PART I - GENERAL

1.01 DESCRIPTION

A. Scope: Work under this Section includes all materials and installation necessary to provide Asphalt Shingles, Felt underlayment and Rolled Roofing as shown and detailed on the drawings and specified herein.

B. Related Work Specified Elsewhere:
   1. Division 7, Section 07600 – Flashing and Sheet Metal
   2. Metal flashing of mechanical and electrical penetrations of the roof.

1.02 SUBMITTALS

A. Samples for verification in the form of 2 full-size units of each type of asphalt shingle indicated showing the full range of variations expected in these characteristics.

1.03 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in manufacturer's unopened bundles or containers with labels intact.

B. Handle and store materials at Project site to prevent water damage, staining, or other physical damage. Store roll goods on end. Comply with manufacturer's recommendations for job-site storage, handling, and protection.

1.04 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installing asphalt shingles only when existing and forecasted weather conditions will permit work to be performed according to manufacturers' recommendations and warranty requirements, and when substrate is completely dry.

1.05 WARRANTY

A. Special Warranty: Submit a written warranty signed by manufacturer agreeing to repair or replace asphalt shingles that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, deformation or deterioration of asphalt shingles beyond normal weathering.

   1. Warranty Period: Manufacturer's standard but not less than 10 years after date of Substantial Completion.

1.06 EXTRA MATERIALS

A. Furnish extra materials described below that match products installed, are packaged with protective covering for storage, and are identified with labels clearly describing contents.
1. Furnish 1 square coverage of asphalt shingles, identical to those to be installed, in unbroken bundles.

PART II - PRODUCTS

2.01 MANUFACTURERS

A. Manufacturers offering asphalt shingles that may be incorporated in the Work shall be Celotex Corp., CertainTeed Corp., or equal.

B. Products that are incorporated in the Work include, but are not limited to, the following:
   1. Vents.
   2. Waterproof underlayment shall be by WinterGuard; CertainTeed Corp., or equal.

2.02 ASPHALT SHINGLES

A. Colors, Blends, and Patterns: Where manufacturer's standard products are indicated, provide asphalt shingles with the following requirements:
   1. Provide selections from manufacturer's full range of colors, textures, and patterns for asphalt shingles of type indicated.

B. Square-Tab, Fiberglass Strip Shingles: Mineral-surfaced, self-sealing, 3-tab, fiberglass-based, strip asphalt shingles, complying with ASTM D 3018, Type I, and with the following requirements:
   2. Fire-Test-Response Classification: Class A.

C. Hip and Ridge Shingles: Manufacturer's standard, factory-precut units to match asphalt shingles.

2.03 METAL TRIM AND FLASHING

A. See Section 7600 – FLASHING AND SHEET METAL Furnish the following sheet metal materials:
   1. Galvanized-Steel Sheets: ASTM A 526, G 90 hot-dip galvanized steel with coating designation according to ASTM A 525, mill phosphatized where indicated for painting; 0.0217 inch thick, unless otherwise indicated.

B. Metal Drip Edge: Preformed Anodized Aluminum Type "D" or Brake-formed sheet metal with at least a 2" roof deck flange and a 1-½" fascia flange with a ¾" drip at lower edge. Furnish the following material in lengths of 8’ or 10’.

C. Open-Valley Metal Flashing: Preformed, inverted "V" profile at center of valley and extending at least 9” in each direction from centerline of valley.
   1. Material: Galvanized-steel sheets. SECTION 07920 – CAULKING AND SEALANTS.
D. Vent Pipe Flashing: Lead conforming to ASTM B 749, Type L51121, at least $\frac{3}{16}$" thick, unless otherwise indicated. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof extending at least 4" from pipe onto roof.

2.04 ACCESSORIES

A. Felt Underlayment: Type I, 36" wide, asphalt-saturated organic felt, complying with ASTM D 226 (No. 15) or ASTM D 4869.

B. Vents: High-density polypropylene, nonwoven modified polyester, or other UV-stabilized plastic designed to be installed under asphalt shingles.

C. Smooth-Surface Roll Roofing: Organic roofing felt saturated with asphalt and coated on both sides with an asphaltic compound, 36" wide, weighing at least 90 lb/square and complying with ASTM D 224, Type II or III.

D. Mineral-Surface, Organic-Felt Roll Roofing: Mineral-granular-surfaced, organic-felt-based, asphalt roll roofing, 36" wide, complying with ASTM D 249, Type I.


F. Roll-Roofing Lap Cement: Nonasbestos asphalt lap cement, complying with ASTM D 3019, Type III.

G. Nails: Aluminum or hot-dip galvanized steel, 0.120" diameter barbed shank, sharp-pointed, conventional roofing nails with a minimum $\frac{3}{4}$" diameter head and of sufficient length to penetrate $\frac{3}{4}$" into solid decking or at least $\frac{3}{8}$" through plywood sheathing.

1. Where nails are in contact with flashing, prevent galvanic action by providing nails made from the same metal as that of the flashing.

H. Staples: Minimum 0.0625" thick, zinc-coated, steel roofing staples with minimum crown width of $\frac{15}{16}$", and of sufficient length to penetrate $\frac{3}{8}$" into deck lumber or through plywood deck.

PART III - EXECUTION

3.01 EXAMINATION

A. Examine substrate for compliance with requirements for substrates, installation tolerances, and other conditions affecting performance of asphalt shingles. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Clean substrates of projections and substances detrimental to application. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with noncorrosive roofing nails.

B. Coordinate installation with flashings and other adjoining work to ensure proper sequencing. Do not install roofing materials until all vent stacks and other penetrations through roof sheathing have been installed and are securely fastened against movement.
3.03 INSTALLATION

A. General: Comply with manufacturer's instructions and recommendations but not less than those recommended by ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."

1. Fasten asphalt shingles to roof sheathing with either roofing staples, applied pneumatically, or nails.

B. Felt Underlayment: Apply 1 layer of felt underlayment horizontally over entire surface to receive asphalt shingles, lapping succeeding courses a minimum of 6", end laps a minimum of 8", and hips and valleys a minimum of 8". Fasten felt with sufficient number of roofing nails or noncorrosive staples to hold underlayment in place until asphalt shingle installation.

C. Metal Open Valleys: Comply with ARMA and NRCA recommendations. Install a second felt underlayment shingle lapped at least 12" and sealed with plastic asphalt cement. Install a metal valley shingle lapped at least 9" and sealed with plastic asphalt cement.

D. Flashing: Install metal flashing and trim as indicated and according to details and recommendations of the "Asphalt Roofing" section of "The NRCA Steep Roofing Manual" and ARMA's "Residential Asphalt Roofing Manual."

E. Install asphalt shingles, beginning at roof's lower edge, with a starter strip of roll roofing or inverted asphalt shingles with tabs removed. Fasten asphalt shingles in the desired weather exposure pattern; use number of fasteners per shingle as recommended by manufacturer. Use vertical and horizontal chalk lines to ensure straight coursing.

1. Cut and fit asphalt shingles at valleys, ridges, and edges to provide maximum weather protection. Provide same weather exposure at ridges as specified for roof. Lap asphalt shingles at ridges to shed water away from direction of prevailing wind.

2. Use fasteners at ridges of sufficient length to penetrate sheathing as specified.

3. Pattern: ⅔ shingle spacing offset at succeeding courses.

F. Flat Roofs: Apply two layers of smooth surface rolled roofing and a third layer of mineral surface rolled roofing at all flat roof areas. Nail roofing per manufacturers recommendations and laminate layers of rolled roofing with cold applied asphaltic plastic adhesive. Thoroughly cover all exposed surfaces with adhesive prior to applying next layer.

3.04 ADJUSTING

A. Replace any damaged materials installed under this Section with new materials that meet specified requirements.

END OF SECTION 07310