SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:
   1. Asphalt shingles.
   2. Underlayment.
   3. Ridge vents.
   4. Repairs to existing roof as required.

B. Related Sections:
   1. Division 06 Section "Rough Carpentry" for roof sheathing.
   2. Division 07 Section "Thermoplastic Polyolefin (TPO) Roofing" for interface between membrane roofing and asphalt shingle installation.
   3. Division 07 Section "Sheet Metal Roofing" for interface between standing seam roofing and asphalt shingle installation.
   4. Division 07 Section "Sheet Metal Flashing and Trim" for metal drip edges, and flashings not part of this Section.

C. Products installed, but not furnished, under this Section include the following:
   1. Metal roof penetration flashings, drip edges, rake edges, and apron flashing, furnished under Division 07 Section "Sheet Metal Flashing and Trim."

1.3 DEFINITION

A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA's "The NRCA Roofing and Waterproofing Manual" for definitions of terms related to roofing work in this Section.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples for Initial Selection: For each type of asphalt shingle indicated.

C. Samples for Verification: For the following products, of sizes indicated, to verify color selected:
   1. Asphalt Shingle: Full size.

1.5 INFORMATIONAL SUBMITTALS

A. Installation Instructions: Submit shingle manufacturer's and waterproof underlayment manufacturer's written installation instructions. Variations between the manufacturers' printed instructions and these Specifications shall be noted in the submittal.
   1. Shingle fasteners and nailing methods shall be approved in writing by the shingle manufacturer.

B. Research/Evaluation Reports: For each type of asphalt shingle required, from the ICC.

C. Warranties: Sample of special warranties.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For each type of asphalt shingle to include in maintenance manuals.

B. Warranties: Special warranties specified in this Section.

1.7 QUALITY ASSURANCE

A. Installation Requirements: Roofing work shall be applied in strict accordance with provisions of specification criteria. No deviations shall be permitted without written consent from the Architect. Should a conflict between this specification and the manufacturer's requirements arise, the most restrictive provision as determined by the Architect shall govern.

B. Source Limitations: Obtain roof shingles, including ridge and hip cap shingles from single source from single manufacturer.

C. Fire-Resistance Characteristics: Where indicated, provide asphalt shingles and related roofing materials identical to those of assemblies tested for fire resistance per test method below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
1. Exterior Fire-Test Exposure: Class A; ASTM E 108 or UL 790, for application and roof slopes indicated.

1.8 DELIVERY, STORAGE, AND HANDLING

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

B. Store roofing materials in a dry, well-ventilated, weathertight location according to asphalt shingle manufacturer's written instructions. Do not stack bundles of shingles more than 4 feet high. Store underlayment rolls on end on pallets or other raised surfaces. Do not double stack rolls.
1. Handle, store, and place roofing materials in a manner to avoid significant or permanent damage to roof deck or structural supporting members.

C. Protect unused underlayment from weather, sunlight, and moisture when left overnight or when roofing work is not in progress.

1.9 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit asphalt shingle roofing to be performed according to manufacturer's written instructions and warranty requirements and when substrate is completely dry. Roofing shall not be applied when ambient air temperature is less than 40 deg F.
1. Install self-adhering sheet underlayment within the range of ambient and substrate temperatures recommended by manufacturer.

B. New and temporary construction, including equipment and accessories, shall be secured from wind damage or blow-off. All temporary work or work by others damaged from failure to

properly secure the work shall be replaced with new materials at no additional cost to the Owner.

C. Underlayments shall not be left exposed for more than 30 days per manufacturer's requirements. Material left exposed for more than 30 days shall be removed and replaced. Material may be left in place and covered over with new underlayment as long as no telegraphing of substrate through the shingles occurs.

1.10 WARRANTY

A. Special Warranty: Standard form in which manufacturer agrees to repair or replace asphalt shingles that fail in materials or workmanship within specified warranty period.
   1. Failures include, but are not limited to, the following:
      a. Manufacturing defects.
      b. Structural failures including failure of asphalt shingles to self-seal after a reasonable time.
      c. Deformation or deterioration of asphalt shingles beyond normal weathering.
   2. Material Warranty Period: Manufacturer's Limited Lifetime Warranty, defined in warranty literature as not less than 40 years from date of Substantial Completion, prorated, with first ten years nonprorated and covering 100 percent material and labor costs.
   3. Wind-Speed Warranty Period: Asphalt shingles shall resist blow-off or damage caused by wind speeds up to 110 mph minimum for not less than 10 years from date of Substantial Completion.
   4. Workmanship Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip Asphalt Shingles: ASTM D 3462, laminated, multi-ply overlay construction, glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
   1. Product: CertainTeed Corporation; Landmark Pro Shingles.
   2. Butt Edge: Straight cut.
   3. Strip Size: Manufacturer's standard.
   4. Color and Blends: To match existing roof.

B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

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

2.2 UNDERLAYMENT MATERIALS

A. High-Performance Synthetic Underlayment: Polymer-based, water-resistant, UV-stabilized underlayment.
   1. Product: CertainTeed Corporation; Diamond Deck.

B. Self-Adhering Sheet Underlayment, Polyethylene Faced: ASTM D 1970, minimum of 40-mil-thick, slip-resisting, polyethylene-film-reinforced top surface laminated to SBS-modified asphalt adhesive, with release paper backing; cold applied.
   1. Products:
      a. W. R. Grace & Co.; Grace Ice and Water Shield.
      b. Carlisle Coatings & Waterproofing; CCW WIP.

2.3 RIDGE VENTS

A. Rigid Ridge Vent: Manufacturer's standard, rigid section high-density polypropylene or other UV-stabilized plastic ridge vent with nonwoven geotextile filter strips and [xternal deflector baffles]; for use under ridge shingles.
   1. Products:
      a. Air Vent, Inc.; a Gibraltar Industries company; ShingleVent II.
      b. Obdyke, Benjamin Incorporated; Xtractor Vent X18 XTRA.
   2. Minimum Net Free Area: 18 square inches per linear foot.
   3. Width: Manufacturer's standard, not less than 12 inches.
   4. Thickness: 7/8 inch.
   5. Color: As selected by Architect from manufacturer's full range of options.

B. Single Pitch Ridge Vent: Manufacturer's standard aluminum ridge vent for single pitched shingle roofs. Vent shall have nonwoven geotextile filter strips and external deflector baffles.
   1. Product: Air Vent Inc.; Peak FilterVent, Model PFV.
   2. Minimum Net Free Area: 9 square inches per linear foot.
   3. Color: As selected by Architect from manufacturer's full range of options.

2.4 ACCESSORIES

A. Asphalt Roofing Cement: ASTM D 4586, Type II, asbestos free.

B. Roofing Nails: ASTM F 1667; stainless-steel, or hot-dip galvanized-steel wire shingle nails, minimum 0.120-inch- diameter, barbed shank, sharp-pointed, with a minimum 3/8-inch-diameter flat head and of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through plywood sheathing.
   1. Where nails are in contact with metal flashing, use nails made from same metal as flashing to prevent galvanic action.
   2. Where nails are fastened into pressure preservative blocking or sheathing, use stainless steel fasteners.
   3. Use of staples will not be permitted.

C. Underlayment Nails: Stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter. Staples not permitted.

2.5 METAL FLASHING AND TRIM

A. General: Furnished in Division 07 Section "Sheet Metal Flashing and Trim" for installation in this Section.

B. Vent Pipe Flashing: Pipes penetrating shingled roofs shall be ARFCO self-sealing neoprene collar with aluminum flange.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
   1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
   2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored; and that provision has been made for flashings and penetrations through asphalt shingles.

B. If unacceptable conditions are encountered, prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 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. Verify that surfaces are free of cracks, depressions, or waves that may be detrimental to successful installation.

C. Verify that gap in sheathing at ridge is consistent and is meeting the ventilation requirements.

D. 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.

3.3 UNDERLAYMENT INSTALLATION

A. General: Comply with underlayment manufacturer's written installation instructions applicable to products and applications indicated unless more stringent requirements apply.

B. Single-Layer Synthetic Underlayment: Install on roof deck parallel with and starting at the eaves. Lap sides a minimum of 2 inches over underlying course. Lap ends , hips and valleys a minimum of 6 inches. Stagger end laps between succeeding courses at least 72 inches. Fasten with synthetic underlayment nails to hold underlayment in place until asphalt shingle installation; do not use staples. Seal end laps with asphalt plastic cement. Turn up synthetic underlayment not less than 4 inches at vertical walls, curbs, chimneys and other roof projections.
   1. Install synthetic underlayment on roof deck not covered by self-adhering sheet underlayment. Lap sides of synthetic underlayment over self-adhering sheet underlayment not less than 3 inches in direction to shed water. Lap ends of synthetic underlayment not less than 6 inches over self-adhering sheet underlayment as recommended by manufacturer, but not less than 6 inches, and seal with asphalt plastic cement, and seal with asphalt plastic cement.
   2. Install fasteners at no more than 15 inch o.c. vertically and 12 inch o.c. horizontally in field; 6 inch o.c. on vertical side and end laps.

C. Self-Adhering Sheet Underlayment: Install in accordance with manufacturer's written instructions, wrinkle free, on roof deck. Comply with low-temperature installation restrictions of underlayment manufacturer if applicable. Install at locations indicated below, lapped in direction to shed water. Lap sides not less than 3-1/2 inches. Lap ends not less than 6 inches staggered 24 inches between courses. Roll laps with roller. Cover underlayment within seven days.
   1. Eaves: Extend from edges of eaves not less than 5-1/2 feet beyond interior face of exterior wall.
   2. Rakes: Extend from edges of rake 36 inches beyond interior face of exterior wall.
   3. Valleys: Extend from lowest to highest point; center one row in valley and overlap with two additional rows on each side for a distance of not less than 78 inches out from each side of valley centerline. Lap roof underlayment over valley underlayment not less than 6 inches and seal with asphalt plastic cement.
   4. Hips: Extend 18 inches on each side.
   5. Ridges: Extend 36 inches on each side without obstructing continuous ridge vent slot.
   6. Sidewalls: Extend beyond sidewall not less than 6 feet, and return vertically against sidewall not less than 8 inches.

3.4 METAL FLASHING INSTALLATION

A. General: Install metal flashings and other sheet metal provided in Division 07 Section "Sheet Metal Flashing and Trim" according to recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Rake Drip Edges: Install rake drip edge flashings over underlayment and fasten to roof deck.

C. Eave Drip Edges: Install eave drip edge flashings below underlayment and fasten to roof sheathing.

D. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.5 ASPHALT SHINGLE INSTALLATION

A. General: Install asphalt shingles according to manufacturer's written instructions, and asphalt shingle recommendations in NRCA's "The NRCA Roofing and Waterproofing Manual."

B. Install self-sealing starter strip along lowest roof edge, consisting of an asphalt shingle strip with tabs removed with self-sealing strip face up at roof edge.
   1. Extend asphalt shingles 1/4 inch over fasciae drip edge at eaves and rakes.
   2. Install starter strip along rake edge.

C. Install first and remaining courses of asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure. Use vertical and horizontal chalk lines to ensure straight coursing.

D. Stop uncompleted rows in a stepping configuration. Racking is not permitted.

E. Fasten asphalt shingle strips with a minimum of five roofing nails located according to manufacturer's written instructions. Use of staples will not be permitted.

F. Closed-Cut Valleys: Extend asphalt shingle strips from one side of valley 12 inches beyond center of valley. Use one-piece shingle strips without joints in valley. Fasten with extra nail in upper end of shingle. Install asphalt shingle courses from other side of valley and cut back to a straight line 2 inches short of valley centerline. Trim upper concealed corners of cut-back shingle strips.
   1. Do not nail asphalt shingles within 6 inches of valley center.
   2. Set trimmed, concealed-corner asphalt shingles in a 3-inch- wide bed of asphalt roofing cement.

G. Ridge Vents: Install continuous ridge vents over asphalt shingles according to manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
   1. Run ridge vent full length of ridge.

H. Ridge and Hip Cap 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. Fasten with roofing nails of sufficient length to penetrate sheathing.
   1. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

3.6 ADJUSTING

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

3.7 ROOFING INSTALLER'S WARRANTY

A. WHEREAS <**Insert name**> of <**Insert address**>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
   1. Owner: <**Insert name of Owner**>.
   2. Address: <**Insert address**>.
   3. Building Name/Type: <**Insert information**>.
   4. Address: <**Insert address**>.
   5. Area of Work: <**Insert information**>.
   6. Acceptance Date: <**Insert date**>.
   7. Warranty Period: <**Insert time**>.
   8. Expiration Date: <**Insert date**>.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:
   1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
      a. Lightning;
      b. Peak gust wind speed exceeding 110 mph;
      c. Fire;
      d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;

e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
f. Vapor condensation on bottom of roofing; and
g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this <**Insert day**> day of <**Insert month**>, <**Insert year**>.
1. Authorized Signature: <**Insert signature**>.
2. Name: <**Insert name**>.
3. Title: <**Insert title**>.

END OF SECTION 073113