

SUPPLEMENTAL TERMS AND CONDITIONS

RESIDENTIAL SOUND INSULATION PROGRAM

PIEDMONT TRIAD INTERNATIONAL AIRPORT

CONTRACTOR INSURANCE REQUIREMENTS

GENERAL SPECIFICATIONS

HOMEOWNER WARRANTY FORM

CONTRACTOR'S AFFIDAVIT AND  
FINAL WAIVER OF LIEN

DECEMBER 2014

# CONTRACTOR INSURANCE REQUIREMENTS

1. Workers' Compensation:

- |     |                      |             |
|-----|----------------------|-------------|
| (a) | State                | Statutory   |
| (b) | Employer's Liability | \$1,000,000 |

2. Comprehensive General Liability:

- |     |  |                                 |
|-----|--|---------------------------------|
| (a) | Bodily Injury and Property Damage<br>Combined Single Limit   | \$1,000,000<br>(Per Occurrence) |
| (b) | The Contractor's general Liability insurance shall provide coverage for the following (1) Premises - Operations, (2) Independent Contractors, (3) Products/ Completed Operations Hazard, (4) Broad Form Property Damage, (5) Explosion and Collapse Hazard, where applicable, and (6) Personal Injury. |                                 |

3. Comprehensive Automobile Liability:

- |     |   |                                 |
|-----|---|---------------------------------|
| (a) | Bodily Injury and Property Damage:<br>Combined Single Limit   | \$1,000,000<br>(Per Occurrence) |
| (b) | The Contractor's Comprehensive Automobile Liability Insurance shall provide coverage for Bodily Injury and Property Damage Per Occurrence for owned, hired, and non-owned vehicles. |                                 |

4. Homeowner's Protective Liability Insurance:

The Contractor shall obtain in the name of each Homeowner, Owner's Protective Liability Insurance which will have the same limits of coverage for the same period as that required above for the Contractor's general liability coverage, including liability for acts of subcontractors and subordinate contractors.

# GENERAL SPECIFICATIONS

FOR

RESIDENTIAL SOUND  
INSULATION PROGRAM

PIEDMONT TRIAD  
INTERNATIONAL AIRPORT

1000-A TED JOHNSON PARKWAY

GREENSBORO, NC 27409

336-665-5600

2014

**These General Specifications contain the design and construction details for the various types of sound insulation improvements that may be made in the houses included in the Authority's Residential Sound Insulation Program. Not all of the improvements described in these General Specifications will be made in every house. The improvements to be made in a particular house are those that are listed on the Site-Specific Specifications for the house in question or that are necessary to complete one of the listed improvements in the Site-Specific Specifications.**

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## I. GENERAL REQUIREMENTS

### A. General

#### Related Documents

The Site Specific Specifications have been prepared based on the assumption that the Contractor will utilize these Specifications in interpreting the Site Specific Specifications.

#### Labor and Materials

1. Unless otherwise specifically noted, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment, transportation, and other facilities and services necessary for the proper execution and completion of his Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.
2. When these specifications reference a particular product or an approved equal, the reference to an "approved equal" is limited to products that the Contractor has submitted to the Authority prior to bidding, and that the Authority has approved, in accordance with the procedure set forth in the Instructions to Bidders. The Authority shall make the final determination as to whether the Contractor's proposed substitution is acceptable as provided in that procedure. Substitute products will not be considered for approval except as allowed in the Instructions to Bidders.
3. The Contractor shall enforce strict discipline and good order among his employees or other persons carrying out Work of his Contract and shall not permit employment of unfit person or persons or anyone not skilled in the task assigned to them.

#### Cutting and Patching

The Contractor shall not perform cutting that may impair the strength of the building or its components, Work shall be done in a neat manner by mechanics skilled in their trades, and the final Work shall be subject to approval by the Airport and Owner.

### Verifications of Existing Dimensions

The Contractor shall be responsible for the procurement of the field information.

### Protection of Finished Surfaces

The Contractor shall be responsible for protection of the Owner's furnishings and finished surfaces during the Construction period. The Contractor shall protect new and existing finishes. Neither the Owner nor the Authority will accept or pay for materials which are damaged.

### General Construction Notes

1. General contractor to field measure all openings for new windows and doors.
2. Replace all damaged siding due to window and door demolition.
3. 12" insulation in attic areas is required only where no attic flooring exists. In places where attic flooring exists, blow in insulation to the thickness of the floor joists.
4. Apply sound stripping to all attic access doors and drop-down stairs.
5. Increase existing ceiling insulation to R-30 as follows:
  - a. Blown-in insulation to a total 12" thickness where blown-in insulation exists currently.
  - b. Fiberglass batts--12" thick--with paper face toward conditioned space where no insulation exists currently.
  - c. Unfaced fiberglass batts as required to 12" total thickness where batts exist currently.
6. All crawlspace access doors on the exterior of the residences to be solid wood construction or an insulated hollow metal door. All crawlspace doors shall be weatherstripped and caulked. Rehang or replace doors which do not swing or operate freely.
7. Where existing glass panels are to remain, tighten panels and caulk as required.
8. Caulk and seal (w/Compressible filler) around all door and window openings where the jamb/frame meets the stud wall.

9. Contractor to protect exposed areas of houses from weather and secure at the end of the work day.
10. Contractor to inspect existing crawlspace vents, to insure adequate ventilation.
11. Owner to pick color for doors and windows from manufacturers standard color options.
12. The owner shall have salvage rights to any materials and/or equipment removed to prepare for proposed construction.
13. Contractor shall repair any damage to property resulting from specified work.
14. Before removing any alarm contacts from windows or doors, Contractor should check to verify that contacts are in good working order. Contractor is responsible for reconnection of all alarm contacts on installed primary or storm doors and/or primary or storm windows after the Work is completed and should confirm that connections are working.
15. All baffles and insulation barriers shall be installed before the house is insulated.
16. All air-conditioning work must be completed prior to installing storm windows and doors.

***The Contractor is advised that, where caulking is required, the quality of the caulking is critical to the final result, and caulking should be applied with special care and attention.***

## II. ALLOWANCES

### A. General

#### Related Documents

Change Order Data: Include in each change order proposal both the quantities of products being purchased and costs, along with total amount of purchases to be made. Where requested, furnish receipt of purchase to substantiate material costs.

#### Fireplace Doors Allowance

The General Construction Work shall include in its Base Bid work the allowance amount listed under "Schedule of Allowance" below.

#### Adjustment of Cash Allowances

Unused amounts of allowances shall be credited to the job site by deduct Change Order prior to approval of Final Application for Payment.

### B. Products (Not Applicable)

### C. Execution

#### Schedule of Allowances

Allowance No. 1: The General Construction Work Base Bid shall include a Fireplace Doors Allowance of \$350.00. This allowance is for materials only; associated labor shall be included in the base bid proposal.

### III. CONSTRUCTION FACILITIES

#### A. General

##### Description of Requirements

The Contractor shall include all costs associated with the supply, installation, maintenance, and usage of the construction facilities described below in the General Contract Base Bid:

- a. Plug-in electric power cords and extension cords, and supplementary plug-in task lighting and special lighting necessary to complete its own work.
- b. Collection and disposal of its own waste material on a **daily** basis.

##### Quality Assurance

Regulations: The Contractor shall comply with state and local laws and regulations governing construction.

#### B. Products

##### Materials and Equipment

1. Electrical Power Cords: Use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or waterproof connectors to connect separate lengths, if single lengths will not reach work areas.
2. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Protect lamps with guard cages, where fixtures are exposed to breakage by construction operation. Provide exterior fixtures where fixtures are exposed to weather or moisture.

#### C. Execution

Tie into Project Residence for power and water if needed.

## **D. Field Conditions**

### Toilet Facilities

The Owner's toilet facilities are not available to the Contractor.

### Occupancy

The Owner will occupy the site of the Work continuously during the contract period and care shall be taken to minimize disruption to the Owner's normal activities within the house while the Work is in progress.



## IV. ROUGH CARPENTRY

### A. General

#### Summary

1. Provide rough carpentry work (if required):
  - a. Wood framing
  - b. Sheathing
  - c. Subflooring
  - d. Backing Panels for Utilities
  - e. Nailers, blocking, furring, and sleepers
2. Related work:
  - a. Insulation
  - b. Exterior wood door
  - c. Acoustical storm door (hinged)
  - d. Acoustical storm window
  - e. Sliding acoustical patio storm door

#### Quality Assurance

Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

### B. Products

#### Materials

1. Lumber, finished 4 sides, 19% maximum moisture content:
  - a. Light framing: Construction grade No. 2 grade spruce.
  - b. Structural framing: Construction grade No. 2 grade spruce or yellow pine.
  - c. Boards: Construction grade.
2. Wood for nailers, blocking, furring, and sleepers: Construction grade, finished 4 sides, 19% maximum moisture content. Pressure preservative

treat items in contact with roofing, flashing, waterproofing, masonry, concrete or the ground. Provide blocking for all mounted items including:

- a. Casework
  - b. Window treatment
3. Plywood, APA rated for use and exposure:
- a. Roof Sheathing: (if required) APA Sheathing, Exterior.
  - b. Wall Sheathing: (if required) APA sheathing, C-D plugged, Exterior.
  - c. Backing Panels: APA C-D plugged interior with exterior glue, fire retardant treated  $\frac{3}{4}$ " thick.
4. Building Paper: Asphalt saturated felt, non-perforated, ASTM D226, Type 1.
5. Wood Treatment:

Preservative treatment: Pressure-treated with waterborne preservatives, to comply with AWPB LP-2 for above-ground items, LP-22 for ground contact items. Kiln dried after treatment to 19% maximum moisture content for lumber and 15% for plywood. Treat above-ground wood exposed to deterioration by moisture and all wood in contact with the ground or fresh water.

## **C. Execution**

### Installation

1. Wood framing: Comply with recommendation of NFPA Manual for House Framing, NFPA Recommended Nailing Schedule, and NFPA National Design Specification for Wood Construction.
2. Plywood: Comply with recommendations of APA Design and Construction Guide - Residential and Commercial.
3. Provide nailers, blocking and grounds where required. Set work plumb, level and accurately cut.
4. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with other work.
5. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.

6. Restore damaged components in immediate area of improvement. Protect work from damage.
7. Installation of Attic Fan Vent Baffle (Fig. 1):
  - a. Install plywood baffle as shown on drawing in Appendix 1. Provide nailers, blocking and shims as required.
  - b. Furnish and install duct liner board. Secure firmly onto wood blocking with galvanized metal wire and nails, conforming to insulation manufacturer's instructions.
8. Installation of Attic Gable End Vent Baffle (Fig. 2):
  - a. Install plywood baffle as shown on drawing in Appendix 1. Provide nailers, blocking and shims as required.
  - b. Furnish and install fiberglass batt insulation. Secure firmly onto wood blocking with galvanized metal wire and nails, conforming to insulation manufacturer's instructions.
9. Installation of Attic Vent Opening Baffle (Fig. 3):
  - a. Install plywood baffle as shown on drawing in Appendix 1. Provide nailers, blocking and shims as required.
  - b. Furnish and install fiberglass batt insulation. Secure firmly onto wood blocking with galvanized metal wire and nails, conforming to insulation manufacturer's instructions.
10. Installation of Ridge Vent Baffle (Fig. 4):
  - a. Install plywood baffle as shown on drawings in Appendix 1. Provide nailers, blocking and shims as required.
  - b. Furnish and install fiberglass batt insulation. Secure firmly onto wood blocking with galvanized metal wire and nails, conforming to insulation manufacturer's instructions.
11. Installation of Eave Vent (Soffit Vent) Baffle (Fig. 5):
  - a. Insure that attic insulation has been increased to thickness specified in Scope of Work and that insulation stops between rafters have been installed.
  - b. Install wood blocking as shown on drawings in Appendix 1.
  - c. Furnish and install fiberglass batt insulation. Secure firmly into wood blocking with galvanized metal wire and nails, conforming to insulation manufacturer's instructions.

12. Typical Shim Space treatment (Fig. 6):
  - a. Use detail in Fig. 6 of Appendix 1 to assure that shim space between rough opening in framing and window and door units does not become a thermal or acoustical "leak."
  - b. Fill shim space between rough opening and window and door units with batt insulation.
  - c. Insert backer rod and caulk spaces between rough framing and window and door units on inside and outside of structure.
13. Installation of Attic Stairs Detail (Fig. 7):
  - a. Install edge framing for attic insulation as shown in Fig. 7 in Appendix 1.
  - b. Install fiberglass duct-board as shown in Fig. 7 fastened according to manufacturer's instructions.
14. House Fan Baffle Detail (Fig. 8):
  - a. Install edge framing for attic insulation as shown in Fig. 8 in Appendix 1.
  - b. Install fiberglass duct-board as shown in Fig. 7 fastened according to manufacturer's instructions.
15. Foundation Space Vent Detail (Fig. 9):
  - a. Acquire galvanized sheet metal duct with outside dimensions allowing for a "slip" fit in each vent space.
  - b. Install duct liner board and fasten according to manufacturer's instructions.
  - c. Insert lined duct into foundation vent opening as shown in Fig. 9 of Appendix 1.
  - d. Insert backer rod and caulk space between duct foundation vent opening.

## **V. FINISH CARPENTRY**

### **A. General**

#### Summary

Provide finish carpentry for exterior items (doors and windows or items in immediate area of improvement), exposed to view.

- a. Running and standing trim and moldings.
- b. Door frames.
- c. Decorative elements (if applicable).

#### Quality Assurance

Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

### **B. Products**

#### Materials

1. Quality standard for fabrication and products: Architectural Woodwork Institute Quality Standards, premium grade unless noted otherwise.
2. Exterior finish carpentry:
  - a. Trim and boards for painted finish. Clear pine or fir, or other softwood suitable for exposure and use.
  - b. Plywood painted finish: APA rated, exterior, medium density overlay plywood.

### **C. Execution**

#### Installation

1. Provide work sizes, shapes, and profile indicated. Install work to comply with quality standards referenced. Back prime work and install plumb, level, and straight with tight joints; scribe work to fit.

2. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Use non-corrosive fasteners for exterior work. Coordinate with other work of other sections.
3. Comply with manufacturer's requirements for cutting, handling, fastening and working treated materials.
4. Repair minor damage around immediate area of improvement and protect.

#### **D. Removal of Wall-Mounted Air Conditioning Unit**

Remove unit from wall. Repair and seal opening. Wall reconstruction should conform with standard construction practices. Insulate wall between studs accordingly. Replace exterior and interior walls with like/kind matching material of surrounding wall surface (i.e., exterior: brick, masonite, vinyl, etc.; interior: drywall, paneling, etc.) and when necessary, paint exterior wall to match surrounding surface color to homeowner's satisfaction. Paint opening surface and surrounding surface at least 2 to 3 feet from edge of opening. When necessary, paint interior wall to match surrounding surface color. Paint entire repaired wall. Provide homeowner with additional paint to repaint remainder of room.

## **VI. THERMAL & MOISTURE PROTECTION FOR RESIDENCES WHERE VINYL SIDING IS REPLACED WITH FIBER-CEMENT SIDING**

### **A. General**

#### Summary

The installation of a water resistive barrier and joint flashing are essential parts of installation of fiber-cement siding. Wherever the fiber-cement siding is installed, the Contractor shall install a moisture barrier in accordance with the instructions of the siding and barrier manufacturer.

#### Quality Assurance

Comply with governing codes and regulations. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

### **B. Products**

#### Materials

Non-woven moisture barriers designed for control of air and moisture infiltration: HandieWrap, tyvec or approved equal.

### **C. Execution**

#### Installation

1. Remove existing barrier and flashing; examine substrate; report unsatisfactory conditions in writing. Construction of work after removal of the siding means acceptance of substrates.
2. Install new barrier in accordance with instructions of the manufacturer including penetrations, junctions with brick and other masonry veneers, and the roof sheathing.

## **VII. INSULATION**

### **A. General**

#### Summary

Provide building insulation of batt, blanket, blow-in types and duct liner board as applicable.

- a. Roofs and attics (interior), fiberglass batt and/or blown loose-fill.
- b. Exterior stud walls, fiberglass or mineral fiber batt (if applicable).
- c. Soffits fiberglass or mineral fiber batt (if applicable).
- d. Attic blow-in fiberglass insulation.
- e. Duct liner board (where specified)

#### Quality Assurance

Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

### **B. Products**

#### Materials

1. Blanket/batt-type insulation: Paper-faced and foil-faced glass fiber blanket insulation types. Manufacturer: Owens Corning Fiberglass Corp. or Authority approved equal.
2. Blow-in: InsulSafe III, Fiber Glass Insulation, Manufacturer: CertainTeed Corporation or Authority approved equal.
3. Duct liner board: Owens Corning or Authority approved equal.

### **C. Execution**

#### Installation

1. Install materials and systems in accordance with manufacturer's instructions and approved submittals. Install materials and systems in proper relation with adjacent construction. Coordinate with work of other



sections. Provide full thickness in one layer over entire area, tightly fitting around penetrations.

2. Blow-in (InsulSafe III must be pneumatically installed by a professional contractor).
3. Protect installed insulation.

## VIII. WOOD DOORS AND FRAMES

### A. General

#### Summary

1. Extent and location of each type of wood door and frame is indicated on drawings and in the schedules.
2. Types of doors required include the following:
  - a. 1-3/4" Solid particle core wood flush, AWI PC-5 doors (STC rating of 30 minimum), when installed with appropriate acoustical gasketing and drop seal.
3. Factory-prefitting to frames and factory-premachining for reuse of existing hardware for new doors is included in this section.
4. Finishing of new wood doors, refer to Section XII. Field finishing to comply with manufacturer's suggested preparation for such, and in accordance with AWI and NWWDA recommendations. Manufacturer is not responsible for the appearance of field finishes.

#### Submittals

1. Product Data: Door manufacturer's technical data for each type of door, including details of core and edge construction, and trim for openings.
2. Samples: Submit samples, 1-0" square if requested.

#### Quality Assurance

Quality Standards: Comply with the following standards:

- a. NWWDA Quality Standard: I.S.1 "Industry Standard for Wood Flush Doors," of National wood window and Door Association (NWWDA).
- b. AWI Quality Standards: "Architectural Woodwork Quality Standards," including Section 1300 "Architectural Flush Doors," of Architectural Institute (AWI) for grade door, core construction, finish and other requirements exceeding those of NWWDA's quality standard.

## **B. Products**

### Manufacturers

Manufacturer: Subject to compliance with requirements, provide products of one of the following or Authority approved equal:

- a. Algoma Hardwoods, Inc.
- b. Eggers Industries, Architectural Door Division
- c. Weyerhaeuser Company

### Fabrication

1. Fabricate wood doors to produce doors complying with the following requirements:
  - a. Factory pre-fit and pre-machine doors to fit frame opening sizes indicated with the following uniform clearances and bevels:
    - i. Comply with tolerance requirements of AWI for prefitting. Comply with final hardware schedules and door frame shop drawings and with hardware templates.
    - ii. Coordinate measurements of hardware mortises in metal frames to verify dimensions and alignment before proceeding with factory premachining.
2. Openings: Cut and trim openings through doors to comply with applicable requirements of referenced standards for kind(s) of doors required.
3. Glazings: Factory glazed with manufacturer's dual glazed acoustical glazing system.
4. Hinges: Heavy duty, ball bearing, non-ferrous metal, finish to match existing hinges.

## **C. Execution**

### Installation

1. Hardware: Re-use existing hardware to the greatest extent possible. If new hardware is required, new hardware should match old hardware as closely as possible. Install new hinges.

2. Manufacturer's Instructions: Install wood doors to comply with manufacturer's instructions and of referenced AWI standard and as indicated.
3. Mechanically fasten hinges through the door frames into the wood studs of the door jamb.
4. Pre-fit Doors: Fit to frames for uniform clearance at each edge.
  - a. Field-Finished Doors: Refer to Section XII - "Painting."

#### Adjusting and Protection

1. Operation: Rehang or replace doors which do not swing or operate freely.
2. Damaged Doors: Replace doors damaged during installation.
3. Care and Handling: Doors shall be handled, stored, finished and installed per manufacturer's recommendations and in accordance with AWI and NWWDA specifications.
4. Before removing any alarm contacts from windows or doors, Contractor should check to verify that contacts are in good working order. Contractor is responsible for reconnection of all alarm contacts on installed doors or windows after the Work is completed and should confirm that connections are working.

## **IX. ACOUSTICAL WINDOWS AND DOORS**

### **A. General**

#### Summary

1. Extent of each type of acoustical window and door unit required is indicated on the drawings and schedules.
2. Types of Acoustical units required include the following:
  - a. Storm windows.
  - b. Storm doors (hinged).
  - c. Sliding acoustical patio storm door.

#### System Description

1. Performance Requirements: Comply with performance requirements indicated.
2. STC Rating of 30 (minimum) for acoustical storm windows and 44 (minimum) for replacement window units.
3. STC Rating of acoustical storm doors shall be 46 (minimum) when tested in assembly with a wood door.
4. STC rating of patio storm doors shall be 32 (minimum).

#### Submittals

1. Shop Drawings: Submit shop drawings for each type of window including information not fully detailed in manufacturer's standard product data.
2. Product Data: Submit manufacturer's product specifications, technical product data, recommendations and standard details for each type window unit required.
3. Laboratory Test Reports: Provide test reports from a testing laboratory certifying acoustical performance of window and door units required.

## Project Conditions

Field Measurements: Check actual window openings in construction work by accurate field measurement before fabrication; show recorded measurement on final shop drawings.

## **B. Products**

### Manufacturers

Subject to compliance with these specifications, products of the following manufacturers will be considered:

- a. Mon-Ray, Inc., [www.monray.com](http://www.monray.com) (800) 544-3646.
  - i. Series 500 Secondary Storm Window System.
  - ii. Series 800 Secondary Storm Door System.
  - iii. Series 805 Acoustical Patio Storm Door.
- b. Airport-approved equivalent systems.

### Materials

1. Fasteners: Provide aluminum, non-magnetic stainless steel, or other materials warranted by the manufacturer to be non-corrosive and compatible with window member, trim, hardware, anchors and other components of window units.
2. Anchors, Clips and Window Accessories: Depending on strength and corrosion-inhibiting requirements, fabricate anchors, clips and window accessories of aluminum or non-magnetic stainless steel.
3. Sealant: For sealants required within fabricated window units, provide type recommended by the window manufacturer for joint size and movement. Sealant shall remain permanently elastic, non-shrinking and non-migrating. Sealant shall be Class "A" meeting Federal Specification TT-S-00230.
4. Aluminum: All frame, sash and screen main members shall be aluminum prime alloy 6063-T6. Minimum wall thickness for main members shall be 0.050" for windows and swinging doors. Minimum wall thickness for main members shall be 0.062" for Acoustical Patio Storm doors.
5. Glazing: Glazing shall be in accordance with DD-G-451 and the Type 1, Class 1, Quality Q5. Glazing shall be clear 1/4" laminated safety glass.

6. Finishes: Finishes for all windows and doors shall be pre-finished with colors selected by Owner from manufacturer's standard colors.

### Hardware

General: Except to the extent that more specific or stringent requirements are indicated, provide the manufacturer's standard hardware fabricated from aluminum, stainless steel, or other corrosion-resistant material compatible with aluminum and of sufficient strength to perform its intended function. All units shall be provided with positive locking mechanism that prevents entry from exterior.

### Accessories

1. Screens: Provide insect screens for each operable sash. Screens shall be removable for cleaning and repair without special tools.
2. Weatherstripping: Provide weatherstripping at locations where sash rails slide horizontally or vertically along the unit frame. Provide double compression-type weatherstripping at the perimeter of each operating sash where sliding-type weatherstripping is not appropriate.
3. Sub-Sill: Supply and install (if required) extruded aluminum, thermally broken, sub-sills for windows and doors, matching the finish of the window framing.
4. Head & Jamb Sub-Frame: Manufacturer's standard, thermally broken head and jamb sub-frames may be used to facilitate installation of replacement windows. Exposed portions of sub-frames shall match the finish of window and door framing.

### Fabrication

1. General: Fabricate aluminum window and door units to comply with indicated standards. Include a complete system for assembly of components and anchorage.
2. Glazing Stops: Provide screw-applied or snap-on glazing stops. Finish glazing stops to match window units.
3. Pre-glazed Fabrication: Pre-glaze units at the factory.

### Acoustical Storm Window Units

General: Provide pre-assembled units.

- a. Sashes shall be adjustable and removable for cleaning. Adjustment to include 2 ventilation notches for each sash.
- b. All operable windows shall have operable screens.

### Acoustical Storm Doors (Hinged Doors)

General: Provide pre-assembled units with integral frames.

- a. Glazing shall be clear 1/4" laminated safety glass. Sashes shall be adjustable and removable for cleaning. Adjustment to include 2 ventilation notches for each sash.
- b. Hinges shall be continuous piano-type stainless steel with nylon thrust bearing.
- c. Latch shall be cast aluminum with thumb push on exterior, lever on interior. One key shall operate all storm door locks per house.
- d. Closer shall be adjustable spring-loaded hydraulic cylinder with hold-open feature. Equip with storm chain with spring safety cushion.
- e. Weatherstripping to be full perimeter set in frame slot. Sill sweep to be adjustable and extend full width of door.

### Acoustical Patio Storm Door

General: Provide pre-assembled sashes.

- a. All fasteners incorporated in the product shall be non-magnetic stainless steel.
- b. Weatherstrip shall be of materials compatible with aluminum and resistant to weathering. Weatherstripping shall be polypropylene pile with a fin barrier running through the entire length of the weatherstripping.
- c. All hardware shall be of aluminum, stainless steel or other non-corrosive material compatible with aluminum. White metal or plastic hardware is not acceptable.
- d. Operating sash surfaces shall be separated from metal-to-metal contact. Operating sash shall operate smoothly and quietly on zinc plated, galvanized, adjustable 1-1/2" wheels. Each wheel shall roll on its own extruded track rail. Operating and non-operating sash shall be easily removable from the inside for cleaning.



## **C. Execution**

### Installation

1. Comply with manufacturer's specifications and recommendations for installation of window units, hardware, operators, and other components of the work. See Figs. 10 and 11 showing additional installation details.
2. Set units plumb, level and true to line, without warp or rack of frames or sash. Provide proper support and anchor securely in place.

### Adjusting and Cleaning

1. Adjust operating sash and hardware to provide a tight fit at contact points and at weatherstripping, smooth operation and a weathertight closure.
2. Clean aluminum and glass surfaces promptly after installation. Lubricate hardware and other moving parts.

## **X. SECTIONAL OVERHEAD DOOR**

### **A. General**

#### Summary

Provide labor, materials, and equipment necessary for complete installation of the overhead doors as shown on the Drawings and specified herein. Reuse existing closer (if applicable).

#### Submittals

Product Data: Submit door manufacturer's product data, specification, and installation instructions for overhead door.

### **B. Products**

#### Manufacturer

1. Overhead doors shall be manufactured by the Overhead door Corporation, Dallas, Texas; specified as the type, size, function, and quality of the products required.
2. Products of the following manufacturers will be considered:
  - a. Porvene McKee Door Company.
  - b. Clopay Overhead Door Co.
  - c. Raynor Manufacturing Co.
  - d. Wayne-Dalton Door Co.

#### Type

Residential steel sectional upward acting door.

#### Materials and Construction

1. Panel Construction: Panel sections shall be rolled from zinc-coated steel and chemically treated for paint adherence. Interior and exterior panels shall be .016 inch thick (minimum). Center and end stiles are 16 gauge or heavier steel.

2. Counterbalance: Torsion spring(s) on crossheader shaft. Galvanized lift cables with cable safety factor of 8:1, spring wire stressed to give high cycle life.
3. Hardware: Galvanized steel hinges and fixtures, full floating, hardened steel, ball bearing rollers. Doors reinforced with steel struts according to best engineering practices.
4. Weather Strip: Flexible neoprene strip on bottom section shall provide tight seal between door and floor. Weather strip retainer to hold weather strip and provide additional reinforcement to bottom of door. Provide one inch by 1/4 inch vinyl foam gasket applied continuously to inside of jamb and head. Vinyl foam shall have adhesive back and 1.5 mil polyurethane surface cover in contact with exterior surface of door.
5. Insulation: Provide expanded foam insulation in door sections. Insulation shall be full thickness of door and shall have an "R" factor of 13.33 (minimum) at 75 degrees F mean temperature.
6. Finish: Door panels shall be factory painted.
7. Glazing: Provide standard glazing units of 24 by 7 inches, held in place with glazing moldings. Single glazing shall be DSA clear glass. Locate glazing units approximately 5'-0" above floor.

### **C. Execution**

#### Installation

The door shall be erected in compliance with detailed instructions of the manufacturer.

#### Adjustment and Demonstration

After installation, moving parts shall be properly adjusted to give free, effortless operation.

## **XI. GYPSUM DRYWALL**

### **A. General**

#### Summary

1. Extent of each type of gypsum drywall construction required is indicated on Drawings.
2. This Section includes the following types of gypsum board construction:
  - a. Gypsum board screw-attached to framing and furring members.

#### Quality Assurance

Single-Source Responsibility: Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.

#### Delivery, Storage, and Handling

1. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.
2. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging. Materials should not be stored inside the homeowner's house.
3. Handle gypsum boards to prevent damage to edges, ends, and surface. Do not bend or otherwise damage metal corner beads and trim.

#### Project Conditions

1. Environmental Conditions, General: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations. Min. room temp. to be not less than 40 degrees F (4 degrees C).
2. Ventilate building spaces to remove water not required for drying joint treatment materials. Avoid drafts during dry, hot weather to prevent materials from drying too rapidly.

## **B. Products**

### Manufacturer

Manufacturer: Subject to compliance with requirements provide products of one of the following or Authority approved equal:

- a. Gypsum boards and related products:
  - i. Georgia-Pacific Corp.
  - ii. Gold Bond Building Products Div., National Gypsum Co.
  - iii. United States Gypsum Co.

### Gypsum Board

1. General: Provide gypsum board of types indicated in maximum lengths available to minimize end-to-end joints.
2. Gypsum Wallboard: ASTM C 36 and as follows:
  - a. Type: Regular 1/2" tapered edge for all locations, unless otherwise indicated on drawings.

### Trim Accessories

Corner Bead and Edge Trim for Interior Installation: Provide corner beads, edge trim and control joints which comply with ASTM C 1047 and requirements indicated below:

- a. Material: Formed metal composed of sheet steel zinc-coated by hot-dip process.

### Gypsum Board Joint Treatment Materials

1. General: Provide materials complying with ASTM C 475, ASTM C 840, and recommendations of manufacturer of both gypsum board and joint treatment materials for the application indicated.
2. Joint-Tape: Paper or open-weave glass fiber reinforcing tape.
3. Drying-Type Joint Compounds: Factory- prepackaged, vinyl-based products complying with the following requirements for formulation and intended use.
  - a. Ready-Mix Formulation: Factory-premixed product.

- b. All-purpose compound formulated for use as both taping and topping compound.

### Miscellaneous Materials

1. General: Provide auxiliary materials for gypsum drywall construction which comply with referenced standards and the recommendations of the manufacturer of the gypsum board.
2. Gypsum Board Screws: ASTM C 1002.
3. Framing: Provide wood framing as required to support gypsum board.
4. Concealed Acoustical Sealant: Non-drying, non-hardening, non-skinning, non-staining, non-bleeding, gunnable sealant for concealed applications per ASTM C 919.
5. Exposed Acoustical Sealant: Non-oxidizing, skinnable, paintable, gunnable sealant for exposed applications per ASTM C 919.
6. Sound Attenuation Blankets: Acoustical insulation batts shall be equal to "Sound Attenuation Batts (for walls) and "Sono Batts" (for ceilings) as manufactured by Owens-Corning Fiberglass Corp. Blankets shall be 3-1/2 inches thick and width of blanket shall match spacing of studs.

## **C. Execution**

### Examination

Examine substrates to which drywall construction attaches for compliance with requirements for installation tolerances and other condition affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

### Application and Finishing of Gypsum Board, General

1. Gypsum Board Applications and Finishing Standard: Install and finish gypsum board to comply with ASTM C 840.
2. Install sound attenuation blankets to completely fill all wall cavities.
3. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches in alternate courses of board.

4. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.
5. Locate either edge or end joints over supports. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.
6. Attach gypsum board to supplementary framing and blocking provided for additional support at opening and cutouts.
7. Seal construction at perimeters, control and expansion joints, openings and penetrations with a continuous bead of acoustical sealant including a bead at both faces of partitions. Comply with ASTM C 919 and manufacturer's recommendations for location of edge trim and close off sound-flanking paths around or through construction, including sealing of partitions above acoustical panel and gypsum drywall ceilings.
8. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

#### Installation of Drywall Trim Accessories

1. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.
2. Install corner beads at external corners.
3. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound except where "U-bead" (semi-finishing type) is indicated.
  - a. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

### Finishing of Drywall

1. General: Apply joint treatment at gypsum board joints (both directions), flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.
2. Pre-fill open joints and rounded or beveled edges, if any, using setting-type joint compound.
3. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.
4. Finish interior gypsum wallboard by applying ready-mix, drying-type, all-purpose compounds in 3 coats (not including pre-fill of openings in base), and sand between coats and after last coat.

### Protection

Provide final protection and maintain conditions, in a manner suitable to installer, which ensures gypsum drywall construction being without damage or deterioration at time of Substantial Completion.



## **XII. PAINTING, STAINING, AND VARNISHING**

### **A. General**

#### Summary

Provide all labor, materials, equipment and services and perform all operations necessary for complete painting and finishing interior and exterior surfaces exposed to view as denoted on drawings and/or finish schedule. Surfaces to be painted shall be limited to:

- a. Surfaces around the immediate area of doors and windows as specified in Sections VIII, IX, and X.
- b. Damaged wood surfaces around immediate area of soffit/gable insulation installation.

#### Acceptable Products

1. Glidden.
2. Pittsburgh.
3. Pratt and Lambert.
4. Sherwin Williams.
5. Authority approved manufacturers not named.

#### Quality Assurance

1. Materials shall be of the best quality and suitable for surfaces receiving work.
2. Workmanship: Work shall conform to standards generally accepted by industry, and shall be of a high quality free of uneven color, appearance, coverage, and/or cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections.
3. Guarantee/Warranty:
  - a. Provide product warranty information to Airport.
  - b. Contractor shall provide written guarantee, covering labor cost, against peeling and/or chipping for a period of two (2) years or equal to the length of product warranty whichever less.

## **B. Products**

### Product Compatibility

1. Undercoat (primer) and finish coat (paint) shall be of material by the same manufacturer.
2. Color and texture of finish coat (paint) shall match existing finish.

## **C. Execution**

1. Starting of work in this section shall be construed as the acceptance by this section of surface conditions within any particular area as suitable for work. Prior to start of work, examine all surfaces to be painted to ensure the absence of visible defects, damages, markings and/or other conditions otherwise detrimental to the formation of a durable paint film. Report all unacceptable conditions to the General Contractor for correction by others.
2. Protection of adjacent areas: Prior to surface preparations and painting operations, completely mask, remove, or otherwise adequately protect all hardware, accessories, glass, lighting fixtures and similar items in contact with painting operations but not scheduled to receive paint.
3. Do not conduct painting operations at air temperatures below 50 degrees Fahrenheit or manufacturer's recommendations whichever is higher. Prepare job site to allow adequate ventilation during operation but otherwise do not allow interior of premises to be affected by inclement weather.

### Preparation

1. Prepare surfaces by cleaning, sanding, dusting and/or other acceptable methods in accordance with manufacturer's recommendations to achieve suitable condition for painting.
2. Material Preparations:
  - a. Mixing shall be conducted in accordance with manufacturer's instructions.
  - b. Material not in actual use shall be stored in tightly-covered containers. Materials should not be stored inside homeowner's house.

- c. Material shall be kept free of foreign substances.
  - d. Stir material before and periodically during application to produce a mixture of uniform density and flow. Remove surface films, if any, by lifting or straining.
3. Application:
- a. Apply each material in accordance with manufacturer's instructions. Use application tools and techniques best suited for each type of material being applied and surfaces receiving material, but otherwise do not use sprayers of any kind.
4. Protection of Completed Work: Provide "Wet Paint" signs as required to protect newly-painted surfaces.
5. Material Disposal and Tool Cleaning: Disposal of paint materials and/or containers as well as cleaning of tools on job site are strictly prohibited.
6. Clean-Up: Upon completion and complete and thorough drying of final paint application:
- a. Remove all masking and other protective covers installed by this section, clean adjacent areas to remove splattering if any.
  - b. Re-install all hardware, fixtures and other items previously removed by this section.
  - c. Remove barricades and other protective measures and clean job site in accordance with requirements stated in this document.

#### **D. Paint Schedule**

- 1. Interior
  - a. Coat #1: Primer or Basecoat
  - b. Coat #2: Finish Coat
  - c. Coat #3: Finish Coat
- 2. Exterior Stain
  - a. Coat #1: Stain
  - b. Coat #2: Sealer
  - c. Coat #3: Finish urethane
  - d. Coat #4: Finish urethane

3. Exterior Trim
  - a. Coat #1: Primer
  - b. Coat #2: Finish Coat
  - c. Coat #3: Finish Coat

### **XIII. ROOF**

#### **A. Shingle Installation**

1. Remove old shingles and roofing felt from roof.
2. Replace any damaged plywood sheathing with same thickness plywood. If part of the plywood sheet is damaged, the entire sheet must be replaced.
3. Cover entire roof with roofing felt. Cover entire roof with 20-year warranty shingle.
4. Old roofing material must be completely removed from the property and properly disposed of.

#### **B. Quality Assurance**

Comply with governing codes and regulations. Provide products of acceptable manufacturers which have been in satisfactory use in similar service for three years. Use experienced installers. Deliver, handle, and store materials in accordance with manufacturer's instructions.

## **XIV. FIBER-CEMENT REPLACEMENT SIDING WITH BACKING LAYER**

### **A. General**

#### Summary

The existing exterior walls in houses receiving this treatment have vinyl siding applied over a vapor barrier and a single layer of OSB on some or all sides of the house, including walls of any dormer windows. Many of the houses have brick or other masonry veneer on some walls. The vinyl siding must be replaced with Fiber-Cement Siding with a Backing Layer in order to achieve the 5-dB Improvement in Outdoor to Indoor Noise Reduction (OINR) required by the FAA. The Backing Layer will be a 1/4" Fiber-Cement Backer Board.

#### Submittals

1. Shop Drawings: Submit shop drawings for:
  - a. Installation of Brick Molding with 2" wide by 1-1/4" deep, solid PVC section to provide a mounting plane for the Acoustical Storm Windows as shown in Fig. 11; and
  - b. Installation of Fiber-Cement Replacement Siding with Backer Layer of 1/4" Fiber-Cement Backer Board.

### **B. Products**

#### Summary

Provide Fiber-Cement Replacement Siding and trim products manufactured by James Hardie Technology Limited with ColorPlus finish, installed according to the most current "Best Practices" identified at [www.Jameshardie.com](http://www.Jameshardie.com) for Climate Zone 10 (HardieZone 10), or a substitute product that has been approved by the Authority prior to bidding in accordance with the Instructions to Bidders.

### **C. Execution**

1. The Scope of Work includes:

- a. Removal of existing vinyl siding, aluminum boxing, gutters, downspouts, soffits, shutters, and the decorative door and window headers, if any, at the front of the house.
  - b. Installing a layer of 1/4" fiber-cement board on the exterior of the house. This layer shall extend toward the underside of the roof sheathing and allow proper ventilation.
  - c. Installing a new air barrier house wrap in accordance with Section VI. extending to the roof sheathing and sealed there.
  - d. Installing a new 2" wide by 1- 1/4" deep solid PVC brick molding to form a mounting plane for the Acoustical Storm Windows and for the Acoustical Storm Doors around the existing windows and doors.
  - e. Installing new fiber-cement clapboards, trim and boxing (HardieBoard or Authority-approved equal) on the exterior of the house. Clapboard shall be pre-finished with the stock color that has been selected by the homeowner and specified in the Site-Specific Specifications for the house. The siding shall have the same pattern of installation as the existing vinyl clapboards. Installation shall be consistent with the approved shop drawings and the Best Practices of the manufacturer. The additional layer of siding shall extend to the underside of the roof sheathing.
  - f. Install the Acoustical Storm Windows and Doors in accordance with Section IX.
  - g. Reinstall gutters, soffits, downspouts, shutters, and decorative window and door headers at the conclusion of the previous tasks.
2. If the Contractor identifies apparent inconsistencies between the approved shop drawings, the Best Practices of the manufacturer(s) or other terms of these Specifications and the Contract, the Authority's Noise Officer will determine how the installation will proceed.

## **XV. SOUND SEALS ON PRIMARY DOORS AND CRAWL SPACE DOORS**

### **A. General**

#### Summary

When Site Specific Specifications include installation of Sound Strip, inspect fit of outside entry doors to the living space and crawl space doors to see if weather and sound seals are present and sealing properly. Seals should be present at the top, bottom and sides of the door. For the primary doors to the living space, these seals will often be visible from the outside when the door is closed. For a crawl space door that opens to the outside, the seals will more likely be visible on the inside. Some types of seal at the sides and top and often the bottom seals will not be visible when the door is closed. The bottom seal will typically be different from those on the sides and top.

A proper seal leaves no gap between the seal and the door and is attached to the frame so there is no gap between the seal and frame. The seals on the sides and top may be attached with nails, screws or adhesive, or may fit into a groove on the frame called a “kerf” as illustrated below. Most newer door frames will have such a kerf seal. At the bottom, there should either be a bulb built into the threshold, or a raised threshold with a bulb or sweep on the bottom of the door. For most seal systems, a good test is to insert a business card between the seal and door. The card should go in with some resistance but not be difficult to insert. Once in place at the top or sides, it should remain in place when released and not fall. At the bottom the card should have similar resistance to being inserted and removed.

The proper treatment for door seals depends on the condition of the doors and frames and type of existing seal. Several possible conditions are identified below along with proper treatments.

#### Entry Doors

##### Door Sides and Top

Many newer doors will have a vinyl covered foam seal with an anchoring flange inserted in a slot in the door frame as shown in Fig. A. These seals would be around the sides and top. This seal can work well as long as the frame or door is not badly warped or bowed. The gap between door and



frame should be around 1/8 inch as shown. If the gap approaches 1/4 inch the seal will not work well. Thus, the frames must be examined for fit of the door and for warping of the frame or door which could leave gaps between the seal and door. If such situations are found they must either be repaired or a different type seal used. If the door and frame are in good shape but the seals damaged, the seals should be replaced and tested with a business card. Seals of this type are available at Lowes and Home Depot.

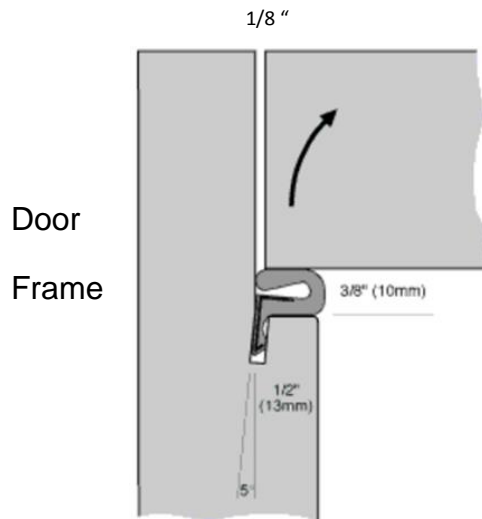


Fig. A

There may be seals as shown in Fig. A mounted with adhesive. Most such seals are of poor durability or have a poor adhesive. These must be examined carefully. If they are a foam type, the business card test can be used. Examine the gap between the door and frame on all sides to verify it is not so large that the seal cannot work.

If it cannot be verified that there is a good seal, and the door surface is not bowed or warped, use a seal mounted inside the frame further from the edge of the door. This could be a seal similar that used in the kerf in the frame but mounted in a kerf in an additional wood or aluminum mounting piece as illustrated in Figs. B and C. Seals with a wooden frame as illustrated in Fig B are available from MD Products (stocked at Lowes) and Frost King (stocked at

Home Depot). The thinner metal frame in Fig. C is available from MD Products.

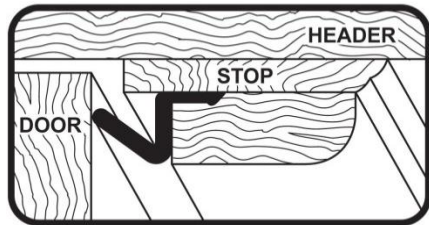


Fig. B

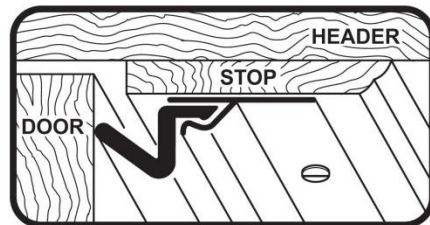


Fig. C

If the door is bowed or warped such that a good seal cannot be obtained with a seal in a rigid mounting, it is necessary to either replace the door or use an adjustable seal. The Zero International Model 870, illustrated in Fig. D, provides up to  $\frac{1}{4}$  inch adjustment to compensate for door surfaces not being flat.

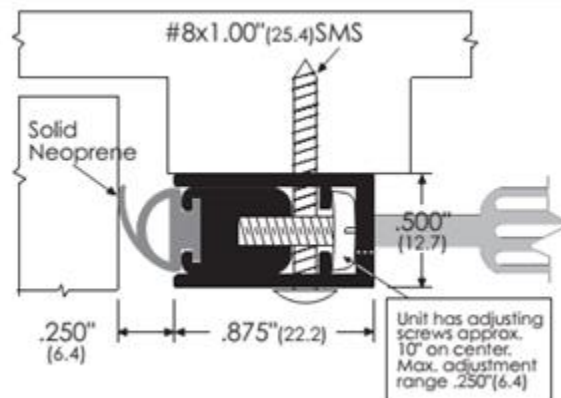


Fig. D

### Submittals

1. Product Data: Submit product data for each seal selected.
2. Samples: Submit samples, 1'0" long if requested.

# **APPENDIX 1**

## **DRAWINGS**

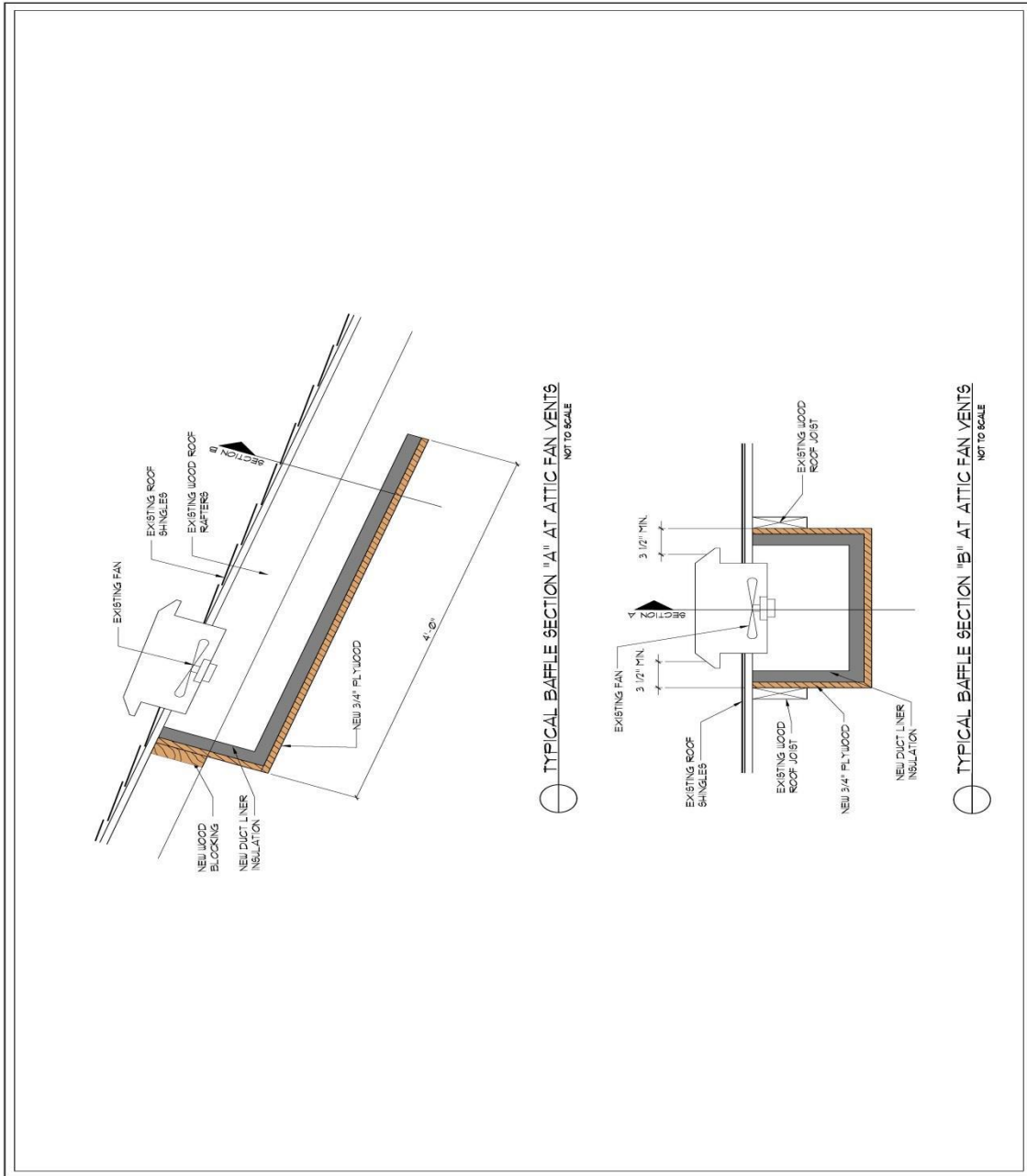


Fig. 1 - Typical Baffle Detail at Attic Fan Vents



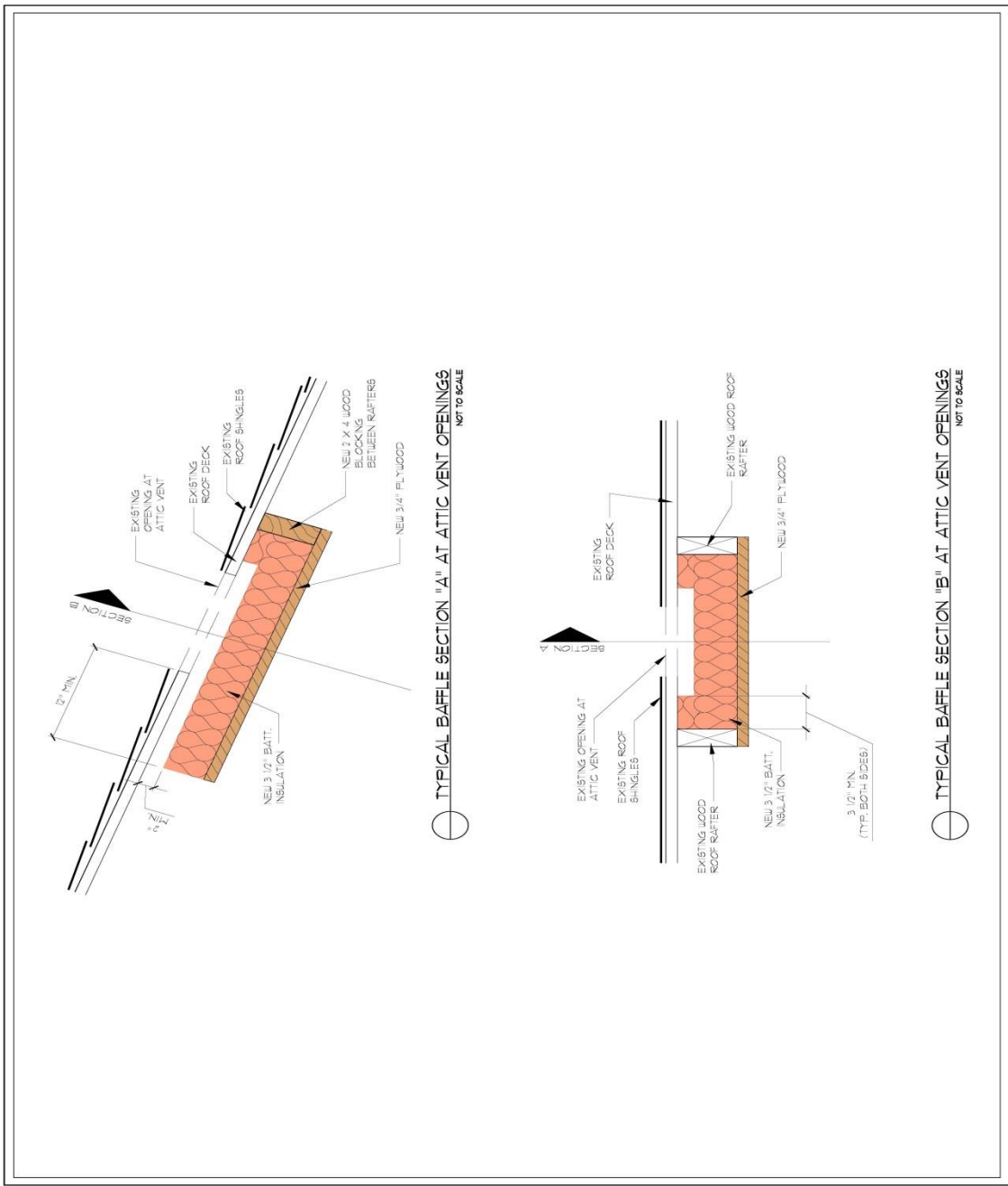


Fig. 3 - Typical Baffle Detail at Attic Vent Openings

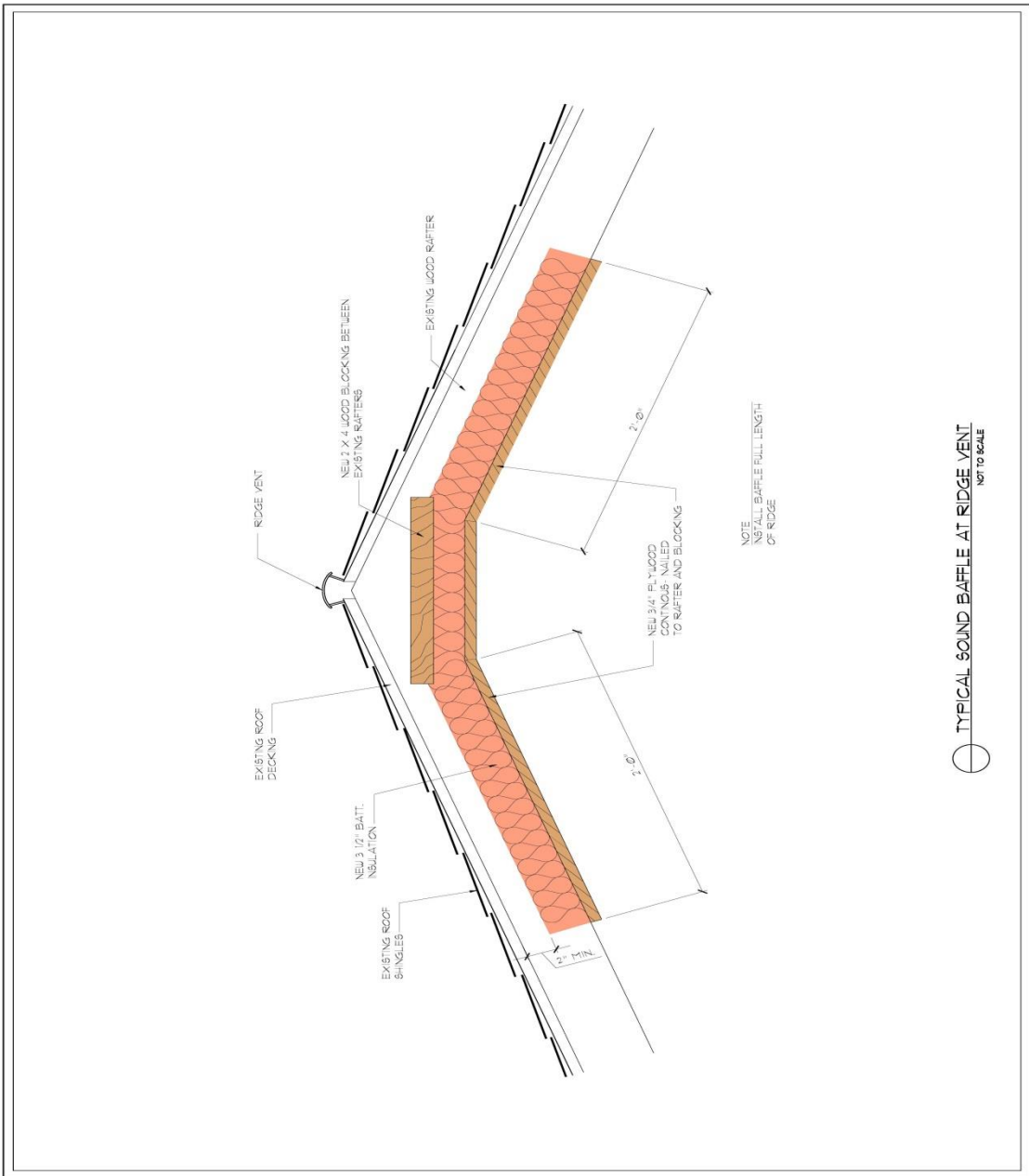


Fig. 4 - Typical Sound Baffle at Ridge Vent





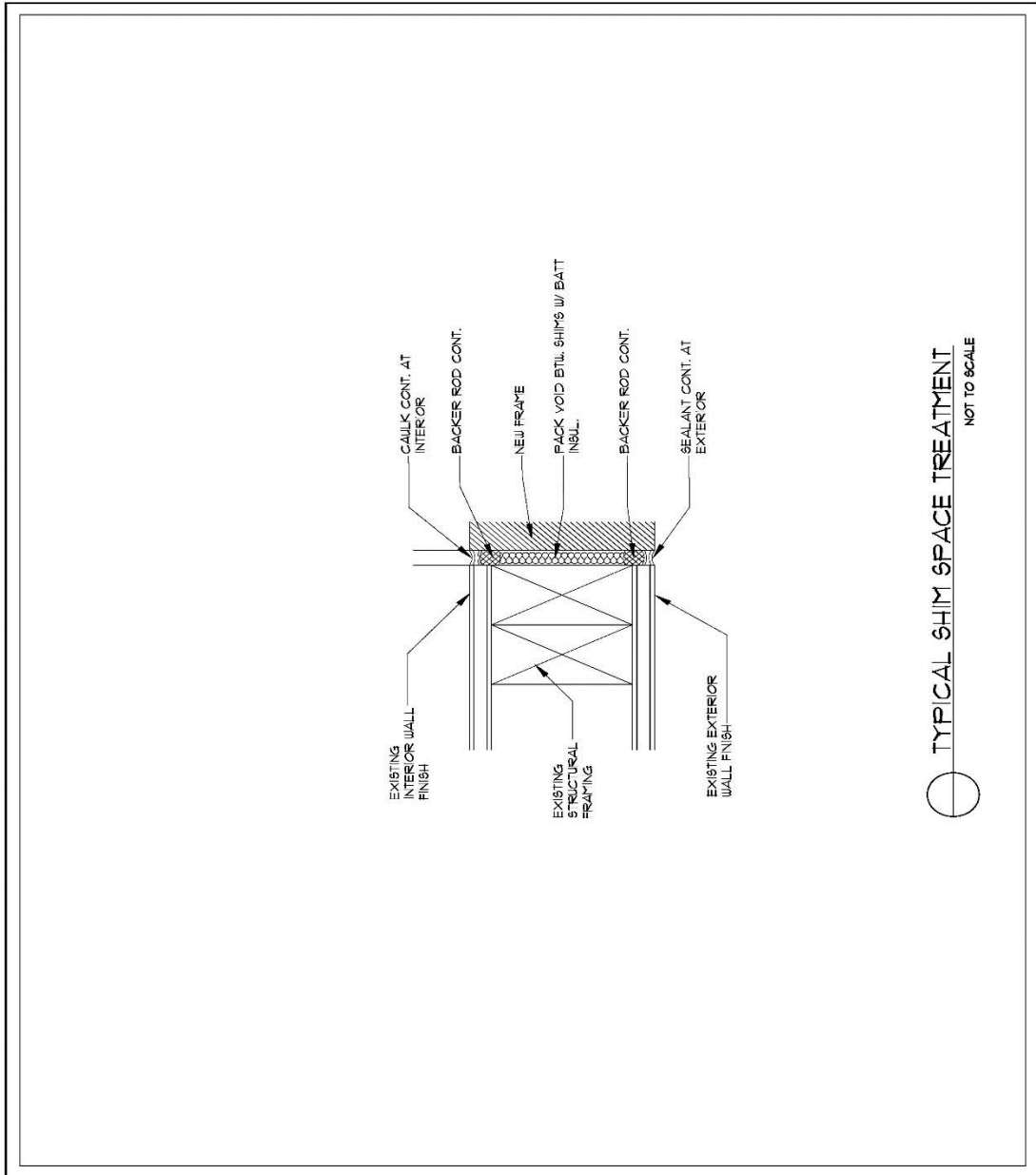


Fig. 6 - Typical Shim Space Treatment





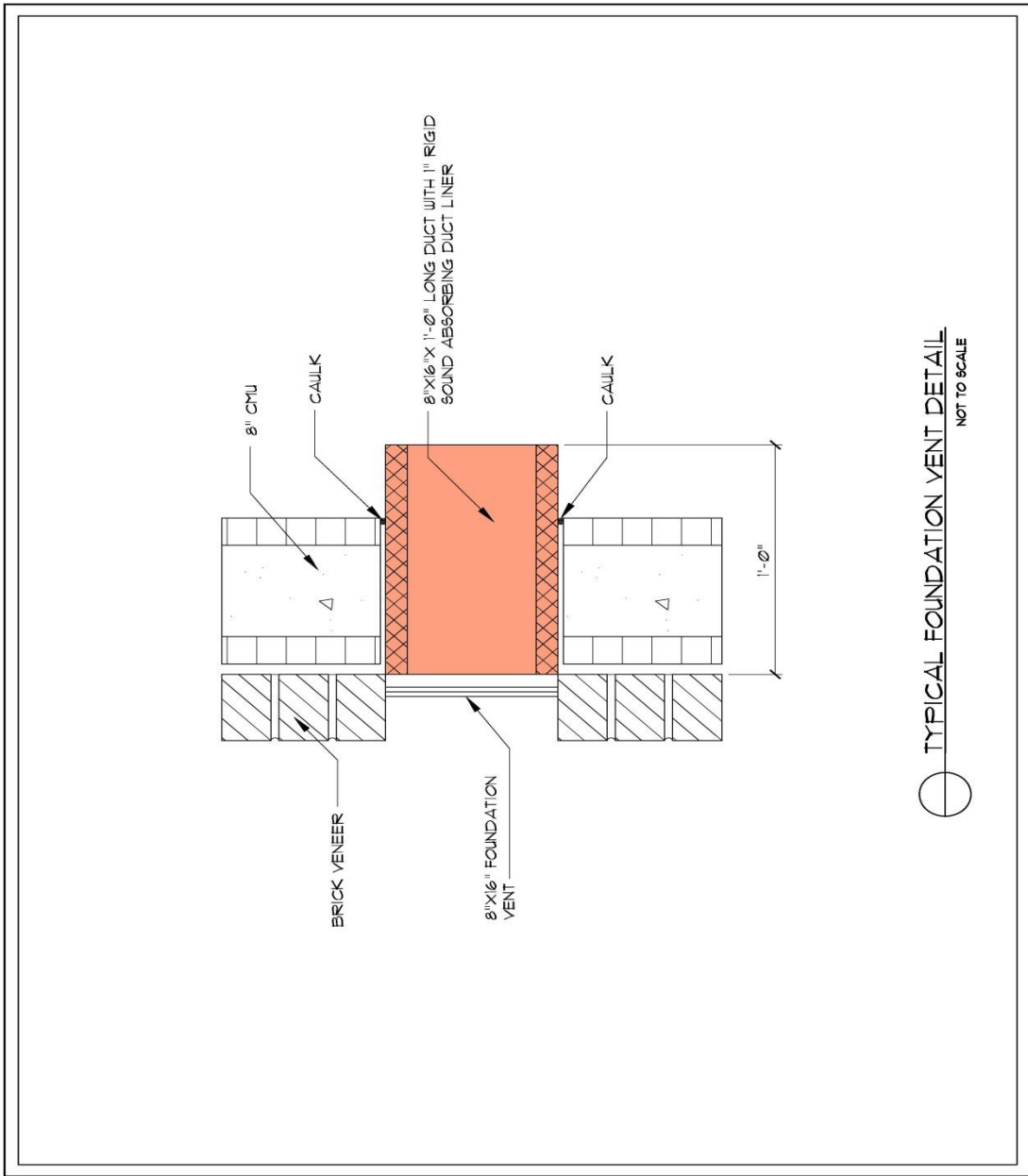


Fig. 9 - Foundation Space Vent Detail

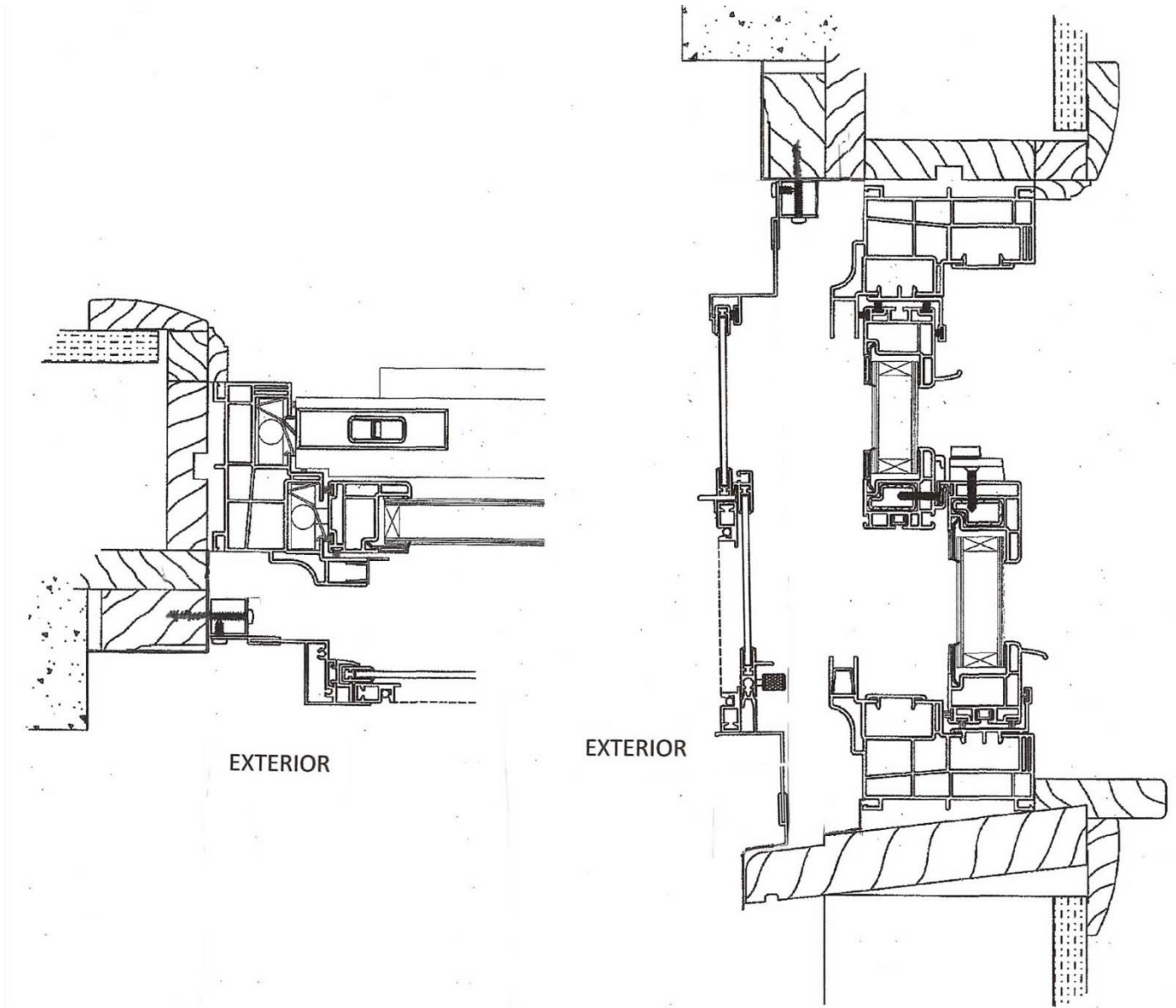


Fig. 10 - Exterior Acoustical Storm Window installed in Brick Veneer Wall

Note: Install Acoustical Storm Window to maximize distance from Interior Vinyl Sash



Mon-Ray, Inc.  
 7900 Excelsior Blvd, Suite 140  
 Hopkins, MN 55343  
 763-544-3646 Fax 763-546-8977  
 www.monray.com

PIEDMONT TRIAD  
 AIRPORT AUTHORITY

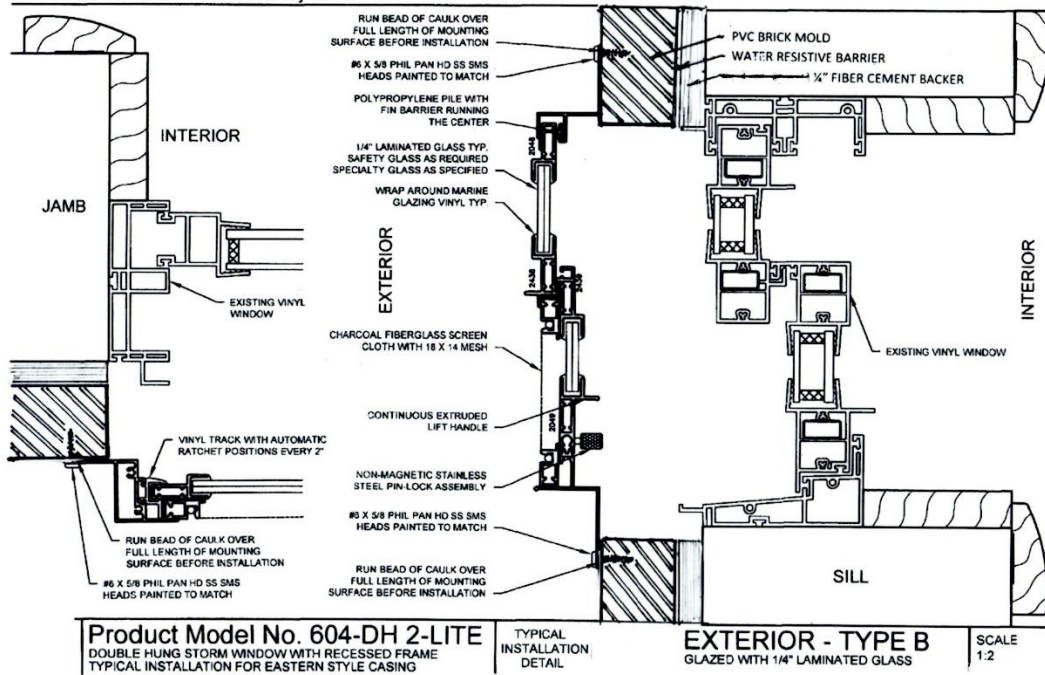


Fig. 11 - Detail of Exterior Acoustical Storm Window Installation in Cement-Fiber Replacement Siding with Backing Layer