

COLANDER BISHOP APARTMENTS

Roofing REPLACEMENT

RFB# 024-04

PROJECT MANUAL

SUFFOLK REDEVELOPMENT AND HOUSING AUTHORITY



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530 East Pinner Street
Suffolk, Virginia 23434

February 9, 2024

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Glass-fiber-reinforced asphalt shingles.
2. Underlayment materials.
3. Ridge vents.
4. Metal flashing and trim.

1.2 PREINSTALLATION MEETINGS

- ##### A. Preinstallation Conference: Conduct conference at Project site.

1.3 ACTION SUBMITTALS

A. Product Data: For the following:

1. Asphalt shingles.
2. Underlayment materials.
3. Ridge vents.
4. Asphalt roofing cement.
5. Elastomeric flashing sealant.
6. Metal Flashing & Trim

- ##### B. Samples: For each exposed product and for each color and blend specified.

1.4 INFORMATIONAL SUBMITTALS

- ##### A. Product test reports.
- ##### B. Research reports for synthetic underlayment.
- ##### C. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

- ##### A. Maintenance data.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized installer who is trained and approved by manufacturer.

1.7 WARRANTY

- A. Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
 - 1. Materials Warranty Period: 25 years from date of Substantial Completion, prorated, with first three years nonprorated.
 - 2. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to 130 mph (58 m/s) for 15 years from date of Substantial Completion.
 - 3. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 10 years from date of Substantial Completion.
 - 4. Workmanship Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance in accordance with ASTM E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
- B. Wind Resistance: Provide asphalt shingles that comply with requirements of ASTM D3161/D3161M, Class F, and with ASTM D7158/D7158M, Class H.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D3462/D3462M, laminated, multi-ply overlay construction; glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Manufacturers: Subject to compliance with requirements, provide products by CertainTeed; Landmark. (Pewter)
 - 2. Butt Edge: Straight cut.
 - 3. Strip Size: Manufacturer's standard.

4. Algae Resistance: Granules resist algae discoloration.
 5. Color and Blends: As selected by Architect from manufacturer's full range.
- B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.1 UNDERLAYMENT MATERIALS

- A. Organic Felt: Asphalt-saturated organic felts, nonperforated and complying with the following:
1. ASTM D226/D226M: Type II.
- B. Glass-Reinforced Felt: ASTM D6757/D6757M, asphalt-saturated, glass-reinforced organic

2.2 RIDGE VENTS

- A. Rigid Ridge Vent: Manufacturer's standard, rigid-section, high-density, UV-stabilized plastic ridge vent for use under ridge shingles.

2.3 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D4586/D4586M Type II, asbestos free.
- B. Elastomeric Flashing Sealant: ASTM C920, Type S, Grade NS, one-part, non-sag, elastomeric polymer sealant; of class and use classifications required to seal joints and remain watertight; recommended in writing by manufacturer for installation of flashing systems.
- C. Roofing Nails: ASTM F1667, aluminum, stainless steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- (3-mm-) diameter, sharp-pointed, with a 3/8- to 7/16-inch- (10- to 11-mm-) diameter flat head and of sufficient length to penetrate 3/4 inch (19 mm) into solid wood decking or extend at least 1/8 inch (3 mm) through sheathing less than 3/4 inch (19 mm) thick.
1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- D. Underlayment Nails: Aluminum, stainless steel, or hot-dip galvanized-steel wire nails with low-profile metal or plastic caps, 1-inch- (25-mm-) minimum diameter.
1. Provide with minimum 0.0134-inch- (0.34-mm-) thick metal cap, 0.010-inch- (0.25-mm-) thick power-driven metal cap, or 0.035-inch- (0.89-mm-) thick plastic cap; and with minimum 0.083-inch- (2.11-mm-) thick ring shank or 0.091-inch- (2.31-mm-) thick smooth shank of length to penetrate at least 3/4 inch (19 mm) into roof sheathing or to penetrate through roof sheathing less than 3/4 inch (19 mm) thick.

2.4 METAL FLASHING AND TRIM

- A. Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 - 1. Sheet Metal: Anodized aluminum.
- B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item unless otherwise indicated on Drawings.
 - 1. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch (1.6 mm) thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches (102 mm) from pipe onto roof.

PART 3 - EXECUTION

3.1 INSTALLATION OF UNDERLAYMENT MATERIALS

- A. Comply with asphalt shingle and underlayment manufacturers' written installation instructions and with recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" applicable to products and applications indicated unless more stringent requirements are specified in this Section or indicated on Drawings.
- B. Asphalt-Saturated Felt: Install on roof deck parallel with and starting at eaves and fasten with roofing nails.
 - 1. Single-Layer Installation:
 - a. Lap sides a minimum of 4 inches (102 mm) over underlying course.
 - b. Lap ends a minimum of 4 inches (102 mm).
 - c. Stagger end laps between succeeding courses at least 72 inches (1829 mm).
 - 2. Double-Layer Installation:
 - a. Install a 19-inch- (483-mm-) wide starter course at eaves and completely cover with a 36-inch- (914-mm-) wide second course.
 - b. Install succeeding 36-inch- (914-mm-) wide courses lapping previous courses 19 inches (483 mm) in shingle fashion.
 - c. Lap ends a minimum of 4 inches (102 mm). Stagger end laps between succeeding courses at least 72 inches (1829 mm).
 - d. Apply a continuous layer of asphalt roofing cement over starter course and on felt surface to be concealed by succeeding courses as each felt course is installed. Apply over entire roof.
 - 3. Install felt underlayment on roof deck not covered by self-adhering, polymer- modified bitumen sheet unless otherwise specified in this Section or indicated on Drawings.

- a. Lap sides of felt over self-adhering sheet not less than 4 inches (102 mm) in direction that sheds water.
 - b. Lap ends of felt not less than 6 inches (152 mm) over self-adhering sheet.
- 4. Install fasteners in a grid pattern of 12 inches (305 mm) between side laps with 6-inch (152-mm) spacing at side and end laps.
- 5. Terminate felt extended up not less than 4 inches (102 mm) against sidewalls, curbs, chimneys, and other roof projections.
- C. Metal-Flashed, Open-Valley Underlayment: Install two layers of minimum 36-inch- (914-mm-) wide underlayment centered in valley.
 - 1. Use same underlayment as installed on field of roof.
 - 2. Stagger end laps between layers at least 72 inches (1829 mm).
 - 3. Lap ends of each layer at least 12 inches (305 mm) in direction that sheds water, and seal with asphalt roofing cement.
 - 4. Fasten each layer to roof deck with underlayment nails located as far from valley center as possible and only to extent necessary to hold underlayment in place until installation of valley flashing.
 - 5. Lap roof-deck underlayment over first layer of valley underlayment at least 6 inches (152 mm).

3.2 INSTALLATION OF METAL FLASHING AND TRIM

- A. Install metal flashings and trim to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
 - 1. Install metal flashings in accordance with recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
 - 2. Bed flanges of metal flashings using asphalt roofing cement or elastomeric flashing sealant.
- B. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.3 INSTALLATION OF ASPHALT SHINGLES

- A. Install asphalt shingles in accordance with manufacturer's written instructions and recommendations in ARMA's "Asphalt Roofing Residential Manual - Design and Application Methods" and NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed at least 7 inches (178 mm) wide with self-sealing strip face up at roof edge.
 - 1. Extend asphalt shingles 3/4 inch (19 mm) over fasciae at eaves and rakes.
 - 2. Install starter strip along rake edge.

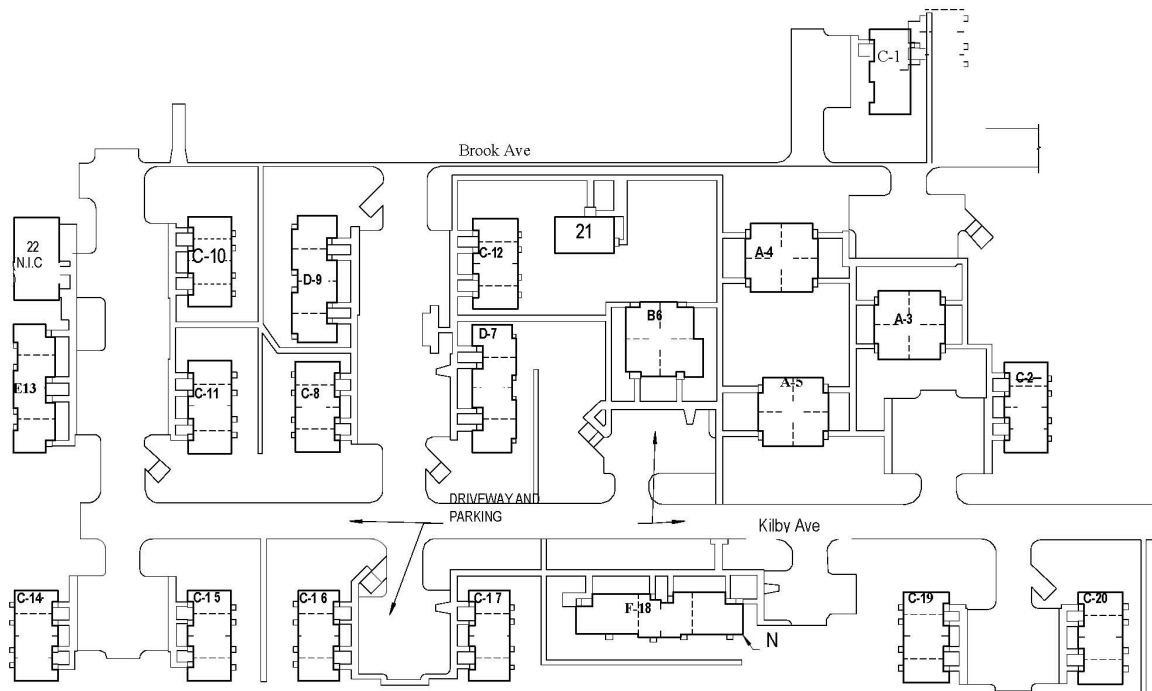
- C. Install first and remaining courses of laminated asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Fasten asphalt shingle strips with a minimum of five roofing nails, but not less than the number indicated in manufacturer's written instructions for roof slope and design wind speed indicated on Drawings and for warranty requirements specified in this Section.
 - 1. Locate fasteners in accordance with manufacturer's written instructions.
 - 2. Where roof slope exceeds 18:12, hand seal self-sealing asphalt shingles to improve the shingles' positive bond by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
 - 3. Where roof slope is less than 4:12, hand seal self-sealing asphalt shingles to improve the shingles' positive bond by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
 - 4. When ambient temperature during installation is below 50 deg F (10 deg C), hand seal self-sealing asphalt shingles by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
- E. Woven Valleys: Extend succeeding asphalt shingle courses from both sides of valley 12 inches (305 mm) beyond center of valley, weaving intersecting shingle-strip courses over each other. Use one-piece shingle strips without joints in valley.
 - 1. Do not nail asphalt shingles within 6 inches (152 mm) of valley center.
- F. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips.
 - 1. Maintain uniform width of exposed open valley from highest to lowest point.
 - 2. Extend shingle a minimum of 4 inches (102 mm) over valley metal.
 - 3. Set valley edge of asphalt shingles in a 3-inch- (76-mm-) wide bed of asphalt roofing cement.
 - 4. Do not nail asphalt shingles to metal open-valley flashings.
- G. Ridge Vents: Install continuous ridge vents over asphalt shingles in accordance with manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
- H. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing-shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds.
 - 1. Fasten with roofing nails of sufficient length to penetrate sheathing.
 - 2. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

END OF SECTION 073113

EXECUTION

Building Characteristics				
Type	Size	Stories	Pitch	qty
A	51'10" x 49'6"	1	4/12	3
B	25' 6" x 55' 8"	1	4/12	1
C	30'10' x 64'10"	2	4/12	12
D	32'6" x 91'6"	2	4/12	2
E	31'8" x 91'6"	2	4/12	1
F	28'8" x 120'8"	1	4/12	1

(Contractor is responsible to field verify)



Some of the roofing was completed on a different contract. When you submit your bid, **omit the following:**
(Represented by red x in the illustrations)

1. All shed type roofs that overhang entrance doors on the lower levels on all buildings.
2. Completed Buildings: B-6; D-7; D-9; F-18; 21; 22.

Note: All diagrams and illustrations are for reference only. The contractor is responsible for verifying characteristics and dimensions.

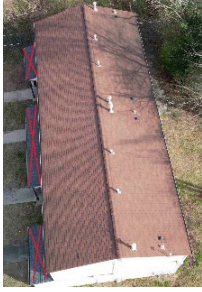


Figure 14: Building C-1



Figure 3: Building C-2



Figure 4: Building A-3



Figure 5: Building A-4

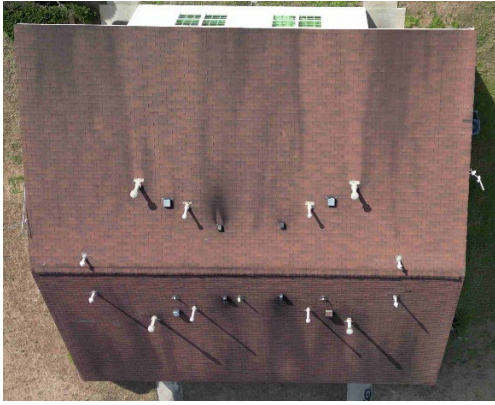


Figure 6: A-5

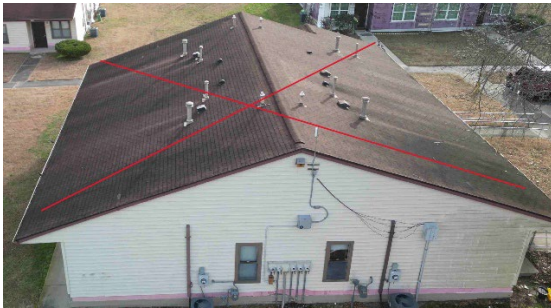


Figure 6: B-6 (Exclude entire building)



Figure 7: D-7 (Exclude entire building)



Figure 8: C-8 (Exclude marked section)



Figure 9: Building D-9 (Exclude entire building)



Figure 10: Building C-10 (Exclude marked sections)

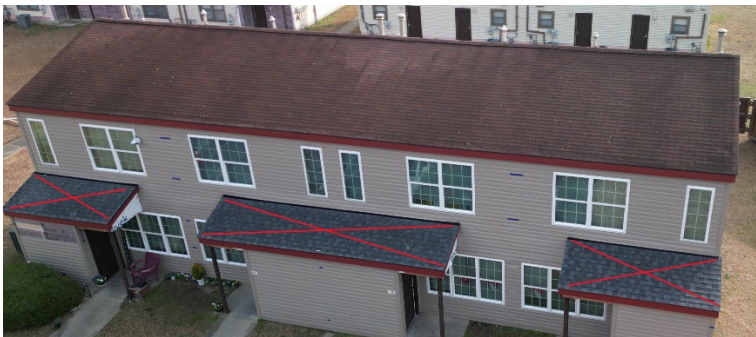


Figure 11: Building C-11(Exclude marked sections)



Figure 12: Building C-12 (Exclude marked sections)



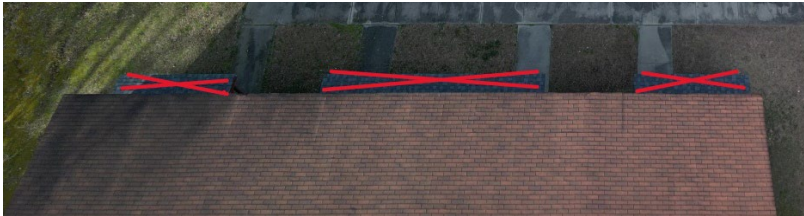
Figure 13: Building E-13



Figure 14: Building C-14 (Exclude marked sections)



Figure 15: Building C-15a



16: Building C-15b (Exclude marked sections)



Figure 17: Building 16 (Exclude marked sections)



Figure 18: Building C-17 (Exclude marked sections)

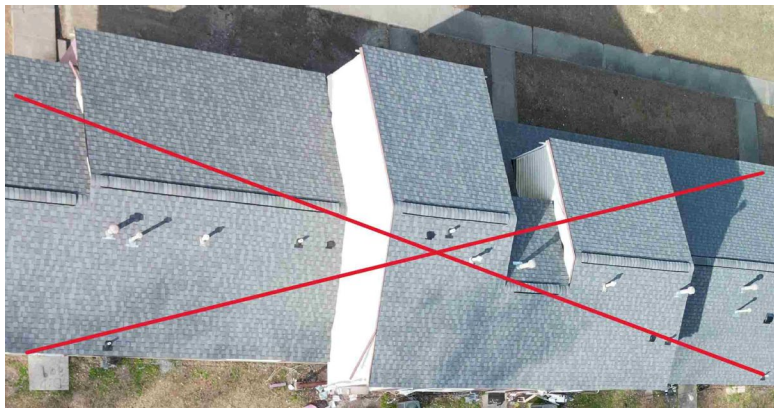


Figure 19: Building F-18 (Exclude entire building)

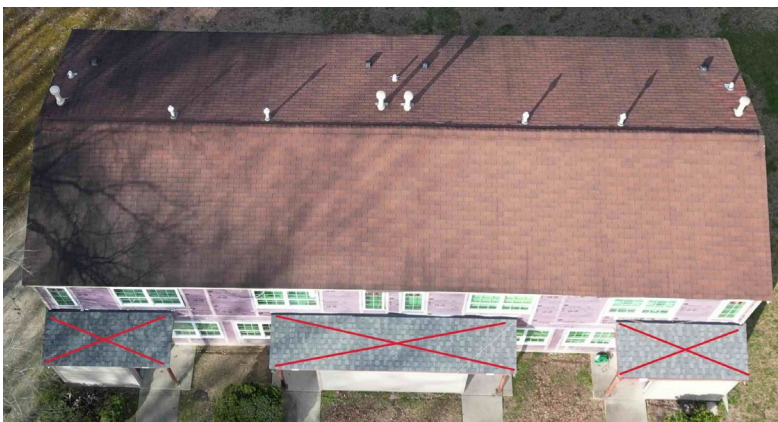


Figure 20:
Building C-19
(Exclude marked
section)



Figure 21: Building C-20 (Exclude marked sections)

INSTALLATION

Remove existing shingles felt and deteriorated plywood.

Do not damage existing trim or gutters.

Replace damaged plywood (include up to 7 percent in bid)

Install new water and ice shield along starter row of roof, then install felt on the rest of the roof.

Install roofing, ridge vent, plumbing vent flashing boots per manufacturer's instructions.

- A. Comply with ASTM C 1193.
- B. Tool all joints
- C. Cure time prior to paint or moisture exposure: strictly follow manufacturer's directions

2.4 CLEAN UP

- A. Clean excess joint sealant from all surfaces. Replace finishes or products from which sealant cannot be removed.

END OF SECTION 07920