CITY OF SOMERVILLE, MASSACHUSETTS
MAYOR'S OFFICE OF STRATEGIC PLANNING & COMMUNITY DEVELOPMENT
KATJANA BALLANTYNE
MAYOR

THOMAS F. GALLIGANI, JR.
EXECUTIVE DIRECTOR

PLANNING, PRESERVATION, & ZONING DIVISION (PPZ)
HISTORIC PRESERVATION

ALTERATION OF A LOCAL HISTORIC DISTRICT (LHD) PROPERTY
STAFF REPORT

Site: 170 Central Street

Case: HP24-000055

Applicant: Doug White

Owner: Baij Joshi

Legal Ad: *The Applicant seeks a Certificate of Appropriateness to alter an LHD property by replacing the siding, roofing, window framing, and trim of the building*

HPC Meeting Date: February 4, 2025

The purpose of a staff report is to provide the Historic Preservation Commission (HPC) with a professional assessment of alteration proposals made for Local Historic District (LHD) properties. These assessments are based on the Historic District Ordinance (HDO) in compliance with M.G.L. Chapter 40C, and the associated Design Guidelines. A Staff Report is not a determination/decision and does not represent findings. A staff report does not constitute authorization in any form.

I. PROJECT DESCRIPTION

Subject Property: The principle structure is a 2.5 story Second Empire, known as the “Cutler Downer” home. The Form B survey describes the building being built circa 1868. This property is located in Winter Hill neighborhood. A full description of the property is provided in the attached Form B survey held by the Massachusetts Historical Commission (MHC).

Proposal: The Applicant proposes the following within the purview of the HPC:

- The applicant proposes to replace the building siding, trim, window framing, and roof materials.

II. ASSESSMENT OF PROPOSAL

Due to the proposed work of replacing building material, the HPC has purview over changes to these features and of the materials used.

The HPC must make findings based on the Historic District Ordinance (HDO) in compliance with M.G.L. Chapter 40C, and associated Design Guidelines. The portions of the regulations that are applicable to the proposed alterations are discussed below.

Please note that the applicant did not provide all the material specifications for the proposed alterations including gutter replacement material and window roof replacement material.

Applicant Proposal:

The applicant proposes renovations to the building including the replacement of siding, trim, window framing, and roof materials with synthetic materials.

1. Siding replacement:

   All three elevations visible from the public way (front, left, and right) propose the same siding material replacement by the applicant. The applicant proposes replacing wood clapboard with Hardie Plank Lap Siding.

2. Roof replacement:

   The applicant proposes removing the existing slate roof and replacing it with EcoStar synthetic "Majestic Slate" tiles in the "Beveled Edge and Chisel Point" style. The new synthetic tiles will maintain the existing slate pattern. Additionally, the applicant plans to install copper valley flashing at the roof's valleys.

   The applicant proposes to remove the existing aluminum gutter. The applicant does not specify what the replacement material will be.

3. Porches, steps, trim, and other architectural replacements:

   On the left side of the front elevation, four window header frieze boards and crowns will be replaced with Azek moldings or a similar synthetic material. Where possible, the existing wood will be preserved. In such cases, it will be scraped, primed, and stained to maintain its character.

   Next, the window head frieze board roof cap will be replaced with a custom-crafted copper roof cap. The window back-bands will be replaced with Azek "Back Band AZM-6931" or an equivalent synthetic material.

The alteration continues with the replacement of the window casings. These will be replaced with Azek trim boards to match the existing size and profile. The perimeters of the window frames will also be replaced with Azek band molding to closely resemble the original profile.

All smooth finishes will be matched to the existing wood molding. Finally, the rotting windowsills will be replaced with new Azek or equivalent synthetic material windowsill moldings.

Moving to the second-story bay, the existing arched window headers and rope molding will be replaced with Azek or PVC molding to match the existing radii. On the right elevation, the existing window back-band will also be replaced with Azek "Back Band AZM-6931" or an equivalent material to match the existing profile and size.

On the front elevation the existing quoins will be replaced with custom-fabricated Azek/PVC replicas, to integrate with the front elevation corner boards. New corner boards, made from Azek/PVC, will be installed.

The existing front porch columns will be assessed. If deemed structurally sound, they will be preserved. However, if replacement is necessary, they will be replaced with matching fiberglass structural columns. The existing low railing on the front porch will be scraped and painted.

Moving to the second floor below the half-story, the existing brackets will be removed. Each bracket will be hand-scraped, sanded, primed, and stained. Once completed, they will be re-installed in their original locations and trimmed with matching PVC quarter-round.

At the same location along the second story on both the front and left-side elevation, the existing wood soffits and sub-soffit areas at the brackets will be removed. In their place, MNDO plywood soffits will be installed on the existing framing.

The existing deteriorated wood trim boards will be replaced with Azek/PVC trim boards to match the existing profiles. The existing aluminum gutter will be removed, and the existing fascia board at the roof perimeter will be replaced with Azek/PVC. What will the gutter be replaced with?

On the right-side elevation on the first floor, the existing watertable and watertable cap will be replaced with new Azek watertable and watercap.

The applicant proposes several replacements to the dormer windows on the half-story of the building. Existing custom-shaped roof crown molding will be scraped, sanded, and painted where possible. Existing brackets will be removed, then scraped, sanded, primed, and painted with opaque stain on all sides. After reinstalling the brackets in their original locations, trim them with polyurethane quarter-round to match existing trim.

All roof window dormer decorative wing-wall side trim will be removed and replaced. Utilize the existing two sandwich panels as templates for the replacement pieces. Replace or repair the wood beneath flashing and shingles as needed. Source 3 ½" solid fir replacement wood at the dormer wing-wall. Cut the replacement wood to match the profile of the existing center pieces. Replicate on both sides, then prime and stain all sides. Replace the existing sandwich panels with 5/4" Azek trim board panels. Install new aluminum flashing at the dormer wing-wall replica panels.

Install ice and water shield at the dormer sills, followed by matching roof shingles. Replace the existing flat tin roof with standing seam metal roofing on all dormers.

Remove and replace all fascia and trim boards with Azek/PVC, maintaining the same size profile where required. Remove, scrape, sand, and stain existing corner boards and corbel brackets. Reinstall them and trim with ½" round Azek/PVC trim. Finally, add new Azek/PVC corner boards at all dormer windows.

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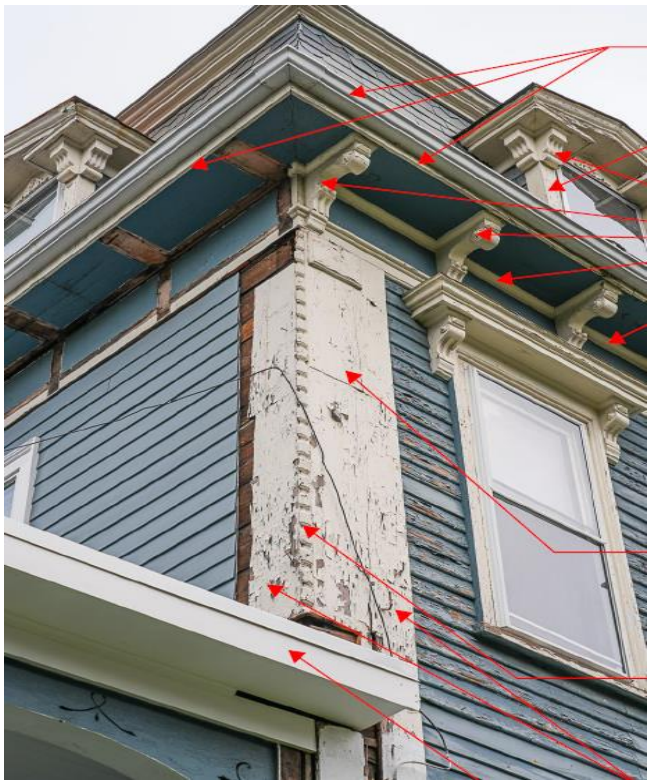
The custom trim piece on the left side elevation half-story dormer will be removed, scraped, sanded, primed and applied with opaque stain to match the other trim boards.

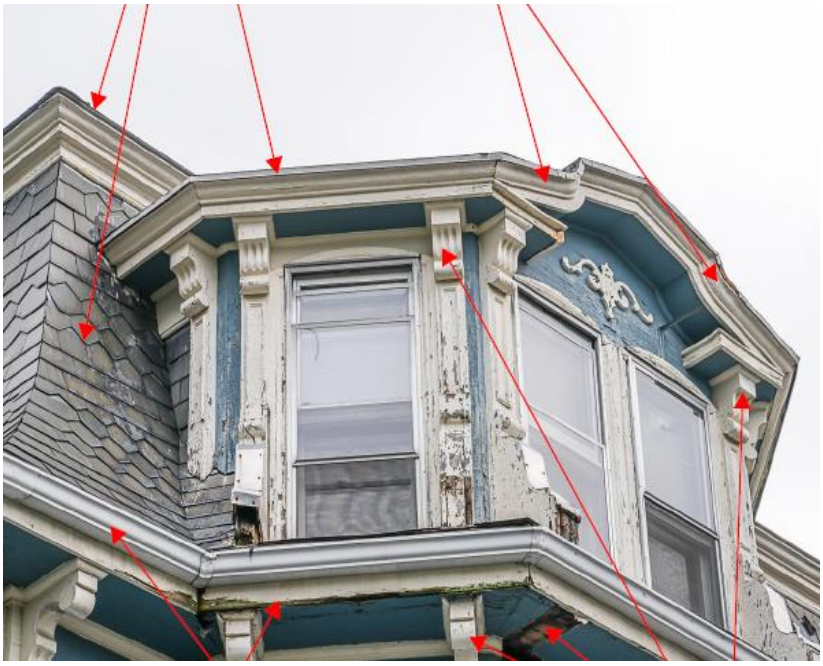
Above: Current photo of the front elevation.



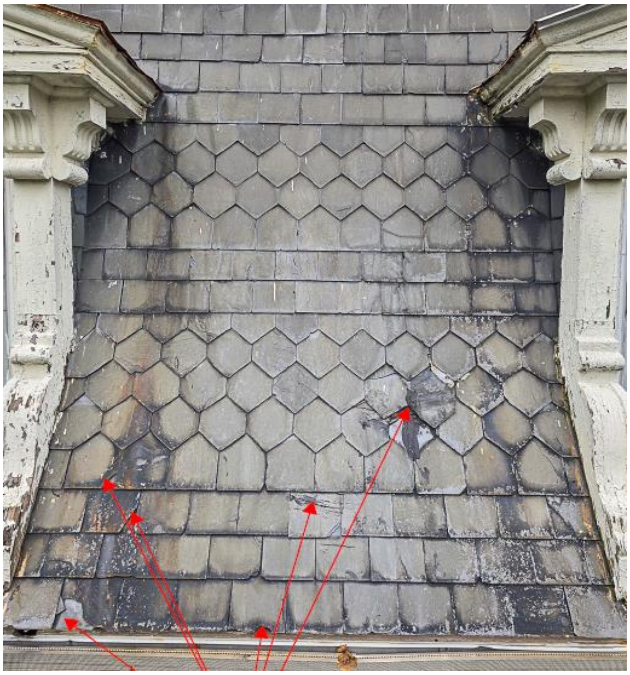
Above: Current photo of the left side of the front elevation identifying proposed changes to the building trim.

Above: Current photo of the second story and half-story of the left side elevation identifying brackets, soffits, and slate roofing.

Above: Current photo of the front elevation identifying proposed changes to window header frieze board/crown and cap, window casings trimboards, window sills, and back-band.

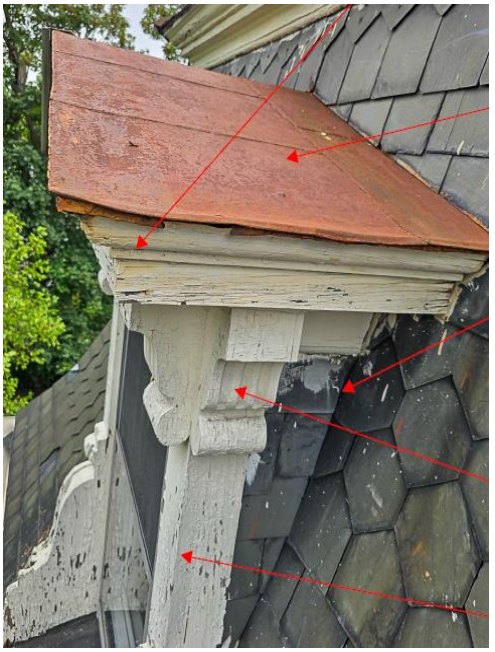


Above: Close up photo showing the current conditions of one of the half-story dormer windows.

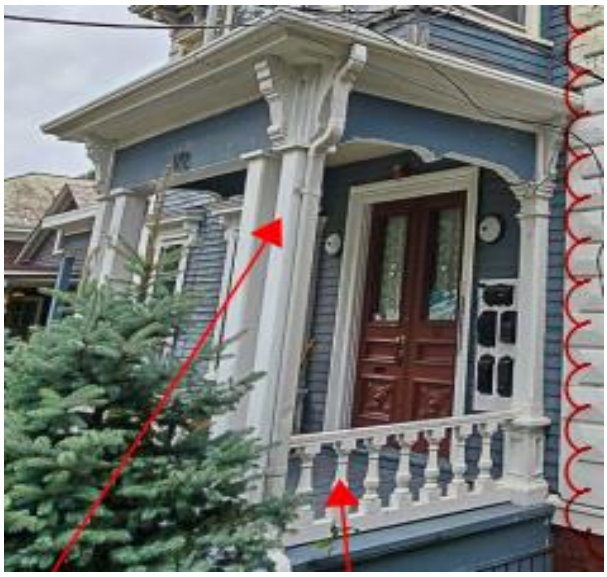


Above: Current photo of slate roof.

Above: Current photo of roof window dormer side trim.



Above: Current photo of tin roof on roof windows.



Above: Current photo of front elevation porch.

Preservation Planning Assessment:

Planning Staff's assessment will be organized by specific alteration (e.g. roof, siding, trim, etc.).

Siding replacement

Pursuant to Design Guideline ii.A.1.a. and ii.A.1.b.

a. *Retain and repair original or later important material whenever possible.*
b. *Retain and repair, when necessary, replace deteriorated material which matches as closely as possible.*
c. *Synthetic siding (aluminum, vinyl, artificial stone or brick) is prohibited because it severely compromises the appearance and integrity of old buildings. In those rare instances where, for reasons of hardship, synthetic siding is approved, the new siding must reproduce the dimensions of the original, including its relationship to corner boards, window trim and other architectural details, all of which must be retained. The application for a Certificate of Hardship must include precise installation specifications supplied by an expert.*

The applicant is not proposing to retain and repair the original/or later important siding material. The applicant is proposing to use synthetic Hardie Plank Lap siding.

Roof replacement

Pursuant to Design Guidelines II.B.2.

> *Retain the original roof covering whenever possible. If the property has a slate roof, conserve the roof slates. Slate is a near-permanent roofing material, and deterioration is generally caused by rusted roofing nails.*

The applicant is not proposing to retain the original slate roof. The applicant is proposing to replace the existing slate with EcoStar “Majestic Slate” “Beveled Edge and Chisel Pont” tiles in a pattern to match the existing slate design. The guideline above states that slate should be conserved. The applicant does not intend to preserve the existing slate roofing.

Porches, steps, trim, and other architectural replacements

Pursuant to the Design Guidelines *II.c.2*:

> *Whenever possible, repair and retain original or later important window elements such as sash, lintels, sill, architraves, glass, shutters and other decorative elements and hardware. When replacement of materials or elements is necessary, it should be based on physical or documentary evidence. If aluminum windows must be installed, select a baked finish that matches as closely as possible the color of the existing trim. Investigate weather-stripping and storm windows with a baked enamel finish as an alternative to the replacement of historic sash.*

Pursuant to Design Guidelines II.D.1

> *Retain and repair porches and steps that are original or later important features, including such items as railings, balusters, columns, posts, brackets, roofs, ornamental ironwork and other important decorative items. If new pieces are needed, they should match as closely as possible the style, shape, scale and materials of the old. Avoid replacing wood posts and railings with metal ones, or wood porch decks with concrete.*

Several of the proposed alterations include preserving existing materials, including trim details like brackets, window header frieze boards and crowns, railings, columns, etc. However, the applicant does note some of those alterations will occur if possible. Staff recommend that all material that can be saved should be saved.

Other than the retainment of some existing features, the applicant intends to repair and replace elements using synthetic materials such as Azek or PVC.

In Summary

Repairs to existing features described above that will be retained are consistent with the guidelines. However, all the other proposed renovations are not consistent with the design guidelines identified above.

Planning Staff recommends to the Commission that the applicant repair in-kind, using materials that are physically the same as what is being replaced.

III. FINDINGS & VOTE

When bringing the matter to a vote the HPC must state their findings and reasons on why they take their position.

IV. RECOMMENDED CONDITIONS

As currently presented, this proposed use of synthetic materials does not conform to LHD Design Guidelines. Therefore, the conditions that Staff has recommended below are general and applicable to any project and are not specific to 170 Central Ave. ***If*** the HPC approves any portion of the proposed project, the HPC will need to add specific conditions to the list below. Preservation Planning recommends the following conditions be attached to any Certificate of Appropriateness that the HPC might grant for this project.

1. The Applicant/Owner shall file the Certificate with the Inspectional Services Department (ISD) by uploading it to the Citizenserve permitting portal with their application for zoning compliance/building permit.
2. This Certificate is valid for one year. If work has not commenced within one year of the HPC's date of determination, this Certificate shall expire, and the Applicant shall re-apply for re-issuance of this Certificate. Provided that no changes have been made to the proposal, this shall be a Staff-level re-issuance of the Certificate.
3. Any changes to this proposal made prior to the commencement of work or in-the-field changes shall be submitted to Preservation Planning for their review to determine if the changes come under the purview of the HPC. Failure to seek approval for changes may delay final sign-offs/Cos.
4. The Applicant shall contact Preservation Planning at **historic@somervillema.gov** a minimum of 15 business days prior to final ISD walk-through so that Preservation Planning or their designee can confirm if the project was completed according to HPC approvals.

Massachusetts Cultural Resource Information System
Scanned Record Cover Page

Inventory No:	SMV.330
Historic Name:	Downer, Cutler House
Common Name:	
Address:	170 Central St
City/Town:	Somerville
Village/Neighborhood:	Winter Hill;
Local No:	
Year Constructed:	1868
Architectural Style(s):	Second Empire;
Use(s):	Multiple Family Dwelling House; Other Communication; Single Family Dwelling House;
Significance:	Architecture; Communications; Invention;
Area(s):	SMV.BA, SMV.CG
Designation(s):	Local Historic District (10/31/1989); Local Historic District (04/28/2022);
Building Materials:	Roof: Slate; Wall: Wood; Wood Clapboard; Foundation: Brick;
Demolished	No

Commonwealth of Massachusetts
Massachusetts Historical Commission
220 Morrissey Boulevard, Boston, Massachusetts 02125
www.sec.state.ma.us/mhc

LHD-10/31/89 (10)
P1- WINTER
USGS BOSTON
SEC B

FORM B - BUILDING

MASSACHUSETTS HISTORICAL COMMISSION
80 BOYLSTON STREET
BOSTON, MA 02116

AREA	FORM NO.
Winter Hill	330

SOMERVILLE

ss 170 Central Street

ric Name Cutler Downer

Present residential

Original residential

IPTION

ca. 1868

maps / visual / directories

Second Empire

Architect

Exterior Wall Fabric clapboard

Outbuildings

Major Alterations (with dates)

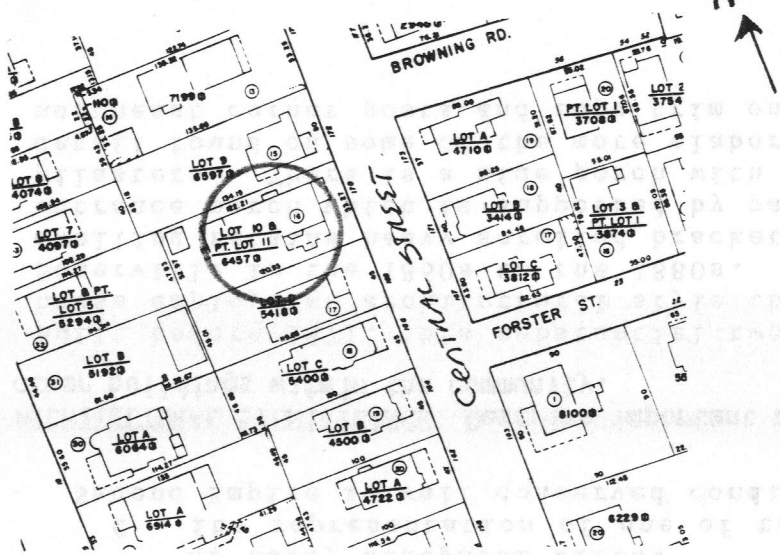
Condition good

Moved **Date**

Acreage 6457 sq. ft.

Setting West side of Central, near Forster and Browning Sts. Well estab residential neighborhood of large lat 19th century dwellings in good repair

Sketch Map: Draw map showing property's location in relation to nearest cross streets and/or geographical features. Indicate all buildings between inventoried property and nearest intersection(s).
Indicate north



UTM REFERENCE

USGS QUADRANGLE

SCALE

Recorded by Carole Zellie - 1980
Gretchen Schuler - 1988

Organization Somerville Historic Preservation Commission

Date May, 1988

SMV.330

NATIONAL REGISTER CRITERIA STATEMENT (if applicable)

The property is significant for :

A - its association with the early development of Winter Hill.

B - its association with Alexander Graham Bell and the experimentation of early telephone wires.

C - its representation of one of the earliest Winter Hill houses, Second Empire in well conserved condition.

ARCHITECTURAL SIGNIFICANCE Describe important architectural features and evaluate in terms of other buildings within the community.

Built before 1871, this substantial two and one-half story Second Empire house employs an architectural style that was exceedingly popular in Somerville in the 1860s to the 1880s. The three-bay, side-hall entrance dwelling retains heavy scrolled brackets, a pierced decorated frieze of the entrance porch which is supported by paired squared columns and single pilasters. There is a side porch with a three-story projecting bay. Other detail found on some of the more elaborate houses include quoins on the northeast corner posts and rope trim on other unadorned cornr posts.

HISTORICAL SIGNIFICANCE Explain the role owners played in local or state history and how the building relates to the development of the community.

Winter Hill refers to a large area of development north of Highland, east of Lowell, west of Marshall and bordered on the north by Broadway. The actual geographic drumlin reaches its summit near the top of Adams and Central Streets, which were laid out-and subdivided in 1847 but not developed for the most part until the 1880s and 1890s. Workers´housing was located in the Ten Hills area and on tracts of land west of Lowell and Adams Streets. In contrast, this area was developed with large, detailed, businessmen´s homes.

During the 1870s and 1880s this land was owned by Cutler Downer who lived on Central Street and worked as a real estate broker in Boston. His tract of land was large extending from Medford Street and running north on Central and Adams Streets. The first directories of 1871-1872 indicate that Downer lived here. According to local history writer William Preble Jones, Downer´s son Ross Downer was a close friend of Professor Alexander Graham Bell, who supposedly used the Downer´s house as one of his first telephone wire location. In Somerville Fity Years Ago, Jones writes, " years aferward, Ross told me that the first paid delivery message ever sent out by telephone was sent out by Professor Bell to the Downer home, whence it was carried by a boy to the professor´s sweetheart in Cambridge."

BIBLIOGRAPHY and/or REFERENCES

1. Atlas of Middlesex County, Somerville: 1874 ("Cutler Downer"), 1884 (same), 1895 ("Frank W. Downer").
2. City Directories, 1870s-1890s.
3. Jones, William Preble, Somerville Fifty Years Ago, 1933.
4. Registry of Deeds, Middlesex County: Book Page .

DSC ARCHITECTS

Douglas Shoop & Associates Architects
One Shipyard Way, Medford, MA 02155
781.391.1939 www.dsaarchitects.com

PROPOSED EXTERIOR MAINTENANCE

170 Central Street
Somerville, MA

SIDING REPLACEMENT

Refer to enlarged details in this document for mansard roof work.

Replace existing wood siding with Hardie Plank Lap siding. "Select Cedarmill / Boothbay Blue"

Existing columns to remain. Verify structural integrity. If replacement is required, install matching Fiberglass structural columns.

Remove, and/or relocate existing wires/ cable as necessary and where possible.

Replace existing wood siding with Hardie Plank Lap siding on 3 visible sides of building. "Select Cedarmill (woodgrain style)/ Boothbay Blue".

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Replace existing wood siding with Hardie Plank Lap siding. "Select Cedarmill (woodgrain style)/ Boothbay Blue".

BUILDING TRIM REPLACEMENT

Replace/ repair existing window header frieze board/ crown details with matching Azek moldings or custom trimboards, matching profile as closely to existing. Scrape prime and stain existing salvageable wood where possible.

Replace window head frieze board roof cap with custom copper roof cap. Flash behind new siding as required.

Carefully remove existing ornate wood brackets. Scrape to wood, sand, prime all sides, stain with white opaque stain. Reinstall in same location.

Replace existing window casings with Azek trimboards of same size and profile. Replace with Azek band molding around perimeter to match as closely as possible to original profile. All traditional smooth finish to match existing historic wood moulding.

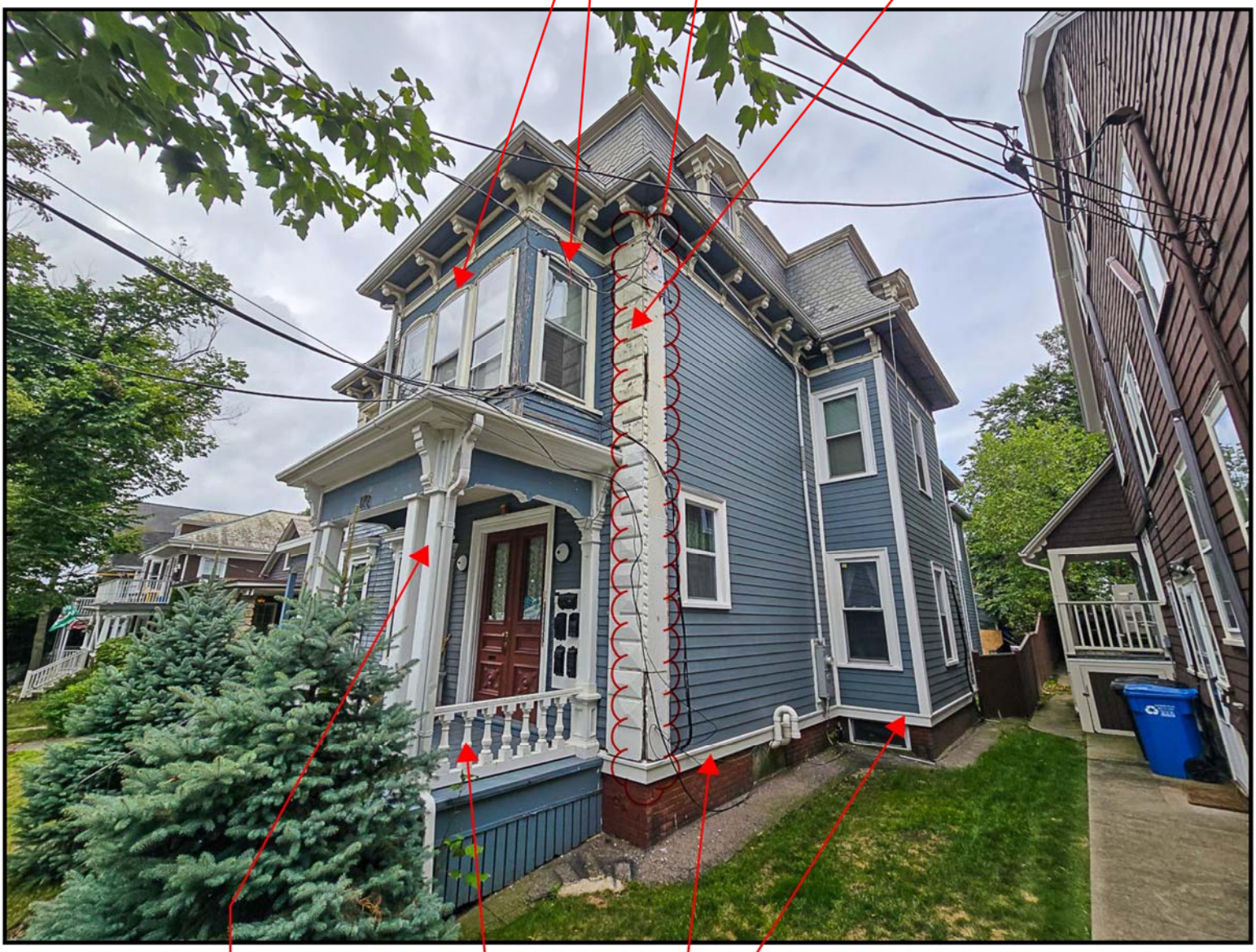
Replace existing window back-band with Azek "Back Band AZM-6931" moulding or equal to match existing in profile and size.

Replace existing rotting window sills with new matching profile Azek or equal window sill moulding. (Tpyical)

Replace existing rotted Rope Moulding with new PVC Equivalent.

Replace existing/ missing Quoins at Central St. facade side with custom fabricated Azek/PVC replicas at front facade corner boards. New corner boards shall be Azek/PVC replacements.

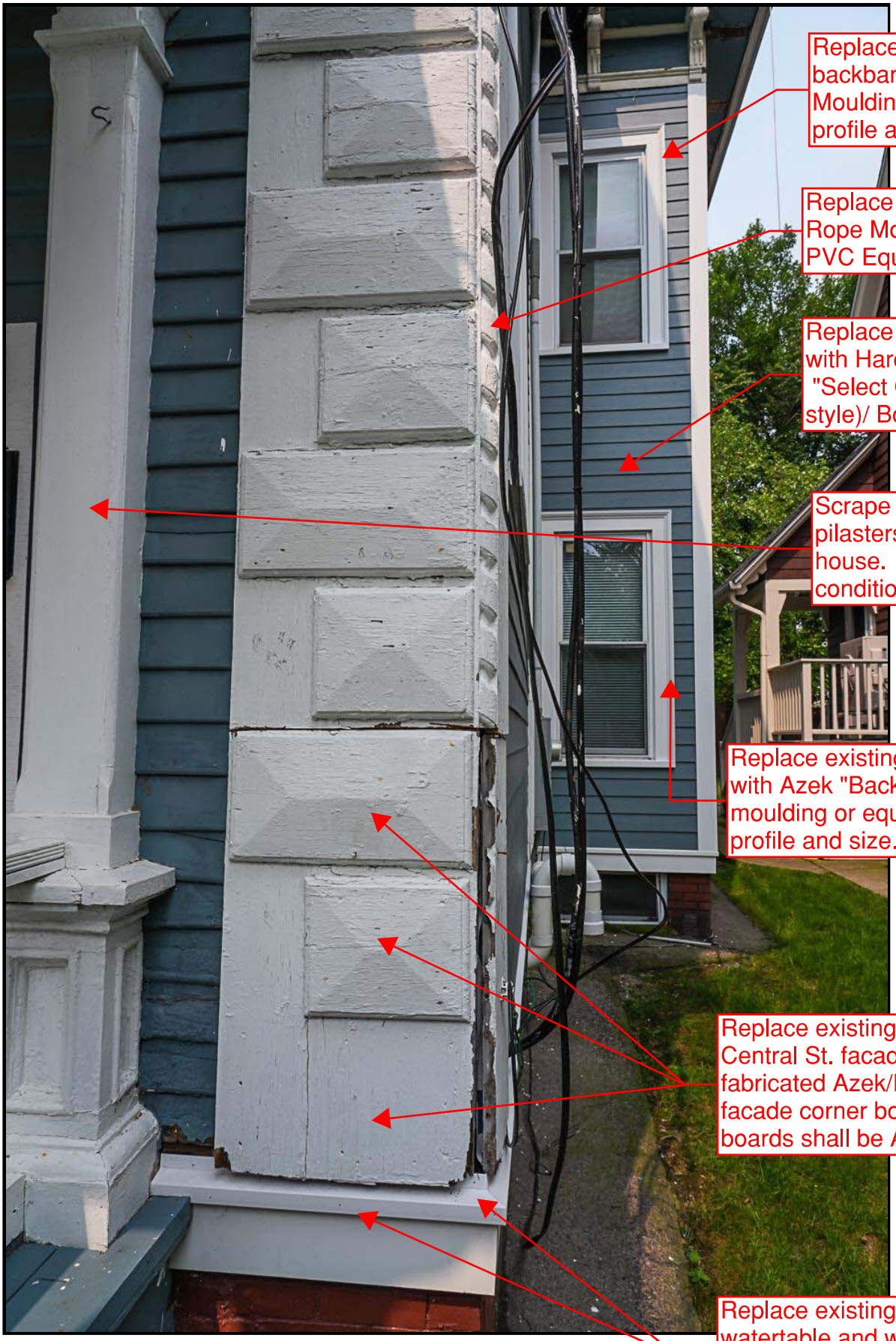
Replace existing wood arched window headers with matching radii Azek or PVC Moulding.



Existing columns to remain. Verify structural integrity. If replacement is required, install matching Fiberglass structural columns.

Replace existing and install new Azek watertable and watertable cap. Match size of existing watertable as closely as possible.

Existing low railing to be scraped and painted.


Replace existing window backband with PVC backband Moulding to match existing in profile and size.
Replace existing rotted Rope Moulding with new PVC Equivalent.
Replace existing wood siding with Hardie Plank Lap siding. "Select Cedarmill (woodgrain style)/ Boothbay Blue".
Scrape and paint existing pilasters against existing house. These are in good condition.
Replace existing window back-band with Azek "Back Band AZM-6931" moulding or equal to match existing in profile and size.
Replace existing/ missing Quoins at Central St. facade side with custom fabricated Azek/PVC replicas at front facade corner boards. New corner boards shall be Azek/PVC replacements.
Replace existing and install new Azek watertable and watertable cap. Match size of existing watertable as closely as possible.

Remove existing aluminum gutter. Remove and replace existing fascia board at roof perimeter with Azek / PVC.

Install new Azek/ PVC corner boards at all roof dormers.

Remove existing brackets. Hand scrape existing paint, sand, prime and paint with opaque stain on all sides. Re-install at existing location and trim with PVC quarter-round to match existing.

Replace existing/ missing Quoins at Central St. facade side with custom fabricated Azek/PVC replicas at front facade corner boards. New corner boards shall be Azek/PVC replacements.

Replace existing rotted Rope Moulding with new PVC Equivalent.

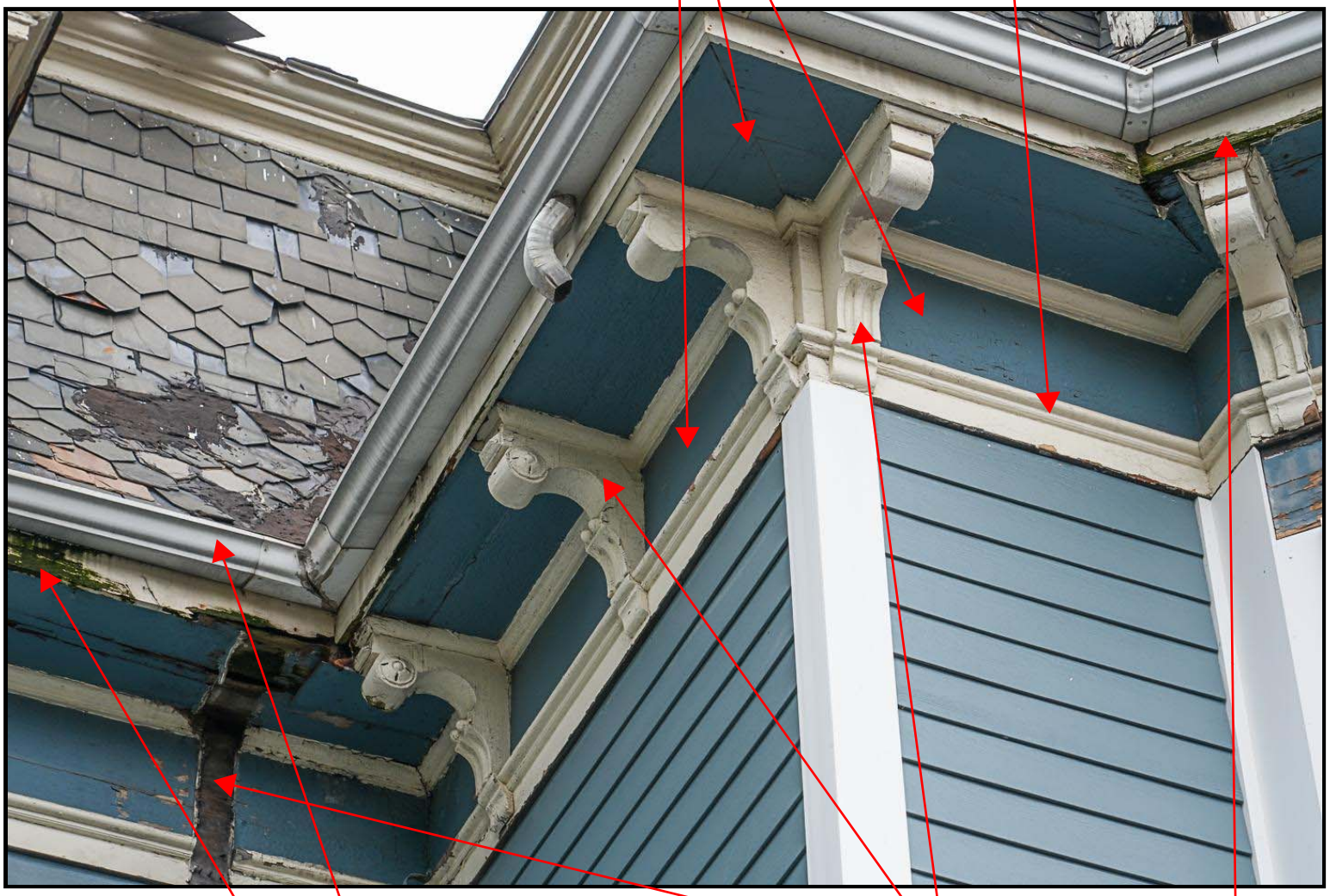
Remove and replace existing ultra-wide corner boards. Install new Azek / PVC matching size materials at all exterior corner boards.

Remove and replace existing fascia board at roof perimeter with Azek / PVC.


Existing low railing to remain.
Existing decking to remain.

Remove existing wood soffits and sub-soffit areas at Brackets. Install MDO plywood soffit on existing framing. Repair roof framing as required.

Remove existing deteriorated wood trimboards with Azek / PVC trimboard to match existing profiles

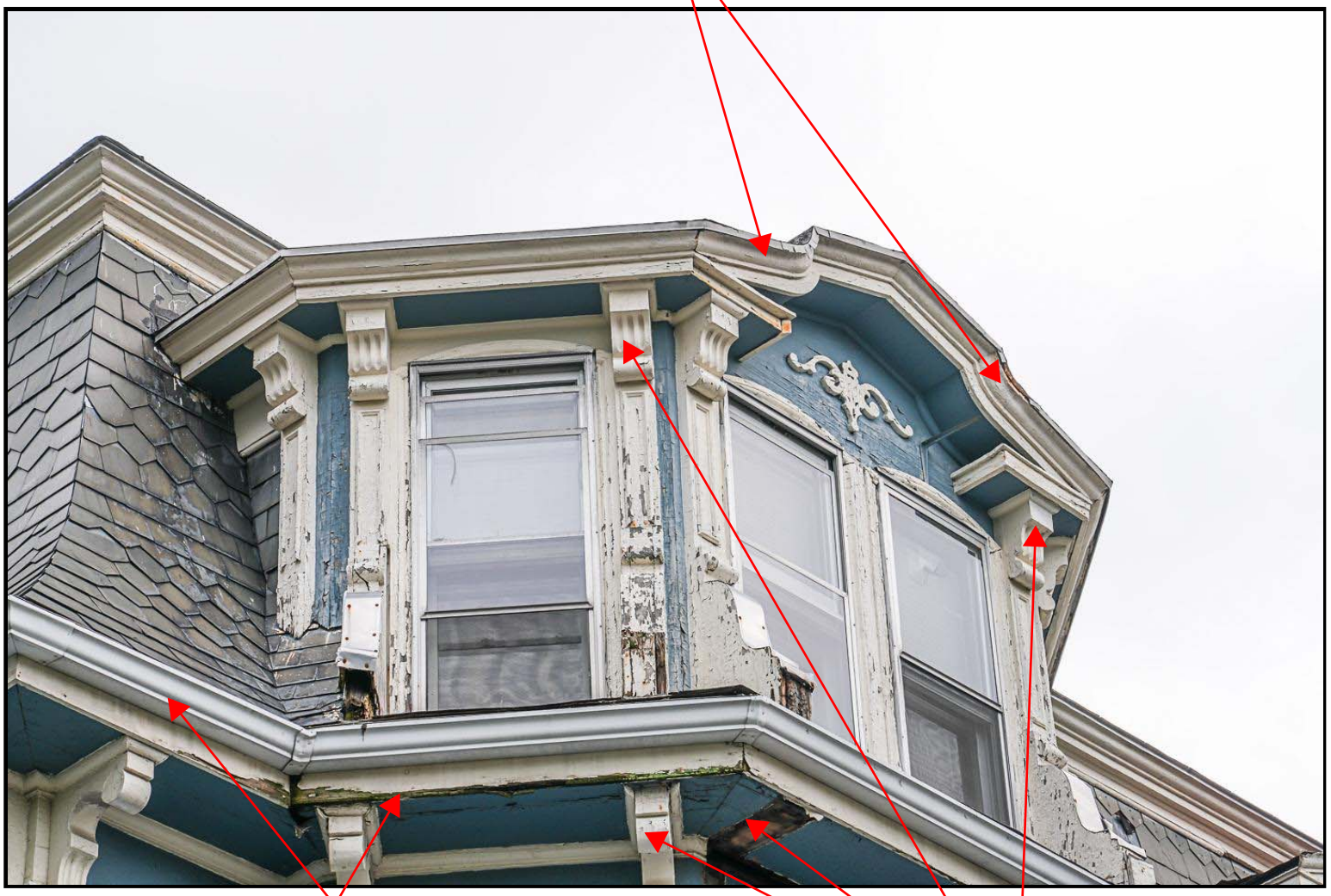


Remove existing brackets. Hand scrape existing paint, sand, prime and paint with opaque stain on all sides. Re-install at existing location and trim with PVC quarter-round to match existing.

Remove existing aluminum gutter. Remove and replace existing fascia board at roof perimeter with Azek / PVC.


Remove existing aluminum gutter. Remove and replace existing fascia board at roof perimeter with Azek / PVC.
Remove existing brackets. Hand scrape existing paint, sand, prime and paint with opaque stain on all sides. Re-install at existing location and trim with PVC quarter-round to match existing.
Replace existing wood siding with Hardie Plank Lap siding. "Select Cedarmill (woodgrain style)/ Boothbay Blue".

Scrape, sand and paint existing custom shaped roof crown moulding where possible



Remove existing aluminum gutter. Remove and replace existing fascia board at roof perimeter with Azek / PVC.

Remove existing brackets. Hand scrape existing paint, sand, prime and paint with opaque stain on all sides. Re-install at existing location and trim with PVC quarter-round to match existing.

Scrape, sand and paint existing custom shaped roof crown moulding where possible

Carefully remove custom trim piece. Scrape, sand, prime and apply opaque stain to match other trimboards

Remove existing wood soffits and sub-soffit areas at Brackets. Install MDO plywood soffit on existing framing. Repair roof framing as required.

Remove existing brackets. Hand scrape existing paint, sand, prime and paint with opaque stain on all sides. Re-install at existing location and trim with PVC quarter-round to match existing.

Install new aluminum flashing at dormer wing-wall replica panels. Install Ice & watershield at dormer sills. Cover with matching roof shingles.

Remove and replace all roof window dormer decorative wing-wall side trim. Use existing two sandwich panels as template for replacement pieces. Replace and/or repair deteriorating wood below flashing and shingles as required.

Source 3 1/2" solid fur replacement wood at dormer wing-walls. Cut on same profile as existing center pieces. Replicate on both sides. Prime, stain all sides, 2 coats.

Use wing-wall side trim as template for new 5/4" Azek trimboard replacement sandwich panels.

Pervasive damage to existing slate roof tiles throughout entire mansard roof. All tiles must be replaced with new material to fix roof leaks and wood rot.

Replace deteriorating crown moulding with profile matching Azek/ PVC trimboards as necessary

Replace deteriorating flat tin roof with standing seam metal roofing (copper color) at all 3rd floor dormers.

Remove and replace all deteriorating fascia and trimboards with Azek/ PVC with same size/ profile where required.

Carefully remove, scrap, sand, stain (2 coats) existing cornerboard corbel brackets. Reinstall and trim wiht 1/2 round Azek / PVC trim

New Azek/ PVC cornerboards at all dormer windows.

Install ice & watershield at roof dormer valley's prior to installation of new roof shingles.


Replace deteriorating crown moulding with profile matching Azek/ PVC trimboards as necessary
Replace deteriorating flat tin roof with standing seam metal roofing (copper color) at all 3rd floor dormers.
Install ice & watershield at roof dormer valley's prior to installation of new roof shingles.
Carefully remove, scrap, sand, stain (2 coats) existing cornerboard corbel brackets. Reinstall and trim wiht 1/2 round Azek / PVC trim
New Azek/ PVC cornerboards at all dormer windows.

Use wing-wall side trim as template for new 5/4" Azek trimboard replacement sandwich panels.

Install ice & watershield at roof dormer valley's prior to installation of new roof shingles.

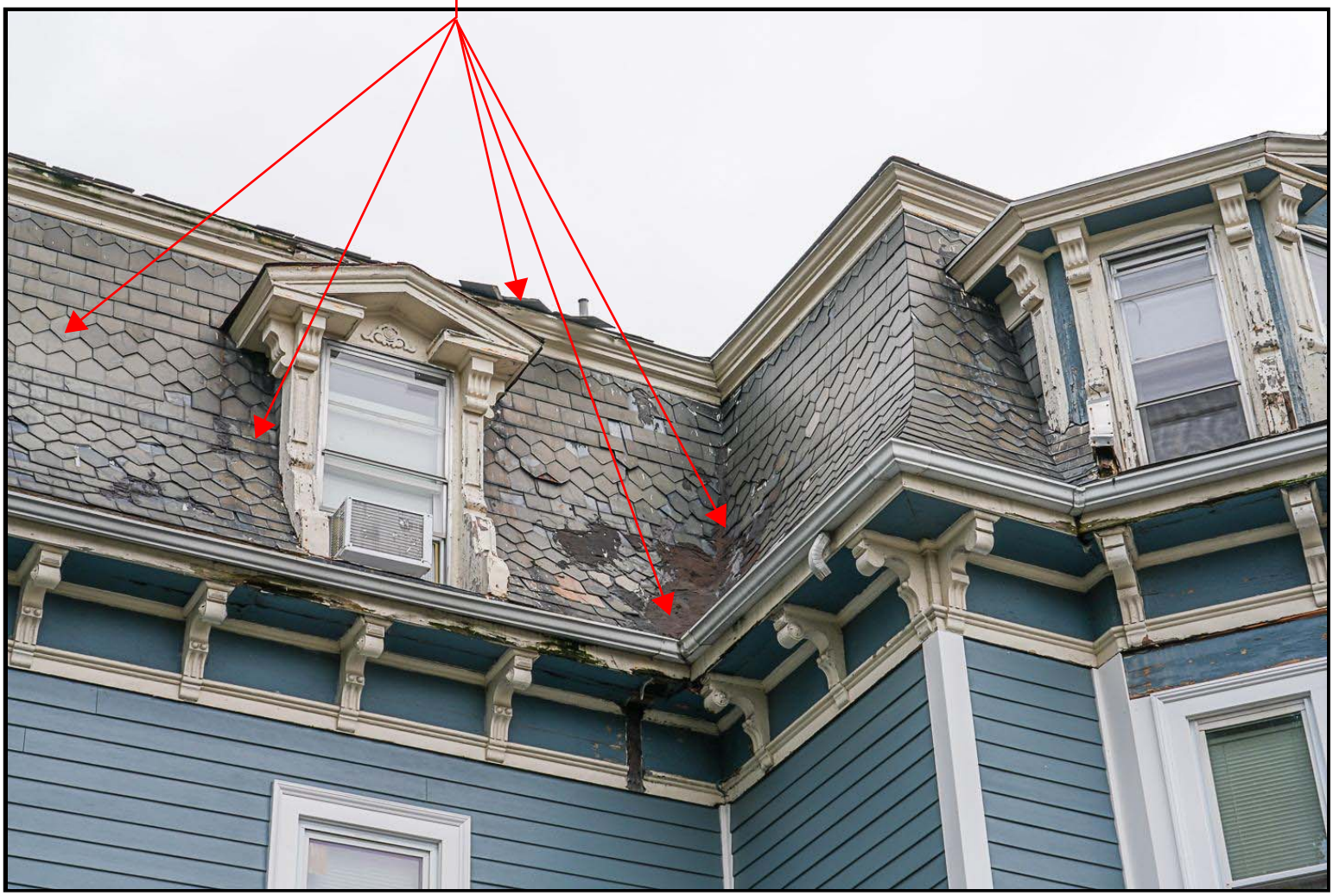
Pervasive damage to existing slate roof tiles throughout entire mansard roof. All tiles must be replaced with new material to fix roof leaks and wood rot.

Remove and replace all roof window dormer decorative wing-wall side trim. Use existing two sandwich panels as template for replacement pieces. Replace and/or repair deteriorating wood below flashing and shingles as required.

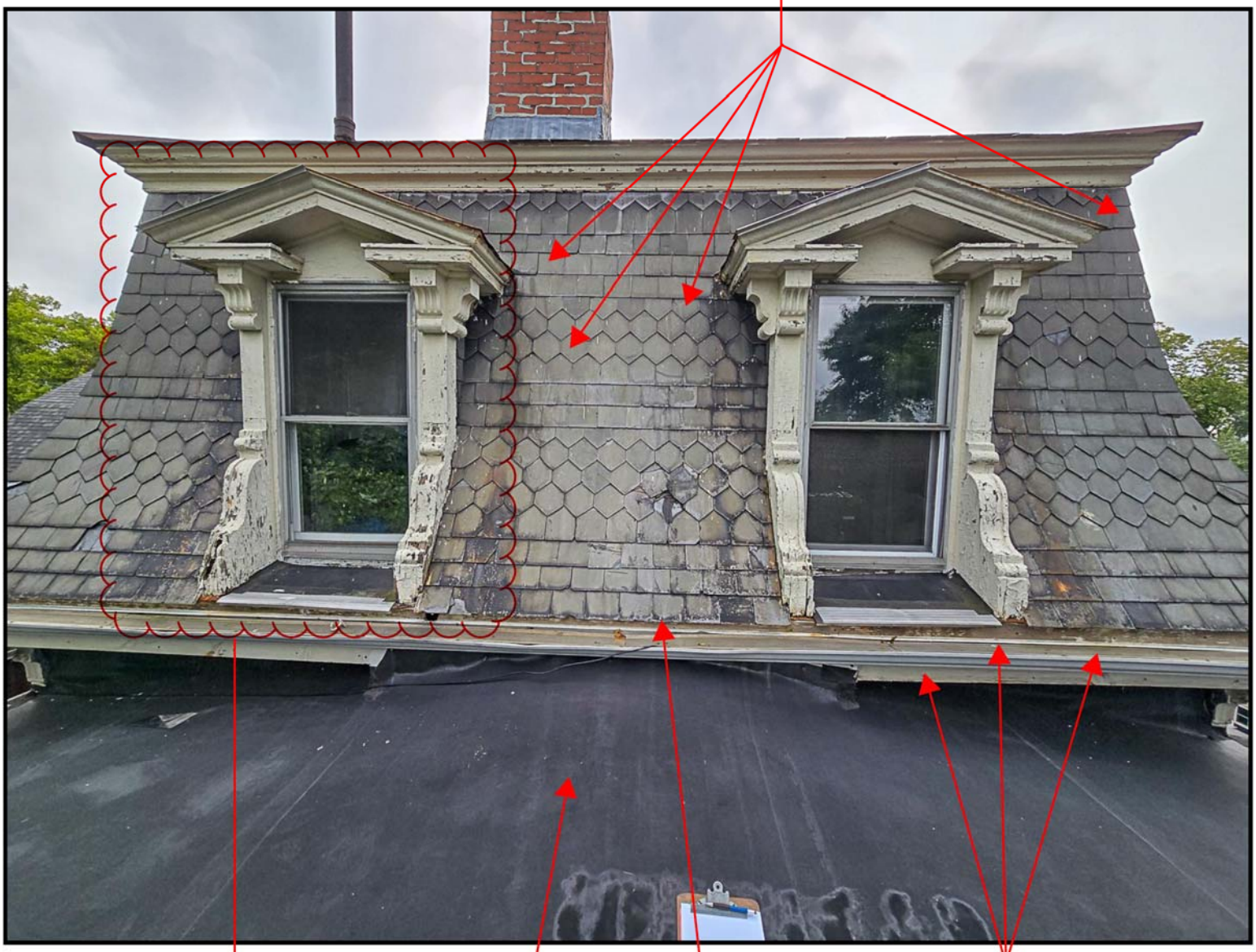
Source 3 1/2" solid fur replacement wood at dormer wing-walls. Cut on same profile as existing center pieces. Replicate on both sides. Prime, stain all sides, 2 coats.

ROOF REPLACEMENT DETAILS

Remove existing slate. Repair damaged roof sheathing and roof framing as required. Install Grace "Ice & water shield HT" over entire roof directly on existing and new roof sheathing. Install EcoStar "Majestic Slate" "Beveled Edge and Chisel Point" tiles in pattern to match existing slate design.
Install copper valley flashing at all valley's. Install new step flashing at all vertical intersections with dormers.
Install continuous drip edge at roof edges



Remove existing slate. Repair damaged roof sheathing and roof framing as required. Install Grace "Ice & water shield HT" over entire roof directly on existing and new roof sheathing. Install EcoStar "Majestic Slate" "Beveled Edge and Chisel Point" tiles in pattern to match existing slate design.
Install copper valley flashing at all valley's. Install new step flashing at all vertical intersections with dormers.
Install continuous drip edge at roof edges

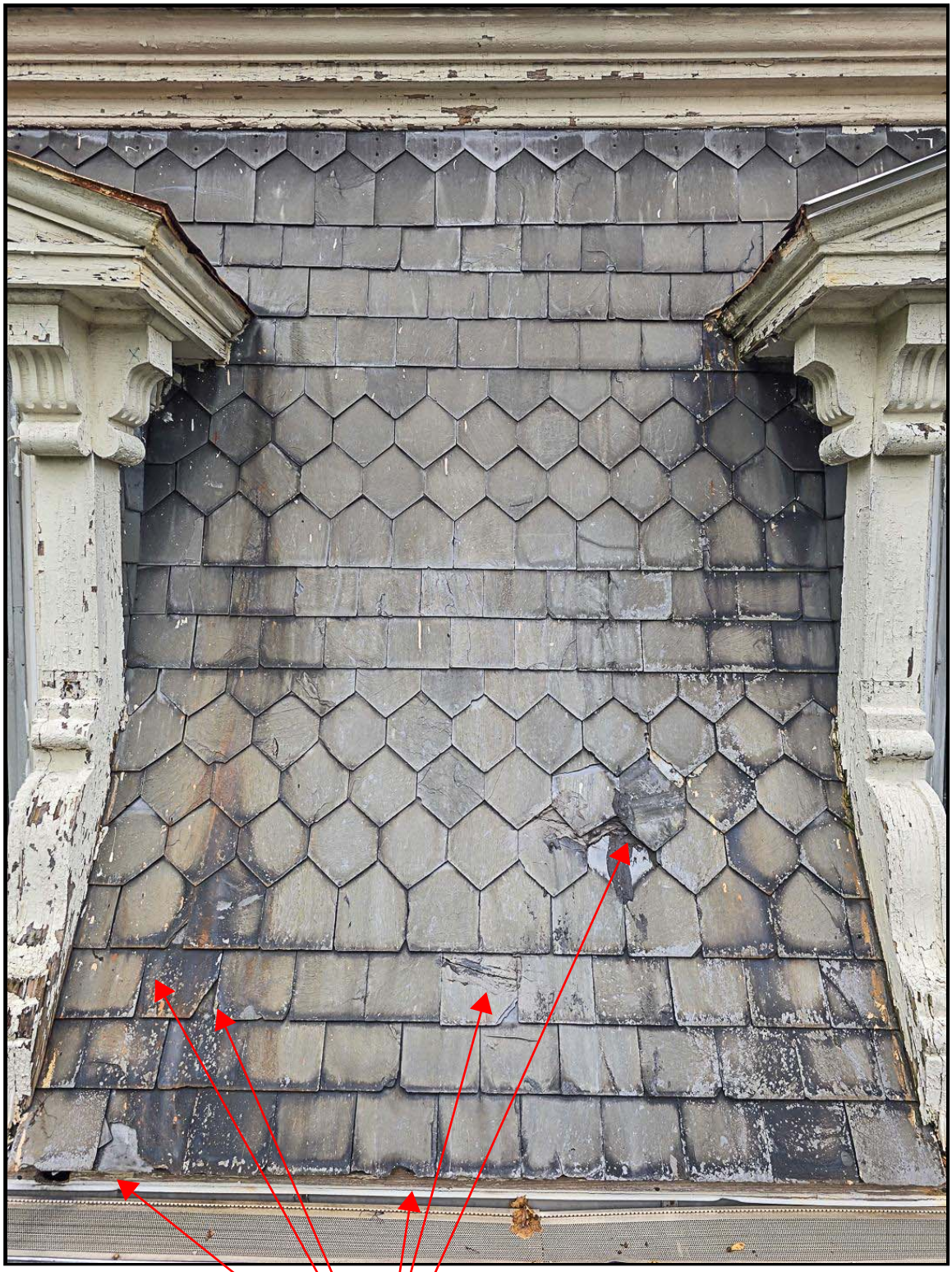


See following page for more detailed replacement specifications at all dormers.

Remove existing gutter. Replace deteriorating fascia boards and soffit with Azek and/or MDF plywood as required.

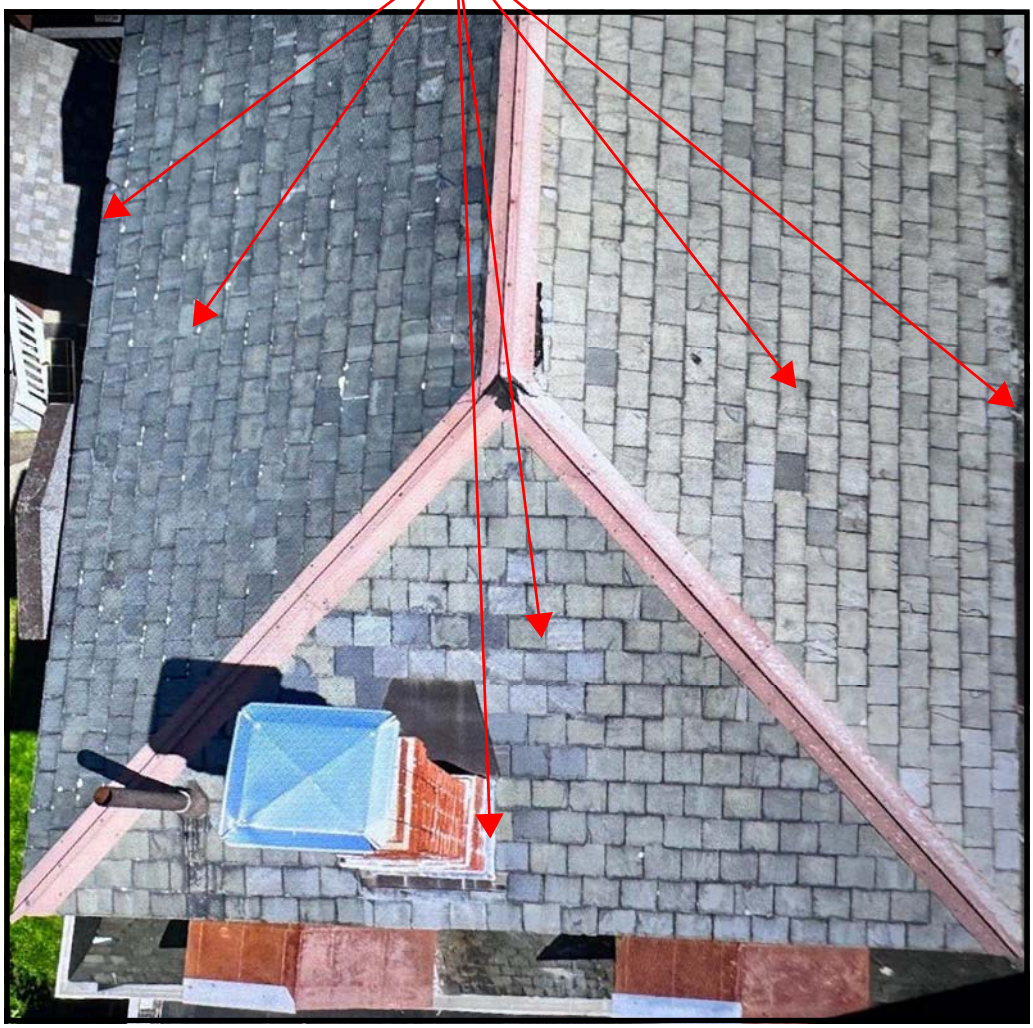
Patch and repair existing EPDM roof as may be required.

New aluminum flashing at roof edge as required prior to installation of new Mansard shingles.



Pervasive damage to existing slate roof tiles throughout entire mansard roof. All tiles must be replaced with new material to fix roof leaks and wood rot.

Remove existing slate. Repair damaged roof sheathing and roof framing as required. Install Grace "Ice & water shield HT" over entire roof directly on existing and new roof sheathing. Install EcoStar "Majestic Slate" "Beveled Edge tiles in pattern to match existing slate design.
Install copper ridge cap flashing at all ridge hip caps. Install new step flashing at all vertical intersections with dormers.
Install continuous drip edge at roof edges.



ICC EVALUATION SERVICE®

ICC-ES Evaluation Report

ESR-1074

Reissued August 2022

This report is subject to renewal August 2024.

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DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES
Section: 06 50 00—Structural Plastics

REPORT HOLDER:

CPG BUILDING PRODUCTS LLC

EVALUATION SUBJECT:

AZEK® TRIMBOARDS TRADITIONAL, AZEK® MILLWORK, AZEK TO MILL, AZEK® TRIMBOARDS FRONTIER SERIES, AZEK® SHEETS, AZEK® BEADBOARD, AZEK® CORNERBOARDS, AZEK® UNIVERSAL SKIRT BOARD, AZEK® FINISH GRADE TRIM, AZEK® INTEGRATED DRIP EDGE, AZEK® RABBETED CORNERBOARDS, AZEK® RABBETED TRIMBOARDS, AND AZEK COLUMN WRAP

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2015, 2012, 2009, 2006 and 2003 *International Building Code®* (IBC)
- 2015, 2012, 2009, 2006 and 2003 *International Residential Code®* (IRC)
- 2013 *Abu Dhabi International Building Code* (ADIBC)†

†The ADIBC is based on the 2009 IBC. 2009 IBC code sections referenced in this report are the same sections in the ADIBC.

Properties evaluated:

- Weather resistance
- Termite resistance
- Surface burning characteristics
- Structural—negative-transverse wind loads on soffits

1.2 Evaluation to the following green code(s) and/or standards:

- 2019 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard™* (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.0

2.0 USES

AZEK® Trimboards Traditional, AZEK® Millwork, AZEK to Mill, AZEK® Trimboards Frontier Series, AZEK® Sheets, AZEK® Beadboard, AZEK® Cornerboards, AZEK® Universal Skirt Board, AZEK® Finish Grade Trim, AZEK® Integrated Drip Edge, AZEK® Rabbeted Cornerboards, AZEK® Rabbeted Trimboards, and AZEK Column Wrap are used as nonload-bearing exterior trim.

3.0 DESCRIPTION

AZEK® Trimboards Traditional, AZEK® Millwork, AZEK to Mill, AZEK® Trimboards Frontier Series, AZEK® Sheets, AZEK® Beadboard, AZEK® Cornerboards, AZEK® Universal Skirt Board, AZEK® Finish Grade Trim, AZEK® Integrated Drip Edge, AZEK® Rabbeted Cornerboards, AZEK® Rabbeted Trimboards and AZEK Column Wrap are rigid cellular PVC solid cross sections installed as corner boards, soffits, fascias, column wraps, door pilasters, frieze boards, nonload-bearing rake boards, architectural millwork, door trim, and window trim.

The material is expanded rigid poly-vinyl-chloride material with a small-cell micro structure. AZEK® Trimboards Traditional are supplied with a smooth surface on both sides. AZEK® Millwork is machined from AZEK Trimboards using common woodworking equipment. AZEK Trimboards Frontier Series are supplied with a textured surface on one side and a smooth surface on the other. AZEK Trimboards Traditional and AZEK Trimboards Frontier Series are available in nominal widths of 4 inches to 16 inches and nominal thicknesses of $^{5}/_{8}$, $^{4}/_{4}$, $^{5}/_{4}$ and $^{6}/_{4}$ inches. AZEK Sheets are available in 4-foot (1.2 m) widths and in lengths of 8, 10, 12, 18 and 20 feet (2.4, 3.0, 3.6, 5.4 and 6.0 m), with actual thicknesses of, $^{3}/_{8}$, $^{1}/_{2}$, $^{5}/_{8}$, $^{3}/_{4}$ and $1^{1}/_{4}$ inches (9.5, 12.7, 15.0, 19.1, 25.4 and 31.75 mm). AZEK Beadboards are available in two nominal sizes, $^{1}/_{2}$ inch thick by 6 inches wide by 18 feet long and $^{5}/_{8}$ inch thick by 4 inches wide by 18 feet long. AZEK Cornerboards are available in nominal thicknesses of $^{6}/_{4}$ and $^{5}/_{4}$ inches, nominal outside-corner widths of 4 and 6 inches, and in lengths of 10 and 20 feet. AZEK® Universal Skirt Board is used to provide a transition between siding and trim, and is a two-piece product that consists of a routed AZEK Trimboard with a $1^{1}/_{2}$-inch (33.75 mm) nailing flange and $^{1}/_{4}$-inch (6.35 mm) drip edge overhang. The AZEK® Universal Skirt Board is available in a nominal thickness of $^{5}/_{4}$ inches, nominal widths of 6, 8 and 10 inches, and a length of 18 feet (5.4 m). AZEK® Integrated Drip Edge is used to assist in directing water

away from window and door surrounds and is a two-piece product that consists of a routed AZEK Trimboard with a $1^1/_4$-inch (33.75 mm) nailing flange and $^1/_8$-inch (3.18 mm) drip edge overhang. The AZEK® Integrated Drip Edge is available in a nominal thickness of $^5/_4$ inches, nominal widths of 4 and 6 inches, and a length of 18 feet (5.4 m). AZEK® Finish Grade Trim is used to provide installation with hidden fasteners (a fastener-free trim surface) and is a two-piece product consisting of a base trim piece and a cover trim piece. AZEK® Finish Grade Trim is available in an installed nominal thickness of $^5/_4$ inches, nominal widths of 4 and 6 inches, and a length of 18 feet (5.4 m). AZEK® Rabbeted Cornerboards and Trimboards are produced with a $^3/_4$-inch (19 mm) square removed from each edge. The AZEK® Rabbeted Cornerboards are available in a nominal thickness of $^5/_4$ inches, nominal widths of 4, 6 and 8 inches, and lengths of 10 and 20 feet (3 m and 6 m). AZEK® Rabbeted Trimboards are available in a nominal thickness of $^5/_4$ inches, nominal widths of 4, 6 and 8 inches, and a length of 18 feet (5.4 m). AZEK Column Wrap consists of three connected panels and a fourth locking panel that secures the Column Wrap in place. AZEK Column Wrap is $^1/_2$ inch thick and has actual outside dimensions of $4^3/_4$ inches, $6^3/_4$ inches, or $8^3/_4$ inches, and is installed around a nominal 4-by-4, 6-by-6 or 8-by-8 wood column or post. AZEK Column Wrap is available in 10-foot lengths.

All AZEK products covered under this evaluation report, up to a maximum nominal thickness of $^5/_4$ inches, and AZEK® Finish Grade Trim at a maximum nominal installed thickness of $^5/_4$ inches, have a flame-spread index of less than 25 when tested in accordance with ASTM E84.

The attributes of the AZEK products have been verified as conforming to the requirements of (i) CALGreen Section A4.405.1.1 for prefinished building materials and Section A5.406.1.2 for reduced maintenance; (ii) ICC 700-2015 and ICC 700-2012 Sections 602.1.6 and 11.602.1.6 for termite-resistant materials and Sections 601.7, 11.601.7, and 12.1(A).601.7 for site-applied finishing materials; and (iii) ICC 700-2008 Section 602.8 for termite-resistant materials and Section 601.7 for site-applied finishing materials. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

4.0 INSTALLATION

4.1 General:

AZEK Trimboards Traditional, AZEK® Millwork, AZEK to Mill, AZEK® Trimboards Frontier Series, AZEK® Sheets, AZEK® Beadboard, AZEK® Cornerboards AZEK® Universal Skirt Board, AZEK® Finish Grade Trim, AZEK® Integrated Drip, AZEK® Rabbeted Cornerboards, AZEK® Rabbeted Trimboards and AZEK Column Wrap must be installed in accordance with the manufacturer's published installation instructions and this report.

The manufacturer's published installation instructions and this report must be strictly adhered to, and a copy of the instructions must be available at all times on the jobsite during installation. The instructions within this report must govern if there are any conflicts between the manufacturer's published installation instructions and this report.

4.2 Fasteners:

Fasteners must be stainless steel or hot-dipped galvanized, and must be approved box nails or finish wood screws designed for wood trim and wood siding with a thinner shank. Nails must have blunt points and full-rounded heads. The fasteners must be long enough to penetrate the solid wood substrate a minimum of $1^1/_2$ inches (38.1 mm). The fasteners located at board ends must be placed no more than 2 inches (50.8 mm) from the end of the board.

4.3 Wind Load Assembly—Soffits Using AZEK® Trimboards:

AZEK® Trimboards measuring a minimum of 12 inches by 48 inches (304.8 mm by 1219.2 mm) must be installed on minimum 2-by-4 wood framing SPF stud grade (G = 0.42) spaced 16 inches (406.4 mm) on center. The AZEK® Trimboards are placed with the long direction perpendicular to the wood framing and are fastened to each of the wood members with two $3^1/_4$-inch-long (82.55 mm), 16d box nails, located 1 inch (25.4 mm) from the seam/edge of panels. AZEK® Trimboards nominally 1 inch and $1^1/_4$ inches thick must have a maximum allowable design load of 60 psf (2880 N/m^2) suction, negative wind load.

5.0 CONDITIONS OF USE

The AZEK® Trimboards Traditional, AZEK® Millwork, AZEK to Mill, AZEK® Trimboards Frontier Series, AZEK® Sheets, AZEK® Beadboard, AZEK® Cornerboards AZEK® Universal Skirt Board, AZEK® Finish Grade Trim, AZEK® Integrated Drip Edge, AZEK® Rabbeted Cornerboards, AZEK® Rabbeted Trimboards and AZEK Column Wrap described in this report comply with, or are suitable alternatives to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

5.1 This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application.

5.2 The trim must be manufactured, identified and installed in accordance with this report and the AZEK Building Products instructions.

5.3 The product is limited to the following construction types:

5.3.1 Nonload-bearing exterior trim on buildings of combustible non-fire-resistance-rated construction (Type VB of the IBC).

5.3.2 Architectural trim on buildings of Type I, II, III and IV construction under 2006 and 2003 IBC Section 1406.2.2 that do not exceed 3 stories or 40 feet (12.2 m) in height above grade. The trim must be backed by noncombustible construction. The trim is limited to ten percent of the exterior wall surface area where the fire separation distance is 5 feet (1.52 m) or less.

5.3.3 All construction types permitted under the IRC.

5.4 The product must be installed over solid backing material, such as approved exterior sheathing covered with an approved water-resistant barrier or approved exterior wall covering.

6.0 EVIDENCE SUBMITTED

Data in accordance with the ICC-ES Acceptance Criteria for Rigid Cellular PVC Nonload-Bearing Exterior Trim (AC227), dated December 2004 (editorially revised November 2017).

7.0 IDENTIFICATION

7.1 Each package of AZEK® Trimboards Traditional, AZEK® Millwork, AZEK to Mill, AZEK® Trimboards Frontier Series, AZEK® Sheets, AZEK® Beadboard, AZEK® Cornerboards AZEK® Universal Skirt Board, AZEK® Finish Grade Trim, AZEK® Integrated Drip Edge, AZEK® Rabbeted Cornerboards AZEK® Rabbeted Trimboards and AZEK Column Wrap described in this report must be labeled with the CPG Building Products LLC name, address and telephone number; the product trade name; and the evaluation report number (ESR-1074).

7.2 The report holder's contact information is the following:

CPG BUILDING PRODUCTS LLC
888 NORTH KEYSER AVENUE
SCRANTON, PENNSYLVANIA 18504
(570) 558-8000
www.azek.com
info@azek.com

EcoStar LLC

Eco-friendly and proudly made in the United States

Durable, sustainable building product

Made with upcycled polymer and rubber (not tires)

50-Year Gold Star Labor & Material Warranty available

UL listed Class C or A fire resistance (UL 790)

UL Class 4 (highest rating) hail impact resistance (UL 2218)

UL listed wind resistance to 110 mph (ASTM D3161)

Manufactured in strict adherence to ISO 9001:2015 Quality Management

EcoStar LLC
42 Edgewood Drive
Holland, NY 14080
800.211.7170
ecostarllc.com

Find us on social media:

EcoStar LLC

Pioneers in sustainable roofing since 1993

Sustainable Beauty

Majestic Niagara Shake in Summit Blend

Majestic Niagara Slate in Midnight Gray

Aspen Blend in Fresh Cut Cedar

Majestic Slate in Stormy Gray Blend

Proudly approved and certified by the following organizations:

Underwriters Laboratories (UL)®

Texas Department of Insurance

Florida Building Code

Canadian Code Compliance Evaluation

Visit www.ecostarllc.com for a complete listing of approvals and certifications.

Highly Sustainable | Highest Testing Performance | Proven Longevity | Uncompromised Beauty

Preserving the Future


Majestic Slate in Midnight Gray

Focus on Sustainability

As the leading manufacturer of sustainable roofing tiles, we recognize the challenges our world faces regarding Earth's limited resources, non-renewable energy sources, and responsible disposition of waste. EcoStar LLC leads the composite steep-slope roofing industry with its premium synthetic slate and shake roofing tiles. EcoStar products are made to the highest of standards and are the environmentally responsible choice for contractors, specifiers, architects and property owners.

EcoStar tiles are manufactured with a material made of up to 80% recycled post-industrial rubber and plastic. Your purchase of EcoStar products assists in the diversion of millions of pounds of scrap rubber and plastic from landfills annually.

Cool Colors

Enjoy additional energy savings from our line of Cool Colors, available in all Empire colors (excludes Bedford Black, Tioga Terra Cotta and Plymouth Patina).
CA Title 24 Summary - see coolroofs.org/resources/california-title-24.

Preservation

EcoStar is dedicated to helping the world address recyclable materials. Since 1993, we have redirected thousands of tons of valuable raw materials away from landfills each year. By using post-industrial upcycled materials, EcoStar tiles aid in the preservation of natural resources. No trees are cut down and no slates are quarried for the manufacture of EcoStar products.

Durability

An EcoStar roof system provides your home with superior protection from the harshest elements while adding a stunning profile and authentic wood shake look. Manufactured with up to 80% upcycled polymeric materials, EcoStar tiles offer long-term strength and durability. EcoStar roofs are freeze/thaw resistant, Class C or A fire rated, Class 4 impact resistant, offer wind resistance to 110 mph (ASTM D3161), and are available with a 50-year transferable warranty. See www.ecostarllc.com for available warranties.

Weathering

Product weathering occurs in all synthetic roofing products regardless of material content (recycled or virgin). Our lot control methods ensure that our tiles weather uniformly, so that over time, EcoStar tiles lose their slight sheen and develop a patina, continuing the replication of their natural counterparts. Testing our products remains paramount to providing products that look beautiful and realistic when first installed, and even more natural with each year of exposure to mother nature. In other words, we improve with age!


Majestic Niagara Shake in Chestnut Brown

Why Choose EcoStar

- Highly Sustainable
- Designed to Perform
- Highest Testing Performance
- Largest Profile Offering
- Unmatched Weathering Capability
- Color Match Excellence
- Proven Longevity
- Easy Installation
- Uncompromised Beauty
- Made in the USA

upcycle

transitive verb

: to recycle (something) in such a way that the resulting product is of a higher value than the original item; to create an object of greater value from a discarded object of lesser value.

GRACE ICE & WATER SHIELD® HT **Data Sheet**

Meets the challenges inherent in metal roofs

PDF Share Add

Product Description

GRACE ICE & WATER SHIELD® HT high temperature self-adhered roofing underlayment is a premier membrane designed to deliver premium in-place performance for high temperature applications. It is composed of two waterproofing materials—an innovative and proprietary rubberized asphalt adhesive combined with a high performance polymeric film with UV barrier properties. The rubberized asphalt surface is backed with a foldless release paper that protects its adhesive quality. During application, the release paper is easily removed, allowing the rubberized asphalt to bond tightly to the roof deck. The RIPCORD® embedded in the adhesive provides the applicator a "split release on demand" feature, making it easier to apply in detail areas.

Find a GRACE ICE & WATER SHIELD® Distributor

Features & Benefits

Today's sloped roof designs utilize more insulation and incorporate long-lasting roof coverings that tend to have lengthy construction cycles. The many variables that contribute to roof top temperatures; insulation, facing, pitch, color, etc., make it difficult to predict what kind of heat profile the roof top will experience. Choosing an underlayment that will perform under all of these demanding conditions is essential to a successful roof design.

GRACE ICE & WATER SHIELD® HT underlayment was specifically designed to meet the challenge of these high-temperature applications. It is an environmentally conscious solution that provides both confidence and design flexibility.

High temperature resistance — Designed to withstand high temperature applications, up to 260°F (127°C).

Seals around fasteners — The rubberized asphalt layer in GRACE ICE & WATER SHIELD® HT membrane seals around roofing nails and other fasteners, resisting leakage caused by water back-up behind ice dams or wind-driven rain.

Superior adhesion — The self-adhered membrane bonds firmly to the roof deck without supplemental heat or special adhesives.

Extended exposure — Can be left exposed for up to 120 days before installing final roof covering

Watertight laps — Membrane easily forms water-tight overlaps without special treatment.

Protects under all standard sloped roof coverings — GRACE ICE & WATER SHIELD® HT underlayment protects under standing seam metal, slate, tile, cedar shakes, metal and conventional asphalt shingles.

Slip resistant surface — GRACE ICE & WATER SHIELD® HT underlayment has a slip resistant embossed surface to maximize traction and improve safety.

Ripcord — Split Release on demand feature makes GRACE ICE & WATER SHIELD® HT underlayment easier to apply. Faster application of the membrane in the straight-aways, as well as ease of membrane positioning in detail areas (valleys, around dormers, etc.).

Membrane will not crack, dry out or rot — GRACE ICE & WATER SHIELD® HT membrane resists attacks from fungus and bacteria; maintains its integrity for long lasting protection.

Local technical support — GRACE ICE & WATER SHIELD® HT roofing underlayment is backed by a team of local technical support personnel that help ensure every application goes smoothly.

Guidelines for Use

GRACE ICE & WATER SHIELD® HT roofing membrane is used as an underlayment for sloped roofs to resist water penetration due to water back-up behind ice dams or wind-driven rain. GRACE ICE & WATER SHIELD® HT underlayment also offers leak protection in trouble prone spots like valleys, skylights, protrusions and other flashing areas.

Ice Dams

GRACE ICE & WATER SHIELD® HT roofing underlayment should be used in conjunction with roof designs that minimize ice dam formation. In cold climates, it is particularly important to provide proper insulation and ventilation to reduce the size of ice dams and to avoid interior condensation. Cathedral ceilings must include ventilation between rafters to allow for air flow to a ridge vent. Well ventilated cold roof designs are particularly important in alpine regions to reduce the size of ice dams which could contribute to structural damage.

Several variables will influence the height of ice dams and the membrane coverage required.

1. **Climate** — The annual snow fall will affect the amount of membrane needed.
2. **Slope** — On a low slope, ice dams will extend farther inward from the roof edge.
3. **Overhang** — A wide overhang will require more membrane to reach the appropriate point on the roof.
4. **Insulation and ventilation** — A very well insulated building with a cold, well ventilated attic will have smaller ice dams.
5. **Valleys** — Any valleys formed by projections such as dormers or roof direction changes are likely to trap more snow and cause larger ice dams.
6. **Exposure** — A northern exposure or shaded areas will generally contribute to larger ice dams. While gutters may make it easier for an ice dam to start, large dams can occur on roofs with no gutters. Removing snow from a roof edge or installing heat cables may not prevent ice dam formation, but may shift the location of the ice dam. Under certain conditions, a dam can form at the edge of the remaining snow. Local building codes should be consulted for specific requirements.

Installation Procedure

Surface Preparation

Install GRACE ICE & WATER SHIELD® HT roofing underlayment directly on a clean, dry, continuous structural deck. Some suitable deck materials include plywood, wood composition, wood plank, metal, concrete, and gypsum sheathing. Prior to membrane application remove dust, dirt, loose nails, and old roofing materials. Protrusions from the deck area must be removed. Decks shall have no voids, damaged, or unsupported areas. Wood planks should be closely butted together. Repair deck areas as needed before installing the membrane. (Refer to Tech Letter #5, Chemical Compatibility, when installing over wood plank decks).

Prime concrete, masonry surfaces and DensGlass Gold® with PERM-A-BARRIER® WB Primer. Prime wood composition and gypsum sheathing with PERM-A-BARRIER® WB Primer if adhesion is found to be marginal (refer to Technical Letter 12, Use on Oriented Strand Board (OSB) Roof Sheathing). Apply PERM-A-BARRIER® WB Primer at a rate of 250–350 ft^2/gal (6–8 m^2/L). Priming is not required for other suitable surfaces provided that they are clean and dry.

Precautions & Limitations

- Slippery when wet or covered by frost.
- Consistent with good roofing practice, always wear fall protection when working on a roof deck.
- Release liners are slippery. Remove from work area immediately after membrane application.
- Do not leave permanently exposed to sunlight. Cover within 120 days.
- Place metal drip edges or wood starter shingles over the membrane.
- Do not fold over the roof edge unless the edge is protected by a drip edge, gutter or other flashing material. •Do not install on the chamfered edges of wood plank.
- Do not install directly on old roof coverings.
- Check with the manufacturer of the metal roofing system for any special requirements when used under metal roofing. Do not install directly under roof coverings especially sensitive to corrosion, such as zinc, without providing proper ventilation.
- Do not install under copper, COR-TEN® , or zinc metal roofing in high altitudes. These roofs can reach extremely high temperatures due to the low reflectivity, high absorption, and high conductivity of the metals. Use GRACE ULTRA™ butyl-based underlayment for these roof types. Contact your GCP Applied Technologies sales representative for assistance choosing the best product for your application.
- Provide proper roof insulation and ventilation to help reduce ice dams and to minimize condensation. GRACE ICE & WATER SHIELD® HT underlayment is an air and vapor barrier.
- Repair holes, fishmouths, tears, and damage to membrane with a round patch of membrane extending past the damaged area 6 in. (150 mm) in all directions. If fasteners are removed leaving holes in the membrane, they must be patched. The membrane may not self-seal open fastener penetrations.

- Do not install fasteners through the membrane over unsupported areas of the structural deck, such as over the joints between adjacent structural panels.
- Due to its slight asphaltic odor, do not apply where the membrane is exposed to interior living space. Refer to product literature for more complete information.
- Not compatible with EPDM or TPO; use GRACE ULTRA™ for tie-ins (refer to Technical Letter 5, Chemical Compatibility).
- Not compatible with polysulfides, flexible PVC, or high concentrations of resin (pitch) found in some wood plank decks. For more information, refer to Technical Letter 5.

Code Compliance

GRACE ICE & WATER SHIELD® HT underlayment meets all key code performance requirements for self-adhered underlayments.

- Meets ASTM D1970
- ICC-ES ESR-3121 approval according to AC–48 Acceptance Criteria for Self-Adhered Underlayments to be used as an Ice Barrier
- Miami-Dade County Product Control Approved. NOA# can be found on Miami-Dade Product Control Search.
- Florida State Product Approval. Product Approval # can be found on FL Building Code Product Approval Search.
- CCMC Approval No. 13671-L
- Underwriters Laboratories Inc. R13399- Class A fire classification under fiber-glass shingles and Class C under organic felt shingles (per ASTM E108/UL 790)
- Underwriters Laboratories Inc. Classified Sheathing Material Fire Resistance Classification with Roof Designs: P225, P227, P230, P237, P259, P508, P510, P512, P514, P701, P711, P717, P722, P723, P732, P734, P736, P742, P803, P814, P818, P824

Membrane Installation

Apply GRACE ICE & WATER SHIELD® HT roofing underlayment in fair weather when the air, roof deck, and membrane are at temperatures of 40°F (5°C) or higher. Apply roof covering material at temperatures of 40°F (5°C) or higher.

Cut the membrane into 10–15 ft (3–5 m) lengths and reroll loosely. Peel back 1–2 ft (300–600 mm) of release liner, align the membrane, and continue to peel the release liner from the membrane. Press the membrane in place with heavy hand pressure.

Side laps must be a minimum of 3.5 in. (90 mm) and end laps a minimum of 6 in. (150 mm). For valley and ridge application, peel the release liner, center the sheet over the valley or ridge, drape, and press it in place. Work from the center of the valley or ridge outward in each direction and start at the low point and work up the roof.

Alternatively, starting with a full roll of membrane, unroll a 3–6 ft (1–2 m) piece of membrane leaving the release liner in place. Align the membrane and roll in the intended direction of membrane application. Carefully cut the release liner on top of the roll in the cross direction being careful not to cut the membrane. Peel back about 6 in. (150 mm) of the release liner in the opposite direction of the intended membrane application exposing the black adhesive. Hold the release liner with one hand and pull the roll along the deck with the release liner, leaving the applied membrane behind. Use the other hand to apply pressure on the top of the roll. Stop frequently to press the membrane in place with heavy hand pressure. When finished with the roll go back to the beginning, reroll and pull the remaining release paper from the material, finishing the installation.

For successive membrane courses, align the edge of the release liner with the dashed line provided on the surface of the membrane to achieve the 3.5 in. (90 mm) side lap.

Consistent with good roofing practice, install the membrane such that all laps shed water. Always work from the low point to the high point of the roof. Apply the membrane in valleys before the membrane is applied to the eaves. Following placement along the eaves, continue application of the membrane up the roof.

Use smooth shank, electro-plated galvanized nails for fastening shingles to get the best seal. Hand nailing generally provides a better seal than power-activated nailing. If nailing of the membrane is necessary on steep slopes during hot or extreme cold weather, backnail and cover the nails by overlapping with the next sheet.

Extend the membrane on the roof deck above the highest expected level of water back-up from ice dams and above the highest expected level of snow and ice on the wall sheathing on vertical side walls (dormers) and vertical front walls for ice dam protection. Consider a double layer of membrane in critical areas, such as along the eaves or in valleys and in climates where severe ice dams are anticipated. Apply the membrane to the entire roof deck for wind-driven rain protection. Apply a new layer of GRACE ICE & WATER SHIELD® HT membrane directly over the old GCP selfadhered underlayment (except GCP granular underlayment) in retrofit applications following the standard membrane application procedure.

Product Data

Roll length	75 ft (22.9 m)	66.6 ft (20.2 m)
Roll width	36 in (914 mm)	36 in (914 mm)
Roll size	225 ft^2 (20.9 m^2)	200 ft^2 (18.6 m^2)
Packaging	Corrugated cartons	Corrugated cartons
Roll weight	61.4 lbs (27.9 kg)	56 lbs (25.4 kg)
Rolls per pallet	35	35

Performance Properties

PROPERTY	VALUE	TEST METHOD
Color	Grey-black	

Thickness, membrane	40 mil (1.02 mm)	ASTM D3767 method A
Tensile strength, membrane	MD 25 lbf/in., CD 25 lbf/in.	ASTM D412 (Die C modified)
Elongation, membrane	250%	ASTM D412 (Die C modified)
Low temperature flexibility	Unaffected @ -20°F (-29°C)	ASTM D1970
Adhesion to plywood	3.0 lbs/in. width (525 N/m)	ASTM D903
Permeance (max)	0.05 Perms (2.9 ng/m^2s P	ASTM E96
Material weight installed (max)	0.22 lb/ft^2 (1.3 kg/m^2)	ASTM D461

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This document is only current as of the last updated date stated below and is valid only for use in the United States. It is important that you always refer to the currently available information at the URL below to provide the most current product information at the time of use. Additional literature such as Contractor Manuals, Technical Bulletins, Detail Drawings and detailing recommendations and other relevant documents are also available on www.gcpat.com. Information found on other websites must not be relied upon, as they may not be up-to-date or applicable to the conditions in your location and we do not accept any responsibility for their content. If there are any conflicts or if you need more information, please contact GCP Customer Service.

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https://gcpat.com/en/solutions/products/grace-ice-water-shield-roofing-underlayment/grace-ice-water-shield-ht-data-sheet

FAQs

Get the answers to your questions about James Hardie and the complete line of Hardie® exterior siding and building products, from choosing colors to siding installation and care.

Product Information

What are the benefits of fiber cement siding?

James Hardie invented fiber cement siding because of its unparalleled longevity and quality over traditional wood siding. It's water resistant and doesn't attract pests, reducing the need for ongoing repair. It's even non-combustible and fire resistant.

With the addition of our innovative ColorPlus® Technology finishes, it better maintains color and resists fading. The durability and versatility of fiber cement siding make it a cost-effective and stylish option for any home.

What is Hardie® siding made of?

Hardie® siding is made of fiber cement which is made up of a few simple ingredients: sand, water, cellulose fibers, and Portland cement, which is a mixture of limestone, clay, and gypsum. James Hardie's formulation includes proprietary additives that enhance the performance of the product.

What kinds of warranties does James Hardie offer for its products?

All Hardie® fiber cement products come with a 30-year, non-prorated warranty.

ColorPlus® Technology finishes come with a 15-year limited warranty that covers paint and labor, protecting against peeling, cracking, and chipping.

What is the Hardie® Artisan Siding, and what sets it apart from other siding options?

What is the Dream Collection®?

What is ColorPlus® Technology, and how does it work?

How do ColorPlus® Technology finishes differ from traditional paint?

Can ColorPlus® Technology finishes be customized to match specific color preferences?

Is Hardie® siding eco-friendly?

Our commitment to sustainable manufacturing practices extends to the development of products that last longer, requires less maintenance, and contribute to energy efficiency.

Hardie® siding is made of sustainable raw materials, including sand, cellulose fiber, Portland cement, and water (which is recycled up to four times during the manufacturing process).

Hardie® siding is also highly durable and resistant to water, wind, fire, and other damage, so it can protect your home and keep it looking beautiful for decades to come.

James Hardie has been selected as the Green Builder's Readers' Choice for the Greenest Siding Brand eight times over the past 13 years, and has made the top five on the list for the remaining years.

James Hardie is NGBS Green Certified to help our builders' projects be eligible for the National Association of Home Builders Green Builder Program or Green Building Certified.

What products are available to order as samples? How can I order a sample?

How do I know which products and colors are available in my area—and why are some colors not available here?

How long does Hardie® siding last?

Hardie® siding is built to stand up to the elements: day in, day out, for decades. Hardie® siding is water and fire resistant, reducing the impact of pests and moisture and minimizing the burden of constant repair. Our wide range of siding products come with a 30-year, non-prorated warranty.

How weather and climate resistant is fiber cement siding by James Hardie?

James Hardie engineers siding and trim products for specific climates, ensuring that you get the best performance for your region. We test our products to better withstand worst-case scenarios: fires, flooding, extreme heat, hurricanes, snowstorms, and more.

But it's not only extremes that break down siding—simply changing seasons does a number on materials like vinyl (which may crack in the cold) and wood siding (which expand and contract with changes in moisture and humidity). Only Hardie® products are Engineered for Climate®.

After studying the long-term effects different climates have on siding, we created the Hardie™ Zone System, to ensure that you get the right product for your region. HZ5® products resist shrinking, swelling and cracking even after years of wet or freezing conditions. HZ10® products protect homes from hot, humid conditions, blistering sun and more.

Is Hardie® siding water resistant?

Hardie® products are water resistant, protecting your investment from swelling, warping, and edge checking common with traditional wood or vinyl siding. We invented fiber cement siding because of its unparalleled durability in any climate, and we're constantly innovating our original technology to provide builders and homeowners with standard-setting Hardie® products specifically engineered to resist damage from moisture, rot, and weather.

Is Hardie® siding fire resistant?

Hardie® siding is non-combustible, will not ignite when exposed to a direct flame, and will not contribute fuel to a fire.

Hardie® siding is recognized by firefighters and fire departments across the US and has a Class A fire rating.*

Because Hardie® products are non-combustible, many insurance companies offer a discount. We recommend sharing fiber-cement siding's fire-resistant qualities with your insurance carrier.

*When tested in accordance with ASTM E136.

What is cement board, and how do you use it in home construction and renovation products?

What types of trim can be used with Hardie® Plank Lap Siding?

What is Hardie™ Weather Barrier used for?

How is Hardie™ Weather Barrier better than other house wraps?

Siding Types

What is lap siding?

What are architectural panels—and what are the benefits of using them in your exterior home design?