



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS

Department of Administration
DIVISION OF PURCHASES
One Capitol Hill
Providence, RI 02908-5855

Tel: (401) 574-8100
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August 7, 2015

ADDENDUM NUMBER FIVE

RFQ # 7549706

**TITLE: Window Replacement Benjamin Rush Bldg. #55, Pastore Center,
DOA**

Closing Date and Time: 8/27/15 at 2:30 PM (note change)

Per the issuance of this ADDENDUM # (5).

Please be advised the Bid Closing Date and Time has been extended:

**From: 8/20/15 at 2:30 PM
To: 8/27/15 at 2:30 PM**

☒ **Specification Change /Addition / Clarification**

The specifications for the products listed in this Invitation to Bid forms a basis of performance and design for this product. Any substitutions must meet or surpass these specifications in every way. Any substitution request that does not fully meet the requirements of these specifications will be rejected.

NOTE: Remove any references on the attached pages to Addendum Four and replace them with Addendum Five.

Solicitation #:7549706

Solicitation Title: Benjamin Rush Office Building
Window Replacement, Pastore Center

BID FORM

To: The State of Rhode Island Department of Administration
Division of Purchases, 2nd Floor
One Capitol Hill, Providence, RI 02908-5855

Bidder:

Legal name of entity

Address (street/city/state/zip)

Contact name

Contact email

Contact telephone

Contact fax

1. BASE BID PRICE

The Bidder submits this bid proposal to perform all of the work (including labor and materials) described in the solicitation for this Base Bid Price (*including the costs for all Allowances, Bonds, and Addenda*):

\$ _____

(base bid price *in figures* printed electronically, typed, or handwritten legibly in ink)

(base bid price *in words* printed electronically, typed, or handwritten legibly in ink)

- Allowances

The Base Bid Price ***includes*** the costs for the following Allowances:

No. 1: _____ \$ _____

No. 2: _____ \$ _____

No. 3: _____ \$ _____

Total Allowances: _____ \$ _____

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- **Bonds**

The Base Bid Price **includes** the costs for all Bid and Payment and Performance Bonds required by the solicitation.

- **Addenda**

The Bidder has examined the entire solicitation (including the following Addenda), and the Base Bid Price **includes** the costs of any modifications required by the Addenda.

All Addenda must be acknowledged.

Addendum No. 1 dated: _____

Addendum No. 2 dated: _____

Addendum No. 3 dated: _____

Addendum No. 4 dated: _____

Addendum No. 5 dated: _____

Addendum No. 6 dated: _____

2. **ALTERNATES** (*Additions/Subtractions to Base Bid Price*)

The Bidder offers to: (i) perform the work described in these Alternates as selected by the State in the order of priority specified below, based on the availability of funds and the best interest of the State; and (ii) increase or reduce the Base Bid Price by the amount set forth below for each Alternate selected.

Check "Add" or "Subtract."

____ Add ____ Subtract Alternate No. 1:

\$ _____

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(amount *in figures* printed electronically, typed, or handwritten legibly in ink)

(amount *in words* printed electronically, typed, or handwritten legibly in ink)

3. UNIT PRICES

The Bidder submits these predetermined Unit Prices as the basis for any change orders approved in advance by the State. These Unit Prices include all costs, including labor, materials, services, regulatory compliance, overhead, and profit.

Unit Price No. 1: Remove caulking of and provide cost
for new Precast sill – 4'-4" L x 5" H x 5" D (V.I.F.): \$ _____/ea.

Unit Price No. 2: Remove caulking of and provide cost
for new Precast sill – 6'-2" L x 5" H x 5" D (V.I.F.): \$ _____/ea.

Unit Price No. 3: Steel Lintel – 5'-0" L (V.I.F.) (LLV 6 x 4 x 3/8") \$ _____/ea.

Unit Price No. 4: Steel Lintel – 6'-10" L (V.I.F.) (LLV 6 x 4 x 3/8") \$ _____/ea.

4. CONTRACT TIME

The Bidder offers to perform the work in accordance with the timeline specified below:

- Start of construction: 10 days from receipt of the Purchase Order
- Substantial completion: 120 days
-
- Final completion: 145 days

5. LIQUIDATED DAMAGES

The successful bidder awarded a contract pursuant to this solicitation shall be liable for and pay the State, as liquidated damages and not as a penalty, the following amount

Solicitation #:7549706

Solicitation Title: Benjamin Rush Office Building
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for each calendar day of delay beyond the date for substantial completion, as determined in the sole discretion of the State: \$_____.

This bid proposal is irrevocable for 60 days from the bid proposal submission deadline.

If the Bidder is determined to be the successful bidder pursuant to this solicitation, the Bidder will promptly: (i) comply with each of the requirements of the Tentative Letter of Award; and (ii) commence and diligently pursue the work upon issuance and receipt of the purchase order from the State and authorization from the user agency.

The person signing below certifies that he or she has been duly authorized to execute and submit this bid proposal on behalf of the Bidder.

BIDDER

Date:_____

Name of Bidder

Signature in ink

Printed name and title of person signing on behalf of Bidder

#_____
Bidder's Contractor Registration Number

*****ADDENDUM FOUR*****

**BID NUMBER 7549706
WINDOW REPLACEMENT
Benjamin Rush Building #55
Pastore Center
35 Howard Avenue
Cranston, Rhode Island**

July 23, 2015

NOTICE:

This Addendum modifies, amends and supplements designated part of the CONTRACT DOCUMENTS for the project identified as "Window Replacement, Benjamin Rush Building #55", Pastore Center, 35 Howard Avenue, Cranston, Rhode Island, dated May 14, 2015, Addendum One, dated July 1, 2015 and Addendum Two, dated July 13, 2015, Addendum Three, dated July 17, 2015 is hereby made a part thereof by reference, and shall be as binding as though inserted in its entirety in the locations designated hereunder. It shall be the responsibility of the Contractor to notify all subcontractor and suppliers he proposes to use for the various parts of the work of any changes or modifications contained in this Addendum. No claim for additional compensation due to lack of knowledge of the contents of this Addendum will be considered.

SPECIFICATIONS:

1. Section 004113: Bid Form
 - a. Delete Section 004131 – Bid Form, in its entirety and substitute revised Section 004131 – Bid Form, attached to this addendum.

Section 024119: Minor Demolition

Delete Part 1 General, Paragraph 1.6, Item No 2 in its entirety and substitute revised Part 1 General, Paragraph 1.6, Item No 2:

Testing for asbestos and lead has been performed by the owner and is attached as "Appendix – A&B" to these specifications. The owner shall submit and obtain an approved abatement plan from the Rhode Island Department of Health. The contractor shall be responsible for the removal and disposal of the existing windows, frames and adhesives, etc. as scheduled according to the approved plan and included within their bid.

2. Add Specification Section 028001 – ASBESTOS; which is attached to this Addendum.
3. Add Specification Section 028002 – LEAD CONTAINING PAINT; which is attached to this Addendum.

DRAWINGS:

1. Drawing A0.00:
 - a. Delete Drawing A0.00 – Abbreviations, Legend, Notes and Window Schedule, dated May 14, 2015 in its entirety and substitute revised Drawing A0.00 – Abbreviations, Legend, Notes and Window Schedule, with Revision date July 20, 2015 attached to this addendum. The revised drawing includes the following modifications:
 1. Revisions and additions to the Demolition and Construction Notes
 2. Revisions to the Window Schedule
2. Drawing A3.00:

- a. Delete Drawing A3.00 – Benjamin Rush South Exterior Elevations, dated May 14, 2015 in its entirety and substitute revised Drawing A3.00 – Benjamin Rush South Exterior Elevations, with Revision date July 20, 2015 attached to this addendum.
3. Drawing A3.01:
 - a. Delete Drawing A3.01 – Benjamin Rush North Exterior Elevations, dated May 14, 2015 in its entirety and substitute revised Drawing A3.01 – Benjamin Rush North Exterior Elevations, with Revision date July 20, 2015 attached to this addendum.
4. Drawing A3.02:
 - a. Delete Drawing A3.02 – Benjamin Rush East and West Exterior Elevations, dated May 14, 2015 in its entirety and substitute revised Drawing A3.02 – Benjamin Rush East and West Exterior Elevations, with Revision date July 20, 2015 attached to this addendum.
5. Drawing A6.00:
 - a. Delete Drawing A6.00 – Window Details, dated May 14, 2015 in its entirety and substitute revised Drawing A6.00 – Window Details, with Revision date July 20, 2015 attached to this addendum.
 1. Revisions to Window Details
6. Drawing A6.01:
 - a. Delete Drawing A6.01 – Window Details, dated May 14, 2015 in its entirety and substitute revised Drawing A6.01 – Window Details, with Revision date July 20, 2015 attached to this addendum.
 1. Revisions to Window Details

PRE-BID CONFERENCE:

A mandatory pre-bid conference for this project was held on July 14, 2015, at 1:00 PM; at the Benjamin Rush State Office Building #55, Pastore Center, 35 Howard Avenue, Cranston RI. Pre-Bid Sign-In sheet is included in Addendum No. Three.

The following is a list of questions:

1. Is there any work required to the Basement window area way steel grates?
Answer: Yes; refer to Drawing A0.00, Demolition and Construction Note No 10
2. Is there any work required to the existing cast window sills?
Answer: Yes; as required refer to Drawing A3.00, A3.01, & A3.02
3. What is the scope of interior and exterior painting?
Answer: Interior painting as noted to include repair and patched areas unless noted otherwise. Exterior painting to include all lintels, and steel grates unless noted otherwise. Refer to Drawings A0.00 Specific Construction Notes and A6.00 & A6.01.

4. Does the 1x PVC extension get painted? All fasteners set, plugged and sanded?

Answer: No. Answer: Yes.

5. Will personal belongings, files, paperwork, office equipment and furnishings be moved by the Owner?

Answer: All personal belongings and loose paperwork shall be removed by owner. All furniture, file cabinets, etc. shall be relocated by contractor as directed by owner. Refer to Drawing A0.00 General Demolition and Construction Notes for additional information.

6. Will the rooms be vacant during window work and for how long?

Answer: No, One (1) day.

7. Will temporary barriers (windows) be required or is it the intention to have windows removed and replaced in the same day?

Answer: The windows will be removed and replaced in the same day. There will be no need for temporary barriers.

8. What happens to existing curtains and curtain hardware?

Answer: To be removed by owner.

9. Please verify that the asbestos abatement is being performed by the Owner as per Section 024119, Paragraph 1.6, 2, which states, "The owner shall retain an approved contractor for the removal and abatement of the hazardous materials." This contradicts what was said at the Pre-Bid Meeting.

Answer: Refer to Specification item No 2 listed above for clarification.

10. Is any work required to existing windows, louvers, or exterior doors to remain?

Answer: Work required as indicated on Drawings A3.00, A3.01 & A3.02.

11. Please verify that the interior of the windows is pre-finished. It was stated as such at the Pre-Bid Meeting but we could not find it mentioned in the specifications.

Answer: Yes.

NOTICE TO ALL CONTRACTORS:

Contractors shall call our office to verify number of Addendum issued at least 24 hours in advance of bid submission. Failure to acknowledge receipt of this addendum on the bid form may, at the sole discretion of the Owner, serve as justification to reject bid.

END OF WRITTEN ADDENDUM

SECTION 02 80 01 – ASBESTOS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DESCRIPTION OF WORK - GENERAL

- A. The following summary of work is required to be performed by the Contractor. The Contractor is required to provide labor, materials and equipment to complete the work of this Section, including but not limited to:
 - 1. Removal and disposal of specified asbestos-containing materials (ACM) in accordance with the attached Asbestos Abatement Plans designed by Vortex Inc., federal, state and local regulations. This shall include the removal and disposal of specified ACM at the Benjamin Rush State Office Building, 35 Howard Avenue, Cranston, RI. The base bid scope of work includes the removal and disposal of any identified ACM, removal and disposal of non-asbestos-containing materials necessary to access / remove ACM. Previously unidentified ACM encountered during construction activity will be addressed per the unit price schedule provided by the Contractor.
 - 2. Removal and disposal of specified non-asbestos-containing materials (ACM). This shall include, but not limited to, non-asbestos containing wall and ceiling systems, and other building components as necessary to access and remove ACM.
 - 3. All work outlined in this Section shall be conducted in accordance with Article 3.2. Removal methods pertaining to specific materials outlined in this Section may be utilized at the direction of the Owner's Consultant.
 - 4. Removal and disposal of asbestos-containing pipe / pipe fitting insulation. Removal methods outlined in Article 3.3 may be utilized at the direction of the Owner's Consultant.
 - 5. Removal of asbestos-containing floor tile and mastic. Removal methods outlined in Article 3.4 may be utilized at the direction of the Owner's Consultant.
 - 6. Work area preparations, including pre-cleaning, installation of critical barriers, primary barriers, construction of decontamination facilities, work area enclosures, sealing / isolation of penetrations / mechanical systems, and other activities as directed by the Owner's Consultant.
 - 7. Installation and operation of HEPA filtration units in accordance with provisions set forth in this Section. All HEPA Filtration units shall be exhausted to the exterior of the building.
 - 8. Protection of non-ACM materials and equipment/furnishings inside of work areas with two layers of polyethylene sheeting.
 - 9. Compliance with all applicable federal, state, and local regulations, as well as all requirements set forth in this Section and Owner requirements.
 - 10. Decontamination and clean up following removal activities in each designated work area.
 - 11. Performance of any other work or activities required by these specifications, applicable regulations, or as necessary to perform a complete job to the satisfaction of the Owner and / or their Consultant.
 - 13. Contractor to coordinate use of building utilities (i.e. electricity / water etc.) with the Owner. Contractor shall comply with applicable utility lock out / tag requirements in asbestos abatement work areas.
 - 14. Provide temporary electrical wiring and services as required for asbestos removal according to applicable electrical code and regulations.

1.3 SCOPE OF WORK

- A. **Base Bid:** The contractor shall provide a base bid price for the removal of all asbestos-containing materials as directed by the Owner. At the end of this Specification Section there is an Asbestos Inspection Report and Abatement Plans as prepared by Vortex Inc. (Owner's Consultant) that identified asbestos-containing material (ACM) to be removed as part of the base bid. All work conducted under this Section is to be performed in conjunction with project phasing requirements outlined in the project documents.

1.4 PRE-JOB SUBMITTALS

- A. The Contractor is required to provide copies of the following Pre-Job Submittals at the Pre-construction Conference:
1. Asbestos Abatement Plan: The Owner's Consultant's will prepare and submit a Rhode Island Department of Health Asbestos Abatement Plan describing engineering controls and procedures that the Asbestos Abatement Contractor will use to conduct the Work of this Section. The design of any staging and exterior containment structures shall be prepared and signed by a Professional Engineer registered in the State of Rhode Island.
 2. Copies of all notifications, permits, applications, personnel licenses and like documents required by Federal, State, or local regulations obtained or submitted in proper fashion.
 3. List of employees to be used on this project, including the resume of the field supervisor.
 4. Copies of written "Physician Opinion" as required by 29 CFR 1926.1101.
 5. Record of successful respiratory fit test performed by a competent person (as defined by OSHA) within the previous 12 months, as required elsewhere in the documents for each employee to be used on this project.
 6. Certificate of Insurance.
 7. Proposed respiratory program for employees throughout all phases of the job, including make, model and NIOSH approval numbers of respirators to be used.
 8. Written description of all procedures, methods, or equipment to be utilized by the Contractor that differs from the Contract Specifications, including manufacturers specifications on any equipment not specified for use by the Contract Specifications.
 9. Proposed electrical safeguards to be implemented, including but not limited to location of transformers, GFCI outlets, lighting, etc., necessary to safely perform the job, including a description of an electrical hazards safety plan for common practices in the work area.
 10. A list of all equipment to be used on site, by make and model, including negative pressure equipment, HEPA vacuums, Water Atomizing Devices, etc. MSDS sheets must be submitted for any proposed chemicals to be utilized on this project. Chemicals may not be utilized without authorization from the Owner.
 11. Chain of Command of responsibility at work site including supervisors, foreman, and competent person, their names, resumes and certificates of training.
 12. Proposed Emergency plan and route of egress from work areas in case of fire or injury, including the name and phone number of nearest medical assistance center.
 13. Contractor's testing lab, AIHA PAT proficiency, and Certification in the State where work site is located.
 14. Schedule of values sufficiently detailing the work to serve as the basis for payment.

No work of the project will be allowed to begin until Consultant accepts the Pre-Construction Submittals. Any delay caused by the Contractor's refusal to submit this documentation in a timely fashion does not constitute a claim for extra compensation or a time extension.

1.5 POST CONSTRUCTION SUBMITTALS

- A. The Contractor is required to submit the following to the Owner within thirty days after completion of the project:

1. Manifests and waste receipts acknowledging disposal of all waste material from the project showing delivery date, quantity, and appropriate signature of landfill's authorized representative.
2. A copy of the entry-exit logbook required elsewhere in these specifications.
3. All personnel monitoring results as required by OSHA and elsewhere in these specifications.
4. Copies of licenses, medical, and fit tests of all workers and supervisors who performed work on the project.
5. All notifications as required elsewhere in these specifications.

1.6 SEQUENCE OF WORK

- A. The following is a typical sequence of work that Contractor shall adhere to during the asbestos abatement project. The Owner's Consultant may authorize deviations from this typical sequence based upon the specific conditions encountered during the project.
1. Contractor shall post all required signage.
 2. Contractor shall secure area from unauthorized access.
General Contractor will remove all movable objects from the work area.
 4. Contractor shall cover all immovable objects and objects not removed from the work area with two (2) layers of six (6)-mil polyethylene sheeting, sealed airtight with duct tape. Contractor shall install critical barriers at all points of access required by regulations.
 5. Contractor shall install HEPA filtration units, as required by these Specifications, sufficient to achieve a minimum of four (4) air changes per hour. All units shall exhaust to the outside of the building through windows and other appropriate means.
 6. Contractor shall prepare each specified Work Area for total isolation, glove bag removal, VAT removal, window removal, etc., as described in this Specification.
 7. Contractor shall construct decontamination unit, and any other construction needed to complete the work area to the satisfaction of the Owner's Consultant.
 8. Owner's Consultant shall inspect and approve all work area preparations before permitting Contractor to begin removal work.
 9. Contractor shall remove and dispose all asbestos-containing and asbestos-contaminated materials as required by these Specifications.
 10. Contractor shall decontaminate the work area upon completion of removal.
 11. Owner's Consultant shall perform a final visual inspection to assure that no visible debris exists in the work area. Contractor shall re-clean the work areas as needed until they pass a visual inspection by Consultant.
 12. Contractor shall encapsulate all surfaces in the work area.
 13. The Owner's Consultant will perform PCM or TEM final air clearance testing, in accordance with AHERA, in each work area. Satisfactory results are required before containment may be removed.
 14. Contractor shall remove all work area barriers, equipment, polyethylene sheeting, etc., and clean any areas to the satisfaction of the Owner's Consultant and/or Owner Representatives.
 15. Contractor shall submit all documents as required not more than thirty days after completion of asbestos removal work.

1.7 SCHEDULE, COORDINATION AND PHASING OF WORK

- A. Contractor shall coordinate all work in this Section with all other work of this Project as required by the General Contractor.
- B. Contractors work schedule must be coordinated with, and acceptable to the General Contractor. Contractor shall work continuously and diligently in each work area on the days and during the hours indicated on their work schedule.
- C. Contractor shall cooperate fully with the General Contractor and other Subcontractors working on this project.

- D. Contractor shall subdivide work areas and/or otherwise provide additional containments and mobilization where and when necessary to accomplish asbestos abatement in accordance with the project phasing, as specified by the General Contractor and approved by Vortex Inc.

1.8 FINAL AIR CLEARANCE TESTS

- A. Final air tests will be performed by the Owner's Consultant in accordance with the EPA Asbestos Hazard Emergency Response Act (AHERA) and Rhode Island Department of Health (DOH) Rules and Regulations for Asbestos Control (R23-24.5-ASB). The first set of final clearance air tests for each removal area will be paid for by Owner. In the event that these air tests do not pass the clearance criteria, any subsequent air tests that need to be performed shall be paid for by Contractor. All additional sampling costs will be automatically deducted from the contract price until the areas in question pass the final air clearance criteria of less than 0.010 fibers per cubic meter for PCM clearance testing or an average of 70 structures per square millimeter for TEM clearance testing.
- B. Air will be agitated by means of a small leaf blower prior to the test, and kept agitated by means of a small electric fan. The results of all samples must be less than 0.010 fibers per cubic centimeter (f/cc) for PCM analysis or an average of 70 structures per square millimeter for TEM analysis to be in compliance with clearance criteria as described in this Specification.
- C. If the Contractor fails to meet the criterion, the Contractor will be required to re-clean the designated work area and then the Consultant will repeat the final air clearance testing. Cleaning and testing will be repeated until the specified criterion is met.

1.9 SPECIAL CONSIDERATIONS

- A. Asbestos-containing material removal will not begin until approved by the Owner's Consultant and / or Owner Representatives.

PART 2 – PERFORMANCE STANDARDS

2.1 TRAINING AND QUALIFICATIONS

- A. Worker Training
 - 1. All workers who work on this project shall be provided training, at a minimum, on the following topics and possess a current RI DOH Asbestos Worker license.
 - 2. The health hazards of asbestos including the nature of asbestos related diseases, routes of exposure, known dose-response relationships, the synergistic relationship between asbestos exposure and cigarette smoking, latency periods for and health basis for standards.
 - 3. Personal protective equipment including the types and characteristics of respirator classes, limitations of respirators, proper selection, inspection, donning, use maintenance and storage of respirators, field testing the face piece-to-face seal (positive and negative pressure fitting tests), qualitative and quantitative fit testing procedures, variations between laboratory and field fit factors, factors that affect respirator fit (e.g. facial hair), selection and use of disposable clothing, use and handling of launderable clothing, non-skid shoes, gloves, eye protection, and hard hats.
 - 4. Medical monitoring requirements for workers including required and recommended tests, reasons for medical monitoring and employee access to records.
 - 5. Air monitoring procedures and requirements for workers including description of equipment and procedures, reasons for monitoring, types of samples and current standards with recommended changes.
 - 6. Work practices for asbestos abatement including purpose, proper construction and maintenance of air-tight plastic barriers, job set-up of airlocks, worker decontamination systems and waste transfer airlocks, posting of warning signs, engineering controls,

- electrical and ventilation system lockout, proper working techniques, waste clean-up, storage and disposal.
7. Personal hygiene including entry and exit procedures for the work area, use of showers and prohibition of eating, drinking, smoking, and chewing in the work area.
 8. Special safety hazards that may be encountered including electrical hazards, air contaminants (CO, wetting agents, encapsulants, material from Owner's operation), fire and explosion hazards, scaffold and ladder hazards, slippery surfaces, confined spaces, heat stress, and noise.
 9. Workshops affording both supervisory personnel and abatement workers the opportunity to see (and experience) the construction of containment barriers and decontamination facilities.

B. Site Supervisor Qualifications

1. The Contractor shall provide one site supervisor, whose responsibilities include coordination, safety, security and execution of all phases of the asbestos removal project. The Site Supervisor will not be used as an asbestos removal worker, and will be assigned full time to the project. The Site Supervisor shall possess a current DOH Asbestos Supervisor license and be fully qualified in all aspects of asbestos abatement practices and procedures, and have a one-week asbestos training course, approved by the Owner, within the previous year prior to the commencement of asbestos related work. This asbestos training course will cover all topics listed above as well as training in contract specifications, liability insurance and bonding, legal considerations related to abatement, establishing respiratory protection medical surveillance programs, EPA, OSHA, recordkeeping programs, as well as any other topics requested by the Owner.

C. CPR/First Aid Training

1. At least one person should be on site at all times who is certified in CPR and Emergency First Aid by an appropriate authority.

2.2 REGULATORY SUBMITTALS

- A. The Contractor shall notify all applicable Federal, State and Local agencies (Fire Department) on the appropriate forms and shall provide evidence of all necessary notifications and regulatory submittals at the pre-construction conference:
- B. Permits
 1. The Contractor shall be responsible for securing all necessary permits for asbestos related work, including hauling, removal, and disposal, fire, and materials usage, or any other permits required to perform the specified work.

2.3 SAFETY CONSIDERATIONS

- A. This project is subject to compliance with Public Law 91-596, "Occupational Safety and Health Act of 1970" (OSHA), with respect to all Rules and Regulations pertaining to construction, including Volume 36, Numbers 75 and 105, of the Federal Register, as amended, and as published by the U.S. Department of Labor.
- B. In addition to any detailed requirements of the Specification, the Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, Regional and Local Authorities regarding handling and storing of asbestos waste material.
- C. All staging and scaffolding shall be furnished and erected by the Contractor in accordance with all applicable requirements, and be maintained in safe condition by Contractor at no additional cost to the Owner.

- D. The Contractor is responsible for using safe procedures to avoid electrical hazards. When a hazard exists, work will be stopped and power will be shut off and checked before work begins again (e.g. Water use near electrical boxes.) All electrical panels and exposed wires within the work site shall be de-energized prior to the commencement of any wetting or removal operations. All extension cords and power tools used within the work area shall be attached to Ground Fault Circuit Interrupters (G.F.C.I.).

2.4 RESPIRATORS AND PROTECTIVE CLOTHING

- A. Personal protection, in the form of disposable Tyvek suits, and NIOSH approved respirators, are required for workers, contractor supervision, Consultant and visitors at the work site during the set-up, removal, and cleaning operations. Contractor shall provide all this protective equipment for workers, Owner's Consultant, and authorized personnel to access the containment.
- B. Each worker shall be supplied with a minimum of two complete disposable uniforms every day. Removal workers shall not be limited to two uniforms, and the Contractor will be required to supply additional uniforms as is necessary. Under no circumstances will anyone entering the removal area be allowed to reuse a contaminated uniform.
- C. Work clothes shall consist of disposable full body suits, head covers, gloves, footwear, and eye protection.
- D. The Contractor shall supply workers and supervisory personnel with NIOSH approved protective respirators and HEPA/filters. Appropriate respirator selection shall be determined by the daily personnel samples being taken and strictly follow the guidelines set forth in the OSHA respiratory program 29 CFR 1910.134 and the Rhode Island Department of Health (DOH) Rules and Regulations for Asbestos Control (R23-24.5-ASB). The respirators shall be sanitized and maintained according to the manufacturer's specifications. Appropriate respirators shall be selected using the information provided in OSHA Title 29 CFR Part 1910.1926 Final Rules. Disposable respirators shall not be considered acceptable in any circumstance. The Contractor will maintain on site a sufficient supply of disposable HEPA/filters to allow workers and supervisory personnel to change contaminated filters at least three (3) times daily. The Contractor is solely responsible for means and methods used and for compliance with applicable regulations.
- E. 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, prepared and implemented in accordance with OSHA 29 CFR 1910.134. A copy of this program shall be kept at the work site, and shall be posted in the Clean Room of the Decontamination Unit.
- F. Workers must perform negative and positive pressure fit tests 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.
- G. Workers shall be given a qualitative fit test in accordance with procedures detailed in 29 CFR 1910.134 Appendix A for all respirators to be used on this abatement project. An appropriately administered quantitative fit test may be substituted for the qualitative fit test.
- H. Upon leaving the active work area, prefilters shall be discarded, cartridges removed, and respirators cleaned in disinfectant solution and clean water rinse. Clean respirators shall be stored in plastic bags when not in use. The Contractor shall inspect respirators daily for broken, missing, or damaged parts.
- I. Contractor shall provide daily personal sampling to check personal exposure levels for the purpose of establishing respiratory protection needs. Samples shall be taken for the duration of the work shift or for eight hours, whichever is less. Personal samples need not be taken every day after the first day if working conditions remain invariant, 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 to determine eight-hour Time-Weighted-Averages (TWA). The Contractor is responsible for personal sampling as outlined in OSHA requirements.

- J. Sampling personnel shall be proficient in the taking of air samples under NIOSH 7400, and must be supervised by an individual who has completed the NIOSH 582 training course or equivalent.
- K. Air sampling results shall be available at the job site in written form no more than twenty-four (24) hours after the completion of a sampling cycle. The document shall list each sample's result, sampling time and date, person monitored, flow rate, sample duration, microscope field area, number of fibers per fields counted, cassette size and analysts name and company. Air sample analysis results will be reported in fibers per cubic centimeter (f/cc).

2.5 SECURITY

- A. The General Contractor will provide specific access as required during the project to the Contractor and personnel assigned to the project. The Contractor will be responsible for the security of the section of the building involved in the abatement project. It will also be the Contractor's responsibility to allow only authorized personnel into the work area, and to secure all assigned entrances and exits at the end of the work day.
- B. Any person entering or leaving the contained areas must sign the Contractor's bound log book and enter the date and time. The log book must be located immediately outside the entrance to the Decontamination Unit at all times, and be open for inspection by the Owner.

2.6 REFERENCES, REGULATIONS AND CODES

- A. The following references and regulations are cited as applicable publications:
 - Environmental Protection Agency
Asbestos Regulations (NESHAPS) Title 40 CFR Part 61; as currently amended.
Guidance for Controlling Friable Asbestos Containing Materials in Buildings; Final Rule and Notice, 10/10/87.
 - Occupational Safety and Health Administration
Title 29 CFR 1910.1001 (amended)
Title 29 CFR Part 1926.1101 (amended)
 - U.S. Department of Transportation Regulations
49 CFR Parts 172 and 173
 - Rhode Island Department of Health
Rules and Regulations for Asbestos Control
R23-24.5-ASB
- B. All regulations by these and other governing agencies in their most recent version are applicable. These specifications refer to many requirements found in these references, but in no way intend to cite or reiterate all provisions therein or elsewhere. It is the contractor's responsibility to know, understand, and abide by all such regulations and common practices.

PART 3 – PROJECT EXECUTION

3.1 GENERAL CONSIDERATIONS

- A. Approvals and Inspection
 - 1. All temporary facilities, work procedures, equipment, materials, services, and agreements must strictly adhere to and meet these contract specifications along with EPA, OSHA, RI DOH, and NIOSH regulations and recommendations as well as any other 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's Consultant.

2. Modifications to these isolation and sealing methods, procedures, and design may be considered if all elements of proper and safe procedures to prevent contamination and exposure can be demonstrated. Written modifications to these specifications must be submitted to the General Contractor, Owner's Consultant and the Owner in the form of a separate proposal for value engineering.

B. Damage and Repairs to the Work Site

1. Asbestos removal and disposal shall be performed without damage to sections of the facility not included in this Contract. In the event that the Contractor damages any component of the facility not included in the Scope of Work, Contractor shall patch, repair, replace or otherwise restore same to its original condition at no additional cost to the Owner.

C Warning Signs

1. Warning signs shall be posted on all work area entrances at the commencement of the work area preparation, as required in OSHA 29 CFR 1926.1101. The signs shall display the proper legend in the lower panel, with letter sizes and styles of a visibility at least equal to that specified in OSHA 29 CFR 1926.1101.
2. The signs shall be posted at the perimeters of the construction areas where the asbestos-containing material to be removed exists.
3. The Contractor shall maintain all temporary barriers, facilities and controls as long as needed for the safe and proper completion of the work. Work will not be allowed to commence until all control systems are in place and operable.
4. No barriers shall be removed until the work areas are thoroughly cleaned and all debris has been properly bagged and removed from work areas, and the air has passed final clearance tests, in accordance with provisions detailed herein.

3.2 WORK AREA PREPARATION AND ACM REMOVAL

A Preparation

1. Primary Barriers
 - a. Prior to construction of the asbestos removal area, all primary barriers shall be sealed with a minimum of one layer of six (6) mil plastic sheeting and duct tape. Primary barriers consist of all windows, vents, closed and locked doors, and openings to adjacent spaces from the work area. HVAC systems shall be sealed, where applicable, as described previously with two layers of 6 mil polyethylene sheeting.
2. Critical Barriers
 - a. Critical barriers consist of the boundaries of the work area including floors, walls, and any constructed barrier to restrict public access to the work area. Floors shall be sealed with a minimum of two layers of six (6) mil polyethylene sheeting. There shall be a minimum overlap of two feet (24") at the floor seams and the sheeting will run a minimum of two feet (24") up the walls.
 - b. The containment walls shall be constructed using a minimum of two layers of six mil polyethylene sheeting after sealing the floors. This shall be done using a minimum of one layer of six mil polyethylene sheeting. Overlaps between the walls and floors shall be interwoven as follows:
 - c. The first floor layer shall be taped up the wall a minimum of two feet (24"). The first wall layer shall be sealed to the floor layer at the corner of the floor and wall. The second floor layer shall be sealed to the first wall layer at a minimum of a two foot (24") overlap. The second wall layer shall cover all overlaps and be sealed to the floor.

- d. The enclosure shall be constructed so as to allow the removal of interior layers of plastic without damaging the exterior layer. The exterior layer shall stay intact for the duration of the project and be designated the critical barrier.
- 3 Decontamination Unit and Procedures
- a. It is the Contractor's responsibility to provide decontamination chambers consisting of an Equipment Room, Shower, and Clean Room for personnel involved in asbestos removal. Each of the three rooms shall be of sufficient size to accommodate authorized personnel and related equipment. Each room shall be separate of other rooms by a double flap of 6 mil polyethylene sheeting acting as an airlock. This shall be designed to minimize fiber migration and air flow between the decontamination unit rooms. The rooms shall be framed with 2"x 4" lumber, masked, sealed and attached to the entry/exit ways of asbestos work areas. The three rooms together shall be referred to as the Decontamination Unit. A Decontamination Unit will be required for each separate containment area, if work is to be divided into sections.
 - b. The Equipment Room shall serve as a transfer room and an intermediate area between the work area and any decontamination procedures to occur in the shower room. This room shall be vacuumed and washed whenever necessary in order to prevent asbestos dust and debris accumulations or when required by Consultant. The Equipment Room will also serve as an access area to the shower for personnel leaving the work area. Workers leaving the containment shall remove and dispose of disposable protective suits and wear only respirators into the Shower. At the end of each day, bags of asbestos waste and contaminated materials shall be removed after a thorough decontamination procedure as described in the contract specifications. Workers performing this operation will wear respirators and disposable full-body protective suits.
 - c. The Shower Room shall have a continuous supply of cold and hot water, and be suitably arranged for complete showering during decontamination. The Shower Room with curtained doorways will comprise an airlock between contaminated and clean areas. All materials being passed from the equipment room to the clean room must pass through the shower and be thoroughly decontaminated. The shower floor will not be allowed to sit at ground level, but must be elevated a minimum of six inches off of the floor with a suitable catch basin for drainage into a filtration system. The shower will be equipped with a sump pump and an in-line two stage filter. The first stage will efficiently filter fibers greater than twenty (20) microns in length and the second stage will filter bulk material and fibers greater than five (5) microns in length. Alternatively, shower water may be re-routed back into the work area to be bagged and disposed of as asbestos contaminated waste. The Contractor shall provide disposable towels and soap in the shower area.
 - d. The Clean Room shall store asbestos worker's clean protective clothing and clean respirator equipment. Contaminated clothing, respirators, tools, equipment, or other materials shall not be allowed into the Clean Room or beyond. The Clean Room will serve as an access for personnel entering the work area, and for the donning of respiratory protection and protective clothing. The contractor shall provide space in the clean room for the worker's personal clothing. This may be in the form of hangers or lockers.
 - e. The decontamination enclosure is called a "three-stage" decontamination enclosure and shall be the type constructed and used for this project in specified areas. A "two stage" unit resembles the "three-stage" unit in construction detail, but it is built without a Shower section.
- 4 HEPA Filtration
- a. Adequate negative pressure shall be provided within the enclosure as specified below.
 - b. After the work area is totally isolated, and prior to commencement of work, the Consultant will perform a visual inspection of the work area. This will consist of checking the integrity of barriers including smoke testing the containment if deemed necessary by Consultant. This does not in any way relieve the Contractor's responsibilities to ensure the isolation of the work area. The volume of air within the contained work area shall be changed a minimum of four (4) times per hour. A

pressure differential reading of 0.02 inches of water shall be maintained in the negative pressure work area relative to adjacent areas. Equipment used for producing a negative pressure work area shall have a filtering device, which is at least 99.97% efficient at a 0.3 micron pore size. Filters meeting these standards are referred to as High Efficiency Particulate Absolute (HEPA) filters.

- c. The HEPA filtration units shall be equipped with the following:
 - 1. Magnehelic gauge to monitor the unit's air pressure difference across the filters and be able to interpret magnehelic reading to cubic feet per minute (CFM).
 - 2. An affixed label, clearly marked and conspicuous, showing the most recent installation date and hour reading of the primary internal HEPA filter.
 - 3. A clock to record the unit's operation time.
 - 4. Automatic shut off for filter failure or absence.
 - 5. Audible alarm for unit shutdown.
 - 6. Amber flashing warning light for filter loading.
 - 7. The unit must be equipped with a safety system which prevents it from being operated with the HEPA filter in an improper orientation
 - 8. All flexible ducting, vent tubing, adapter plates and other equipment used for the passage of filtered air shall be undamaged, uncontaminated, and free of air leaks at all points.
- d. Pre-filters shall be changed frequently during the removal.
- e. Air movement will flow uninterrupted from outside the work area through the Decontamination Unit into the work area. There shall be no other openings for air to enter the containment unless approved by the Consultant in writing.
- f. HEPA filtration units shall be placed as far as possible from the air intake to the containment to prevent short-cycling of fresh air.
- g. This containment, along with the decontamination chamber, shall constitute the critical containment of the work area from the surrounding areas. All openings to this critical containment are to be sealed except where air must enter the work-site due to the use of exhaust equipment. Unless approved by the Owner, air shall enter the critical containment only through the Decontamination Unit.
- h. Modifications to these isolation and sealing methods, procedures, and design may be considered if all elements of proper and safe procedures to prevent contamination and exposure can be demonstrated. Written modifications to these Specifications must be made to the Consultant and Owner in the form of a separate proposal for value engineering.

5 ACM Removal

- a. Asbestos removal will not begin until the Owner's Consultant has given authorization to proceed. This authorization will be given after the removal area has passed a visual inspection by the Owner's Consultant based on the criteria presented herein.
- b. All asbestos-containing material must be soaked with amended water before removal. The material shall be sufficiently saturated to reduce fiber release so that the airborne fiber concentration does not exceed the established OSHA Permissible Exposure Limits, (PEL). The amended water shall not be applied in amounts that will cause leakage or runoff of contaminated water from the removal area. Dry removal will not be permitted during this project.
- c. Asbestos-containing material shall be carefully removed and placed immediately into bags. Bags must have sufficient amounts of water to the point where all asbestos is adequately wetted as defined by Federal Regulations 40 CFR 61 Subpart M. Asbestos will not be permitted to let fall or sit on the ground before being bagged.
- d. Fine cleaning of residual asbestos-containing material shall consist of carefully scraping or brushing the material from surfaces. The recommended method for brushing a substrate after gross removal has taken place is to use a nylon brush. Wetting of the substrate shall also occur while this brushing is performed, since the chance of airborne fiber generation during fine cleaning still exists.
- e. Water Atomizing Devices, commonly termed "mistifiers," shall be utilized by the contractor during asbestos removal and fine cleaning phases to provide further dust

control protection in the work area. The misters shall be supplied with amended water and in operation continuously during these phases. After removal work is completed all surfaces within each work area shall be final cleaned utilizing wet wiping and HEPA vacuuming.

- f. Asbestos waste must be double bagged before it is removed from the contained area. The inner bag will be HEPA vacuumed and showered before being placed in the outer bag. Vacuuming must take place in the Equipment Room of the Decontamination Unit. Washing must take place in the Shower Room of the Decontamination Unit. Bags will normally be removed at the end of each working day and transported from the job site to the onsite waste dumpster.
- g. Any materials considered contaminated by the Owner's Representatives or the Owner's Consultant that cannot be double bagged shall be wetted and containerized in disposal drums. Oversized contaminated materials shall be wrapped airtight in two layers of 6 mil polyethylene sheeting.
- h. All bags, containers or wrapped materials transported out of the work area shall be labeled with preprinted labels required by Federal EPA, OSHA and the Department of Transportation regulations. Any carts used to transport asbestos waste to the on-site holding dumpster should be HEPA vacuumed and wet wiped each day, and may be inspected by the Owner or Consultant every day.
- i. Carts that are not made of an impermeable material shall be lined with a minimum of one layer of 6 mil polyethylene sheeting to be removed after each shift and disposed of as contaminated waste. The transport route and the transport of waste out of the work area shall be coordinated with the Owner's Consultant.
- j. The work area shall be cleaned of residual asbestos debris on a daily basis. The Decontamination Unit floor (top layer) shall be picked up and replaced on a daily basis, if required by Consultant.
- k. Air testing may be performed continuously outside the enclosed area. If fiber concentrations exceed 0.010 fibers/cc or background levels, work shall stop and the Contractor shall perform cleanup activities in the affected areas and check the integrity of the critical barriers. Clean up activities shall include but not be limited to wet wiping and vacuuming surfaces with a HEPA equipped vacuum. Work may continue only after the source of contamination is identified, corrected and proper cleaning activities are implemented. Air testing will be performed by the Owner's Consultant on site in the affected areas. If the results of these air tests are not below 0.010 fibers/cc, the Contractor shall perform a thorough decontamination of the affected areas.
- l. After brushing and scraping, surfaces shall be free of visible debris and fibers. A final wipe-down of the substrate with wet, lint-free rags shall take place in order to ensure proper cleaning. All surfaces including floors, walls, and ceilings shall also be wet wiped and HEPA vacuumed clean as part of final cleaning. All visible asbestos-containing material is to be removed by the Contractor before encapsulation procedures are allowed to begin. The Owner's Consultant will perform an inspection of the work area prior to giving approval to begin encapsulation of work area. Removal substrate must be clean and bare, and the entire work area must be free and clear of any suspect material for the contractor to pass this visual inspection and begin encapsulation.
- m. Where insulated substrates penetrate walls or other demising structures, remove asbestos through to the opposite side of the demising structure. After the removal of the asbestos materials at the demising structures, any resulting spaces or breeches shall be foamed or sealed airtight.

3.3 GLOVE BAG REMOVAL METHOD

- A. Removal of asbestos containing pipe / pipe fitting insulation shall be in accordance with the following procedure:
 - 1. Glove bags may be used as a method of asbestos removal in conjunction with total isolation removal in areas identified in the scope of work for pipe/pipe fitting insulation

- removal. Several restrictions which apply to the use of glove bags for asbestos removal purposes may be found at OSHA Regulations 29 CFR 1926.1101.
2. Contractor shall set up a containment barrier around the immediate area of glove bag removal. This containment is to consist of two layers of six (6)-mil polyethylene sheeting walls and a two layer six-mil polyethylene sheeting floor forming a fully enclosed "cocoon"-like work area enclosure.
 3. As an alternative to the "cocoon" enclosure described above, Contractor is permitted to erect a containment enclosure where all openings, windows, vents, and doors in the work area are sealed with two layers of six-mil polyethylene sheeting and duct tape. In addition, walls adjacent to the piping, floor surfaces below the piping, and any object in the work area shall be covered with two layers of six-mil polyethylene sheeting.
 4. In either case, the containment area surrounding the glove bag area shall be under adequate negative pressure to achieve a minimum of four air changes per hour. Criteria for filtering and exhausting the work area shall be the same as in the total isolation method for removal.
 5. Pipes and fittings where glove bags are to be used must be no warmer than 150°F, as the glove bag material may melt or stick to the pipes.
 6. All workers must wear full protective suits and respirators during all Phases of glove bag work, including preparation, removal, clean up, and encapsulation.
 7. Preparation of the area will include a minimum double-stage decontamination unit at the entrance to the contained area, equipped with a HEPA vacuum for personal decontamination, in accordance with OSHA 1926.1101, Appendix G. Glove bags will be placed on pipes or fittings and securely taped with tools enclosed. Bags will not have any holes which might allow air to escape during removal. Bags will be checked with smoke tubes provided by Contractor. A HEPA vacuum will be inserted through the appropriate hole in the bag along with the nozzle for the water sprayer containing amended water. When such preparations are completed, approval of the Consultant will be obtained for each glove bag work area before removal begins.
 8. It is required that removal be performed by two-person (minimum) teams. One will support the vacuum and assist with wetting the material in the bag while the other does the actual cutting of the material. Once the material is removed and the pipes are clean and bare, the material in the bag will be thoroughly wetted down and forced to the bottom of the bag. All air in the bag will be vacuumed out, and the bottom portion of the bag where all the asbestos must be will be twisted around before separating the bag from the pipe. Bags will then be immediately placed in another labeled bag for disposal purposes. Glove bags are not permitted to be left in the work area for any length of time after the removal.
 9. All surfaces in the glove bag area will then be wet-wiped and HEPA- vacuumed. Polyethylene sheeting used to protect the immediate area will be discarded as asbestos waste. Enclosure barriers will be left up until results of clearance air samples are acceptable. Contractor will encapsulate the pipes and fittings for Owner's Consultant inspection.
 10. Lock-down must be done with a pre-approved encapsulant, after the pipe is essentially dry. Workers performing lock-down must wear disposable protective clothing and suitable respirators. The lock-down material shall be applied with a low pressure (less than 500 psi), airless, spray-type mechanism or be hand-applied. A minimum of one coat of lock-down encapsulant will be applied. The lock-down encapsulant will be applied to both the substrate and the polyethylene sheeting, if in place. If the lock-down material is being applied to irregular, grooved, or corrugated surfaces, it should be administered from the opposing side, or at a right angle to the direction of the previous application.
 11. Personal samples, containment area samples taken during glove bag operations, and/or final clearance air samples must not exceed 0.010 fibers/cc or above background levels. If this occurs, the area inside the containment must be thoroughly cleaned and encapsulated. Clearance air samples will then be taken with acceptance criteria of 0.010 f/cc required before the enclosure can be dismantled.
 12. Glove bag work areas will be post-tested in the same manner and with the same acceptance criteria as specified for total isolation removal (i.e. 0.010 f/cc).

3.4 ASBESTOS-CONTAINING FLOOR TILE AND MASTIC REMOVAL METHOD

- A. Removal of asbestos containing flooring materials (floor tile, linoleum, mastics, carpet applied to flooring mastic) including the removal of all ACM contaminated wood underlayment materials and the removal of mastic where present, shall be in accordance with all applicable regulations including Part II, Occupational Safety and Health Administration, 29 CFR Parts 1910, et. al., dated Wednesday, August 10, 1994. At a minimum, the following work practices shall apply:
1. Workers shall wear protective clothing and half-mask, dual-cartridge, HEPA-filtered respirator, at a minimum.
 2. The work area shall be isolated as required by regulations and to the satisfaction of the Consultant. At minimum, critical barriers, a negative pressure system, and a personal decontamination facility shall be erected in accordance with Section 3.2 of this Section. All areas where flooring material and mastic are to be removed shall be sealed off by the use of polyethylene sheeting on all openings and HEPA filtered negative pressure shall be established in each work area sufficient to achieve six air changes per hour.
 3. Flooring material and mastic shall be wet prior to removal and during removal.
 4. Floor tile shall be removed as a complete unit, with no breakage, wherever possible.
 5. The exposed floor will be cleaned with a HEPA vacuum cleaner and wet-scraped. Repeat the process until the floor area is clean and smooth.
 6. Any chemicals to be used for removal of the mastic must be approved by the Consultant, and Owner and prior to being used.
 7. Dispose all asbestos-containing waste at an approved landfill.

3.5 REMOVAL OF CRITICAL BARRIERS

- A. No critical barrier shall be taken down until the final visual inspection and final clearance air tests pass the final air clearance criteria of less than 0.010 fibers per cubic centimeter for PCM clearance, or an average of 70 structures per square millimeter for TEM clearance testing. After a successful final visual inspection, encapsulation, and a successful final air test, Contractor shall perform post abatement take-down.
- B. All encapsulated polyethylene sheeting used in the construction of the Decontamination Unit and Containment Area shall be bagged and disposed of as asbestos contaminated waste. Areas exposed during this process shall be examined for traces of suspect material. If any is found, it will be picked up by HEPA vacuuming and wet cleaning, and a coat of encapsulant be applied to the affected areas. Based on the amount of suspect material found, the Consultant may request the use of misters in the surrounding area. The Contractor will then implement the use of misters as a precautionary measure.
- C. The polyethylene barriers shall be cleaned of gross contamination before a lock-down sealant can be applied to the substrate. After the substrate has been cleaned and all polyethylene barriers of the work area are cleaned of all visible debris, the Contractor shall request a visual inspection of the work area by the Owner's Consultant. Prior to the inspection of the work area, the Contractor shall remove the inside layer of the work area polyethylene sheeting, after cleaning, and dispose of it as contaminated waste. The work area will still have all primary barriers intact and one layer of polyethylene sheeting over floor, walls, and items within the work area during the inspection.
- D. Workers performing lock-down must wear disposable protective clothing and respirators suitable for asbestos. The encapsulation process shall not be treated any differently from the removal process in this respect.
- E. The lock-down material shall be applied with a low-pressure airless spray-type mechanism.
- F. All surfaces in the work area will be encapsulated. A minimum of one coat of lock-down encapsulant will be applied to prevent the generation of airborne residual fibers. The lock-down encapsulant will be applied to both the substrate and the polyethylene sheeting serving as the containment barrier. During the encapsulation process, the Contractor shall decrease the

negative pressure of the work area by shutting down some of the air filtration devices in the work area. If the lock-down material is being applied to irregular, grooved, or corrugated surfaces, it shall be administered from the opposing side, or at a right angle to the direction of the previous application. The encapsulant shall be left to dry before the commencement of final air testing. After final air clearance and inspection criteria have been met, the Contractor shall begin final take-down procedures.

3.6 FINAL AIR CLEARANCE MONITORING

- A. Final clearance air samples will be collected by the Consultant inside the asbestos removal work area following acceptance of the area as being free of all visible debris.
- B. Air will be agitated by means of a small leaf blower prior to the test, and kept agitated by means of a small electric fan. The results of all samples must be less than 0.010 fibers per cubic centimeter (f/cc) for PCM analysis or an average of 70 structures per square millimeter for TEM clearance testing to be in compliance with clearance criteria as described in this Specification, EPA and Rhode Island Department of Health (DOH) Rules and Regulations for Asbestos Control (R23-24.5-ASB). If the Contractor fails to meet the criterion, the Contractor will be required to re-clean the designated work site and will be responsible for the payment of additional clearance testing services. The Owner's Consultant will then repeat the final air clearance testing. Cleaning and testing will be repeated until the specified criterion is met.
- C. All final air tests will be performed by the Consultant in accordance with the EPA Asbestos Hazard Emergency Response Act (AHERA) and Rhode Island Department of Health (DOH) Rules and Regulations for Asbestos Control (R23-24.5-ASB). The first set of final clearance air tests for each removal area will be paid for by Owner. In the event that these air tests do not pass the clearance criteria, any subsequent air tests that need to be performed shall be paid for by Contractor. All additional sampling costs will be automatically deducted from the contract price until the areas in question pass the final air clearance criteria of less than 0.010 fibers per cubic meter for PCM clearance testing or an average of 70 structures per square millimeter for TEM clearance testing.

3.7 DISPOSAL OF ACM WASTE

- A. Waste removal procedures shall be done in accordance with all regulations as set forth by the agencies having authority to regulate. The Contractor shall provide proof that disposal sites for the waste materials have current and valid permits to accept asbestos waste at the time of the pre-construction meeting.
- B. Receipts shall be obtained by the Contractor from the disposal site(s), and submitted to the Owner prior to request for final payment.
- C. Warning labels having permanent, waterproof print and adhesive shall be affixed to all bags, trucks, drums (lids and sides), and other containers used to store and/or transport asbestos-containing material. Labels must be conspicuous and legible.
- D. The Contractor shall be responsible for all necessary precautions to prevent pollution by spilling during the performance of services and shall assume full responsibility for all Contractor caused spills, which shall be cleaned up at the Contractor's expense.
- E. Temporary storage of asbestos waste on-site will be allowed only at the designated waste dumpster. Location of dumpster to be determined during Pre-Construction Meeting.

3.8 HOUSEKEEPING

- A. Throughout the work period, the Contractor shall maintain the building and site in a standard of cleanliness as specified throughout these specifications.

1. Contaminated disposable clothing, respirator filters, and other debris shall be bagged and sealed at the end of each work day.
2. All asbestos generated by spot removal shall be bagged immediately and not allowed to be left exposed at any time.
3. Respirators shall be thoroughly cleaned at the end of each work day and stored for the next day's use.
4. The Contractor shall retain all stored items in an orderly arrangement allowing maximum access, not impeding traffic, and providing the required protection materials.
5. The Contractor shall not allow the accumulation of scrap, debris, waste material, and other items not required for completion of the work.
6. The Contractor shall provide adequate storage for all items awaiting removal from the job site, observing all requirements for fire protection and protection of the ecology.
7. The Contractor shall maintain the site in a neat and orderly condition at all times.

END OF SECTION 02 80 01

SECTION 02 80 02 – LEAD-CONTAINING PAINT

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

- A. Attention is directed to the CONTRACT AND GENERAL CONDITIONS, which are hereby, made a part of this Section of the Specifications.
- B. Examine all Drawings and all other Sections of the Specifications for requirements of related sections affecting the work of this Section.
- C. The General Contractor (Contractor) is responsible for the coordination of the work of this Section with related work. No delays in completion of the work shall be claimed for lack of coordination.
- D. The Contractor shall comply with all applicable local, state, and federal guidelines and regulations regarding all work involving the presence of lead paint. All Contractors shall be made aware that lead safe paint exists on painted surfaces throughout the buildings in this project.

1.2 DESCRIPTION OF WORK

- A. The work of this Section outlines the minimum requirements for the disturbance and disposal of lead-containing coatings and associated waste generated during the renovation of the Benjamin Rush State Office Building, 35 Howard Avenue, Cranston, RI. This work includes the following:
- B. The procedures described herein shall provide work practice requirements where occupational exposure to lead may occur, and shall provide requirements regarding waste testing and disposal of all wastes generated from the work described in this section. The Contractor shall assume that any coated surface for which representative test results are not available be assumed to contain lead paint, and it shall be the Contractor's responsibility to protect workers performing under this Contract. This may require additional testing by the Contractor to verify lead content.
- C. The Contractor shall assume full responsibility and liability for the compliance with all applicable Federal, State and local regulations pertaining to work practices, hauling and disposal of hazardous waste, protection of workers and visitors to the site, and persons occupying areas adjacent to the site. The Contractor shall hold the Architect, Owner and Consultant harmless for failure to comply with any applicable work, hauling, disposal, safety, health or regulation on the part of himself, his workers or his subcontractors.
- D. The Contractor is required to ensure the protection of workers performing any work that will affect surfaces coated with lead paint as well as protecting the public and the environment from exposure to lead dust.

1.3 RELATED DOCUMENTS

- A. All work shall conform to the standards set by applicable Federal, State and local laws, regulations, ordinances, and guidelines in such form in which they exist at the time of the work on the contract and as may be required by subsequent regulations.
- B. In addition to any detailed requirements of the Specification, the Contractor shall at his own cost and expense comply with all laws, ordinances, rules and regulations of Federal, State, Regional and Local Authorities regarding handling and storing of lead waste material.
- C. The following references are cited as applicable standard and regulations as amended:

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 1926.354 – Welding, Cutting and Heating in Way of Preservative Coatings
 - 40 CFR 50 – National Primary and Secondary Ambient Air Quality Standards for Lead
 - 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. American National Standards Institute (ANSI) Publications:
 - 29.2-79 Fundamentals Governing the Design and Operation of Local Exhaust Systems
 - 288.2-80 Practices for Respiratory Protection
3. National Institute of Occupational Safety and Health (NIOSH) Publications:
 - Manual of Analytical Methods, 4th Ed.
4. Underwriters Laboratories, Inc. (UL) Fire Resistance Directory Publications:
 - 586-77 (R 1982) Test Performance of High Efficiency Particulate, Air Filter Units

- D. All regulations by the above and other governing agencies in their most current version are applicable throughout this project. Where there is a conflict between this Specification and the cited State, Federal, or local regulations, the more restrictive or stringent requirements shall prevail.

1.4 DEFINITIONS

- A. The following definitions apply to the performance of the work of this project.

1. Action Level: Employee exposure, without regard to the use of respirators to an airborne concentration of lead of 30 micrograms/cubic meter ($\mu\text{g}/\text{m}^3$) calculated as an 8-hour time-weighted average (TWA).
2. Area Monitoring: Sampling of lead concentrations within the work area and outside the work area that is representative of the airborne concentrations of lead.
3. Consultant: Authorized representatives who are under contract with the Owner to perform Lead Paint Consulting services.
4. HEPA Filter Equipment: High efficiency particulate air (HEPA) filtered vacuuming or exhaust ventilation equipment with a UL 586 filter system. Filters shall be of 99.97 percent efficiency for retaining 0.3-micrometer diameter particles.
5. Lead Paint: Paint, varnish, or stain that contains lead in excess of 0.0% lead by weight.
6. Permissible Exposure Limit (PEL): The employer shall assure that no employee is exposed to lead at concentrations greater than $50 \mu\text{g}/\text{m}^3$ of air averaged over an 8-hour period. If an employee is exposed to lead for more than 8 hours in any work day, the employee's allowable exposure, as a time weighted average (TWA) for that day, shall be reduced according to the following formula: Allowable employee exposure in $\mu\text{g}/\text{m}^3$ of air = 400 divided by hours worked in the day.
7. Sample Location: Area or place where an air sample is collected.
8. Time Weighted Average (TWA): The TWA is an 8-hour time-weighted average for the test of the concentration of lead for worker exposure.
9. Wet Cleaning: The process of removing lead contamination from building surfaces, equipment and other objects by using cloths, mops, or other cleaning tools, which have been dampened with water, and by afterwards disposing of these cleaning tools as, lead contaminated wastes.
10. Work Area: A controlled-access work area that has plastic sheeting or other containment barriers erected to separate the trades and the public from entering.

1.5 SUBMITTALS

A. Provide copies of the following Submittals for review by the Owner & Architect:

1. Copies of all notifications, permits, applications, licenses and like documents required by Federal, State, or local regulations obtained or submitted in proper fashion,
2. List of total number of supervisors and workers intended to be assigned to the project, including name and lead awareness qualifications,
3. Copies of written medical opinions for each employee who may be occupationally exposed to lead as required by 29 CFR 1926.62 (j)(3)(v),
4. Record of successful respirator fit testing performed by a qualified individual within the previous 12 months for each employee to be used on this project with the employee's name and social security number with each record,
5. Employer's Lead Compliance Program as required by 29 CFR 1926.62, including proposed worker training, 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; worker orientation plan; written description of all proposed procedures, methods, or equipment to be utilized, including those that may differ from the Contract Specifications. In all instances, Contractor must comply with all applicable federal, state and local regulations.
6. Material Safety Data Sheets on potentially hazardous materials to be used on the project,
7. Waste Disposal Plan which describes the waste stream and the disposal means (i.e. landfill, recycle, etc.) and includes the name, address, and ID number of the proposed hazardous waste hauler, waste transfer route, and proposed disposal reclamation or treatment facility.
8. Work Plan which describes proposed engineering controls, work practices and procedures, and sequencing that the Contractor will use to conduct the work of this specification and related Sections. Upon contract award, the Contractor shall submit a more specific plan prior to commencement to work.

No work of the project will be allowed to begin until Owner & Architect accepts the Pre-Construction Submittals. Any delay caused by the Contractor's refusal to submit this documentation in a timely fashion does not constitute a claim for extra compensation or a time extension.

B. Submit the following to the Owner as a Post-Construction submittal package:

1. Copies of waste manifests and receipts acknowledging disposal and recycling of all lead waste material from the project, showing delivery date, quantity, and appropriate signature of landfill's authorized representative,
2. All personnel monitoring results,
3. All TCLP testing results.

1.6 GENERAL WORK PROCEDURES

- A. Work shall be carried out as directed by Owner. As a Contract requirement, any reasonable delay caused by this requirement will not constitute a basis for claim against the Owner or Consultant. Contractor must coordinate the work of this section with the work of all other trades.
- B. At no time will Owner permit storage of debris generated from paint removal activities to be stored inside buildings at the site, and any storage of materials shall be subject to Owner's approval. Assure security of debris at all times.

1.7 SPECIAL CONSIDERATIONS

- A. Work Affected: In general, the following activities are minimum requirements of this Section and affect the demolition of painted components:

1. No torch cutting, mechanical sanding or stripping, or abrasive methods of paint removal shall occur until the employer performs an employee exposure assessment as required under 29 CFR 1926.62 and determines actual employee exposure. The employer shall provide to employees performing these tasks with interim protection as follows and according to 29 CFR 1926.62:
 - a. Appropriate respiratory protection,
 - b. Appropriate personal protective clothing and equipment,
 - c. Change areas,
 - d. Hand washing facilities,
 - e. Biological monitoring to consist of blood sampling and analysis for lead and zinc protoporphyrin levels, and
 - f. Training as required regarding 29 CFR 1926.59, Hazard Communication; training as required regarding use of respirators; and training in accordance with 29 CFR 1926.21, Safety training and education.
2. Workers shall be informed of the components to be impacted during demolition that have been identified as containing lead.
3. Separation of Trades: Unprotected, untrained workers or trades shall not perform any related work within the same vicinity as work involving components identified with lead.

1.8 REPORT OF FINDINGS

- A. Representative building components were determined to contain lead in concentrations between 0.1 and 1.6 (mg/cm²). Testing results will be made available upon request to the Owner.

1.9 FEES, PERMITS & LICENSES

- A. The Contractor shall pay all licensing fees, royalties, and other costs necessary for the use of any copyrighted or patented product, design, invention, or process in the performance of the work specified in this section. The Contractor shall be solely responsible for costs, damages, or losses resulting from any infringement of these patent rights or copyrights. The Contractor shall hold the Owner and Architect harmless from any costs, damages, and losses resulting from any infringement of these patent rights or copyrights. If the Specification requests the use of any product, design, invention, or process that requires a licensing, patent or royalty fee for use in the performance of the job, the Contractor shall be responsible for the fee or royalty fee and shall disclose the existence of such rights.
- B. Contractor shall be responsible for costs for all licensing requirements, where applicable and notification requirements, plus all other fees related to the Contractor's ability to perform the work in this Section.
- C. Secure all necessary permits for work under this Section.

1.10 CLEAN-UP

- A. Maintain the work site in a neat and orderly manner at all times, so as not to interrupt or infringe upon the work of other trades.
- B. Comply with all requirements for release of work areas as described in the project specification.
- C. It is the prerogative of the Owner and Consultant to inspect whenever deemed necessary and the Contractor is responsible for meeting and correcting any deficiencies discovered which do not meet the current applicable regulations and requirements of these specifications.

1.11 COORDINATION

- A. Extend full cooperation to Owner in all matters involving the use of Owner's facilities. At no time shall Contractor cause or allow to be caused conditions that may cause risk or hazard to the general public or conditions that might impair safe use of the facility. The use of the facility's electricity, water or like utilities by the Contractor shall be as specified in the General Conditions.
- B. Coordinate the work of this section with that of all other related sections and trades.
- C. Inspections: The Owner & Architect may perform visual inspections during the work of this section, as described below.
 - 1. During: Prior to the commencement of a proposed alternative method other than specified.
 - 2. Post Inspection: At the completion of work and final clean-up, prior to clearance or removal of any critical barriers from the work area and release to other trades.
 - 3. Waste Removal Inspection: Prior to removal of hazardous waste from the site, Consultant may inspect the quantity and type.

1.12 EMERGENCY PRECAUTIONS

- A. The Contractor shall establish emergency and fire exits from the work area.
- B. When an injury occurs, the Contractor shall stop work until the injured person has been removed from the work area.

1.13 DISPOSAL OF WASTE MATERIAL

- A. The Contractor shall comply with the Resource Conservation and Recovery ACT (RCRA) and with all applicable state and local regulations.
- B. Contractor shall be responsible for disposing of all waste determined by Toxicity Characteristic Leachate Procedure (TCLP) to be hazardous. If TCLP testing has not been performed, the Contractor shall be responsible for testing the waste.
- C. Contractor shall comply with all EPA regulations.

1.14 AUTHORITY TO STOP WORK

- A. The Owner & Architect has the authority to stop the work at any time it is determined that conditions are not within the specifications and applicable regulations. The stoppage of work shall continue until conditions have been corrected and corrective steps have been taken to the satisfaction of the Consultant. Standby time required to resolve violations shall be at the Contractor's expense, and shall not be cause for extending the completion date.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. All material and equipment proposed to be used on this project shall be subject to the acceptance of the Owner and Architect.
 - 1. Polyethylene sheeting, minimum thickness of six (6) -mil, fire retardant;
 - 2. Plastic bags, minimum thickness of six (6) -mil;
 - 3. High Quality Duct Tape;
 - 4. Lead Warning Signs, as described in OSHA;
 - 5. Spray adhesive, fire retardant;

6. Personal Protective Equipment, NIOSH approved respirators and filters;
7. HEPA vacuums;
8. Trisodium-Phosphate (TSP), product data;
9. Other materials, tools and equipment necessary for lead based paint abatement;
10. Cloth Tarpaulins;
11. Chemical Strippers, where applicable, not containing methylene chloride and/or flammable materials.

PART 3 – EXECUTION

3.1 SCHEDULING

- A. The Contractor shall coordinate all scheduling with the Owner. A schedule of work shall be submitted to the Owner prior to contract performance.

3.2 UTILITIES

- A. Provide all necessary connections for temporary utilities in the workplace during work. Shut down and disconnect all electrical power to the work area so that there is no possibility of reactivation and electrical shock during the work. The temporary electrical power shall be in accordance with all OSHA requirements.

3.3 IDENTIFICATION OF HAZARDS

- A. Prior to any work involving lead-containing items, the contractor shall identify all work activities in which a worker may be occupationally exposed to lead.
- B. The Contractor shall initially determine if any worker may be exposed to lead above the action level.

3.4 BARRIERS AND ISOLATION AREAS

- A. The degree of containment shall be appropriate for the anticipated levels of airborne lead dust. The lower the level of airborne lead, the lesser the requirements necessary to control lead emissions at the job site.
- B. Work Area Isolation (unless exempted according to Paragraph A)
 1. The Contractor shall isolate work areas for the duration of work by completely sealing off all openings in the work area. Isolation shall be accomplished by constructing critical barriers where necessary around the work area perimeter. The work area shall be sealed airtight to the greatest extent possible.
 2. As necessary, provide temporary power and lighting (with ground fault circuit interrupt protection) to the work areas, and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements, and renovation areas.
- C. All work areas involving lead shall remain isolated from all other trades on the project and remain inaccessible to the public. Contractor shall monitor the access to the renovation work areas. The below listed items are required to control the generation of lead dust during renovation activities. The Contractor is ultimately responsible for cleaning all generated dust and paint debris from renovation operations and must maintain work areas free from lead dust generated from renovation activities.
 1. Signs shall be posted at all approaches to the immediate work area warning that work involving lead is being conducted in the immediate vicinity. Signs shall be in bold lettering not smaller than two inches tall.

2. Barriers shall not be removed until the work areas are thoroughly cleaned.

3.5 PAINT REMOVAL

- A. Where paint removal is to occur on a metal surface to allow for modification to the existing structure, the paint shall be removed from an area of at least eight (8) inches where cut lines or welding are to occur at all surfaces of member. Paint removal shall occur to remove all visible paint down to the bare substrate on metal surfaces.
- B. The following methods are prohibited for use in lead-containing paint removal on this project:
 1. Torch or flame burning;
 2. Dry abrasive blasting using sand, grit or any other particulate;
 3. On-site use of methylene chloride or solutions containing methylene chloride;
 4. Machine sanding.

3.6 PERSONNEL SAMPLING – CONTRACTOR

- A. Perform personnel air sampling during all renovation work to determine worker exposure limits according to 29 CFR 1926.62. The results of such sampling shall be provided to individual workers in writing within 5 working days after completion of the exposure assessment. The Contractor shall be responsible for paying for the collection and analysis of personnel air sampling.

3.7 WORK PROCEDURES

- A. The Contractor shall initiate, and continue, sufficient engineering and work practice controls, as described in the Contractor's Lead Compliance Program, to reduce and maintain worker exposures to lead at or below the Action Level.
- B. The following work practices are specifically required by these specifications:
 1. All persons except those directly involved in the work shall be excluded from the work area. Physical barriers shall be used, where necessary, to limit access to the work area for the duration of the renovation operations.
 2. Provide hand-washing and/or shower facilities and ensure that all workers thoroughly wash their hands and face upon exiting the work area. Workers shall pay careful attention to cleanse the hands and face when decontaminating.
 3. All equipment used by the workers inside the work area shall be either left in the work area or thoroughly decontaminated before being removed from the area. Extra work clothing (in addition to the disposable suits supplied by the Contractor) shall be left in the clean area until the completion of work in that area. The clean area shall be cleaned of all visible debris and disposable materials daily.
 4. 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 Owner to stop all renovation operations. Only in the case of life threatening emergency shall workers or supervisory personnel be allowed to remove their protective respirators, if applicable, while in the work area. In this situation, respirators are to be removed for as short a duration as possible.

3.8 STORAGE OF WASTE

- A. Use of waste containers on site shall be controlled under the following requirements:
 1. Location of waste containers on site shall be coordinated with the Owner.

2. Waste containers shall be lined with two layers of six-mil polyethylene sheeting, be solid, enclosed containers, locked and sealed at all times. This requirement applies to waste classified as hazardous based on TCLP testing.
3. Contractor shall comply with all federal, state, and local regulations and ordinances regarding lead waste and recyclable storage.

END OF SECTION 02 80 02

ACT	AIR CONDITIONING	ELEV	ELEVATOR	MAS	MASONRY	RH	RIGHT HAND
ACG	ACOUSTICAL TILE	EMER	EMERGENCY	MAX	MAXIMUM	RIBC	RIDGE ISLAND STATE
ADDTL	ADDITIONAL	ENG	ENGINEER	MKB	MARKER BOARD		BUILDING CORNER
AFF	ABOVE FINISH FLOOR	EL	ELECTRICAL PANEL	MBL	MARBLE TILE	RL	ROOM LADDER
ALT	ALTERNATE	EPXY	EPPOXY SEALING SYSTEM	MC	MEDICINE CABINET	RM	ROOM
ALJ	ALUMINUM	EQ	EQUALIZER	MD	MEDIUM DENSITY		ROUGH OPENING
ANG BLT	ANCHOR BOLT	EQUIP	EQUIPMENT	MDF	MEDIUM DENSITY OVERLAY	RT	RUBBER TILE
APPROX	APPROXIMATE	ER	EXISTING TO REMAIN	MECH	MEDIUM DENSITY OVERLAY	RTU	ROOM TOP UNIT
AR	AROMATIC	EW	EXPANDED	MFR	MANUFACTURER	S	SEALANT
ARGB	AROUS RESISTANT GB	EXISTS	EXISTING	MH	MANHOLE	SCB	SCHEDULE
ASPH	ASPHALT	EXP	EXPANSION	MIM	MINIMUM	SCB	SHOWER CURTAIN ROD
		EXPT	EPPOXY PAINT	MIR	MIRROR	SCN	SOLID CORE POOD
BB	BASE BOARD	EXT	EXTERIOR	MISG	MISCELLANEOUS	SD	SOAP DISPENSER
BC	BLOCK	BN	BATH	MIX	MIXTURE	SECT	SECTION
BIDS	BIDTUMINOUS	ENC	ELECTRIC WATER COOLER	MO	MASONRY OPENING	SF	SQUARE FEET
BLDM	BUILDING	FACP	FIRE ALARM	MRGB	MOISTURE RESISTANT GB	SM	SMALL
BLK	BLOCKING		CONTROL PANEL	MTD	MOUNTED	SNV	SANITARY NAKIN VENDOR
BKMS	BENCH MARK	FAK	FIRST AID KIT	MTL	METAL	SPEC	SPECIFICATION
BLT	BOTTOM	FBL	FIRE BLANKET	MTP	METAL TOILET PARTITION	SQ	SQUARE
BO	BOTTOM OF FOOTING	FCU	FAN COIL UNIT	MV	MOLDED POOD FIBERBOARD	SS	STAINLESS STEEL
BOFF	BOTTOM	FE	FLOOR DRAIN	MWF	MULTI-COLOR	STD	STANDARD
BOF	BREAKING	FE	FIRE EXTINGUISHER	FIN	FINISH	STL	STEEL
BRK	BRICK	FFE	FINISH FLOOR	NA	NOT APPLICABLE	STOR	STORAGE
BKMT	BRICK SHELF	FF	FINISH FLOOR ELEVATION	NG	NOT IN CONTRACT	STRUC	STRUCTURE OF STRUCTURAL
BKMT	BRICK SHELF	FF	FINISH FLOOR ELEVATION	NG	NOT IN CONTRACT	STRUC	SUPPLEMENT OF SUPPLEMENT
CB	CABINET	FR	FIBERGLASS	NOM	NOMINAL	SV	SHEET VINYL
CAB	CABINET BOARD	FR	FIBERGLASS REINFORCED PANEL	NOM	NOMINAL		
CH	CHANCE	FM	FIRE HOOD	NUM	NUMBER	T	TREAD
CH	CHANCE	FLSH	FLASHING	NY	NEW	TB	TIE BAR
CM	CEMENT	FLR	FLOOR	OC	OVERALL	TBA	TO BE ABANDONED
CM	CEMENT BOARD	FLUR	FLOURESCENT	OC	ON CENTER	TBB	TIE BACKER BOARD
CE	CEILING HEIGHT	FNDN	FOUNDATION	OC	ON CENTER	TBD	TO BE DETERMINED
CE	CEILING HEIGHT	FO	FACE OF CONCRETE	OF	OPENING	TEL	TELEPHONE
CJ	CENTER LINE	FOF	FACE OF FINISH	OPNG	OPENING	THK	THICK OF THICKNESS
CL	CLOSET OR CHAIN LINK	FOM	FACE OF MASONRY	OPHND	OPENING	THOLD	THRESHOLD
CL	CLOSET	FOG	FACE OF GIP	OSB	ORIENTED STRAND BOARD	TOL	TOP OF CURB / TOP OF CONCRETE
CLOS	CLOSET	FR	FIRE RETARDANT	OSB	ORIENTED STRAND BOARD	TOL	TOP OF LANDINGS
CLR	CLEAR	FR	FIRE RETARDANT	OPN	OPERABLE MALL	TOP	TOP OF PLATE / TOP OF PAVEMENT
CM	CEMENT	FR	FIBERGLASS REINFORCED	PART B	PARTICLE BOARD	TCM	TOP OF MALL
CONTR	COUNTER	FTG	FOOTING	PC	PRECAST CONCRETE PLANK	TL	TUBULAR STEEL
CONTR	COUNTER OPENING	FTG	FOOTING	PERM	PERMETER	TP	TOILET TISSUE DISPENSER
CNTL	COLUMN	GA	GAUGE	PL	PLASTER OF PROPERTY LINE	TW	TO WEATHER
COMP	COMPOSITION	GB	GENERAL CONTRACTOR	PLM	PLASTIC LAMINATE	TVU	TEACHERS NARDOORE UNIT
CONC	CONCRETE	GL	GLASS	PLM	PLASTIC	TYG	TYGICAL
CONST	CONSTRUCTION	GLV	GALVANIZED	PJF	PREFOLD JOINT FILLER	UC	UNDERGUT
CONT	CONTINUOUS	GLZ	GLAZED BLOCK	PNT	PANTEE	UNC	UNDERGUT
CONV	CONVERTOR	GLB	GLASS BLOCK	PR	PARK	UNO	UNLESS NOTED OTHERWISE
CO	COORDINATE	GN	GOOSENECK	PRF	PREFINISHED	UV	ULTRAVIOLET
CT	CERAMIC TILE	GNS	GYPSPM WALL BOARD	PSE	POUNDS PER	VB	VINYL WALL BASE
CT	CERAMIC TILE	GNS	GYPSPM WALL BOARD	PT	PAPER TREATMENT	VCT	VINYL COMPOSITE TILE
CR	CROCHET WASHBATH	GP	GYPSPM WALL BOARD	PTD	PAPER TREATMENT	VFT	VINYL FLOOR TILE
		GP	GYPSPM WALL BOARD	PTD	PAPER TREATMENT	VFT	VINYL FLOOR TILE
DBL	DOUBLE	HDR	HARDWARE	PVC	POLYVINYL CHLORIDE	VFB	VENER PLASTER BASE
DEMO	DEMOLITION	HOR	HOLLOW METAL	PVM	PAVEMENT	VS	VINT STACK
DIAG	DIAGONAL	HPT	HIGH POINT	Q	QUARRY TILE	VTS	VINYL TRANSITION STRIP
DIAM	DIAMETER	HT	HEIGHT	R D	REMOVE & DISPOSE	VWB	VINYL WALL BASE
DM	DRAIN	HTR	HEATER	R S	REMOVE & SALVAGE	VYC	VINYL WALL COVERINGS
DL	DRAIN LEADER	HYAC	HEATING, VENTILATING, AIR CONDITIONING	R S	REMOVE & SALVAGE		
DN	DOWN			R S	REMOVE & SALVAGE		
DPART	DISPART			R S	REMOVE & SALVAGE		
DR	DOOR	ID	INSIDE DIAMETER	RB	RUBBER	RA	RUBBER
DS	DOWNSPOUT	INFO	INFORMATION	RB	RUBBER	RA	RUBBER
DV	DRAIN	INSUL	INSULATION / INSULATED	REF	REFRIGERATOR	RA	RUBBER
DVING	DRAWING	INT	INTERIOR	REF	REFRIGERATOR	RA	RUBBER
DVING	DRAWING	INT					

	WALL SECTION or DETAIL		EXISTING CONSTRUCTION TO BE DEMOLISHED
	BUILDING SECTION		EXISTING CONSTRUCTION TO REMAIN
	PLAN / SECTION DETAIL		BATT INSULATION / SOUND ATTENUATION BLANKET
	WALL TYPE		RIGID / SEMI-RIGID INSULA
	WINDOW TYPE		CONCRETE SMALL SCALE - PLAN / ELEVATION VIEW
	SPECIFIC DEMOLITION NOTE		CONCRETE LARGE SCALE - SECTION / DETAIL VIEW
	SPECIFIC CONSTRUCTION NOTE		PLYWOOD
	CHANGE IN ELEVATION		FINISH WOOD
	CONTROL JOINT		WOOD STUDS / BLOCKING (DIMENSIONAL LUMBER)
	ELEVATION or WORK POINT (WP)		WOOD BLOCKING (NON-DIMENSIONAL)
	ALIGN SURFACES		
	REVISION MARKER		
	CHANGE IN PLANE		

1. CONTRACTOR SHALL VISIT THE SITE TO VERIFY AND BE FULLY AWARE OF EXISTING CONDITIONS PRIOR TO START OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING ITEMS OF WORK SCHEDULED TO REMOVE OR BE SALVAGED FOR REUSE.

2. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. CONTRACTOR SHALL SECURE AND PAY FOR ALL REQUIRED DEMOLITION PERMITS.

3. COORDINATE ALL DEMOLITION OPERATIONS WITH OWNER/FI SHUTDOWN PERIODS AND SEQUENCE OF WORK. ARRANGE WITH PROPERTY OWNER FOR ACCESS TO ALL AREAS OF THE PROJECT PRIOR TO BEGINNING DEMOLITION OPERATIONS. PROVIDE ALL NECESSARY PROTECTIVE MEASURES AND SAFETY SHIELDS/ENCLOSURES REQUIRED TO PROPERLY SECURE, ISOLATE AND WEATHERPROOF AREAS OF WORK AND EXISTING AREAS AND MATERIALS TO BE REMOVED.

4. REMOVE ALL DEMOLISHED MATERIALS NOT SCHEDULED FOR SALVAGE OR REUSE IN ACCORDANCE WITH STATE AND LOCAL REGULATIONS. ALL SCHEDULED ITEMS TO BE TURNED OVER TO THE OWNER FOR REUSE OR RECYCLING SHALL BE SAFELY STORED, PROTECTED DURING DEMOLITION OPERATIONS AND DELIVERED TO THE OWNER FOR REUSE OR RECYCLING.

5. ALL ITEMS SCHEDULED TO BE SALVAGED OR REUSED SHALL BE REMOVED WITH CARE, STORED AND PROTECTED FROM DAMAGE UNTIL INCORPORATED IN THE NEW WORK. IF IT IS ABLE TO BE REUSED IN THE SAME REGION OR REGION ADJACENT TO THE NEW WORK, ITEMS SCHEDULED FOR SALVAGE AND REUSE THAT ARE DAMAGED OR OTHERWISE UNUSABLE SHALL BE RECYCLED. THE OWNER SHALL BE THE SOLE JUDGE OF SUITABILITY OF ITEMS SALVAGED FOR REUSE IN THE WORK.

6. IT IS NOT THE INTENT TO SHOW EVERY ITEM OR ITEM TO BE REMOVED OR TO BE DESTROYED. THE CONTRACTOR SHALL DO OTHER WORK RELATED TO A WALL, OR AREA SCHEDULED FOR REMOVAL AND REMOVAL SHALL BE PERFORMED WITHOUT ANY NOTED OR NOT.

7. THE EXTENT OF ALL SPECIFIC DEMOLITION WORK SHALL BE COORDINATED WITH CONTRACT DOCUMENTS.

8. WHERE EXISTING FINISHES ARE INDICATED TO REMAIN AS BASE MATERIAL, SURFACES FOR INSTALLATION OF NEW FINISHES SHALL BE REFINISHED TO MATCH ORIGINAL EXISTING FINISHES AND REPLACE ANY EXISTING LOOSE OR OTHERWISE UNSUITABLE SURFACES.

9. EXISTING SURFACES NOT SCHEDULED FOR DEMOLITION OR REFINISHING WHICH BECOME DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO MATCH ORIGINAL EXISTING CONDITION TO THE MAXIMUM PRACTICABLE.

10. CONTRACTOR TO REMOVE, AND TURN OVER TO OWNER, ALL EXISTING TRU-WINDOW AIR CONDITIONING UNITS AS OCCURS.

11. CONTRACTOR TO TEMPORARILY REMOVE, STORE ON SITE AT A ROOMS) LOCATION DICTATED BY OWNER ALL FURNITURE AS REQUIRED.

- 1 REMOVE & DISPOSE OF ALUMINUM WINDOW SYSTEM IN ITS ENTIRETY.
- 2 REMOVE MILLWORK COMPONENT.
- COORDINATE ENTRY WITH NEW WORK.
- 3 REMOVE GYPSUM/WOOD STUD WALL AND FIBERGLASS INSULATION FROM BRICK/STONE FOUNDATION WALL ASSEMBLY TO REMAIN.
- COORDINATE ENTRY WITH NEW WORK.
- 4 REMOVE INTERIOR GYPSUM BOARD / PLASTER FROM WOOD STUD WALL TO REMAIN.
- COORDINATE ENTRY WITH NEW WORK.
- 5 REMOVE & SALVAGE STEEL REIN MESH WINDOW GUARD ASSEMBLY AS OCCURS, AS REQUIRED TO PERFORM WORK.
- 6 REMOVE & DISPOSE OF EXISTING AUTOMATIC DAMPER AT/IN WINDOW ASSEMBLY.
- 7 REMOVE SOLDER GORGE AND LINTEL. PROVIDE TEMPORARY SIKRING AS REQUIRED TO PERFORM WORK. COORDINATE WITH LOCAL, STATE, & FEDERAL REQUIREMENTS.
- 8 REMOVE & CAP EXISTING WATER SPILL ASSEMBLY AT/IN WINDOW ASSEMBLY.
- 9 IDENTIFIES EXISTING DAMAGED PRE-CAST SLABS TO BE REPAIRED. CONTRACTOR TO VERIFY WITH OTHERS.
- 10 REMOVE SAND AND PREPARE EXISTING LINTELS, SCOFFERS AND AREA NEAR GRATES, AS OCCURS, BACK TO BARE METAL.
- 11 REMOVE AND SALVAGE AREA REINL GRATES AS REQUIRED TO PERFORM WORK.
- 12 REMOVE AND DISPOSE OF WINDOW DRAIN / SHAD ASSEMBLY IN ITS ENTIRETY.

1. LANDSCAPE AREA DAMAGED BY CONSTRUCTION SHALL BE REPAIRED TO ITS ORIGINAL CONDITION UPON COMPLETION OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR RE-INSTALLATION, SEED, SOIL ETC. AS REQUIRED TO ACHIEVE A FINISH APPEARANCE FOR THE LANDSCAPE. IN ADDITION, CONTRACTOR IS TO PROVIDE PROTECTION TO EXISTING PLANTING AND WORKED IN ACCORDANCE WITH RDOT STD. 511.0.
2. UPON COMPLETION OF WORK, CONTRACTOR SHALL BE RESPONSIBLE FOR RE-INSTALLING EXISTING PAINTING AS PER DETAIL OF OWNER.

SPECIFIC CONSTRUCTION NOTES:

1. INSTALL ALUMINUM CLAD WOOD WINDOW ASSEMBLY AS IDENTIFIED IN THE WINDOW SCHEDULE AND ASSOCIATED DETAILS.
2. PROVIDE GALVANIZED EXTERIOR PANEL COATING AT LINTELS, LOUVERS AND AREA YELL GRATES.
3. NOT USED
4. REMOVE, SALVAGE, STORE & REINSTALL EXISTING WINDOW MOUNTED EXHAUST FAN LOUVER. CONTRACTOR TO PREPARE AND INSTALLATION.
5. PROVIDE LINTEL AND SOLDIER COURSE AS DESCRIBED IN WINDOW SCHEDULE AND ASSOCIATED DETAILS.
6. PAINT EXISTING COLOR / INSULATED PANEL ASSEMBLY IN ITS EXISTING TO MATCH WINDOW FRAME ASSEMBLY COLOR.
7. PROVIDE NEW AUTOMATIC DAMPER/ LOUVER TO MATCH EXISTING CONTRACTOR TO PREP PANEL FOR DAMPER INSTALLATION.
8. NOT USED
9. PROVIDE CAULKING AS REQUIRED TO REPAIR DAMAGED PRECAST SILL. COLOR AS SELECTED BY ARCHITECT.
10. PRIME AND PAINT EXISTING LINTELS AND AREA YELL GRATES AS REQUIRED TO MATCH EXISTING AREA YELL GRATES IN THEIR ORIGINAL LOCATIONS UPON COMPLETION OF WORK.
11. SCRAPE, SAND AND PREPARE EXISTING WOOD WINDOW FRAMES AS REQUIRED TO RECEIVE EXTERIOR PANEL, TIO COATS.
12. INSTALL WINDOW BLINDS AS SPECIFIED.
13. RE-INSTALL EXISTING SALVAGED STEEL WIRE MESH WINDOW GUARDS IN THEIR ORIGINAL LOCATIONS UPON COMPLETION OF WORK.

$$\overline{3/8'' = 1' - 0''}$$
[illegible]

1. EXISTING CONDITIONS WERE OBTAINED FROM DRAWINGS AND DATA PROVIDED BY THE OWNER AND A FIELD SURVEY. NO WARRANTY OF ACTUAL CONDITIONS IS INTENDED BY ARCHITECT OR OWNER. CONTRACTOR TO VERIFY AND COORDINATE ALL EXISTING CONDITIONS WITH NEW WORK PRIOR TO BID. START OF CONSTRUCTION OR ANY FABRICATION.
2. CONTRACTOR SHALL VISIT SITE, PRIOR TO BID, AND CAREFULLY INVESTIGATE AND EXAMINE THE AREA OF WORK SO AS TO SATISFY HIMSELF AS TO THE NATURE AND LOCATION OF THE WORK. CONTRACTOR SHALL NOTE THE CONDITION, QUANTITY, QUALITY, QUANTITIES OF MATERIALS REQUIRED AND DIFFICULTIES TO BE ENCOUNTERED, THE KIND AND EXTENT OF EQUIPMENT AND FACILITIES NEEDED FOR PERFORMANCE OF THE WORK AND OTHER ITEMS WHICH MAY, IN ANY WAY, AFFECT THE WORK OR CONTRACTOR'S PERFORMANCE.
3. DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
4. NO EXITS SHALL BE CLOSED WITHOUT THE WRITTEN PERMISSION OF THE OWNER AND LOCAL AUTHORITIES HAVING JURISDICTION.

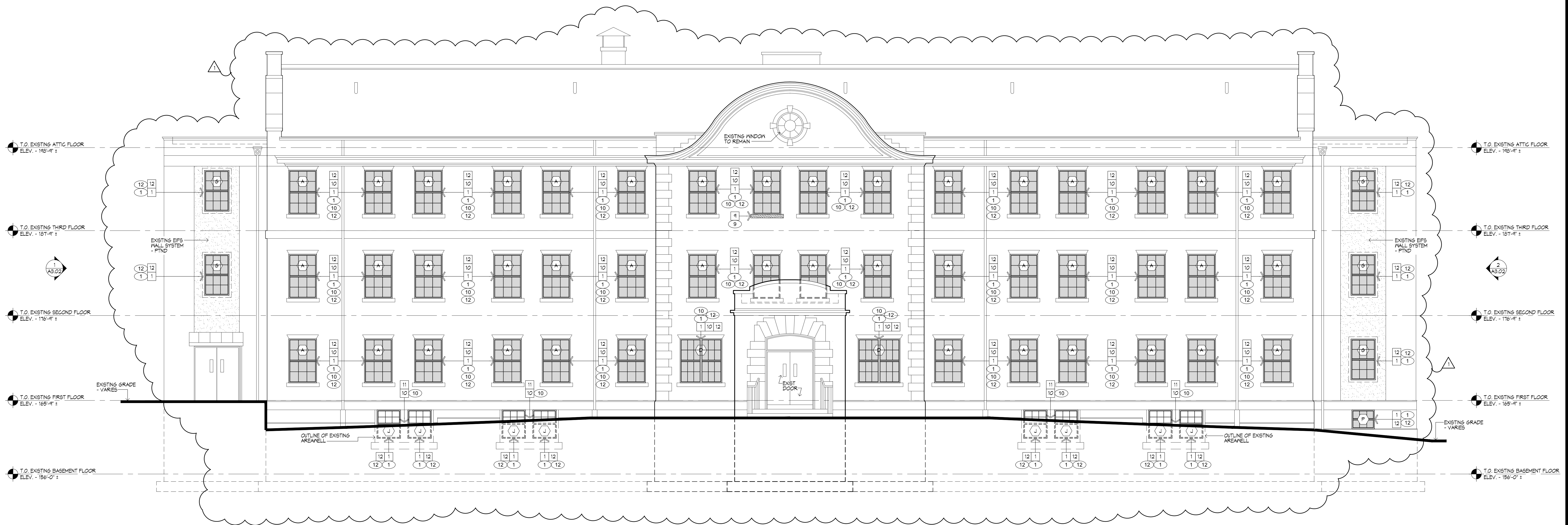
1. UNO, ALL DIMENSIONS ARE TO FACE OF GYPSUM BOARD, FACE OF MASONRY, FACE OF CONCRETE, OR TO CENTERLINE OF COLUMN AS OCCURS.
2. MAINTAIN INTEGRITY OF FIRE RATED WALL ASSEMBLIES, NON - RATED WALL ASSEMBLIES SHALL ABUT.
3. UNLESS OTHERWISE NOTED, ALL WALL TYPE ASSEMBLIES SHALL EXTEND TO UNDERSIDE OF ROOF DECK OR FLOOR DECK AS OCCURS.
4. ALL PENETRATIONS THROUGH FIRE RATED WALLS AND /OR FLOOR ASSEMBLIES SHALL BE FIRE SEALED WITH AN APPROPRIATE THROUGH - PENETRATION SYSTEM.
5. PROVIDE MOISTURE RESISTANT GYPSUM BOARD AT ALL WALL TYPES LOCATED AT BATHROOMS OR ADJACENT TO PLUMBING FIXTURES AS OCCURS.
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[illegible]

ABBREVIATIONS,
LEGEND, NOTES,
& WINDOW SCHEDULE

A0.00



1 SOUTH ELEVATION
A3.00 3/16" = 1'-0"

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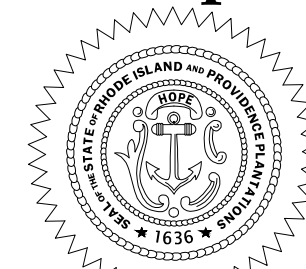
Date: MAY 14, 2015

Drawn by: BPM/DE Proj. Mgr.: EAR

Revisions

No.	Date	Description
1	JULY 23, 2015	APPENDUM NO. 4

Benjamin Rush
State Office Building
Window Replacement

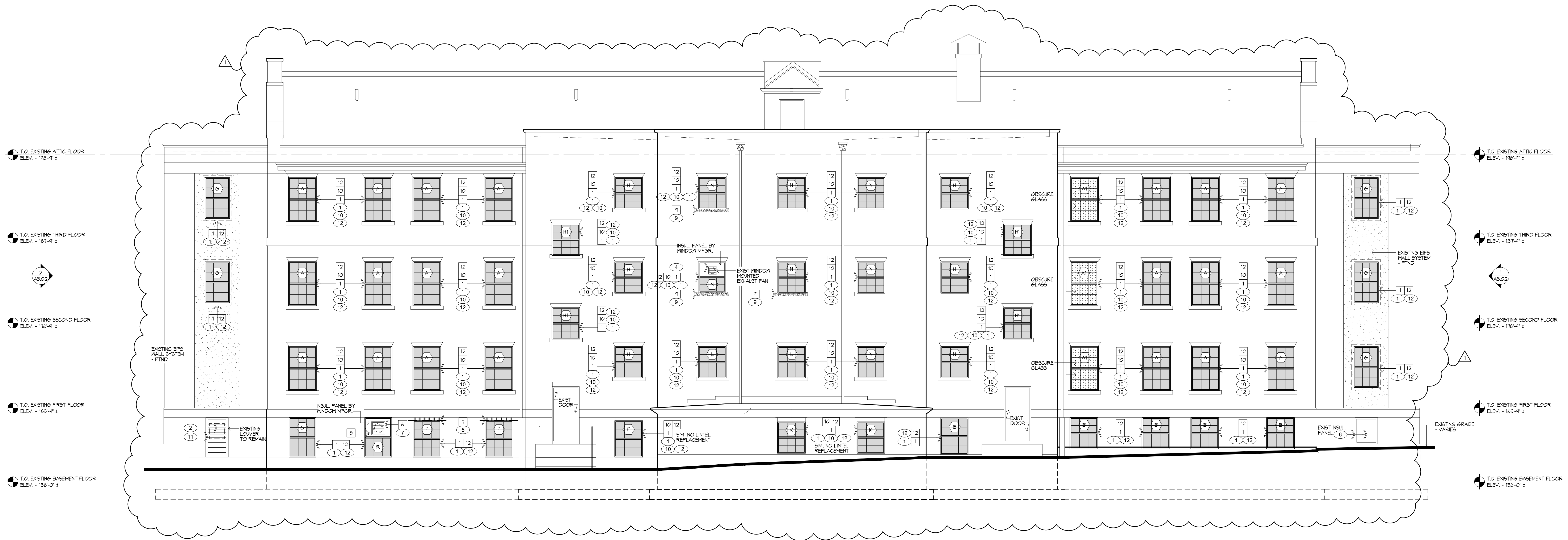


Pastore Center
Cranston, Rhode Island

BENJAMIN RUSH
SOUTH
EXTERIOR ELEVATION

A3.00

1078K - A3.00 3 of 1



1 NORTH ELEVATION
A3.01 3/16" = 1'-0"

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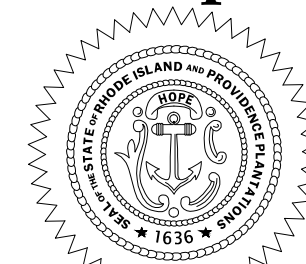
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Benjamin Rush State Office Building Window Replacement

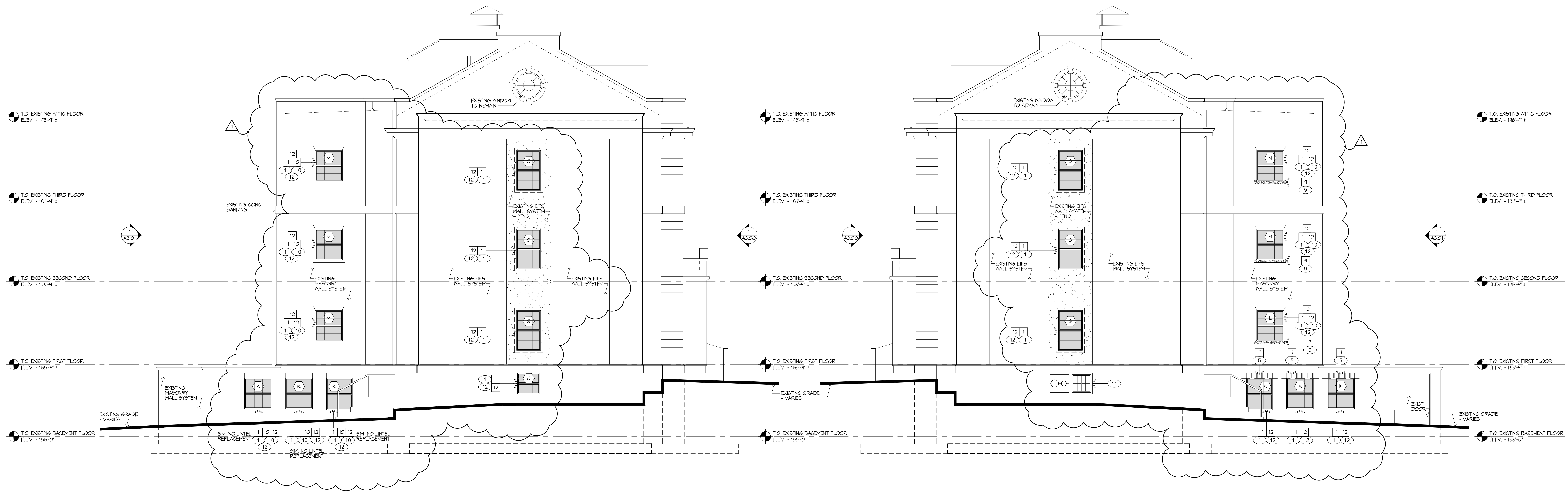


Pastore Center
Cranston, Rhode Island

BENJAMIN RUSH
NORTH
EXTERIOR ELEVATION

A3.01

1078K - A3.00 4 of 7



1 WEST ELEVATION
A3.02 3/16" = 1'-0"

2 EAST ELEVATION
A3.02 3/16" = 1'-0"

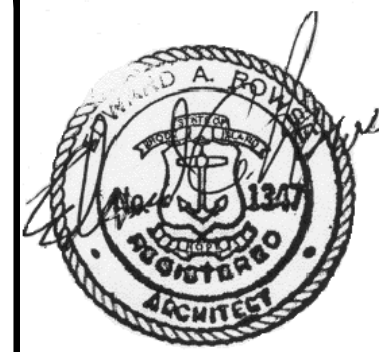
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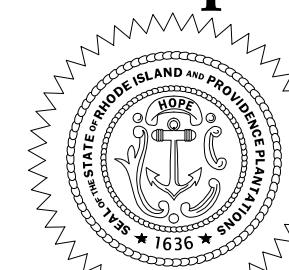
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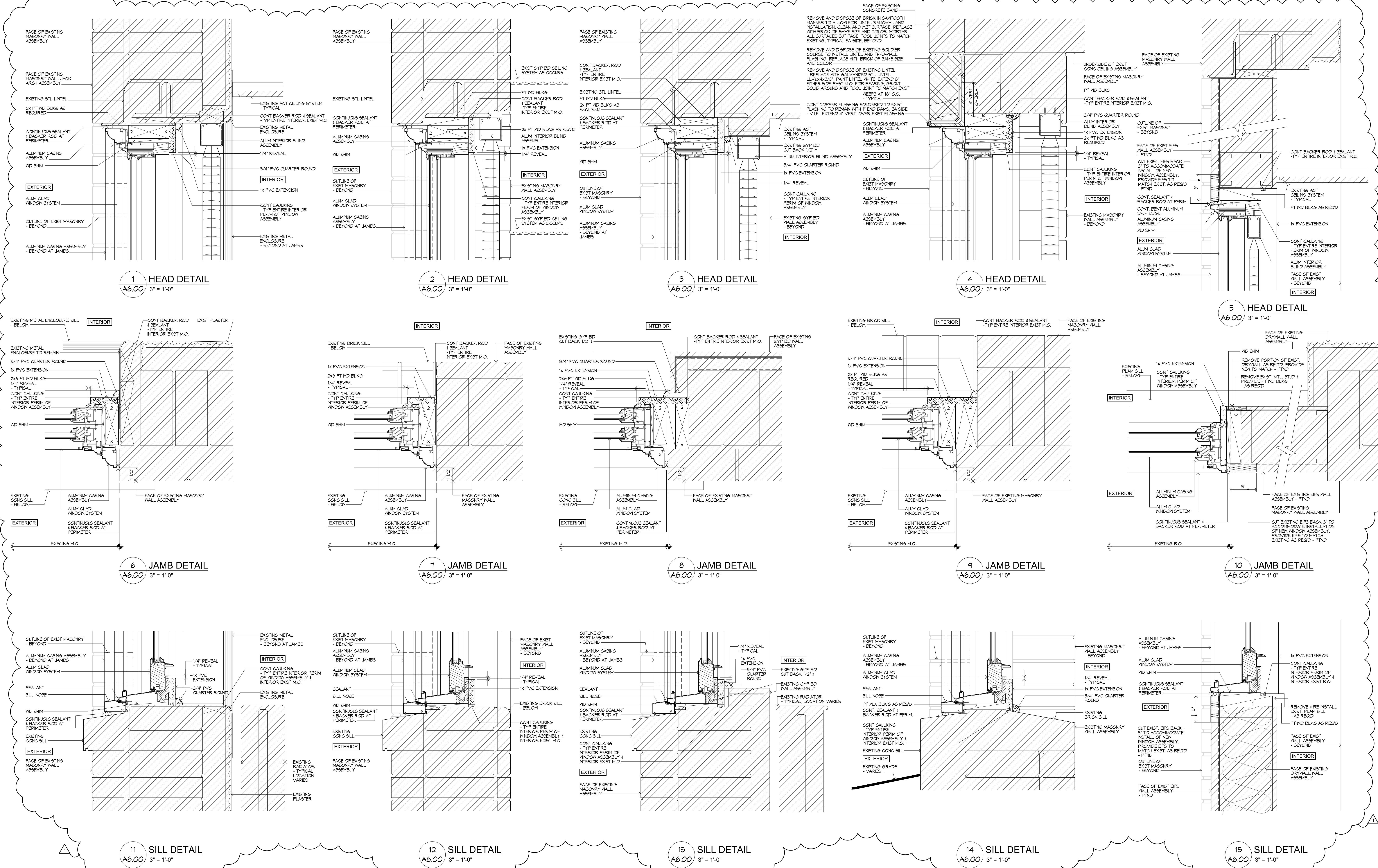


Pastore Center
Cranston, Rhode Island

BENJAMIN RUSH
EAST & WEST
EXTERIOR ELEVATIONS

A3.02

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Benjamin Rush
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Window Replacement



Pastore Center
Cranston, Rhode Island

WINDOW DETAILS

A6.00

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