

Scope of Work, Edgar Evins State Park (Office/Visitor Center)

1. Contractor is to remove all wood siding, windows & door trim. All debris is to be disposed of off Park Grounds.
2. Contractor is to install sheets of faux stone panels are to be 4' high around the exterior of building. Install according mgf. specs. Color and style is to be pick by Park Manger from a faux stone sample.
3. Contractor is to install a Z channel once the faux stone panels are install and before siding is install.
4. Contractor is to install a weather barrier according to Specifications by James Hardie.
5. Contractor is to install (James Hardie HZ10) fiber cement siding, door & windows trim according to Specifications by James Hardie.
6. The color will be pick out by Park Manger from a standard sample by James Hardie.
7. The contractor will be responsible to repair,, or replace any damages done the electrical, sewer, water & phone lines , or any other type of utility lines at no cost to the State. The contractor is to notify the Park office immediately if any problems occur to the utility lines.
8. The contractor is to seed & straw all areas of work once the ground has settled and job is complete and weather permits.
9. The contractor is to comply with all "OSHA" and "TOSHA" rules and regulation at all times.
10. Contractor will be responsible for maintaining a safe work area at all times.
11. Contractor will be required to issue a 1 year warranty of workmanship upon final inspection and acceptance by the State of Tn.



SECTION 07250

WEATHER BARRIER

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Sheet applied weather barrier and related accessories for wall air/moisture barrier system.

1.2 RELATED SECTIONS

- A. Section 05400 - Light Gage Metal Framing: Wall framing and bracing.
- B. Section 06100 - Rough Carpentry: Wood framing and bracing.
- C. Section 06100 - Rough Carpentry: Sheathing.
- D. Section 07210 - Insulation: Exterior wall insulation.
- E. Section 07460 - Siding: Wall finish and primary weather barrier.

1.3 REFERENCES

- A. The American Association of Textile Chemists and Colorists (AATCC) 127 - Water Resistance: Hydrostatic Pressure Test.
- B. American Society for Testing and Materials (ASTM) E-96 - Standard Test Methods for Water Vapor Transmission of Materials.
- C. American Society for Testing and Materials (ASTM) D1117 - Standard Guide for Evaluating Nonwoven Fabrics.
- D. American Society for Testing and Materials (ASTM) D3330 - Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape1.
- E. American Society for Testing and Materials (ASTM) D3759 - Standard Test Method for Tensile Strength and Elongation of Pressure-Sensitive Tapes.
- F. PSTC-1 - Peel Adhesion of Single Coated Pressure-Sensitive Tapes at 180 Degree Angle.
- G. TAPPI T-460 - Porosity - Gurley.

1.4 SYSTEM DESCRIPTION

- A. The airtight components and secondary moisture protection of the building enclosure and the joints, junctures and transitions between materials, products, and assemblies forming the air-tightness and moisture barrier of the building enclosure are called "the air/moisture barrier system". Services include coordination between the trades, the proper scheduling and sequencing of the work, preconstruction meetings, inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by the Architect.
- B. Air Barrier Penetrations: All penetrations of the air/moisture barrier and paths of air infiltration / exfiltration through the air/moisture barrier system shall be made air-tight.
- C. Moisture Barrier Penetrations: All penetrations of the air/moisture barrier and paths of water migration through the air/moisture barrier system shall be made water shedding.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation and sealing techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship is approved by Architect.
 - 3. Repair mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Do not store in direct sunlight. Weather barrier shall be stored in a covered area. Do not expose to building site chemicals.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

- A. Anticipate environmental conditions and schedule installation when conditions are within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.9 WARRANTY

- A. Product Warranty: Limited product warranty against manufacturing defects.
1. HardieWrap Weather Barrier and related products for 10 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-3464; Tel: 949-367-4980; Fax: 949-367-4981; Email: [request info \(info@jameshardie.com\)](mailto:requestinfo@jameshardie.com); Web: www.jameshardiecommercial.com
- B. Substitutions: Not permitted.
- C. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 01600.

2.2 WEATHER BARRIER SYSTEM

- A. Moisture Air Barrier Sheet:
1. Product: HardieWrap Weather Barrier as manufactured by James Hardie Building Systems.
 2. Composition: Non-woven, non-perforated polyolefin.
 3. Film: MicroTech Coating with micropores to balance water holdout and breathability.
 4. Thickness: 11 mil (0.28 mm).
 5. UV Stability: Up to 180 days.
 6. Water Holdout (AATCC127): 128 inches (3250 mm).
 7. Breathability/Water Vapor Permeance (ASTM E-96A): 15 perms.
 8. Air Resistance (TAPPI T-460): >1800 sec/100 cc.
 9. Tear Strength (ASTM D1117): 15 to 18 lb (6.8 to 8.2 kg).
 10. Basis Weight: 19.4 lbs/1000 sf (9.5 kgs/100 sm).
 11. Sizes: 3 feet by 195 feet (914 mm by 59.4 m), 9 feet by 100 feet (2743 mm by 30.5 m), 9 feet by 150 feet (2743 mm by 45.7 m), 10 feet by 100 feet (3048 mm by 30.5 m), 10 feet by 150 feet (3048 mm by 45.7 m).
- B. Self-adhering Flashing: Designed for peel and stick application.
1. Product: HardieWrap Flashing as manufactured by James Hardie Building Systems.
 2. Composition: Butyl rubber adhesive non-woven polyolefin backing; coated Kraft paper release.
 3. Total Thickness: 25 mil (0.64 mm).
 4. UV Stability: Up to 180 days.
 5. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
 6. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
 7. Packaging: Individually shrink-wrapped.
 8. Roll Weight: 4 inch (102 mm) = 4.6 lb (2 kg)/roll, 6 inches (152 mm) = 6.9 lb (3 kg) /roll, 9 inches (229 mm) = 9.9 lb (4.5 kg)/roll.
 9. Provide Width for Application Required: 4 inches by 100 feet (102 mm by 30.5 m) (2x4 construction), 6 inches by 100 feet (152 mm by 30.5 m) (2x4 construction), 9 inches by 100 feet (229 mm by 30.5) (2x6 construction).
- C. Flexible Flashing:
1. Product: HardieWrap Flex Flashing as manufactured by James Hardie Building Systems.

2. Composition: Butyl rubber adhesive; creped cross-laminated polyolefin backing; polyethylene film release.
 3. Total Thickness: 60 mil (1.5 mm).
 4. Tensile Strength (ASTM D3759): 18 lb/inch (3.2kg/cm).
 5. UV Stability: Up to 180 days.
 6. Water Vapor Transfer Rate (ASTM E96-94): <.2g/100 square inches/24hrs.
 7. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
 8. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
 9. Packaging: Each roll is packed in a convenient dispenser box
 10. Roll Weight: 6 inches (152 mm) = 22.2 lb (10kg)/roll, 9 inches (229 mm) = 33.3 lb (15 kg)/roll.
 11. Provide Width for Application Required: 6 inches by 75 feet (152 mm by 23.9 m) (2x4 construction), 9 inches by 75 feet (229 mm by 23.9) (2x6 construction).
- D. Seam Tape:
1. HardieWrap Seam Tape as manufactured by James Hardie Building Systems.
 2. Composition: Polypropylene film coated with acrylic adhesive Total Thickness: 3.0 mil (.08 mm).
 3. Adhesion Peel to HardieWrap (PSTC-1): 22 oz/inch (25 N/100 mm).
 4. Tensile Strength (ASTM D3759): 32 lb/in (.58 kg/mm).
 5. Elongation: 136 percent.
 6. UV Stability: Up to 90 days.
 7. Application Temperature: 30 degree F to 180 degree F (-1 degree C to 82 degree C).
 8. Operating Temperature: -30 degree F to 200 degree F (-34 degree C to 93 degree C).
 9. Packaging: Individually shrink-wrapped.
 10. Roll Weight: 1 lb(0.5 kg)/roll.
 11. Roll Size: 1-7/8 inches (43 mm) by 165 feet (50 m).

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Weather barrier shall be installed before window and door installation. Do not install on saturated sheathing. Weather barrier can become slippery and should not be used in any application where it may be walked on.
- D. Weather barrier shall be installed on vertical wall applications only.
- E. Manufacturer warrants weather barrier sheet only when covered within 180 days of its installation.

3.3 INSTALLATION

- A. Moisture Air Barrier Sheet:
1. Weather barrier shall be installed before window and door installation. Do not install on saturated sheathing. Weather barrier can become slippery and should not be used in any application where it may be walked on.
 2. Begin by affixing weather barrier extending at least 6 inches (152 mm) around a building corner. Unroll horizontally (with print side facing out) around the building covering rough window and door openings.
 3. Fasten to studs or nailable sheathing material with galvanized construction grade staples a maximum of 18 inches (457 mm) in the vertical and horizontal direction.
 4. Attach weather barrier so that it is taut and flat. The vertical overlap shall have a minimum of 6 inches (152 mm) and the vertical seam shall be taped.
 5. Assure that the bottom edge of the weather barrier extends over the sill plate and foundation interface by at least 1 inch (25 mm).
 6. Overlap upper layers of weather barrier (in shingle lap fashion) by a minimum of 6 inches below the horizontal edge, and tape the horizontal seam line.
 7. At roof to wall intersection (or wall to deck), affix wrap to the wall such that it overlaps any step flashing already in place on the wall by at least 2 inches (51 mm).
- B. Flexible Flashing:
1. Windows and Doors: Weather barrier is not designed nor guaranteed as a flashing material to prevent moisture or air from intruding behind weather barrier. Verify that flashing has previously been installed around all windows and door openings. Install flexible flashing per manufacturer's instructions.
 - a. Use the inverted "Y" cut method at rough window and door openings. Do not place fasteners within 9 inches (229 mm) of the rough opening, door or window heads. This area shall not be fastened to allow for proper head flashing installation. At the top corners of the rough opening, cut the weather barrier at 45 degree to extend 9 inches (229 mm) past the joint.
 - b. Fold the top flap up and out of the way and fasten temporarily.
 - c. Fold the remaining three flaps in through the opening fastening them inside the opening with staples.
 2. Rough Electrical and Plumbing Penetrations: Seal with a double layer of flashing. Install the top flashing piece over the bottom flashing piece overlapping flashing layers to cover flashing cut-out necessary for placement around penetration.
- C. Repairs: For minor punctures or tears, less than 3 inches (76 mm), cover and completely seal with seam tape. For larger holes, greater than 3 inches (76 mm), use slit flashing technique.
- a. Slit flashing requires making a horizontal slit above the damaged area and placing a cut piece of weather barrier into the slit, covering the damaged area. Tape the perimeter of the patched area.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 074646

FIBER CEMENT SIDING

(James Hardie HZ10 Engineered for Climate Siding)

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Fiber cement lap siding, panels, shingle, trim, fascia, moulding and accessories; James Hardie HZ10 Engineered for Climate Siding.
- B. Factory-finished fiber cement lap siding, panels, shingle, trim, fascia, moulding and accessories; James Hardie HZ10 Engineered for Climate Siding.

1.2 RELATED SECTIONS

- A. Section 054000 - Light Gage Metal Framing: Wall framing and bracing.
- B. Section 061000 - Rough Carpentry: Wood framing and bracing.
- C. Section 061000 - Rough Carpentry: Sheathing.
- D. Section 072400 - Insulation: Exterior wall insulation.

1.3 REFERENCES

- A. ASTM D3359 - Standard Test Method for Measuring Adhesion by Tape Test, Tool and Tape.
- B. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 SUBMITTALS

- A. Submit under provisions of Section 013000.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- C. Shop Drawings: Provide detailed drawings of atypical non-standard applications of cementitious siding materials which are outside the scope of the standard details and specifications provided by the manufacturer.
- D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

- E. Verification Samples: For each finish product specified, two samples, minimum size 4 by 6 inches (100 by 150 mm), representing actual product, color, and patterns.

1.5 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum of 2 years experience with installation of similar products.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 - 1. Finish areas designated by Architect.
 - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 - 3. Refinish mock-up area as required to produce acceptable work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store siding on edge or lay flat on a smooth level surface. Protect edges and corners from chipping. Store sheets under cover and keep dry prior to installing.
- C. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.8 WARRANTY

- A. Product Warranty: Limited, non-pro-rated product warranty.
 - 1. HardiePlank HZ10 lap siding for 30 years.
 - 2. HardiPanel HZ10 vertical siding for 30 years.
 - 3. HardieSoffit HZ10 panels for 30 years.
 - 4. HardieShingle HZ10 siding for 30 years.
 - 5. HardieTrim HZ10 boards for 15 years.
 - 6. Artisan HZ10 lap siding for 30 years.
 - 7. Artisan HZ10 Lock Joint System siding for 30 years
- B. Finish Warranty: Limited product warranty against manufacturing finish defects.
 - 1. When used for its intended purpose, properly installed and maintained according to Hardie's published installation instructions, James Hardie's ColorPlus finish with ColorPlus Technology, for a period of 15 years from the date of purchase: will not peel; will not crack; and will not chip. Finish warranty includes the coverage for labor and material.
- C. Workmanship Warranty: Application limited warranty for 2 years.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: James Hardie Building Products, Inc., which is located at: 26300 La Alameda Suite 400 ; Mission Viejo, CA 92691; Toll Free Tel: 866-274-

- B. Substitutions: Not permitted.
- C. Requests for approval of equal substitutions will be considered in accordance with provisions of Section 016000.

2.2 SIDING

- A. HardiePlank HZ10 lap siding, HardiePanel HZ10 vertical siding, HardieSoffit HZ10 panels and HardieShingle HZ10 siding requirement for Materials:
 - 1. Fiber-cement Siding - complies with ASTM C 1186 Grade II, Type A.
 - 2. Fiber-cement Siding - classified as noncombustible when tested in accordance with ASTM E 136.
 - 3. Fiber-cement Siding - have a flame-spread index of 0 and a smoke-developed index of 5 when tested in accordance with ASTM E 84.
 - 4. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product. [[Ask Ben about this one.]]
 - 5. ICC-ES Evaluation Report No. ESR-2290 (HardiePlank and HardieShingle), ESR-1844 (HardiePanel), and NER-405 (HardieSoffit)
 - 6. City of Los Angeles, Research Report No. 24862.
 - 7. Miami Dade County, Florida Notice of Acceptance-13-0311.07.
 - 8. US Department of Housing and Urban Development Materials Release 1263e.
 - 9. California DSA PA-019.
 - 10. City of New York M EA 223-93-M.
 - 11. Florida State Product Approval FL13192 (HardiePlank and HardieShingle), FL13223 (HardiePanel), and FL13265 (HardieSoffit).
 - 12. Texas Department of Insurance Product Evaluation EC-23.
- B. Artisan HZ10 lap siding requirement for Materials:
 - 1. Fiber-cement Siding - complies with ASTM C 1186 Grade II, Type A.
 - 2. Fiber-cement Siding - classified as noncombustible when tested in accordance with ASTM E 136.
 - 3. Fiber-cement Siding- have a flame-spread index of 0 and a smoke-developed index of 5 when tested in accordance with ASTM E 84.
 - 4. Warnock Hersey Product Listing.
 - 5. CAL-FIRE, Fire Engineering Division Building Materials Listing - Wildland Urban Interface (WUI) Listed Product.
 - 6. Florida State Product Approval FL10477.
 - 7. Miami Dade County, Florida Notice of Acceptance 12-0517.05.
 - 8. Texas Department of Insurance Product Evaluation EC-55.
 - 9. Manufacturer's Technical Data Sheet.
- C. Artisan HZ10 Lock Joint System requirement for Materials:
 - 1. Fiber-cement Siding - complies with ASTM C 1186 Grade II, Type A
 - 2. Fiber-cement Siding - classified as noncombustible when tested in accordance with ASTM E 136.
 - 3. Fiber-cement Siding - have a flame-spread index of 0 and a smoke-developed index of 5 when tested in accordance with ASTM E 84.
 - 4. Warnock Hersey Product Listing..
 - 5. Manufacturer's Technical Data Sheet.
- D. Lap Siding: Artisan HZ10 Lap Siding as manufactured by James Hardie Building Products, Inc.
 - 1. Type: Smooth 5-1/4 inches (133 mm) with 4 inches (102 mm) exposure.

2. Type: Smooth 7-1/4 inches (184 mm) with 6 inches (152 mm) exposure.
 3. Type: Smooth 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
 4. Type: Texture 5-1/4 inches (133 mm) with 4 inches (102 mm) exposure.
 5. Type: Texture 7-1/4 inches (184 mm) with 6 inches (152 mm) exposure.
 6. Type: Texture 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
- E. Lap Siding: Artisan HZ10 Joint Lock System Siding as manufactured by James Hardie Building Products, Inc.
1. Type: Texture 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
- F. Lap Siding: HardiePlank HZ10 Lap as manufactured by James Hardie Building Products, Inc.
1. Type: Smooth 5-1/4 inches (133 mm) with 4 inches (102 mm) exposure.
 2. Type: Smooth 6-1/4 inches (159 mm) with 5 inches (127 mm) exposure.
 3. Type: Smooth 7-1/4 inches (184 mm) with 6 inches (152 mm) exposure.
 4. Type: Smooth 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
 5. Type: Smooth 9-1/4 inches (235 mm) with 8 inches (203 mm) exposure.
 6. Type: Smooth 12 inches (305 mm) with 10-3/4 inches (273 mm) exposure.
 7. Type: Select Cedarmill 5-1/4 inches (133 mm) with 4 inches (102 mm) exposure.
 8. Type: Select Cedarmill 6-1/4 inches (159 mm) with 5 inches (127 mm) exposure.
 9. Type: Select Cedarmill 7-1/4 inches (184 mm) with 6 inches (152 mm) exposure.
 10. Type: Select Cedarmill 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
 11. Type: Select Cedarmill 9-1/4 inches (235 mm) with 8 inches (203 mm) exposure.
 12. Type: Select Cedarmill 12 inches (305 mm) with 10-3/4 inches (273 mm) exposure.
 13. Type: Beaded Smooth 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
 14. Type: Beaded Cedarmill 8-1/4 inches (210 mm) with 7 inches (178 mm) exposure.
- G. Vertical Siding: HardiePanel HZ10 siding as manufactured by James Hardie Building Products, Inc.
1. Type: Smooth Vertical siding panel 4 feet by 8 feet (1219 mm by 2438 mm).
 2. Type: Smooth Vertical siding panel 4 feet by 9 feet (1219 mm by 2743 mm).
 3. Type: Smooth Vertical siding panel 4 feet by 10 feet (1219 mm by 3048 mm).
 4. Type: Cedarmill Vertical siding panel 4 feet by 8 feet (1219 mm by 2438 mm).
 5. Type: Cedarmill Vertical siding panel 4 feet by 9 feet (1219 mm by 2743 mm).
 6. Type: Cedarmill Vertical siding panel 4 feet by 10 feet (1219 mm by 3048 mm).
 7. Type: Stucco Vertical siding panel 4 feet by 8 feet (1219 mm by 2438 mm).
 8. Type: Stucco Vertical siding panel 4 feet by 9 feet (1219 mm by 2743 mm).
 9. Type: Stucco Vertical siding panel 4 feet by 10 feet (1219 mm by 3048 mm).
 10. Type: Sierra 8 inches (203 mm) Vertical siding panel 4 feet by 8 feet (1219 mm by 2438 mm).
 11. Type: Sierra 8 inches (203 mm) Vertical siding panel 4 feet by 9 feet (1219 mm by 2743 mm).
 12. Type: Sierra 8 inches (203 mm) Vertical siding panel 4 feet by 10 feet (1219 mm by 3048 mm).
- H. Shingle Siding: HardieShingle HZ10 siding as manufactured by James Hardie Building Products, Inc.

1. Type: HardiShingle Individual Shingles 6 inches (152 mm) wide by 18 inches (457 mm) high with 8 inches (203 mm) exposure.
 2. Type: HardiShingle Individual Shingles 8 inches (203 mm) wide by 18 inches (457 mm) high with 8 inches (203 mm) exposure.
 3. Type: HardiShingle Individual Shingles 12 inches (305 mm) wide by 18 inches (457 mm) high with 8 inches (203 mm) exposure.
 4. Type: HardieShingle Straight-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.
 5. Type: HardieShingle Staggered-Edge Notched Panel 48 inches (1219 mm) wide by 16 inches (406mm) high with 7 inches (178 mm) exposure.
 6. Type: HardieShingle Half Round Notched Panel 48 inches (1219 mm) wide by 19 inches (483mm) high with 7 inches (178 mm) exposure.
 7. Type: Sierra 8 inches (203 mm) Vertical siding panel 4 feet by 10 feet (1219 mm by 3048 mm).
- I. Soffit Panels: HardieSoffit HZ10 soffit panel, factory sealed on 5 sides as manufactured by James Hardie Building Products, Inc.
1. Type: Smooth non-vented, 12 inches (305 mm) by 12 feet (3658 mm).
 2. Type: Smooth non-vented, 16 inches (406 mm) by 12 feet (3658 mm).
 3. Type: Smooth non-vented, 24 inches (610 mm) by 8 feet (2438 mm).
 4. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 12 inches (305 mm) by 12 feet (3658 mm).
 5. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 16 inches (406 mm) by 12 feet (3658 mm),
 6. Type: Smooth vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 24 inches (610 mm) by 8 feet (2438 mm).
 7. Type: Textured Cedarmill non-vented, 12 inches (305 mm) by 12 feet (3658 mm).
 8. Type: Textured Cedarmill non-vented, 16 inches (406 mm) by 12 feet (3658 mm).
 9. Type: Textured Cedarmill non-vented, 24 inches (610 mm) by 8 feet (2438 mm).
 10. Type: Textured Cedarmill vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 12 inches (305 mm) by 12 feet (3658 mm).
 11. Type: Textured Cedarmill vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 16 inches (406 mm) by 12 feet (3658 mm).
 12. Type: Textured Cedarmill vented, provides 5 square inches (32.3 sq.cm) of net free ventilation per linear foot, 24 inches (610 mm) by 8 feet (2438 mm).
 13. Thickness: 1/4 inch (6 mm).
- J. Trim:
1. HardieTrim HZ10 boards as manufactured by James Hardie Building Products, Inc.
 - a. Product: Batten Boards, 2-1/2 inch (63 mm) width.
 - b. Product: 4/4 Boards, 3-1/2 inch (89 mm) width.
 - c. Product: 4/4 Boards, 5-1/2 inch (140 mm) width.
 - d. Product: 4/4 Boards, 7-1/4 inch (184 mm) width.
 - e. Product: 4/4 Boards, 9-1/4 inch (235 mm) width.
 - f. Product: 4/4 Boards, 11-1/4 inch (286 mm) width.
 - g. Product: 4/4 NT3 Boards, 3-1/2 inch (89 mm) width.
 - h. Product: 4/4 NT3 Boards, 5-1/2 inch (140 mm) width.
 - i. Product: 4/4 NT3 Boards, 7-1/4 inch (184 mm) width.
 - j. Product: 4/4 NT3 Boards, 9-1/4 inch (235 mm) width.
 - k. Product: 4/4 NT3 Boards, 11-1/4 inch (286 mm) width.
 - l. Product: 5/4 Boards, 3-1/2 inch (89 mm) width.
 - m. Product: 5/4 Boards, 5-1/2 inch (140 mm) width.

- n. Product: 5/4 Boards, 7-1/4 inch (184 mm) width.
 - o. Product: 5/4 Boards, 9-1/4 inch (235 mm) width.
 - p. Product: 5/4 Boards, 11-1/4 inch (286 mm) width.
 - q. Product: 5/4 NT3 Boards, 3-1/2 inch (89 mm) width.
 - r. Product: 5/4 NT3 Boards, 4-1/2 inch (114 mm) width.
 - s. Product: 5/4 NT3 Boards, 5-1/2 inch (140 mm) width.
 - t. Product: 5/4 NT3 Boards, 7-1/4 inch (184 mm) width.
 - u. Product: 5/4 NT3 Boards, 11-1/4 inch (286 mm) width.
 - v. Texture: Smooth.
 - w. Texture: Rustic.
 - x. Texture: Wood Grained.
 - y. Length: 12 feet (3658 mm).
 - z. Thickness: 3/4 inch (19 mm).
 - aa. Thickness: 1 inch (24 mm).
2. HardieTrim HZ10 Fascia boards as manufactured by James Hardie Building Products, Inc.
 3. Artisan HZ10 Accent trim as manufactured by James Hardie Building Products, Inc.
- K. Crown Mouldings:
1. HardieTrim HZ10 Crown moulding manufactured by James Hardie Building Products, Inc.

2.3 FASTENERS

- A. Wood Framing Fasteners:
1. Wood Framing: 4d common corrosion resistant nails.
 2. Wood Framing: 6d common corrosion resistant nails.
 3. Wood Framing: 8d common corrosion resistant nails.
 4. Wood Framing: 8d box ring common corrosion resistant nails.
 5. Wood Framing: 0.083 inch (2.1 mm) shank by 0.187 inch (4.7 mm) head by 1-1/2 inches (38 mm) corrosion resistant ring shank nails.
 6. Wood Framing: 0.089 inch (2.2 mm) shank by 0.221 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 7. Wood Framing: 0.090 inch (2.3 mm) shank by 0.215 inch (5.5 mm) head by 1-1/2 inches (38 mm) corrosion resistant ring shank nails.
 8. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant siding nails.
 9. Wood Framing: 0.093 inch (2.4 mm) shank by 0.222 inch (5.6 mm) head by 2-1/2 inches (64 mm) corrosion resistant siding nails.
 10. Wood Framing: 0.092 inch (2.3 mm) shank by 0.222 inch (5.6 mm) head by 2 inches (51 mm) corrosion resistant galvanized nails.
 11. Wood Framing: 0.092 inch (2.3 mm) shank by 0.225 inch (5.7 mm) head by 2-1/4 inches (57 mm) corrosion resistant galvanized nails.
 12. Wood Framing: 0.092 inch (2.3 mm) shank by 0.222 inch (5.6 mm) head by 2-1/2 inches (64 mm) corrosion resistant galvanized nails.
 13. Wood Framing: 0.091 inch (2.3 mm) shank by 0.221 inch (5.6 mm) head by 1-1/2 inches (38 mm) corrosion resistant siding nails.
 14. Wood Framing: 0.091 inch (2.3 mm) shank by 0.225 inch (5.7 mm) head by 1-1/2 inches (38 mm) corrosion resistant ring shank nails.
 15. Wood Framing into WSP: 0.121 inch (3 mm) shank by 0.371 inch (9.4 mm) head by 1-1/4 inches (32 mm) corrosion resistant roofing nails.
 16. Wood Framing: No. 11 gauge 1-1/4 inches (32 mm) corrosion resistant roofing nails.
 17. Wood Framing: No. 11 gauge 1-3/4 inches (44 mm) corrosion resistant roofing nails.

18. Wood Framing into WSP: No. 8 1-5/8 inches (41 mm) by 0.375 inch (9.5 mm) head corrosion resistant ribbed wafer head screws.
- B. Metal Framing:
1. Metal Framing: 1-1/4 inches (32 mm) No. 8-18 by 0.375 inch (9.5 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
 2. Metal Framing: 1-5/8 inches (41 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant S-12 ribbed buglehead screws.
 3. Metal Framing: 1 inch (25 mm) No. 8-18 by 0.323 inch (8.2 mm) head self-drilling, corrosion resistant ribbed buglehead screws.
 4. Metal Framing: 1.5 inch (38mm) [AGS-100] 0.100 inches by 0.25 inches (2.54 mm by 6.35 mm) ET&F Pin or equivalent pneumatic fastener.
 5. Metal Framing: 1.5 inch (38mm) 0.100 inches by 0.313 inches (2.54 mm by 7.95 mm) ET&F Pin or equivalent pneumatic fastener.
- C. Masonry Walls (CMU):
1. Masonry Walls: ET&F No. ASM-144-125, 0.144 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/4 inches (32 mm) long corrosion resistant nails
 2. Masonry Walls: ET&F No. ASM-144-150, 0.145 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/2 inches (38 mm) long corrosion resistant nails
 3. Masonry Walls: Max System CP-C 832 W7-ICC, 0.145 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1.3 inches (33 mm) long corrosion resistant nails
 4. Masonry Walls: Max System CP-C 838 W7-ICC, 0.145 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/2 inches (38 mm) long corrosion resistant nails
 5. Masonry Walls: Aerosmith SurePin 0.144 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/4 inches (32 mm) long corrosion resistant nails
 6. Masonry Walls: Aerosmith SurePin 0.144 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/2 inches (38 mm) long corrosion resistant nails
 7. Jaaco Nail Pro NP145S 0.145 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/4 inches (32 mm) long corrosion resistant nails
 8. Jaaco Nail Pro NP145S 0.145 inch (3.6 mm) shank by 0.30 inch (7.6 mm) head by 1-1/2 inches (38 mm) long corrosion resistant nails
- D.** NOTE TO SPECIFIER ** Certain geographic areas allow a minimum single coat of 100% acrylic or exterior grade latex, high quality alkali resistant paint on unprimed product. James Hardie recommends, minimum one coat primer plus on or two topcoats.

2.4 FINISHES

- A. Factory Primer: Provide factory applied universal primer.
1. Primer: Factory primed by James Hardie.
 2. Topcoat: Refer to Section 099000 and Exterior Finish Schedule.
- B. Factory Finish: Refer to Exterior Finish Schedule.
1. Product: ColorPlus Technology by James Hardie.
 2. Definition: Factory applied finish; defined as a finish applied in the same facility and company that manufactures the siding substrate.
 3. Process:
 - a. Factory applied finish by fiber cement manufacturer in a controlled environment within the fiber cement manufacturer's own facility utilizing a multi-coat, heat cured finish within one manufacturing process.
 - b. Each finish color must have documented color match to delta E of 0.5 or better between product lines, manufacturing lots or production runs

as measured by photo spectrometer and verified by third party.

4. Protection: Factory applied finish protection such as plastic laminate that is removed once siding is installed
 5. Accessories: Complete finishing system includes pre-packaged touch-up kit provided by fiber cement manufacturer. Provide quantities as recommended by manufacturer.
- C. Factory Finish Color for Trim, Soffit and Siding Colors:
1. Alpine Frost JH50-10.
 2. Arctic White JH10-20.
 3. Autumn Tan JH20-20.
 4. Boothbay Blue JH70-20.
 5. Chestnut Brown JH80-30.
 6. Cobble Stone JH40-10.
 7. Countrylane Red JH90-20.
 8. Evening Blue JH70-30.
 9. Frosted Green JH60-20.
 10. Harris Cream JH80-10.
 11. Heathered Moss JH50-20.
 12. Iron Gray JH90-30.
 13. Khaki Brown JH20-30.
 14. Light Mist JH70-10.
 15. Monterey Taupe JH40-20.
 16. Mountain Sage JH50-30.
 17. Navajo Beige JH30-10.
 18. Parkside Pine JH60-30.
 19. Sail Cloth JH20-10.
 20. Sandstone Beige JH30-20.
 21. Soft Green JH60-10.
 22. Timber Bark JH40-30.
 23. Traditional Red JH90-10.
 24. Tuscan Gold JH80-20.
 25. Woodland Cream JH10-30.
 26. Woodstock Brown JH30-30.
 27. Terra Cotta JH15-20.
 28. Coral Coast JH25-20.
 29. Aqua Marine JH35-20.
 30. Cool Breeze JH45-20.
 31. Pink Sand JH55-20.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If framing preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Nominal 2 inch by 4 inch (51 mm by 102 mm) wood framing selected for minimal shrinkage and complying with local building codes, including the use of water-resistant barriers or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 1. Install water-resistant barriers and claddings to dry surfaces.
 2. Repair any punctures or tears in the water-resistant barrier prior to the installation of the siding.
 3. Protect siding from other trades.

- D. Minimum 20 gauge 3-5/8 inch (92 mm) C-Stud 16 inches maximum on center or 16 gauge 3-5/8 inches (92 mm) C-Stud 24 inches (610 mm) maximum on center metal framing complying with local building codes, including the use of water-resistive barriers and/or vapor barriers where required. Minimum 1-1/2 inches (38 mm) face and straight, true, of uniform dimensions and properly aligned.
 - 1. Install water-resistive barriers and claddings to dry surfaces.
 - 2. Repair any punctures or tears in the water-resistive barrier prior to the installation of the siding.
 - 3. Protect siding from other trades.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Install a water-resistive barrier is required in accordance with local building code requirements.
- D. The water-resistive barrier must be appropriately installed with penetration and junction flashing in accordance with local building code requirements.
- E. Install Engineered for Climate™ HardieWrap™ weather barrier in accordance with local building code requirements.
- F. Use HardieWrap™ Seam Tape and joint and laps.
- G. Install and HardieWrap™ flashing, HardieWrap™ Flex Flashing.

3.3 INSTALLATION - HARDIEPLANK HZ10 LAP SIDING AND ARTISAN HZ10 LAP SIDING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall. Apply planks horizontally with minimum 1-1/4 inches (32 mm) wide laps at the top. The bottom edge of the first plank overlaps the starter strip.
- C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- D. Align vertical joints of the planks over framing members.
- E. Maintain clearance between siding and adjacent finished grade.
- F. Locate splices at least one stud cavity away from window and door openings.
- G. Use off-stud metal joiner in strict accordance with manufacturer's installation instructions.
- H. Wind Resistance: Where a specified level of wind resistance is required Artisan lap siding is installed to framing members and secured with fasteners described in ICC-ES Evaluation Report No. ESR-2290
- I. Face nail to sheathing.
- J. Locate splices at least 12 inches (305 mm) away from window and door openings.

3.4 INSTALLATION - ARTISAN HZ10 LOCK JOINT SYSTEM SIDING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Starting: Install bottom course at bottom of the wall. Apply consecutive courses horizontally in a stacking affect as the Lock Joint system connecting into the course below.
- C. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- D. Align vertical joints of the siding minimum 4 inches from framing members.
- E. Maintain clearance between siding and adjacent finished grade.
- F. Locate splices at least 12 inches (305 mm) away from window and door openings.
- G. Wind Resistance: Where a specified level of wind resistance is required Artisan HZ10 Lock Joint System siding is installed to framing members and secured with fasteners described in Artisan V Rustic code compliance sheet
- H. Face nail to sheathing.

3.5 INSTALLATION - HARDIEPANEL HZ10 VERTICAL SIDING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Block framing between studs where HardiePanel siding horizontal joints occur.
- C. Install metal Z flashing and provide a 1/4 inch (6 mm) gap at horizontal panel joints.
- D. Place fasteners no closer than 3/8 inch (9.5 mm) from panel edges and 2 inches (51 mm) from panel corners.
- E. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- F. Maintain clearance between siding and adjacent finished grade.
- G. Specific framing and fastener requirements refer to. ICC-ES Evaluation Report No. ESR-1844
- H. Factory Finish Touch Up: Apply touch up paint to cut edges in accordance with manufacturer's printed instructions.
 - 1. Touch-up nicks, scrapes, and nail heads in pre-finished siding using the manufacturer's touch-up kit pen.
 - 2. Touch-up of nails shall be performed after application, but before plastic protection wrap is removed to prevent spotting of touch-up finish.
 - 3. Use touch-up paint sparingly. If large areas require touch-up, replace the damaged area with new pre-finished siding. Match touch up color to siding color through use of manufacturer's branded touch-up kits.

3.6 INSTALLATION - HARDIE HZ10 SHINGLESIDE CLADDING

- A. Install materials in strict accordance with manufacturer's installation instructions.
- B. Substrate: Install a minimum 7/16 inch (11 mm) thick OSB wall sheathing or equivalent braced walls complying with applicable building codes.

- C. Starting: Install a minimum 1/4 inch (6 mm) thick lath starter strip at the bottom course of the wall.
- D. Maintain clearance between siding and adjacent finished grade.
- E. Apply starter course of 10 inches (254 mm) shingles or 9-1/2 inches (241 mm) lap siding overlapping the starter strip.
- F. Apply subsequent courses horizontally with a minimum 10 inch overlap at the top and a minimum 2 inch (51 mm) side lap. The bottom edge of the first two courses overlaps the starter strip.
- G. Fasten between 1/2 inch (13 mm) and 1 inch (25 mm) in from the side edge and between 8-1/2 inches (216 mm) and 9 inches (229 mm) up from the shingle bottom edge.
- H. Allow minimum vertical clearance between the edge of siding and any other material in strict accordance with the manufacturer's installation instructions.
- I. Ensure vertical joints of overlapping shingle course do not align.
- J. Wind Resistance: Where a specified level of wind resistance is required, Hardie Shingle siding is installed to substrate and secured with a minimum two fasteners described in ICC-ES Evaluation Report No. ESR-2290.

3.7 INSTALLATION - HARDIETRIM HZ10 BOARDS

- A. Install materials in strict accordance with manufacturer's installation instructions. Install flashing around all wall openings.
- B. Fasten through trim into structural framing or code complying sheathing. Fasteners must penetrate minimum 3/4 inch (19 mm) or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch (19 mm) and no further than 2 inches (51 mm) from side edge of trim board and no closer than 1 inch (25 mm) from end. Fasten maximum 16 inches (406 mm) on center.
- D. Maintain clearance between trim and adjacent finished grade.
- E. Trim inside corner with a single board trim both side of corner.
- F. Outside Corner Board Attach Trim on both sides of corner with 16 gage corrosion resistant finish nail 1/2 inch (13 mm) from edge spaced 16 inches (406 mm) apart, weather cut each end spaced minimum 12 inches (305 mm) apart.
- G. Allow 1/8 inch gap between trim and siding.
- H. Seal gap with high quality, paint-able caulk.
- I. Shim frieze board as required to align with corner trim..
- J. Fasten through overlapping boards. Do not nail between lap joints.
- K. Overlay siding with single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten HardieTrim boards to HardieTrim boards.

L. Shim frieze board as required to align with corner trim.

M. Install HardieTrim Fascia boards to rafter tails or to sub fascia.

3.8 FINISHING

A. Finish unprimed siding with a minimum one coat high quality, alkali resistant primer and one coat of either, 100 percent acrylic or latex or oil based, exterior grade topcoats or two coats high quality alkali resistant 100 percent acrylic or latex, exterior grade topcoat within 90 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

B. Finish factory primed siding with a minimum of one coat of high quality 100 percent acrylic or latex or oil based exterior grade paint within 180 days of installation. Follow paint manufacturer's written product recommendation and written application instructions.

3.9 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION