors(s) who shall supervise the project on a daily basis, and shall present evidence that all the requirements for initiation of the work have been met.

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1.4 SUBMITTALS

Provide six (6) copies of the following Submittals at the Pre-Construction Conference for the acceptance of the Owner and Architect:

1. Copies of all notifications, permits, applications, licenses and like documents required by Federal, State, or local regulations and this Specification obtained or submitted in proper fashion.
2. Copies of recent blood testing, pulmonary function test (PFT) for respirator use, and medical records as required by 454 CMR 22.00, 105 CMR 460.00 and OSHA 29 CFR 1926.62.
3. Copies of Supervisor's and workers' training certificates.
4. Record of successful respirator fit testing performed by a qualified individual within the previous 6 months, for each employee to be used on this project with the employee's name and social security number with each record.
5. Employers Hazard Communication Program as requires by OSHA 29 CFR 1926.62, including proposed respiratory protection program and medical monitoring for all employees throughout all phases of the job, including make, model, and NIOSH approval numbers of respirators to be used.
6. Proposed number and type (i.e., hazardous waste or non-hazardous waste, open top, front loading, etc.) of dumpsters for waste, proposed location(s). (NOTE: A maximum of two dumpsters will be allowed on site.)
7. Proposed worker orientation plan which at a minimum includes a description of lead hazards and removal methodologies, a review of worker protection requirements, proposed decontamination procedures, location of wash station and change areas.
8. A list of all equipment to be used on-site, by make and model, including ventilation equipment, HEPA vacuums, etc.
9. Chain of Command of responsibility at work site including supervisors and competent person, their names, resumes and certificates of training and phone numbers.
10. List of total number of supervisors and workers intended to be assigned to the project, including name and lead removal qualifications.
11. The name and address of Contractor's blood lead testing lab, OSHA-CDC listing, and Certification in the State where work site is located.
12. Material Safety Data Sheets on potentially hazardous materials to be used on the project.

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13. Name, address, and ID number of the proposed hazardous waste hauler, and proposed disposal reclamation or treatment facility.
14. Name and address of the proposed construction debris site.
15. Proof of Insurance.
16. Construction schedule including sequence of critical work.

1.5 MOCK UPS

- A. Submit mock ups of paint removal of one complete window for approval prior to starting the complete work of this SECTION. As noted on 3.3B-4, hand scrapping shall be performed wherever possible with other acceptable methods used when needed. The mockup should reflect both methods.

1.6 ADDITIONAL INSURANCE REQUIREMENTS

- A. Insurance requirements: Refer to General Conditions of the Contract Article 16 Insurance and the Supplementary Conditions Article 16 Insurance.
 1. Transportation: The Paint Removal Contractor shall provide evidence that the transporter of all hazardous waste has a Form MCS-90 Endorsement for Master Carriers Policy of Insurance for Public Liability as required under Section 29 and 30 of the Motor Carriers Act of 1980.
 2. Contractor shall provide, with his insurance certificates, a complete explanation of their coverage and any / all exclusions in their coverage. Policies may not be canceled prior to giving thirty (30) days written notice of the Owner.
 3. Contractor shall indemnify, hold harmless, and defend the Owner, Consultant and Architect and any of its affiliates, partially or wholly owned entities, and any of their agents, employees, or officers (hereinafter referred to as Releases) from and against any and all losses, claims, judgements, including legal fees and expenses, of any and every nature and description brought or recoverable against Paint Removal Contractor or releases by reason of any act, intentional or otherwise, or covered by this Contract, including but not limited to, the removal, handling and disposal of any hazardous material.
- B. The working hours for this project are set forth in Division 1, and the General Requirements.
 1. Removal of paint stripper can take place during normal working hours.

1.7 RELATED DOCUMENTS

- A. The following documents are made applicable and a part of this Section:

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1. Code of Federal Regulations (CFR) Publications:
 - 29 CFR 1910 - General Industry
 - 29 CFR 1926-55 - Gases, Vapors, Fumes, Dusts and Mists
 - 29 CFR 1926. 57 - Ventilation
 - 29 CFR 1926.62 - Lead in Construction
 - 29 CFR 1926. 200 - Signs, Signals and Barricades
 - 29 CFR Subpart T - Demolition
 - 40 CFR 61 Subpart A - General Provisions
 - 40 CFR 61.152 - Standard for Waste Manufacturing Demolition, Renovation, Spraying, and Fabricating Operations
 - 40 CFR 241 - Guidelines for the Land Disposal of Solid Wastes
 - 40 CFR 257 - Criteria for Classification of Solid Waste
 - 40 CFR 261 and 262 - Waste Disposal Facilities and Practices
2. Massachusetts Regulations:
 - 105 CMR 460.00 - Massachusetts Childhood Lead Poisoning Prevention
 - 454 CMR 11.00 - Structural Painting Safety Code
 - 454 CMR 22.00 - Deleading Regulations
 - 454 CMR 23.00 - Occupational Lead Exposure
3. American National Standards Institute (ANSI) Publications:
 - 29.2-79 - Fundamentals Governing the Design and Operation of Local Exhaust System
 - 288.2-80 - Practices for Respiratory Protection
4. National Institute of Occupational Safety and Health (NIOSH) Publications:
 - Manual of Analytical Methods, 2nd Ed., Vol. 1, Physical and Chemical Analysis Method (P&CAM)
5. Underwriters Laboratories, Inc. (UL) Publications;

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Fire Resistance Directory

586-77 (R- 1982) - Test Performance of High Efficiency Particulate Air Filter Units

1.8 SCOPE OF WORK

- A. The work of this Section, without limiting the generality thereof, includes the furnishing of labor, materials, tools; equipment, services and incidentals necessary to complete all Lead Based Paint Removal from windows in accordance with the Drawings, Tables and Specifications, which are intended to describe, and provide for, completed lead removal and refinishing as required by regulations and this Specification; what is called for by any portion of these documents shall be complete in every detail, notwithstanding whether or not every item necessarily involved is particularly mentioned.

1.9 DISPOSAL OF WASTE MATERIAL

A. General

1. For the purposes of bidding, all waste from removal activities shall be considered hazardous waste. All disposal costs shall be borne by the Paint Removal Contractor. The Contractor shall carry the cost to dispose of all hazardous waste material in a lined landfill in the base bid price.
2. The Paint Removal Contractor shall contact the regional EPA, State, DEP and local authorities to determine lead-based paint debris disposal requirements. The requirements of Resource Conservation and Recovery Act (RCRA) shall be complied with as well as applicable DEP solid waste plan requirements. During the actual removal, the Paint Removal Contractor shall not leave debris on the property, incinerate debris, dump waste by the road or in an authorized dumpster, or introduce lead-contaminated water into storm (will not be flushed down yard inlet or street drain) or sanitary sewers (will not be flushed down toilet or other household drain)

B. Testing of Materials by Paint Removal Contractor:

1. The following materials, individually and at a minimum, shall be representatively tested according to the TCLP procedures of the Resource Conservation and Recovery Act (RCRA) by the Paint Removal Contractor, and results made available to the Owner, Architect and Consultant to determine whether or not they are to be considered hazardous waste.
 - a. Waste water for permitting requirements for disposal.
 - b. Dust from HEPA filters and from damp sweeping.
 - c. Plastic sheets, duct tape, or tape used to cover floors and disposal work clothes and respirator filters.

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- d. Rags, sponges, mops, HEPA filters, respirator cartridges, scrapers, and other materials used to be testing, removal, and clean-up.
 - e. Any other components to be removed and disposed not listed elsewhere.
2. For waste disposal and classification purposes, the following documents are made applicable and part of this Section: 40 CFR 241, 257, 261, 262, and 49 CFR 172, 173, 178, and 179.
- C. Disposal of Non-Hazardous Contaminated Solid Waste
1. Contractor shall place lead-based paint chips debris, and lead dust in double six-mil polyethylene bags that are air-tight and puncture resistant. Pieces of wood or other types of substrates that do not fit into polyethylene bags shall be wrapped and labeled DANGER, LEAD DUST".
 2. Contractor shall place all disposable cleaning materials, such as sponges, mop heads, filters, disposable clothing in double six-mil polyethylene bags and seal.
 3. Contractor shall clean surfaces and equipment and bag large debris. Contractor shall then remove polyethylene sheeting and tape from covered surfaces. Prior to removing polyethylene sheeting, Contractor shall lightly mist the sheeting in order to keep dust down and fold inward to form tight bundles to bag for disposal, Contractor shall place all polyethylene sheeting in double six-mil thick polyethylene bags and seal. Bags shall be labeled "DANGER, LEAD DUST".
 4. Contractor shall bag and seal vacuum bags and filters in double six-mil thick polyethylene bags.
 5. Contractor shall place contaminated clothing or work area clothing used during removal in polyethylene bags for disposal prior to leaving the work area.
 6. Contractor shall contain and properly dispose of all liquid waste, including lead dust-contaminated waste water,
 7. Contractor shall HEPA vacuum the exterior of all liquid waste containers prior to removing waste containers from the work area, and wet-wipe containers to ensure that no residual contamination remains. Containers shall then be moved out of the work area into the designated storage area.
 8. Contractor shall carefully place the containers into a truck or dumpster used for disposal.
 9. Contractor shall ensure that all waste is transported in covered vehicles to a landfill, or lined landfill, if available, in accordance with applicable DOT and EPA regulations.
 10. Contractor shall submit to Owner the waste transfer

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procedure and route and shall comply with all DEP and DOT regulations concerning hazardous and non-hazardous waste removal and transportation. If a Paint Removal Contractor is utilized for the disposal procedure, Paint Removal Contractor shall submit for Owner's approval the Contractor Qualifications to perform the work as specified in this Specification. Contractor shall be responsible for all actions of the waste hauler pertaining to waste removal and disposal under this Section.

D. Disposal of Hazardous Waste

1. Paint Removal Contractor and Transporting Contractor will be required to comply with the Resource Conservation and Recovery Act (RCRA) and with all applicable State and local regulations.
2. Contractor shall comply with all EPA regulations for waste treatment, transfer and disposal.
3. Contractor shall place caustic paste residues in drums fabricated of materials that cannot be dissolved or corroded by chemicals. Caustic and acid waste must be segregated from each other and cannot be stored in the same containers. Other materials testing as hazardous shall be prepared for disposal as follows:
 - a. Packaged and sealed in containers approved under. 49 CFR 173, 178, and 199.
 - b. Containers shall be numbered to correspond to the seal number, labeled with the type of materials, date it was filled and sealed, seat number, and weight of sealed container in addition to the information required under 49 CFR 172.
 - c. A log shall be prepared at time of filling, identifying each numbered container and the information from "b" above. A copy of this log shall be furnished to the Consultant within three working days after the containers are filled.
 - d. Name, location and telephone number of the disposal site used; copy of the state license in which the disposal site is located, locally-issued license, and a signed agreement that the disposal site will accept the hazardous lead waste shall be provided to the Consultant.
 - e. Name, address and telephone number of any waste Contractors used; provide copies of licenses and signed agreements to Consultant.
 - f. Submit copies of the Hazardous Waste manifest as required by these Specifications.
4. Waste Containers: Contractor shall comply with EPA and DOT regulations for containers Contractor shall contact State and local authorities to determine their

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criteria for containers, and present this information to Owner. The more stringent regulation shall apply. No more than two hazardous waste trailers shall be allowed on the site at any time All trailers shall be placed at the direction of the Owner

5. Waste Transportation: If Contractor is not a certified hazardous waste transporter, a contract shall be entered into with a certified transporter to move the waste. Transporter shall be at approval of Owner. Deleading Contractor shall require the certified hazardous waste transporter to fully comply with RCRA and DOT regulations.

6. Prior to removal of any hazardous waste the following information must be received in writing by Owner's Lead Inspection Consultant for their review and approval:
 - a. Quality of hazardous waste.
 - b. Type of waste materials.
 - c. Method of containerizing waste or waste treatment and appropriate licensing, certification and regulatory approvals.
 - d. Proposed waste hauler and disposal route.
 - e. Proposed waste disposal site or landfill.

Once approval is received by Contractor from such Consultant, the waste may be transported as required.

7. Receipts from waste disposal site or landfill must be received and approved by Owner and Lead Inspection Consultant prior to approval of completion of the applicable phase of work.

E. Cost for Disposal of Hazardous Waste

1. The cost for the correct disposal of all waste of this project shall be included in the Total Base Bid, including the lead removal waste to be disposed as hazardous waste listed in this Section, and according to 40 CFR 241, 261, and 262.

The cost for the disposal as hazardous waste shall include all fees, permits, excise tax, labor, materials, profit, overhead, waste transfer costs, and all other costs incidental to hazardous disposal, including Land-Ban requirements. Also included shall be the cost for all storage dumpsters, permit fees, transport, reduction (on-site or off-site), additional testing, and disposal fees.

2. Contractor shall submit to its approved laboratory for testing, samples of each type of component removed as part of the work of this project. The Base Bid shall include minimum requirements for testing of materials required by the disposal sites, hazardous and non-hazardous, and as referred to in this Section.

PART 2 - PRODUCTS

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2.1 MATERIALS AND EQUIPMENT

All material and equipment proposed to be used on this project shall be subject to the acceptance of the Owner and Architect, including:

- A. Polyethylene Sheeting, minimum thickness of six (6)-mil.
- B. Plastic Bags, minimum thickness of (6)-mil.
- C. Duct Tape, up to 3 inch width.
- D. Lead Warning Signs, as required by the DLWD regulations, and OSHA Hazard Communication requirements.
- E. Flexible Duct for ventilation units (if required).
- F. Spray Adhesive, fire retardant.
- G. Personal Protective Equipment, NIOSH approved respirators.
- H. Ventilation Units with HEPA filtration and exhaust fans.
- I, HEPA Vacuums.
- J. Other materials, tools and equipment necessary for lead based paint removal.
- K Trisodium-Phosphate (TSP) and product data.
- L. Cloth Tarpaulin.
- M. Semi-Paste non-caustic stripper, as needed: NUTEC-002A Industrial Semi-Paste paint stripper, or approved equal.

PART 3 - EXECUTION

3.1 GENERAL

- A. Approvals and Inspection

All temporary facilities, work procedures; equipment, materials, services, and agreements must strictly adhere to and meet this Section along with EPA, OSHA regulations and recommendations as well as Federal, State, and local regulations. Where there exists overlap of these regulations, the most stringent one applies. All work performed by the Contractor is further subject to approval of the Owner and/or Architect.

- B. Damage and Repairs to the Work Site

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1. Removal shall be performed without damage to the building, including, but not limited to, structural members, landscaping, ceilings, floors, walls, siding, electrical fixtures or exterior fixtures and components. The Contractor shall provide protection of these items and materials as part of the work area preparation. Where lead paint removal activity causes damage, the Contractor shall patch, repair, replace or otherwise restore the damaged items to their original condition, with similar or better materials, at no additional cost to the Owner. This includes repair of surfaces damaged during component removal as described herein, prior to the commencement of replacement activities by the Contractor or trades.'
2. Existing damage not needing repair includes damage to fixtures being removed. Contractor shall confirm on-site, the components not needing repair of damage prior to any removal work.

C. Isolation Work Areas

All lead work areas shall remain isolated from all other trades of the project and remain inaccessible to the public. Contractor shall monitor the access to the lead removal work areas. Refer to Pre-Construction Submittals for requirement of Owner and Architect approval of work areas.

D. Personnel Sampling Paint Removal Contractor

1. Perform personnel air sampling during all lead paint removal work to determine worker exposure limits. The results of such sampling shall be posted, provided to individual workers, and submitted to Owner and Architect as described herein.
2. Provide sampling to check personal exposure levels. Representative sampling shall be taken for the duration of the work shift or for eight hours, whichever is less, Personal samples need not be taken for repeated working conditions if working conditions remain unchanged, but must be taken every time there is a change in the removal operation, either in terms of the location or the type of work. Sampling will be used to determine eight hour Time-Weighted-Averages (TWA). Personal sampling shall be as outlined in OSHA Standard 29 CFR 1926-62.
3. Air sampling results shall be transmitted to the Owner and individual workers available at the job site in written form no more than forty-eight (48) hours after the completion of a sampling cycle. The reporting document shall list each sample's result, sampling time and date, personnel monitored and their social security numbers, flow rate, sample duration, sample yield, cassette size, and analysts' name and company, and shall include an interpretation of the results. Air sample analysis results will be reported in micrograms/cubic meter (ug/m3)
4. The Contractor's testing lab shall be an AIHA accredited for analysis of metals. Contractor shall submit for Owner's review and acceptance the name and address of the laboratory, certification(s) of AIHA accreditation for metal analysis, listing of relevant experience in air lead analysis, and presentation of a documented Quality Assurance and Quality Control Program.

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5. Air monitoring frequency will be established in accordance with the requirements set forth in 29 CFR 1926-62.

E. Work Review

1. The Architect may review the Contractor's work practices prior to the start of and during all lead-based paint removal related work and will report any violations of Section 02090 to the Owner. If the Contractor fails to correct deficiencies within 24 hours, the Architect will request that work be stopped and the Owner will be contacted to intervene. The on-site Inspector representing the Architect or Owner may stop the work at any time due to violation of regulations and violation of Specification requirements.

F. Respirators and Protective Clothing

1. Personal protection, in the form of disposable coveralls and NIOSH approved respirators, is required for all workers, supervisors, and visitors entering the work area during the removal and cleaning operations.
2. Work clothes shall consist of disposable full-body Tyvek ® or other impermeable coveralls, head covers, gloves, boot or shoe covers, and eye protection.
3. Supply workers and supervisory personnel with NIOSH approved respirators and HEPA filters. Respiratory protection shall be implemented for all work performed under this Section unless Architect approves lesser requirements. The respirators shall be sanitized and maintained according to the manufacturer's specifications. Disposable respirators shall not be considered acceptable under any circumstances.
4. Respirators shall be individually assigned to removal workers for their exclusive use. All respiratory protection shall be provided to workers in accordance with the written submitted respiratory protection program, which includes all items in OSHA 29 CFR 1910.134 (b) (1-11) A copy of this program shall be kept at the work site, and shall be posted in the clean area.
5. Workers must perform negative and positive pressure fittest each time a respirator is put on, whenever the respirator design so permits. Powered air purifying respirators shall be tested for adequate flow as specified by the manufacturer.
6. Workers shall be given a Qualitative Fit Test in accordance with procedures detailed in OSHA 29 CFR 1920.1025, Appendix D, Qualitative Fit Test Protocols, for all respirators to be used on this removal project.
7. All persons leaving the removal area must remove their personal protective equipment before leaving the containment. Coveralls shall be removed inside out to minimize the dispersal of lead dust.

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8. Under no circumstances shall workers or supervisory personnel eat, drink, smoke, chew gum, or chew tobacco in the work area; to do so shall be grounds for the Architect to stop all removal operations.
 9. As with additional clothing, all footwear shall be left inside the clean area until the completion of the job and then shall be HEPA vacuumed or discarded as contaminated waste.
- G. The Contractor is responsible for using safe procedures and complying with OSHA and DWLD regulations to avoid electrical hazards.
1. Contractor shall comply with all Federal, State and local regulations and ordinances regarding lead waste storage.

3.2 OCCUPANT PROTECTION

- A. General:
1. During the course of removal activities, the protection of the public, building occupants, and workers from other trades and building contents shall be the responsibility of both the general contractor and the Contractor.
 2. Conduct paint removal work off-site in a secure and controlled environment.
 3. Maintain polyethylene barriers, as long as needed for the safe and proper completion of the work. Any breeches in the work area barriers shall be corrected immediately as necessary during the workday with such breeches reported immediately to the Owner. Work will not be allowed to commence until all barriers are in place and air testing equipment has been setup and working.
 4. All debris must be properly bagged and removed from work areas daily.
 5. Clean Area: The Contractor shall select a clean area outside of the removal and decontamination unit areas for workers to change into protective equipment. This area shall contain warm water hand washing facilities (potable water), clean cloths, storage for a HEPA vacuum, and respirator storage space. Table, chairs and a rest facility shall also be available at this location. Contaminated equipment or personnel shall not be permitted in this area. The floors and walls shall covered with six-mil polyethylene sheeting.
 6. Contractor shall comply with proper notification requirements of this Section prior to commencement of work.

3.3 REMOVAL METHODS

- A. Removal - General

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1. For surfaces in which the components are removed, all visible debris, caulking, sealers, and run-off paint shall be removed and any excess paint on the structure from which the component was removed shall be removed by the Contractor.
2. At no time will wire brushing, flame torching, sanding or the use of heat guns be allowed on this project.

B. Paint Removal:

1. General: This shall include the removal of paint from components identified to be abated in the scope of work of this Specification. Paint removal shall follow the below listed requirements. Refer also to related articles in this Section.
2. Paint removal shall occur to remove all visible paint down to a point where no more than 2 well-adhered coats are remaining. At least 90% of all surface areas shall be bare wood.
3. If the paint removal process damages the component, Contractor shall replace component or repair the damaged surface during the removal process, under full work area preparation as identified in the Specification. At no time will the use of abrasive or mechanical strippers /sanders or dry scraping be allowed for use in paint removal or surface repair work of this Contract.
4. Acceptable Methods: Hand scapping should be done wherever possible (see 1.5A), as first priority. For areas where hand scapping is not sufficient, the following methods may be employed:

Paint removal occurring on wood surfaces shall be performed using accepted chemical strippers paste products, or wet scraping methods. The use of caustic pastes on this project is not permitted. Worker protection shall be increased to include chemical resistant, non-permeable gloves and face shields, Protect floors and adjacent painted surfaces. Any damage to these surfaces will be repaired or the damaged material replaced at no cost to the Owner.

5. All paint chips, slurry, waste, and debris generated from paint removal shall be removed immediately upon generation during the work.
6. Paint and component removal at windows and doorways shall occur only when proper barriers and protection are in place and approval has been given regarding barrier set-up and methods of removal.
7. Paint removal occurring at exterior trim and woodwork shall not cause damage to existing wood or trim components. Any damage shall be repaired.
8. In all cases of paint removal, the Contractor shall wait to coordinate the painting of the materials until after receiving a visual inspection and approval from the Licensed Inspector performing the removal re-inspection.

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3.4 FINAL CLEAN-UP PROCEDURES

A. Clearance Testing

1. Clearance testing will be performed after the final clean-up has been completed and all surfaces are dry, and the area has passed a visual inspection by the Architect, Visual inspection. clearance within the exterior work areas shall determine completion of exterior removal.

Contractor shall pay for all additional costs until the clearance level is achieved. Re-inspection will then be performed to verify compliance with the mandated levels. The cost of additional testing shall be paid by the Contractor by subtracting the cost for laboratory analysis and Inspector's time from the Contract total.

END OF SECTION

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SECTION 08610 – WINDOW RESTORATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

The general provisions of the Contract, including General and Supplementary Conditions, and relevant sections of these Specifications, apply to the work specified in this Section.

1.2 SCOPE OF WORK

A. Restoration of windows where identified:

1. Paint removal of window sash shall be off-site, see:
SECTION 02090 – LEAD-CONTAINING PAINT CONSIDERATIONS
SECTION 02091 – PAINT REMOVAL
2. Inspect and repair wood with Abatron liquid consolidant and filler.
3. Provide and install replacement wood parts where missing or deteriorated beyond the point where they can receive epoxy repairs, where indicated on the window schedule.
4. Re-glaze windows with putty.
5. Prep and prime all wood.
6. Provide structural reinforcement of sash.
7. Provide weatherstripping where indicated.
8. Refurbish existing hardware where indicated.
9. Provide and install new hardware where indicated.
10. Provide and install new sash weights where indicated.
11. Finish painting of all sash (both interior & exterior)

1.3 RELATED WORK

SECTION 02090 – LEAD-CONTAINING PAINT CONSIDERATIONS
SECTION 02091 – PAINT REMOVAL
SECTION 09900 – PAINTING

1.4 SUBMITTALS

Submit for approval product data and samples of each product.

1.5 QUALITY ASSURANCE

Employ only workers with at least five (5) years documentable experience with use of materials and methods outline herein. Window restoration specialist must have successfully completed a minimum of three (3) similar restoration projects. The Contractor shall submit to the Architect the names, addresses, Architect and contact person for at least three projects.

1.6 MANUFACTURER'S DATA

Provide four (4) copies of manufacturer's data for all materials.

1.7 MOCK-UP

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Following the requirements of this section, perform complete repair of one of each window type. Obtain Architect's approval of mock-ups before proceeding with the restoration of remaining windows.

1.8 SCAFFOLDING, STAGING AND HOISTING

Scaffolding, staging, and hoisting shall be provided by the General Contractor.

PART 2 - PRODUCTS

2.1 MATERIALS FOR RESTORATION

- A. Wood Consolidant: "Liquid Wood" as manufactured by Abatron, Inc., 33 Center Drive, Gilberts, IL 60136 or approved products by Gougeon (West Systems) or Adhesive Engineering, Inc.
- B. Structural Adhesive Putty: "Wood Epoxy" as manufactured by Abatron, Inc. as above or approved products by Gougeon (West Systems) or Adhesive Engineering Inc. Fillers or modifiers shall be by epoxy manufacturer. Structural Adhesive Putty shall be of same manufacturer as wood consolidant.
- C. Wood replacement: Salvaged eastern white pine
- D. Glazing Compound: "DAP-33"
- E. Glazing: Re-use existing glass. Where replacing missing or broken, use clear plate glass 3/16" thick minimum or match existing thickness.
- F. Hardware:
 - 1. Sash Pulleys: Equal to Phelps Model SP225BB RE
 - 2. Sash Chain: Equal to Phelps #45 solid bronze
 - 3. Counterweights: Equal to Phelps CW5
 - 4. Sash lifts: Equal to Phelps Model LFD31
 - 5. Weatherstrip: Equal to Spring Bronze by Wm. A, Kilian Hardware Co.

2.2 PAINT MATERIALS

A. Paint Systems

The products listed are manufactured by Sherwin Williams. Equivalent products by other manufacturers may be submitted for review and approval by Owner and Architect. Provide manufacturer's best quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

Material compatibility: Provide primers and finish coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

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1. Existing Exterior Woods and New Wood Work:

Prime all bare wood

1st Coat: Sherwin Williams A-100, Alkyd Exterior Wood Primer, Y24W20 at 2.2 dft.

2nd Coat: Sherwin Williams Duration Exterior Coating K Series at 2.8 mils dft.

3rd Coat: Sherwin Williams Duration Exterior Coating K Series at 2.8 mils dft.

2. Interior - paint finish for windows and trim:

1st Coat: Sherwin Williams PrepRite Wall and Wood Primer (4 mils wet, 1.6 mils dry)

2nd Coat: Sherwin Williams ProClassic XP Interior Alkyd Semi-Gloss (4 mils wet, 1.6 mils dry)

3rd Coat: Sherwin Williams ProClassic XP Interior Alkyd Semi-Gloss (4 mils wet, 1.6 mils dry)

B. Paintable Sealants

1. Dupont Paintable Premier Silicone
2. GE Silicone II Paintable Silicone
3. Dow CRL paintable Silicone

PART 3 - EXECUTION

3.1 GENERAL

- A. Security and Weathertightness: The window restorer shall maintain a weathertight and secure building at all times.
- B. Surface preparation: All wood shall be thoroughly sanded with number 100 sandpaper.
- C. Window Restoration: Inspect and repair all existing deteriorated wood parts. Use wood dutchmen to repair defects greater than 1 cubic inch, use consolidant and filler to repair smaller defects. Remove all putty and prime with linseed oil and re-putty. Lightly sand all woodwork to assure good paint adhesion and smooth finish. Prime all woodwork.
- D. General Wood Repair Standards:
 1. The following standards will serve as general guidelines for the conservation and repair process.

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- a. Replace all finish elements in kind, matching profiles and actual dimensions of the stock and the methods of installation. Under no **circumstances shall nominal sized lumber be substituted for any existing** more fully sized lumber. All exposed woodwork shall be Honduran mahogany.
- b. Prime and backprime all architectural and trim elements, including field cuts.
- c. Take measures to prevent chronic maintenance problems, such as allowing for good ventilation and air circulation, positive drainage of water, etc.

3.2 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturer's directions. Apply only in atmospheric conditions as directed by the manufacturer's instruction.
- B. 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. Do not store paint materials inside the building.
- C. Stir materials before application to produce a mixture of uniform density, and stir as required during the application of the materials.

3.3 EPOXY WOOD CONSOLIDATION AND PATCHING

- A. General: All epoxy materials to be as manufactured by Abatron, Inc. 33 Center Drive, Gilberts, IL 60136 Tel. (708) 426-2200.
 1. Wood Consolidant: Liquid Wood as manufactured by Abatron, Inc.
 2. Structural Adhesive Putty: Wood Epoxy as manufactured by Abatron, Inc.
- B. Proportioning of Mix: Follow the directions of the manufacturer explicitly with regard to proportioning and mixing of epoxy components.
- C. Addition of Fillers: Follow the directions of the manufacturer explicitly with regard to the addition of either microfibers or microballoons to the epoxy mix. Addition of fillers may be necessary if the epoxy mix is to be used as patching and filling compound.
- D. Use of Epoxy Consolidants: Drill 1/8" diameter holes diagonally into deteriorated or punky wood approximately 1" on centers both ways in staggered row, and to sufficient depth to penetrate sound wood. Apply consolidant by injecting it into each hole with a plastic squeeze bottle until absorption ceases.

In vertical or diagonal members, begin at top and work downward; in horizontal members begin at one end and work across member. On window sills, it may be possible to brush apply epoxy consolidant onto sill until absorption stops.

- E. Use of Epoxy Patching Compound: Remove all debris from areas to receive patching compound. Remove all paint from wood surfaces. Use patching compound only to fill holes and cracks less than 1/2" wide. Apply patching compound with putty knife, forcing it firmly into holes and cracks. Do not strike off compound flush to surface, leave slightly protruding. Plane, shape and sand all consolidated wood elements to conform to original profiles and shapes as closely as possible.

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3.4 APPLICATION

- A. Apply paint materials in accordance with the manufacturer's directions. Use applicators and techniques best suited for the type of material being applied.
- B. Apply paint materials so as to completely cover all surfaces with an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, laps, refinish, or repaint work not in compliance with specified requirements.
- C. Apply additional coats when undercoats, stains or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance.
- D. Prime Coats: Apply a prime coat to those areas which are badly worn or where there is exposed bare substrate.
- E. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or paint work not in compliance with specified requirements.

3.5 CLEAN-UP PROTECTION

- A. During the progress of the work, remove from the project daily all discarded paint materials, rubbish, cans and rags. No paint materials will be allowed to be kept within the structure itself for any reason.
- B. Protect all areas of the building and site, whether to be painted or not, against damage by painting and finishing work. Correct any damages by cleaning, repairing or replacing and repainting, as directed by the Architect.

END OF SECTION 08610

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SECTION 09900 – FIELD PAINTING (FILED SUB-BID REQUIRED)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

The drawing and general provisions of the Contract, including General and Supplementary Conditions, Division 1 Specification Sections and relevant sections of these Specifications, apply to the work specified in this Section.

1.2 GENERAL REQUIREMENTS

- A. The General Conditions and Division 1, General Requirements, are a part of this Division.
- B. Review all other Contract Documents for requirements and/or conditions affecting or relating to work described in this Section.

1.3 SCOPE

Provide all labor, materials, equipment, supervision and related services and items necessary to perform all PAINTING work.

- A. Work Included:
 - 1. Preparation and painting of exterior wood trim window sill.
 - 2. Preparation and painting of interior window stops.
 - 3. Field touch-ups of restored shop painted window sashes.
- B. This SECTION includes surface preparation and field painting of exposed exterior items and surfaces, as well as interior and exterior surfaces at windows, and interior surfaces disturbed in the window restoration process.
- C. See SECTION 08610 WINDOW RESTORATION, for shop painting of restored window sash.
- D. See SECTION 02090 – LEAD CONTAINING PAINT CONSIDERATIONS

1.4 SUBMITTALS

- A. For information only, submit two (2) copies of manufacturers specifications, including paint label and analysis for each material specified and/or used.
- B. Submit samples for Architects review of color and texture only. Compliance with all other requirements is the exclusive responsibility of the Contractor. On 12" x 12" hardboard, provide 2 samples of each color and material, with texture to simulate actual conditions. Resubmit each sample as requested until required sheen, color and texture is achieved.

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1.5 DELIVERY AND STORAGE

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

1.6 JOB CONDITIONS

- A. Do not apply paint materials when the temperature of surfaces to be painted and the surrounding air temperatures are below 50 degrees F, unless otherwise permitted by the paint manufacturers printed instructions.
- B. Do not apply paint materials in snow, rain, fog, or mist, or when the relative humidity exceeds 85%, or to damp or wet surfaces. Test all wood to be painted with a moisture meter and do not apply paint to wood with a moisture content greater than 12%.

1.7 RELATED WORK

SECTION 02091 – PAINT REMOVAL
SECTION 08610 – WINDOW RESTORATION

1.8 CONTRACTOR QUALIFICATIONS

- A. Painting Contractor shall be certified in the category “Painting” by the Massachusetts Division of Capital Asset Management.

1.9 ACCESS TO WORK

- A, General contractor shall provide access to the work of this SECTION, via staging the tower and ventilator structures. Access to cornice work will be by method of the General Contractor’s decision, and may possibly be via aerial lift.

PART 2 - PRODUCTS

2.1 COLORS AND FINISHES

- A. Paint colors are similar to existing. Submit samples, as specified herein, before proceeding with the work.

2.2 MATERIAL QUALITY

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- A. Provide the best quality of the various types of coatings as regularly manufactured by approved paint materials manufacturers. Material not displaying the manufacturer's identifications as a standard, best-grade product will not be acceptable.
- C. Provide undercoat paints which are compatible with the finish coats. Use only thinners approved by the paint manufacturer and use only within recommended limits.

2.3 MATERIALS

A. Paint Systems

The products listed are manufactured by Sherwin Williams. Equivalent products by other manufacturers may be submitted for review and approval by Owner and Architect. Provide manufacturer's best quality paint material of the various coating types specified that are factory formulated and recommended by manufacturer for application indicated. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

Material compatibility: Provide primers and finish coat materials that are compatible with one another and with the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

1. Existing Exterior Woods and New Wood Work:

Prime all bare wood

1st Coat: Sherwin Williams A-100, Alkyd Exterior Wood Primer, Y24W20 at 2.2 dft.

2nd Coat: Sherwin Williams Duration Exterior Coating K Series at 2.8 mils dft.

3rd Coat: Sherwin Williams Duration Exterior Coating K Series at 2.8 mils dft.

2. Interior - paint finish for windows and trim:

1st Coat: Sherwin Williams PrepRite Wall and Wood Primer (4 mils wet, 1.6 mils dry)

2nd Coat: Sherwin Williams ProClassic XP Interior Alkyd Semi-Gloss (4 mils wet, 1.6 mils dry)

3rd Coat: Sherwin Williams ProClassic XP Interior Alkyd Semi-Gloss (4 mils wet, 1.6 mils dry)

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Window Restoration/ Weatherization Project**

- B. Paintable Sealants
 - 1. Dupont Paintable Premier Silicone
 - 2. GE Silicone II Paintable Silicone
 - 3. Dow CRL paintable Silicone

PART 3 - EXECUTION

3.1 INSPECTION

- A. The Contractor must examine the areas and conditions under which painting work is to be applied. Notify 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 Contractor.
- B. Starting of painting work will be construed as the Contractor's acceptance of the surfaces and conditions.
- D. 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 manufacturers instructions and as herein specified, for each particular substrate condition.
 - 1. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from the cleaning process will not fall onto wet, newly painted surfaces.

Scrape with hand tools all surfaces exhibiting areas of loose paint or poor adhesion. Feather all rough edges with sandpaper to provide smooth transition between paint layers of substrate. A sample of the desired quality level of scraping and sanding and feathering shall be provided by the Contractor for approval by the Architect.
- B. Wood:
 - 1. Clean wood 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.
 - 2. Scrape all loose paint and lightly sand all existing painted surfaces, being careful not to damage moulding profiles. Prime and paint woodwork. Any deteriorated woodwork shall be restored by epoxy consolidation as described in SECTION 08610 – WINDOW RESTORATION.
 - 3. Fill any noticeable gaps with sealant prior to painting.

**Northbridge Memorial Town Hall
Window Restoration/ Weatherization Project**

3.3 MATERIALS PREPARATION

- A. Mix and prepare painting materials in accordance with manufacturers directions.
- B. 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.
- C. 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. Apply paint materials in accordance with the manufacturer's directions. Use applicators and techniques best suited for the type of material being applied.
- B. Apply paint materials so as to completely cover all surfaces with an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, laps, refinish, or repaint work not in compliance with specified requirements.
- C. Apply additional coats when undercoats, stains or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance.
- D. Prime Coats: Apply a prime coat to those areas which are badly worn or where there is exposed bare substrate.
- E. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or paint work not in compliance with specified requirements.

3.5 CLEAN-UP PROTECTION

- A. During the progress of the work, remove from the project daily all discarded paint materials, rubbish, cans and rags. No paint materials will be allowed to be kept within the structure itself for any reason.
- B. Protect all areas of the building and site, whether to be painted or not, against damage by painting and finishing work. Correct any damages by cleaning, repairing or replacing and repainting, as directed by the Architect.

END OF SECTION 09900

Northbridge Memorial Town Hall

Window Restoration/ Weatherization Project

April 30, 2012

7 Main Street, Whitinsville, Massachusetts 01588



OWNER

Town of Northbridge
7 Main Street
Whitinsville, MA
Phone: 508-234-2447
Fax: 508-234-0814

ARCHITECT



324 Broadway
Somerville, MA 02145
Phone: 617-625-8901
Fax: 617-625-8902
www.mcginleykalsow.com

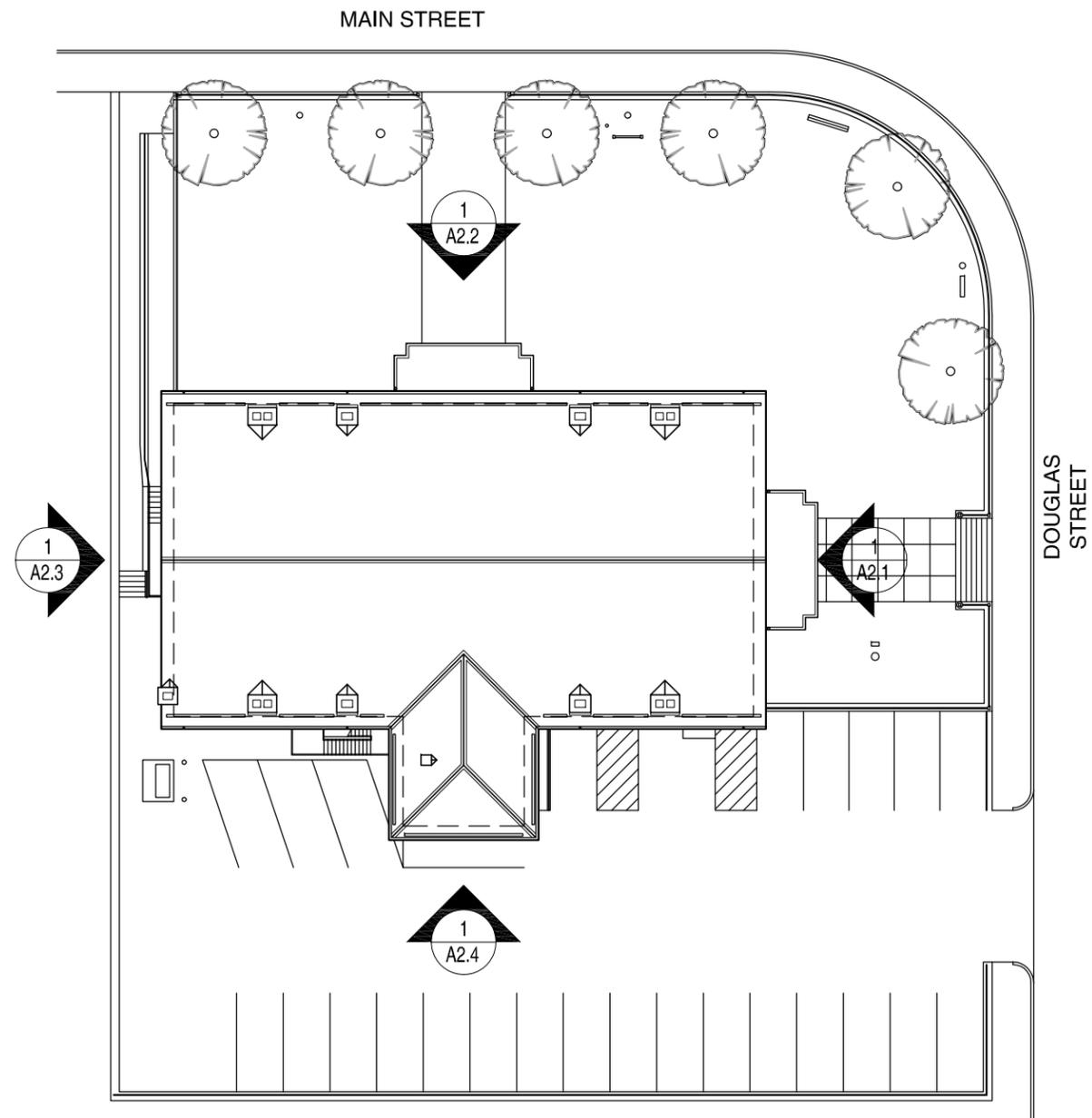
DRAWING LIST

Cover Sheet & Drawing List
A0.1 - General Notes & Key Plan
A2.1 - East Elevation
A2.2 - North Elevation
A2.3 - West Elevation
A2.4 - South Elevation
A8.1 - Window Repair Schedule
A8.2 - Window Repair Schedule
A8.3 - Window Type Elevations
A8.4 - Window Type Elevations
A8.5 - Window Type Elevations
A8.6 - Window Type Elevations
A8.7 - Window Details
A8.8 - Window Details
A8.9 - Storm Window Details

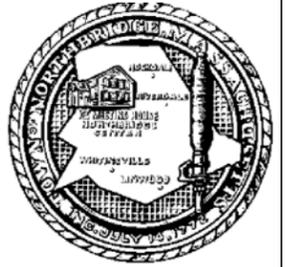
Task III Submission: April 30, 2012

GENERAL NOTES:

1. Protect the public at all times from potential construction hazards.
2. Secure and control access to work area.
3. The Contractor shall be responsible for maintaining a weathertight and secure building at all times.
4. The Contractor shall visit the site and thoroughly examine and become familiar with existing conditions including delivery and removal of materials to and from the site.
5. The Contractor shall protect adjoining property, public rights-of-way, and the public from dust and construction hazards during the project. The Contractor shall provide, install and maintain protection barriers to ensure public safety. Review requirements of work within the public way (street and sidewalk) with the Town of Northbridge and provide required police details for work within the public way.
6. The Contractor shall secure all permits and inspections necessary for the proper execution of the work.
7. Work described in either drawings or specification shall be considered part of this contract.
8. Field dimensions and dimensional coordination shall be the responsibility of the Contractor. Review field conditions that differ from Contract Documents with Architect prior to proceeding with work.
9. Sections and details apply to all similar conditions unless otherwise noted.
10. Materials referred to on drawings and details are new unless noted as existing. Where work is described as "new" or "replacement" the contractor shall remove and legally dispose of existing material. Submit manifest to document legal disposal.
11. Restore any damage to building or site caused during construction to its condition prior to the start of construction. Contractor shall photographically document existing conditions and note areas of existing damage.
12. Control noise. Contain all dust and legally dispose of all construction debris and material removed that is not salvaged for reference or reuse. Conform to all City construction requirements.
13. While the Drawings are generally produced at conventional scales, written dimensions supercede scale. Dimensions given are approximate, and do not relieve the Contractor from measuring actual conditions in the field prior to production or ordering of materials.
14. Contractor shall carefully review site conditions and submit plan with staging, security and site access shown for review by Owner before construction begins.
15. Because of the age of the structure, the contractor shall assume that all painted surfaces include lead paint.
16. At the completion of all work, the Contractor shall remove all construction debris and material and repair damage caused to the site during construction. All paved areas shall be cleaned to return to pre-construction condition.
17. "Requests for Information" RFI's are a normal and expected part of the construction process. In submitting an RFI, the Contractor shall also submit a recommended detail or solution. The Contractor shall also indicate if the Contractor feels that the recommended detail or solution is a proposed increase to the contract sum.



1 SITE KEY PLAN
1/32"=1'-0"



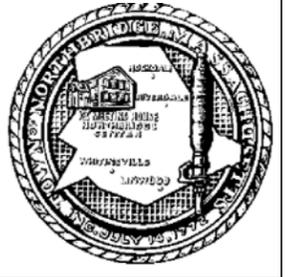
**Northbridge Memorial
Town Hall**
7 Main Street
Whitinsville, MA 01588
Task III
Window Restoration/ Weatherization

Date: 4/ 30/ 2012
Drawn By: WJP
Reviewed By: WCK
Project No: 1616.00

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ARCHITECTS & PRESERVATION PLANNERS
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Somerville, MA 02145
617.625.8901 - www.meginleykalsow.com

**GENERAL
NOTES &
KEYPLAN**

A0.1



**Northbridge Memorial
Town Hall**

7 Main Street
Whitinsville, MA 01588
Task III

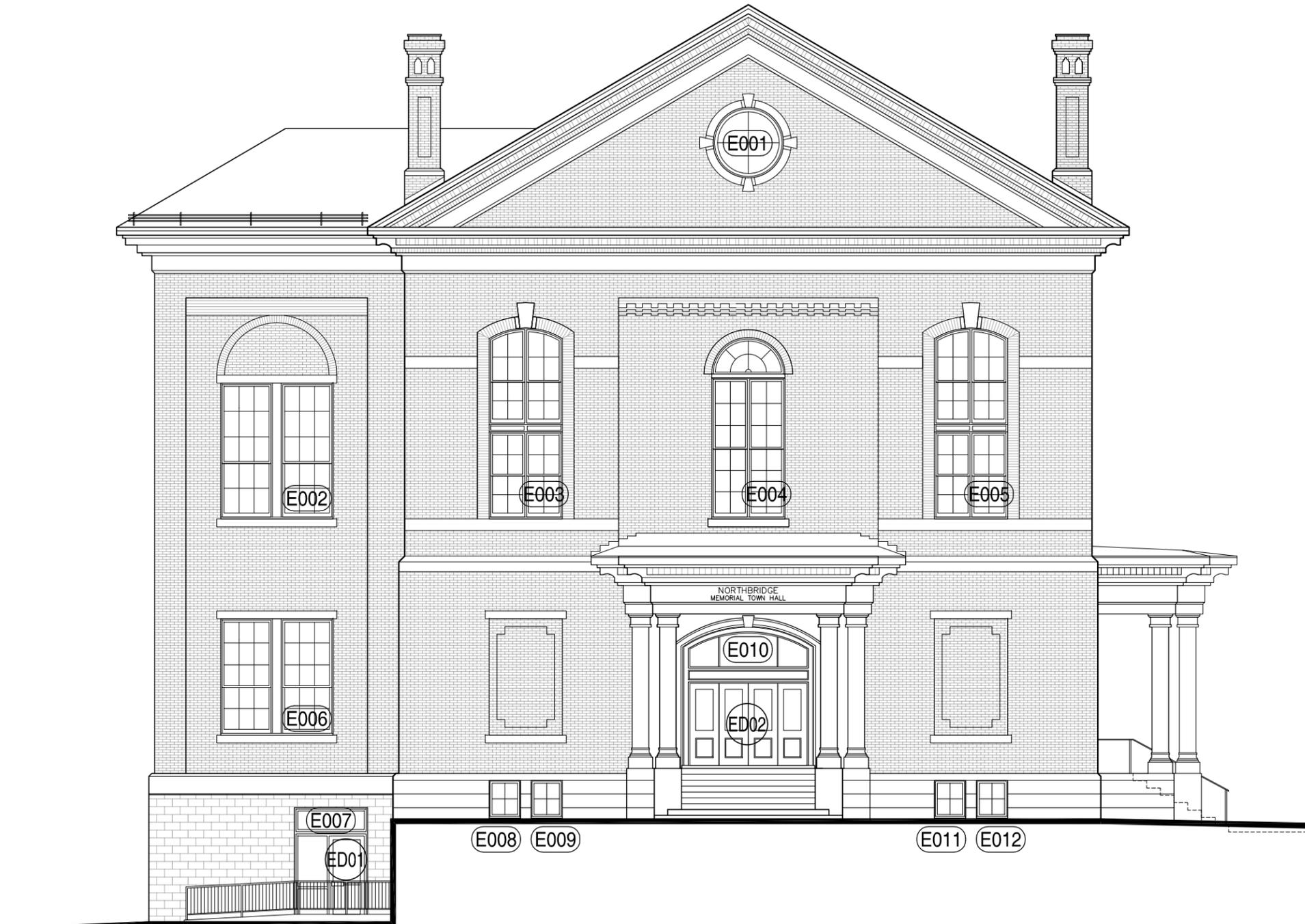
Window Restoration/ Weatherization

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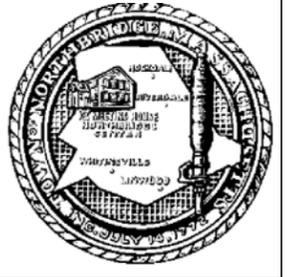
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**WINDOW
RESTORATION
EAST
ELEVATION**

A2.1



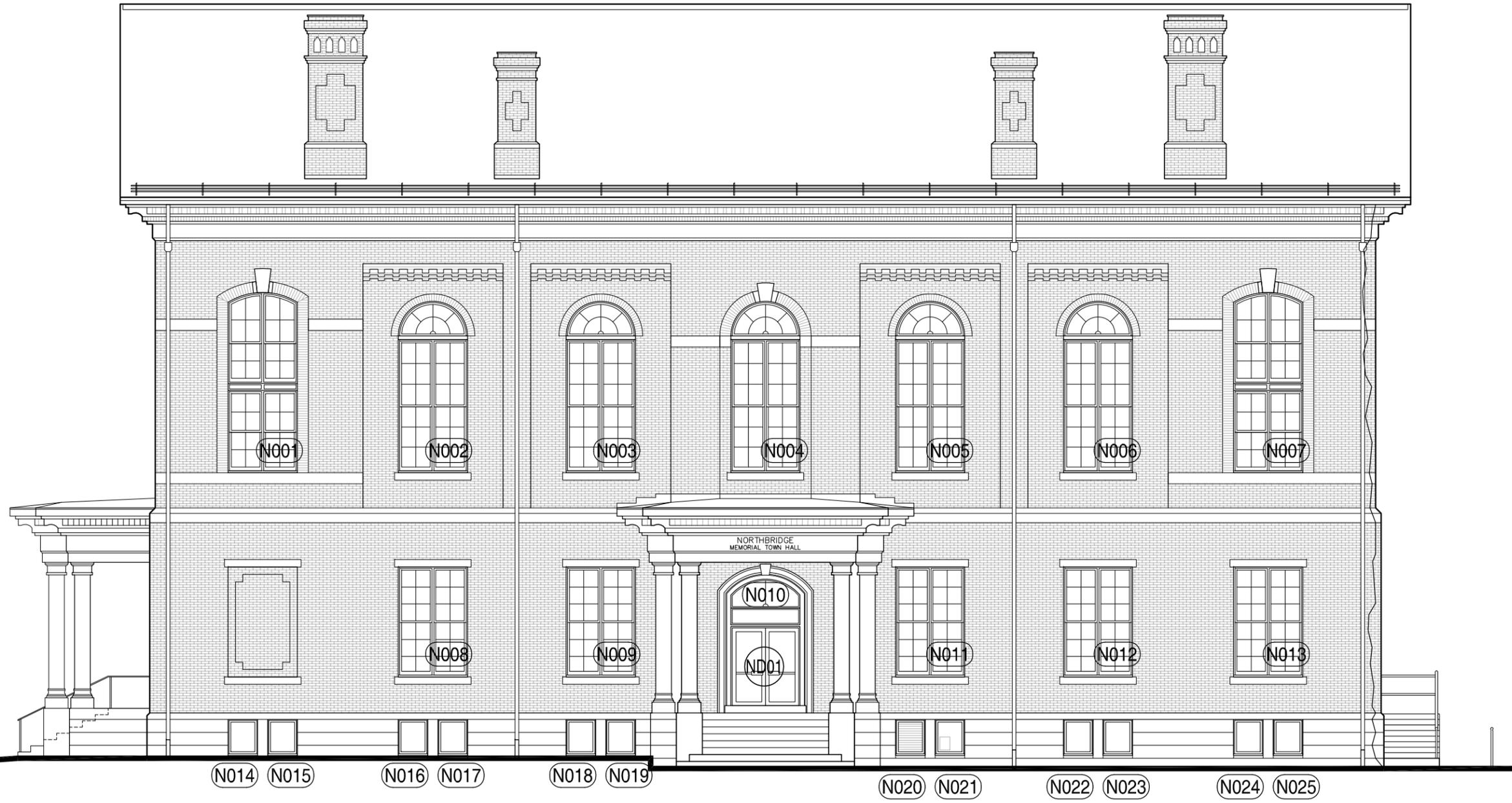
1 EAST ELEVATION
3/32" = 1'-0"



**Northbridge Memorial
Town Hall**

7 Main Street
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Task III
Window Restoration/ Weatherization



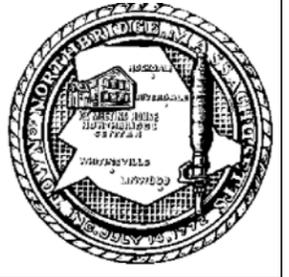
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**WINDOW
RESTORATION
NORTH
ELEVATION**

1 NORTH ELEVATION
3/32" = 1'-0"

A2.2



1 WEST ELEVATION
3/32" = 1'-0"

Northbridge Memorial
Town Hall

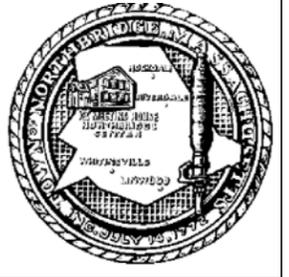
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WINDOW
RESTORATION
WEST
ELEVATION

A2.3



**Northbridge Memorial
Town Hall**

7 Main Street
Whitinsville, MA 01588

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Window Restoration/ Weatherization

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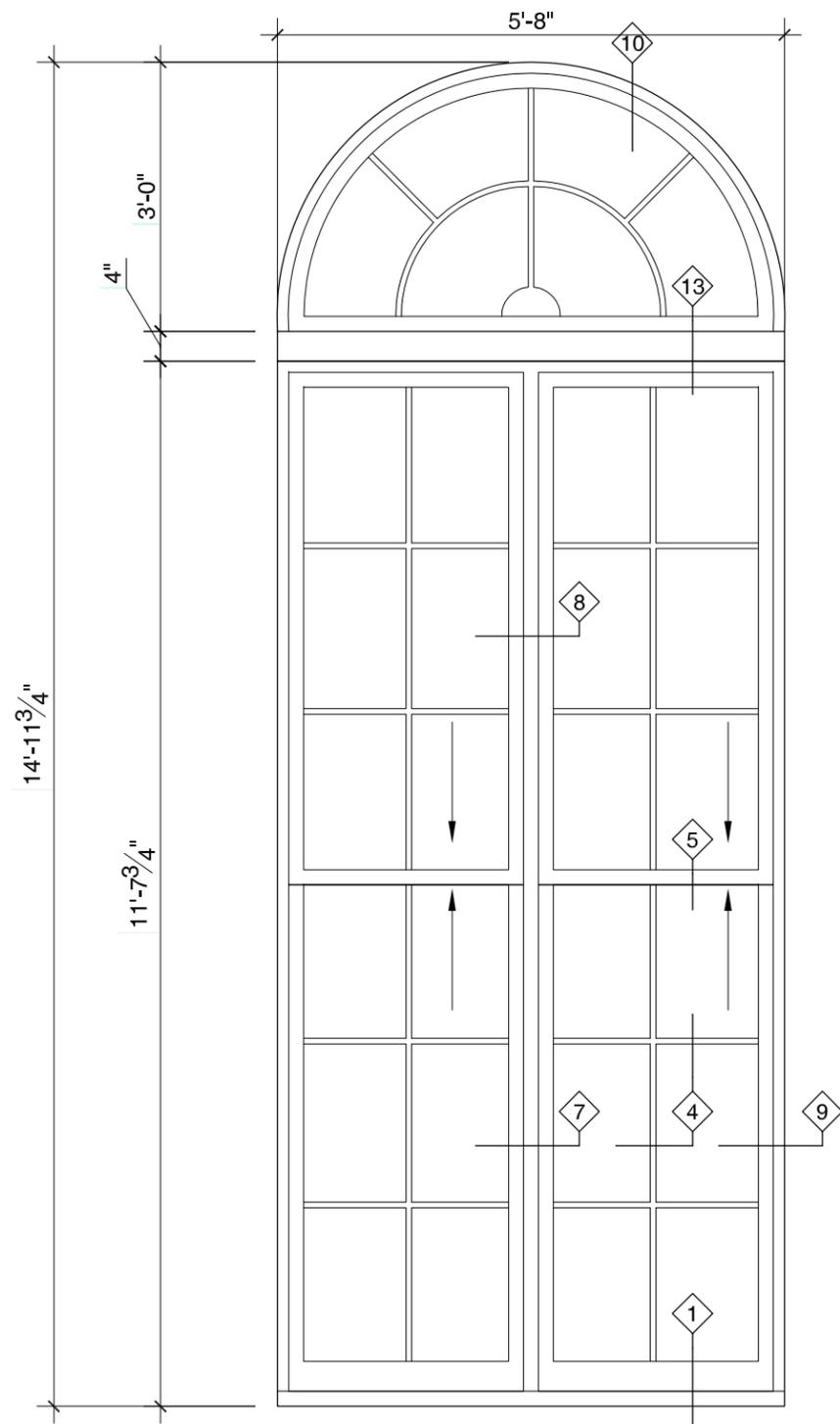
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**WINDOW
RESTORATION
SOUTH
ELEVATION**

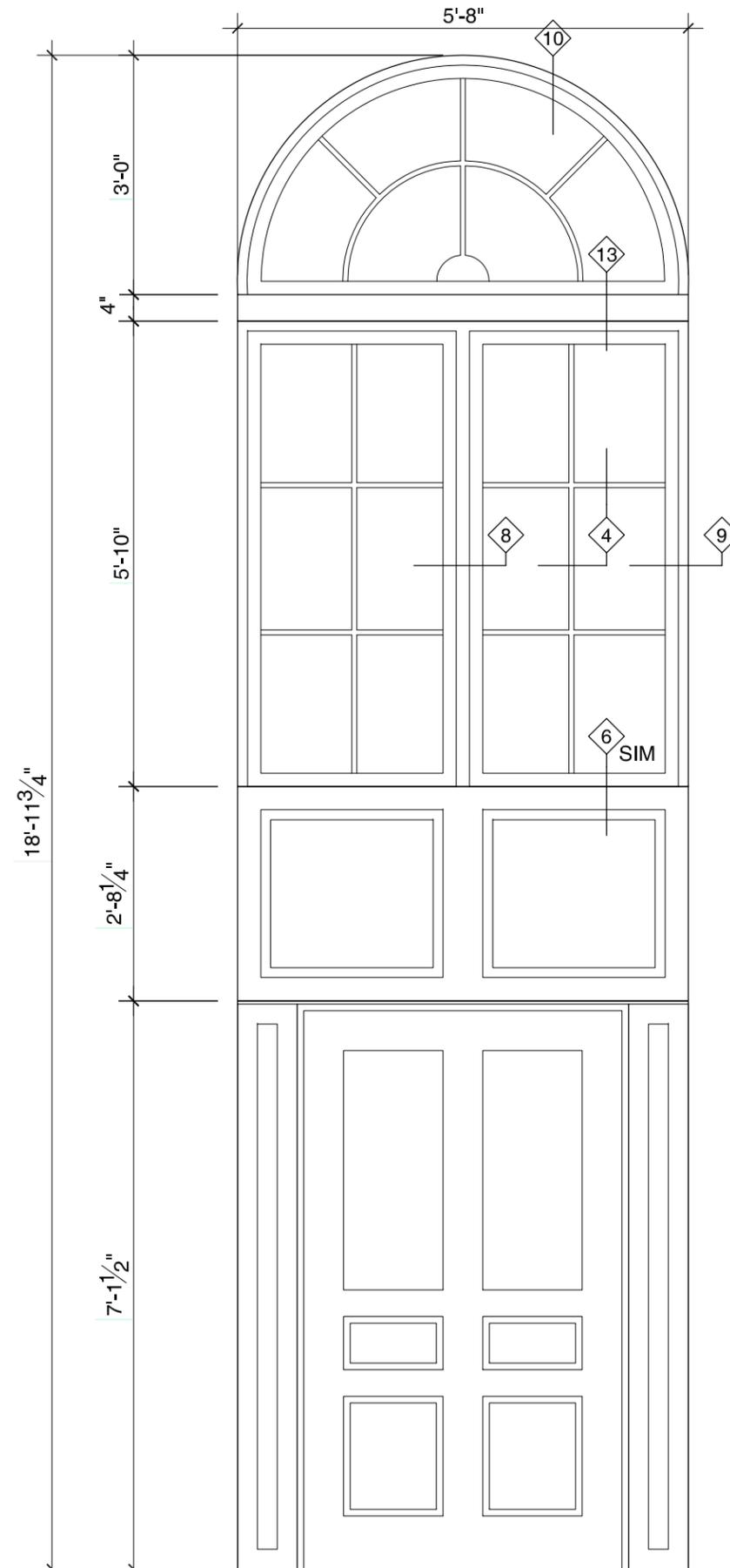
A2.4



1 SOUTH ELEVATION
3/32" = 1'-0"



TYPE A



TYPE A (sim)



**Northbridge Memorial
Town Hall**

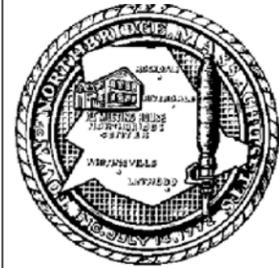
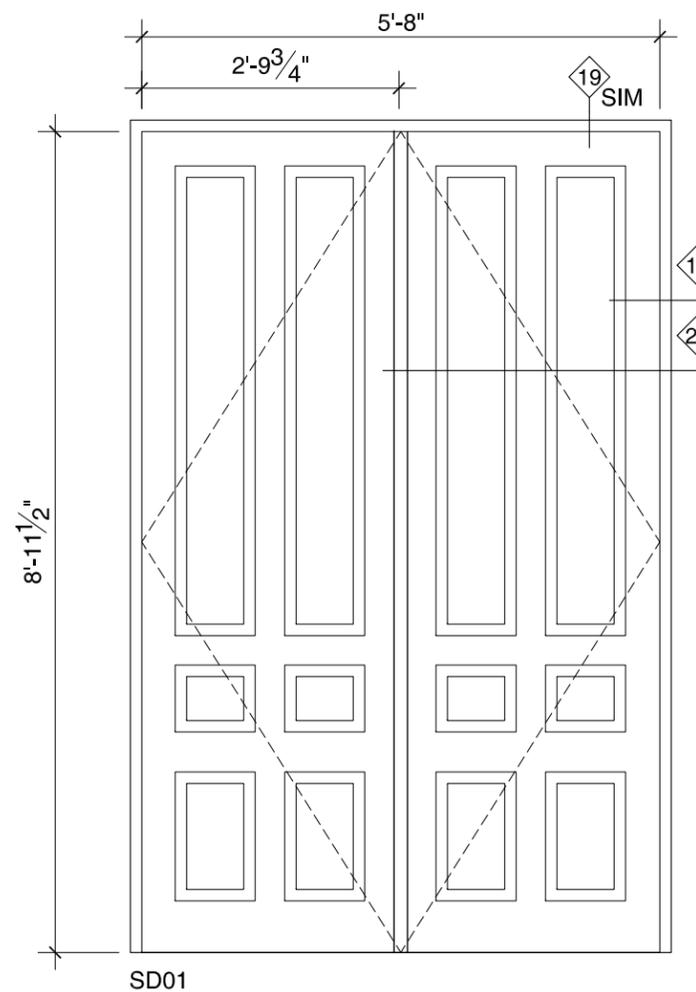
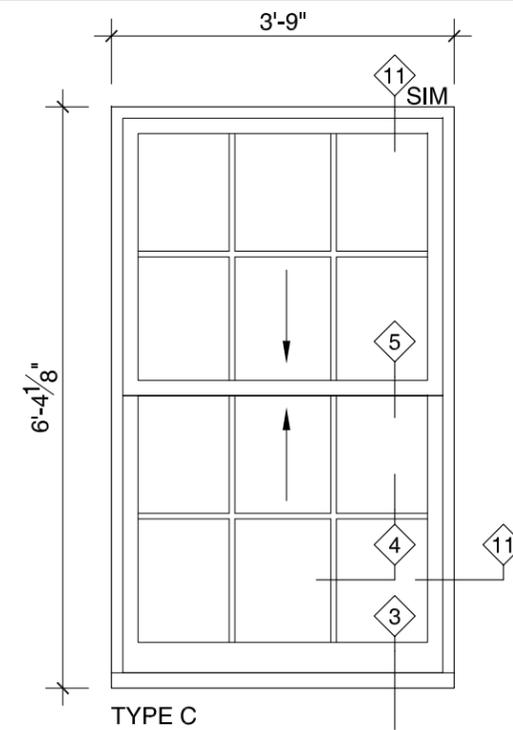
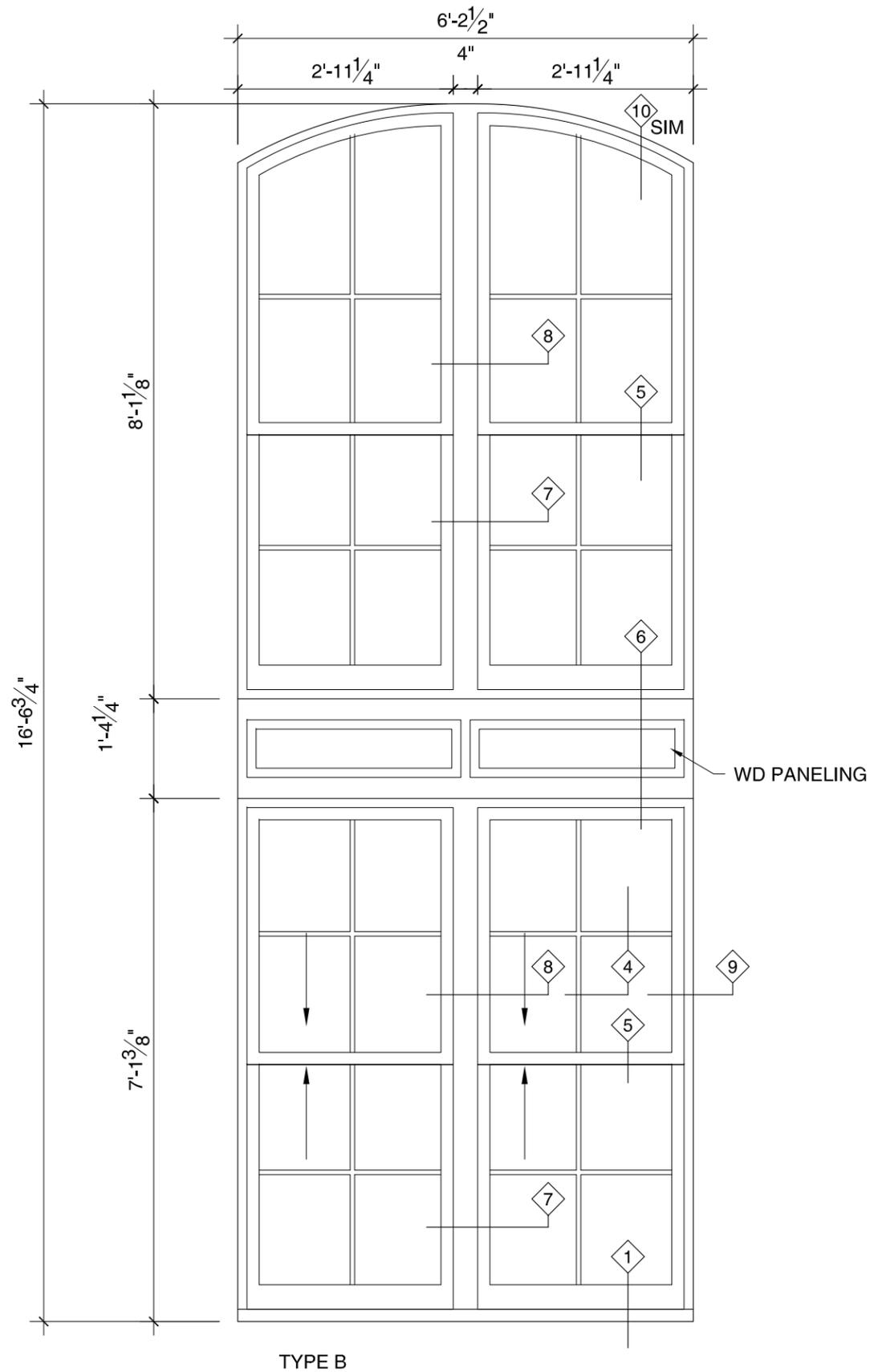
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WINDOW TYPE
ELEVATIONS

A8.3



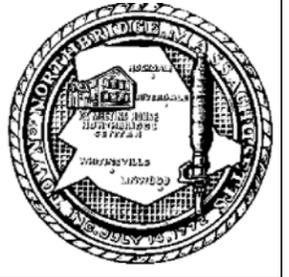
**Northbridge Memorial
Town Hall**
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**WINDOW TYPE
ELEVATIONS**

A8.4



**Northbridge Memorial
Town Hall**

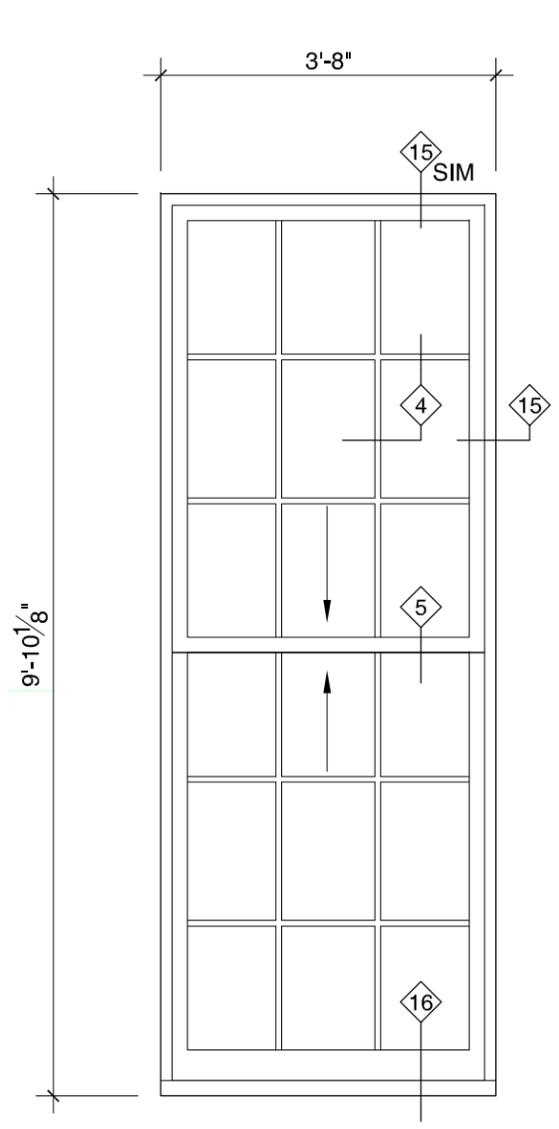
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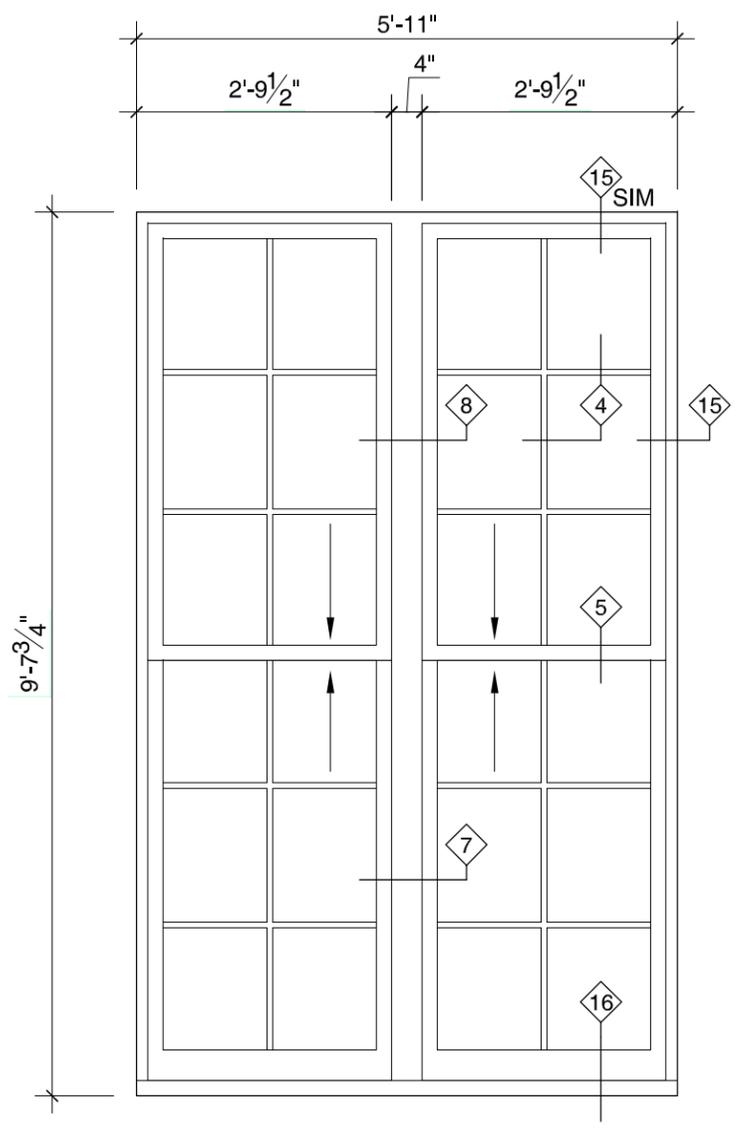
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**WINDOW TYPE
ELEVATIONS**

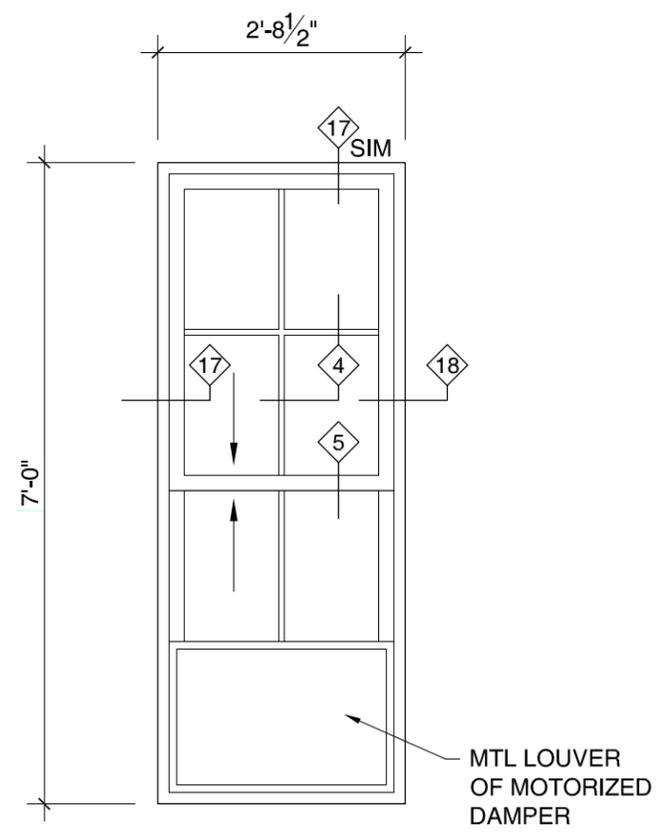
A8.5



TYPE D



TYPE E



TYPE F



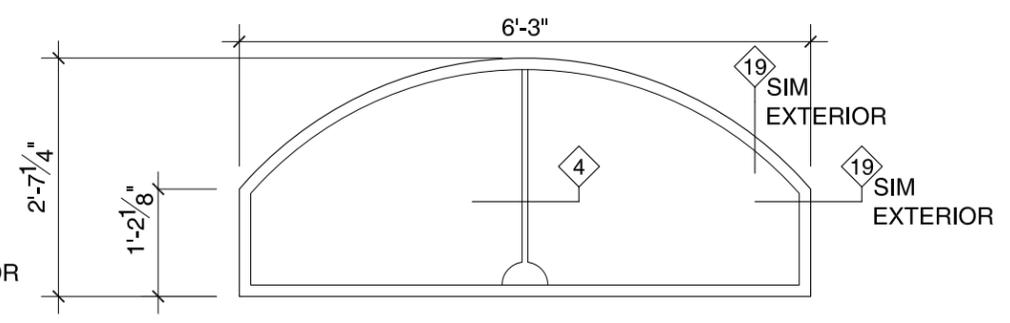
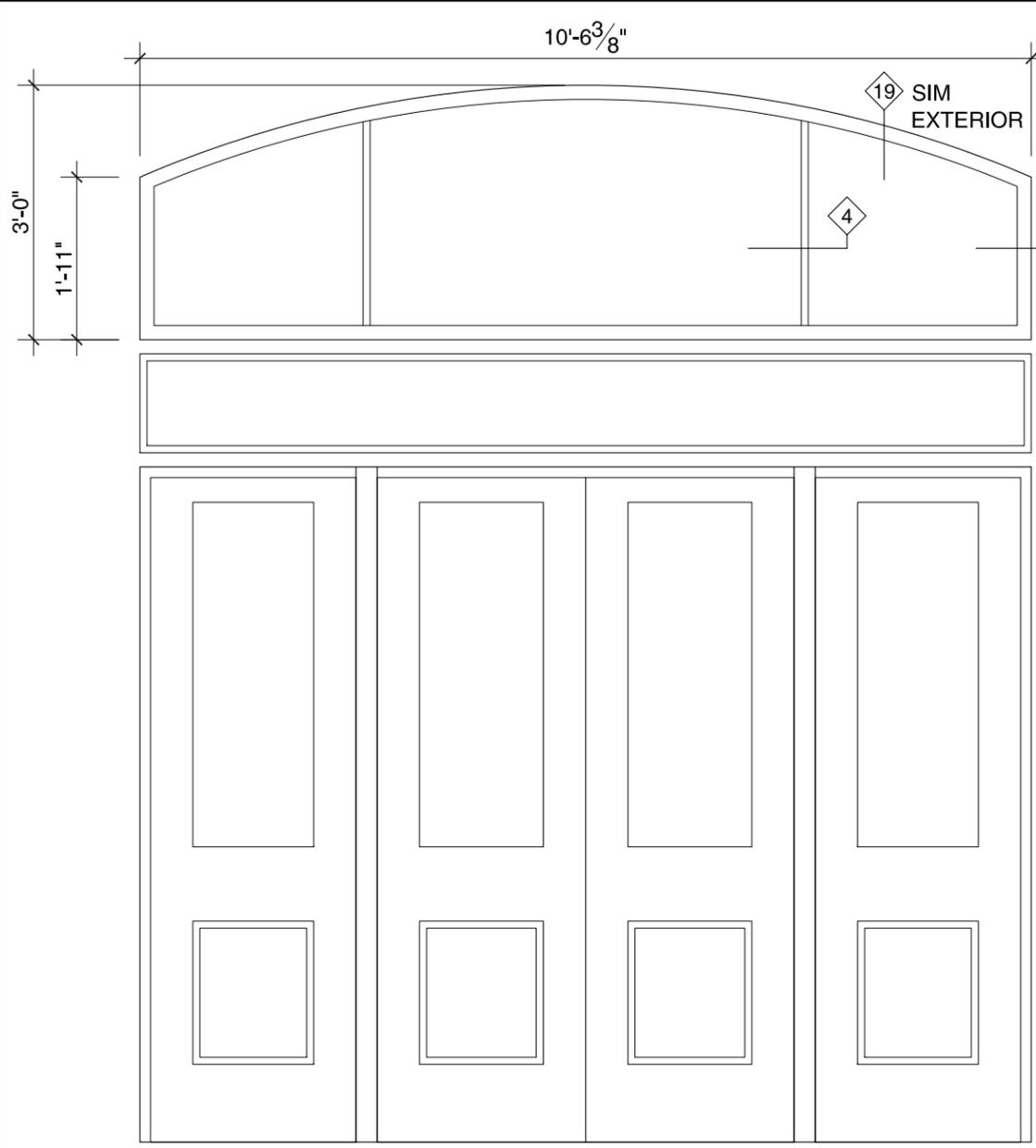
**Northbridge Memorial
Town Hall**
 7 Main Street
 Whitinsville, MA 01588
 Task III
 Window Restoration/ Weatherization

Date: 4/30/2012
 Drawn By: WJP
 Reviewed By: WCK
 Project No: 1616.00

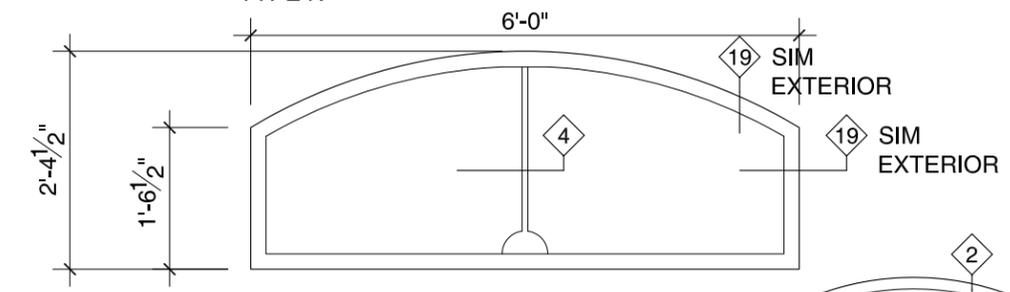
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WINDOW TYPE ELEVATIONS

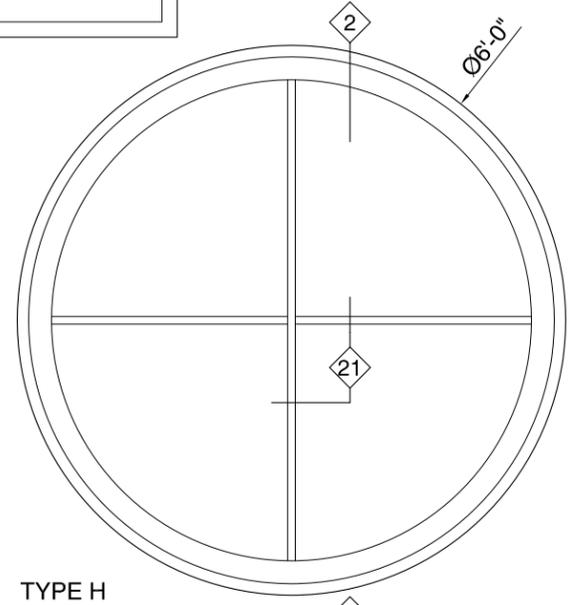
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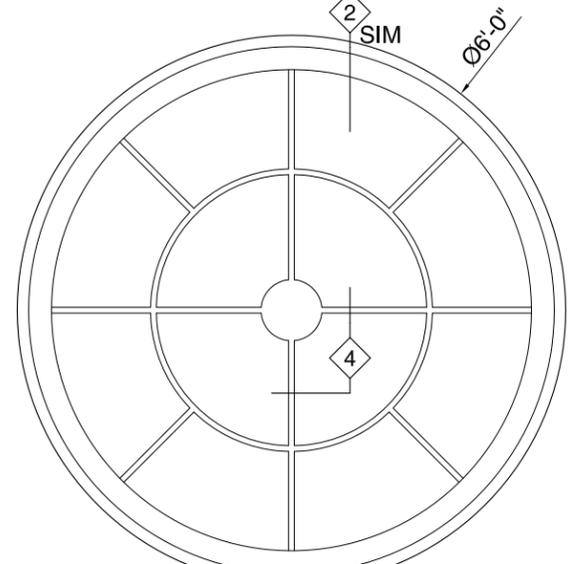
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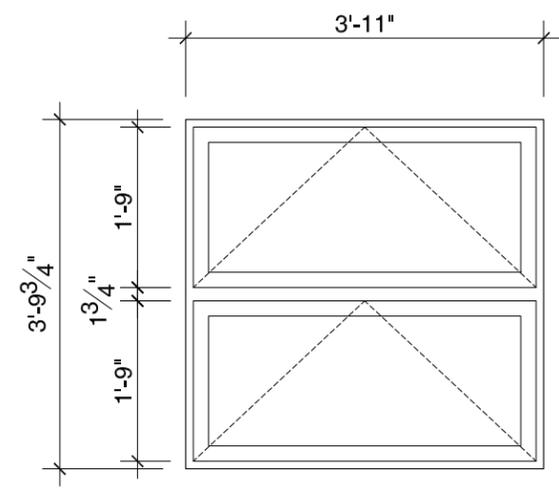
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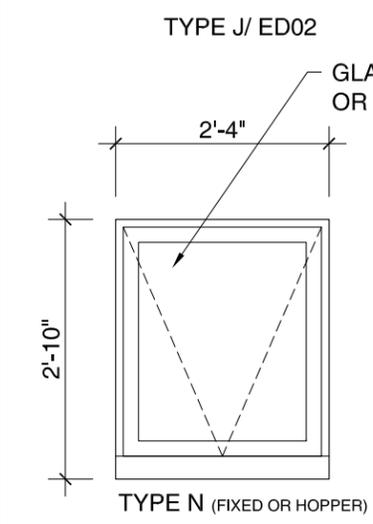
TYPE H



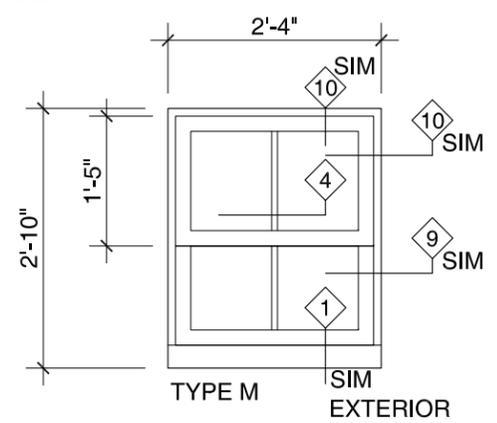
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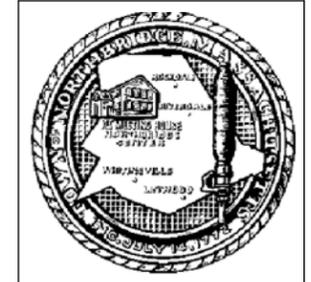
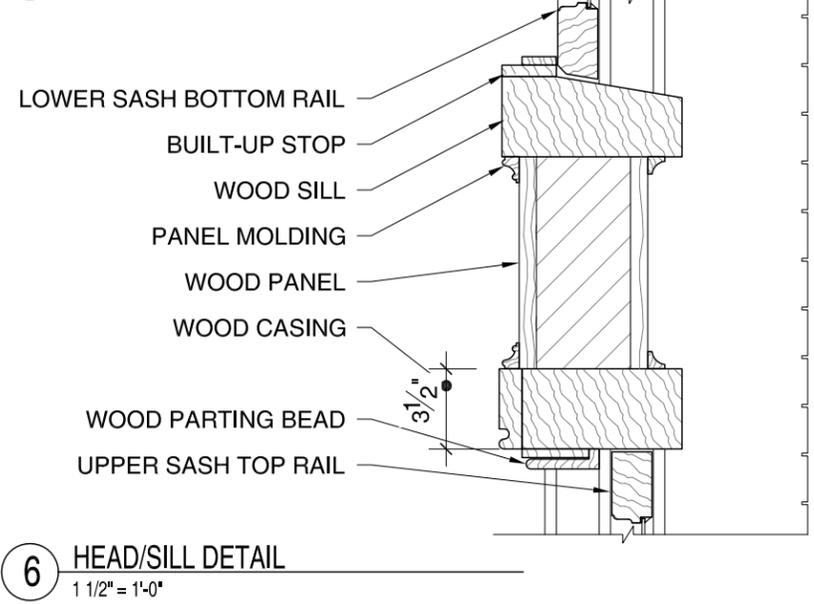
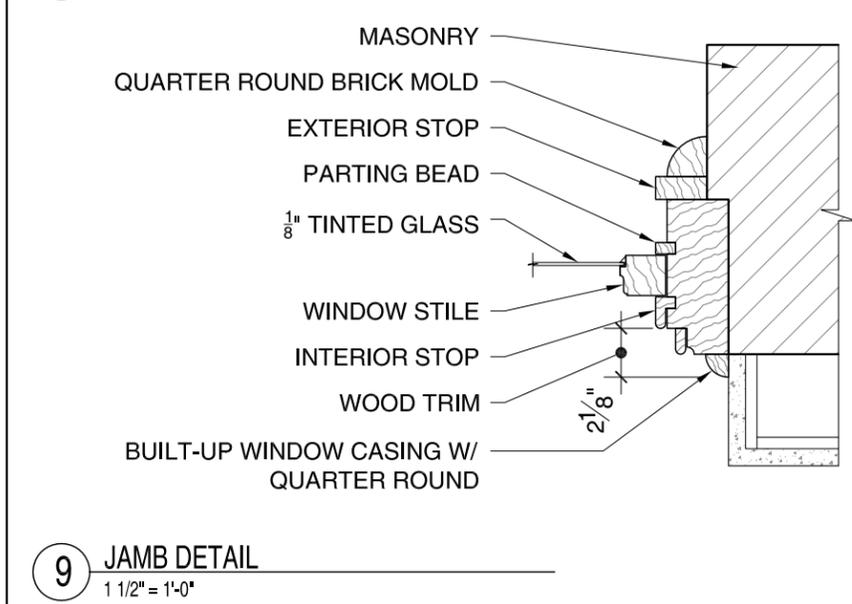
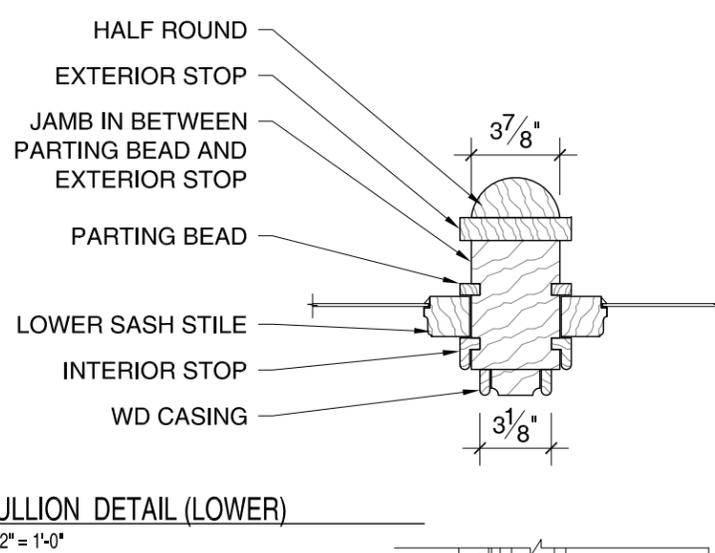
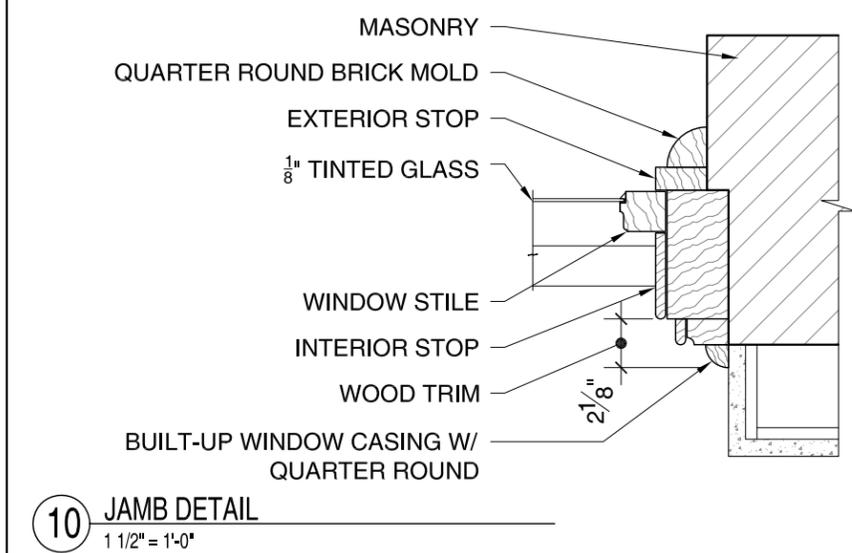
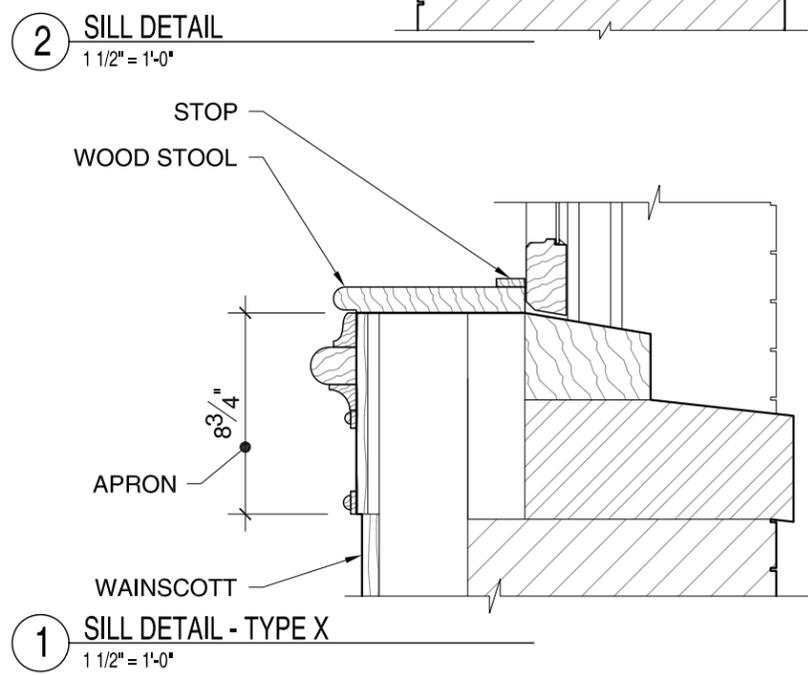
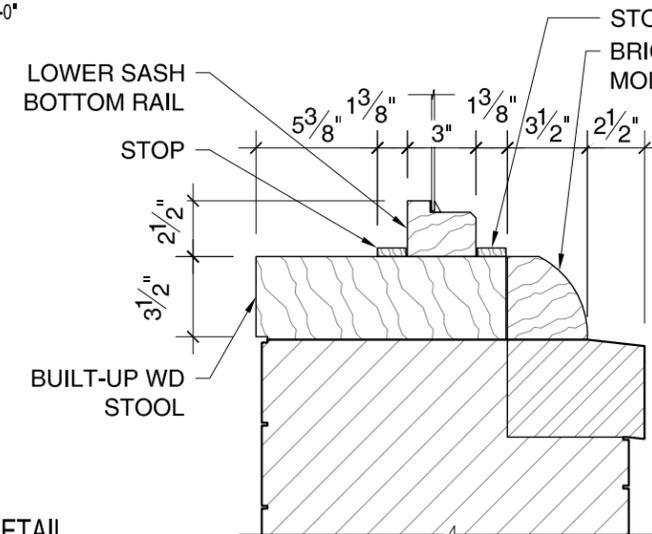
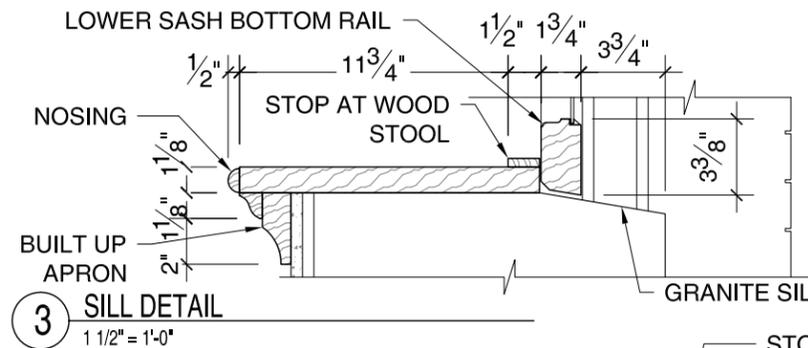
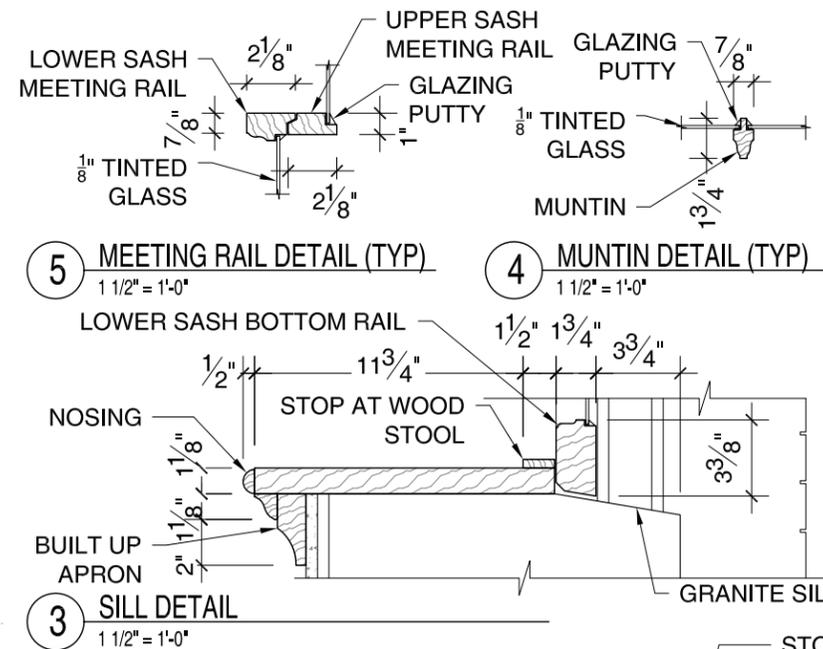
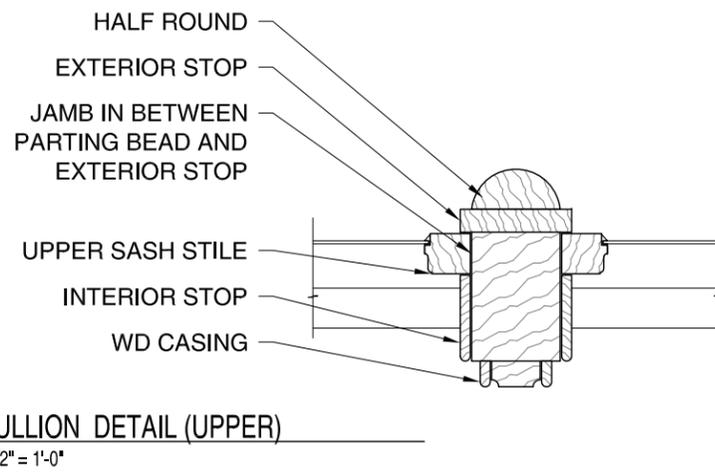
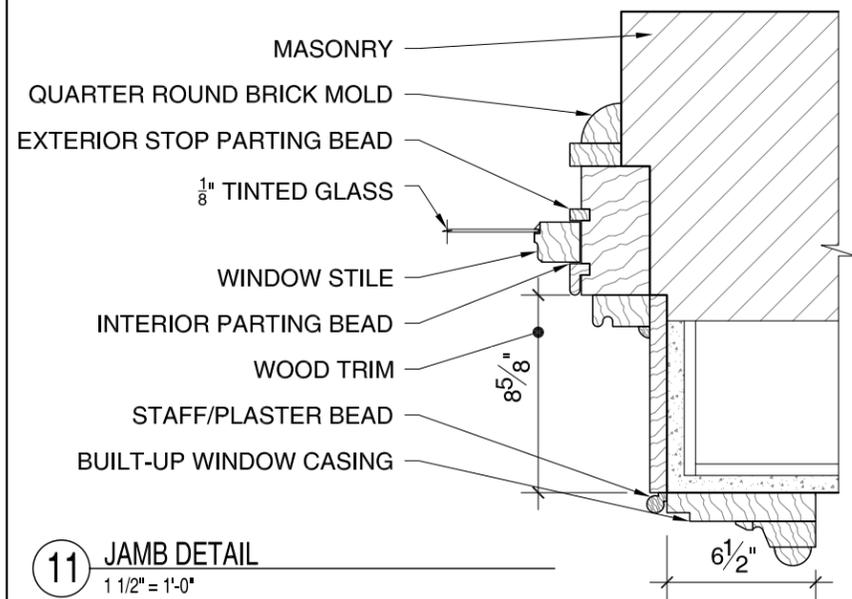
TYPE G



TYPE N (FIXED OR HOPPER)



TYPE M



**Northbridge Memorial
Town Hall**
7 Main Street
Whitinsville, MA 01588
Task III
Window Restoration/ Weatherization

Date: 4/30/2012
Drawn By: WJP
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Project No: 1616.00

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Somerville, MA 02145
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**WINDOW
DETAILS**

A8.7



**Northbridge Memorial
Town Hall**

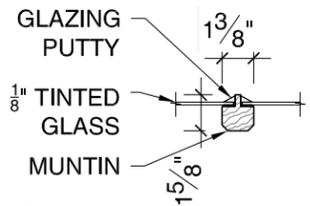
7 Main Street
Whitinsville, MA 01588
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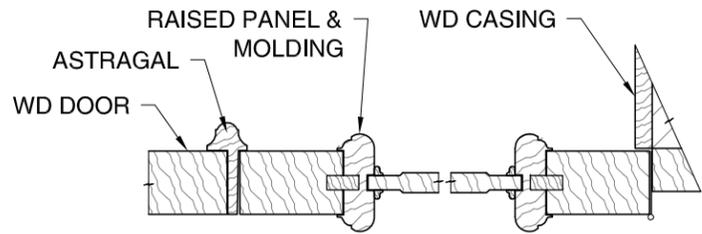
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**WINDOW
DETAILS**

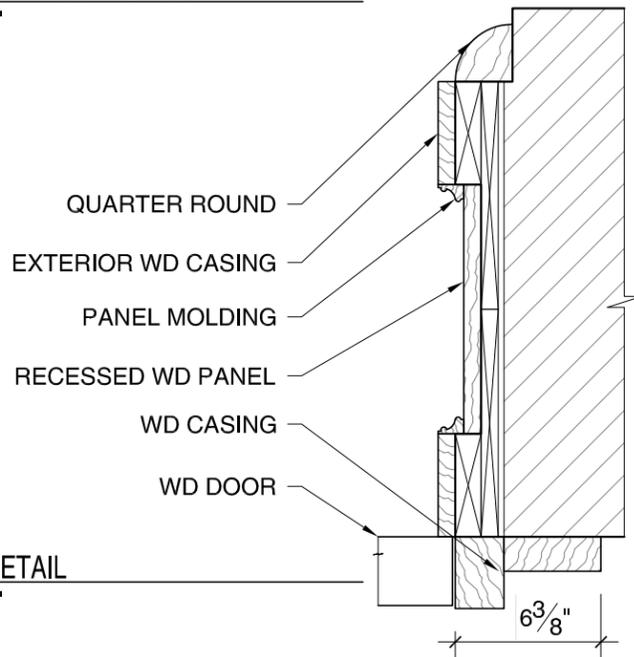
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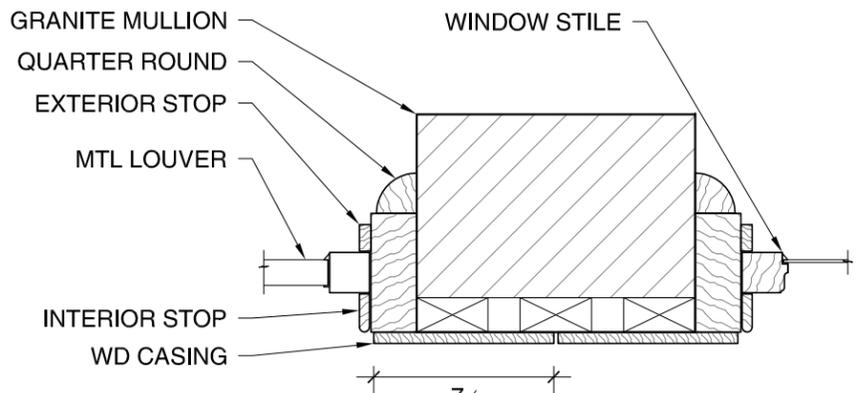
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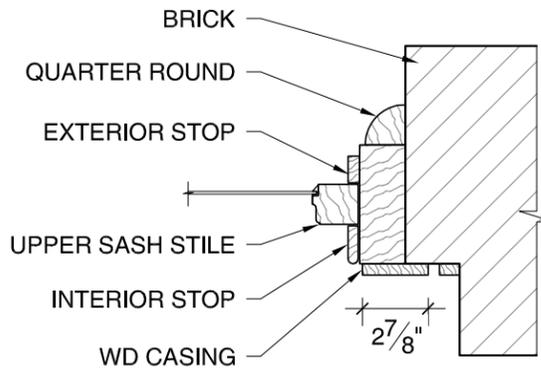
20 RAISED PANEL PROFILE
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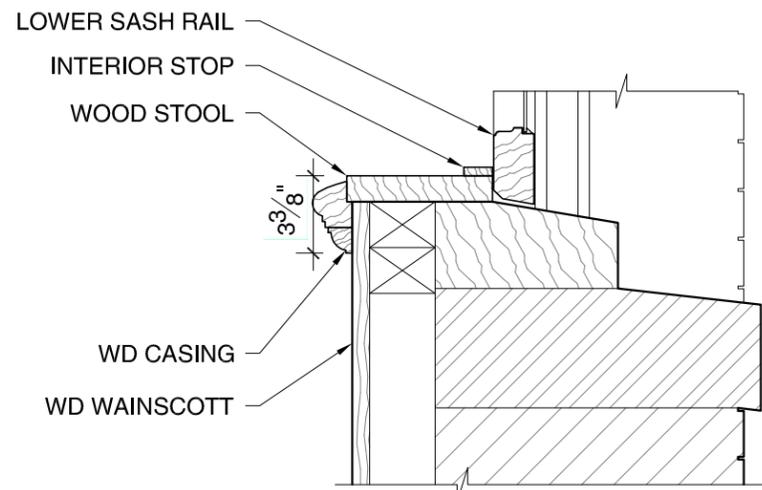
19 JAMB DETAIL
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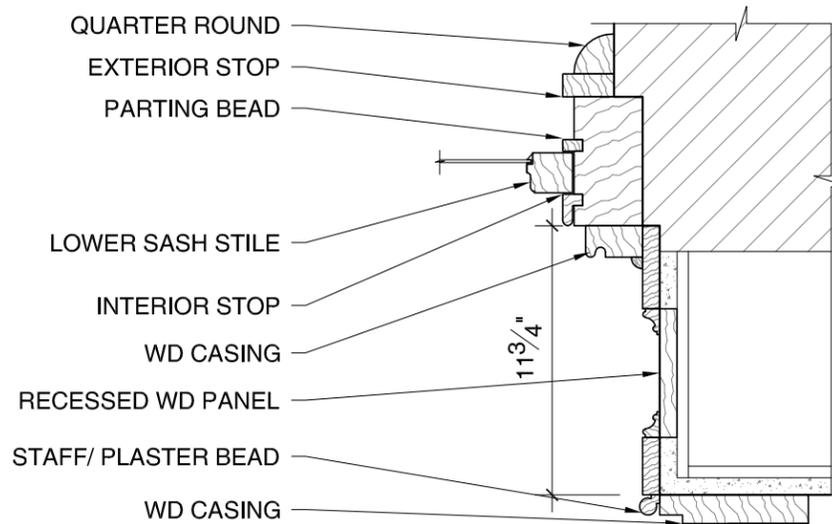
18 GRANITE MULLION DETAIL
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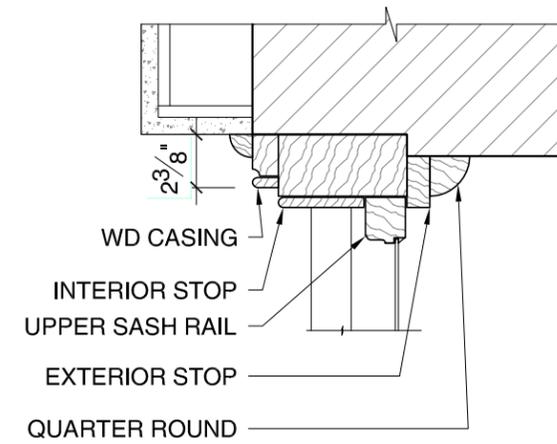
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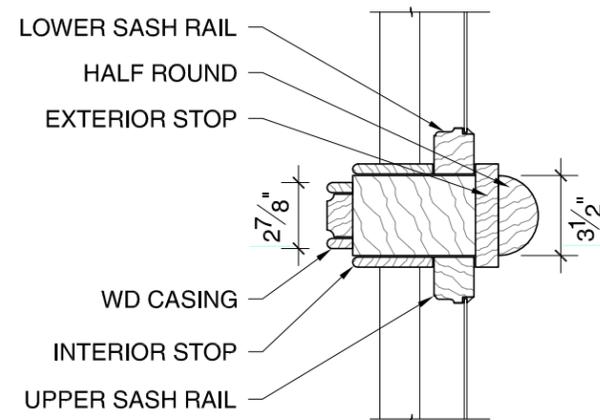
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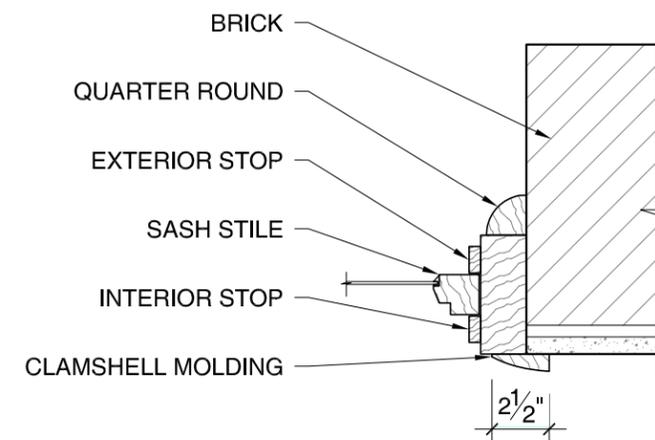
15 JAMB DETAIL
1 1/2" = 1'-0"



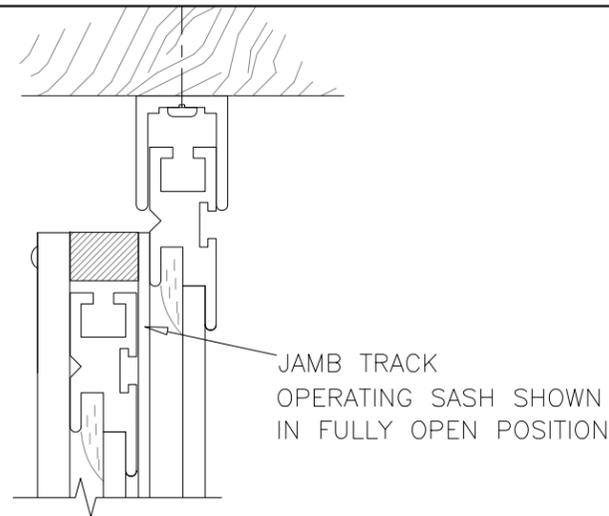
14 TRANSOM HEAD DETAIL
1 1/2" = 1'-0"



13 TRANSOM RAIL DETAIL
1 1/2" = 1'-0"

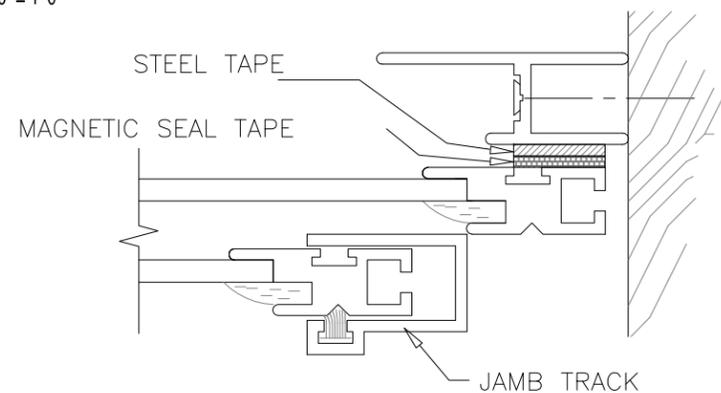


12 JAMB DETAIL
1 1/2" = 1'-0"

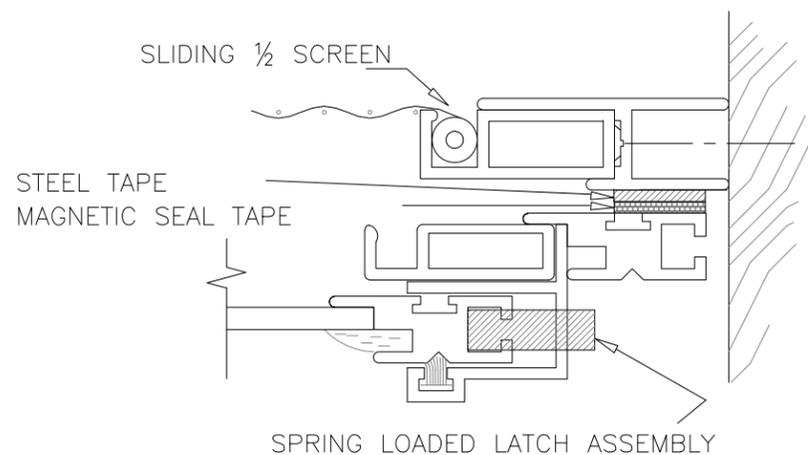


JAMB TRACK
OPERATING SASH SHOWN
IN FULLY OPEN POSITION

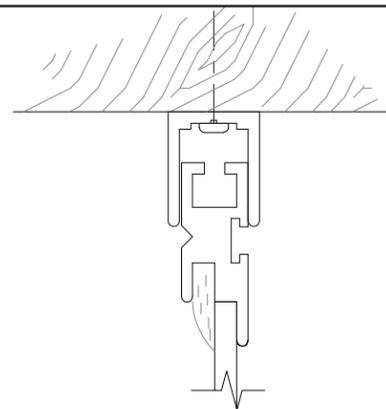
27 STORM HEAD DETAIL
1'-0" = 1'-0"



26 STORM UPPER JAMB DETAIL
1'-0" = 1'-0"

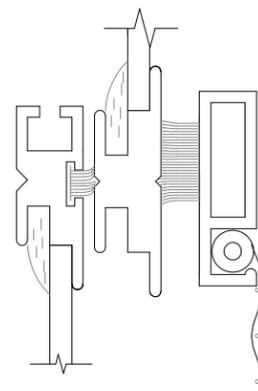


25 STORM LOWER JAMB DETAIL
1'-0" = 1'-0"

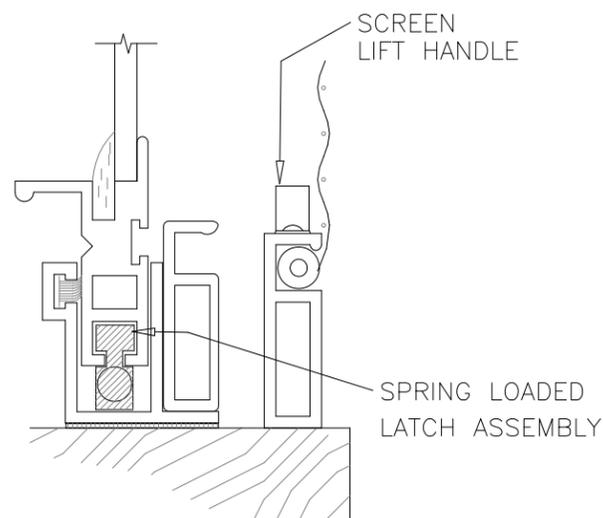


OPERATING SASH
SHOWN IN FULLY
CLOSED POSITION

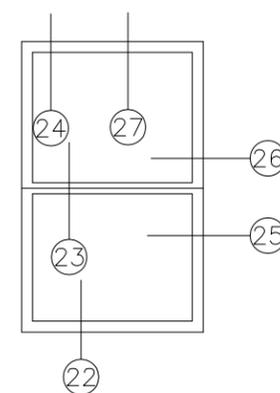
24 STORM HEAD DETAIL
1'-0" = 1'-0"



23 STORM MEETING RAIL DETAIL
1'-0" = 1'-0"



22 STORM SILL DETAIL
1'-0" = 1'-0"



KE STORM DETAILS KEY ELEV
NOT TO SCALE



**Northbridge Memorial
Town Hall**

7 Main Street
Whitinsville, MA 01588
Task III
Window Restoration/ Weatherization

Date: 4/ 30/ 2012
Drawn By: WJP
Reviewed By: WCK
Project No: 1616.00

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**STORM
WINDOW
DETAILS**

A8.9



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