SECTION 07610 - SHEET METAL ROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

A.Preformed, prefinished metal roofing and flashings. B. Miscellaneous trim, flashing, closures, drip flashing, and accessories.

C.Sealant

1.02 RELATED SECTIONS

D. Fastening devices.

A. Section 05120: Structural Steel Framing.

B. Section 05500: Miscellaneous metal fabrication. C. Section 06100: Rough Carpentry.

D. Section 07631: Flashing and Sheet Metal Gutters. E. Section 07900: Sealants.

1.03 REFERENCES

A. American Iron & Steel Institute (AISI) Specification for the Design of Coldformed Steel Structural Members.

B. ASTM A-653 & ASTM A924 Steel Sheet, Zinc-Coated (Galvanized)

C.Spec Data Sheet - Galvalume Sheet Metal by Bethlehem Corp. D. SMACNA - Architectural Sheet Metal Manual.

E. Building Materials Directory - Underwriter's Laboratories, Test Procedure 580.

1.04 ASSEMBLY DESCRIPTION

A. The roofing assembly includes preformed sheet metal panels, related accessories, valleys, hips, ridges, eaves, corners, rakes, miscellaneous flashing and attaching devices.

1.05 SUBMITTALS

A. Submit detailed drawings showing layout of panels, anchoring details, joint details, trim, flashing, and accessories. Show details of weatherproofing, terminations, and penetrations of metal work. B. Submit a sample of each type of roof panel, complete with factory

C.Submit results indicating compliance with minimum requirements of the following performance tests: 1. Wind Uplift - U.L.90

1.06 QUALITY ASSURANCE

A.Manufacturer: Company specializing in Architectural Sheet Metal Products with ten (10) years minimum experience.

B. No product substitutions shall be permitted without meeting specifications. C.Substitutions shall be submitted 10 Days prior to Bid Date and

acceptance put forth in an addendum. D.No substitutions shall be made after the Bid Date.

1.07 DELIVERY, STORAGE AND HANDLING A. Upon receipt of panels and other materials, installer shall

examine the shipment for damage and completeness. B. Panels should be stored in a clean, dry place. One end should be elevated to allow moisture to run off.

C.Panels with strippable film must not be stored in the open, exposed to the sun.

D. Stack all materials to prevent damage and to allow for adequate ventilation.

1.08 WARRANTY

A. Paint finish shall have a twenty-year guarantee against cracking, peeling and fade (not to exceed 5 N.B.S. units). B. Galvalume material shall have a twenty-year guarantee against

failure due to corrosion, rupture or perforation. C. Applicator shall furnish guarantee covering watertightness of the

roofing system for the period of two (2) years from the date of substantial completion.

PART 2 PRODUCT

2.01 ACCEPTABLE MANUFACTURERS

A. Berridge Manufacturing Company, Houston, Texas. B. Substitutions shall fully comply with specified requirements.

2.02 SHEET MATERIALS

A.Prefinished metal shall be Aluminum-Zinc Alloy Coated (AZ-55 Galvalume®) Steel Sheet, 24-Gauge or 22-Gauge, ASTM 792-08, Grade 40, yield strength 40 ksi min.

B. Finish shall be full strength Kynar 500® or Hylar 5000™ fluoropolymer coating applied by the manufacturer on a continuous coil coating line, with a top side dry film thickness of

0.75 ± 0.05 mil over 0.20 ± 0.05 mil prime coat, to provide a total top side dry film thickness of 0.95 ± 0.10 mil. Bottom side shall be coated with a primer and beige urethane coating with a total dry film thickness of 0.35 ± 0.05 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500® or Hylar 5000™ finish supplier.

C.Color shall be selected from manufacturers standard colors. D. Strippable film shall be applied to the top side of all prefinished metal to protect the finish during fabrication, shipping and field handling. This strippable film MUST be removed immediately before installation.

E. Unpainted metal shall be Aluminum-Zinc Alloy Coated (AZ-55 Acrylic Coated Galvalume®) Steel Sheet, 24-Gauge or 22-Gauge, ASTM 792-08, Grade 40, yield strength 40 ksi min., with clear acrylic coating on both sides of material.

F. Field protection must be provided by the contractor at the job site so stacked or coiled material is not exposed to weather and

G.Flashing maybe factory fabricated or field fabricated. Unless otherwise specified all exposed adjacent flashing shall be of the same material and finish as panel system.

2.03 ACCESSORY MATERIALS

A.Fasteners: [Galvanized Steel] [Stainless Steel] [Cadmium Plated Steel] with washers where required.

B. Sealant: As specified in Section 07900 [] Type.

2.04 FABRICATION

A. All exposed adjacent flashing shall be of the same material and finish as the roof panels.

B. Hem all exposed edges of flashing on underside, 1/2 inch.

2.05 BERRIDGE "R" PANEL A. Overall panel width to be 38-1/4", with 36" net coverage.

B. Panels shall be factory-formed to 40' max. C.1-1/4" high ribs to be spaced 12" on center, with 3/4" wide by 1/4"

high minor ribs spaced 4" on center between major ribs. D.Panel-to-panel and panel-to-decking connections to be with No. 12-14 self-drilling tapping fasteners, 1" min. for panel-to-decking connections, 3/4" minimum for panel-to-panel connections.

shall be used at panel side laps and end laps. G.Where required, panel assembly shall bear Underwriter's

F. For roof applications, a line of tape sealant for weathertightness

Laboratories Label UL90, pursuant to Construction Number 161.

PART 3 EXECUTION

3.01 INSPECTION A Substrate:

1. Examine plywood or metal deck to ensure proper attachment to

2. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves or projections, level to +/- 1/4" in 20', and properly sloped to [valleys] (or) [eaves].

3. Verify roof openings, curbs, pipes, sleeves, ducts or vents through roof are solidly set, cant strips and reglets in place, and nailing strips located.

4. Verify deck is dry and free of snow or ice. [Flutes in steel deck to be clean and dry] or [joints in wood deck to be solidly supported and nailed].

B. Underlayment: 1. Verify #30 unperforated asphalt saturated roofing felt

underlayment has been installed over solid sheathing and

2. One (1) layer of #30 asphalt roofing felt paper for roof slopes of 3:12 and up, two (2) layers for roof slopes of 1:12 - 3:12 in moderate climates (check with Berridge).

3. Grace Ice & Water Shield underlayment to be used on all curved applications and on low (less than 1:12) slope or complex roofs per Berridge recommendation.

4. Ensure felt installed horizontally, starting at eave to ridge with a 6" minimum overlap and 18" endlaps.

5. Ensure that all nail heads are totally flush with the substrate. Nails shall be galvanized roofing nails with Berridge Coated Felt Caps.

3.02 INSTALLATION

A. Comply with manufacturers standard instructions and conform to standards set forth in the Architectural Sheet Metal Manual published by SMACNA, in order to achieve a watertight

installation. B. Install panels in such a manner that horizontal lines are true and level and vertical lines are plumb.

C.Install starter and edge trim before installing roof panels. D.Remove protective strippable film prior to installation of roof

E. Attach panels using manufacturer's standard fasteners, spaced in accordance with approved shop drawings. F. Install sealants for preformed roofing panels as approved on shop

G.Do not allow panels or trim to come into contact with dissimilar

H.Do not allow traffic on completed roof. If required, provide cushioned walk boards. I. Protect installed roof panels and trim from damage caused by

adjacent construction until completion of installation. J. Remove and replace any panels or components which are damaged beyond successful repair.

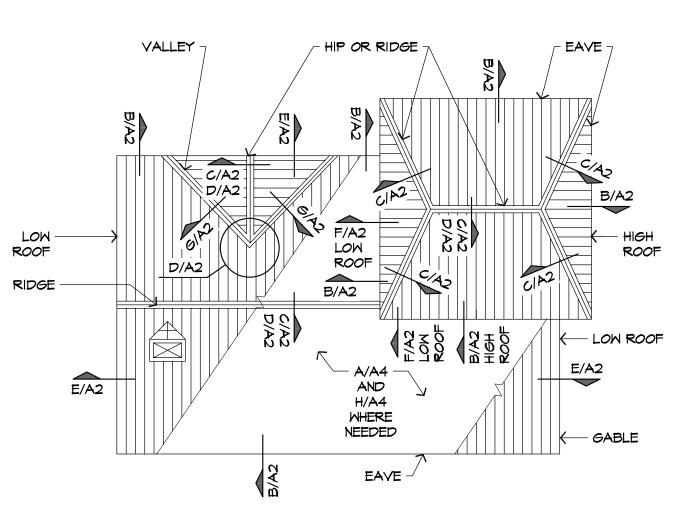
3.03 CLEANING

A. Clean any grease, finger marks or stains from the panels per manufacturer's recommendations. B. Remove all scrap and construction debris from the site.

3.04 FINAL INSPECTION

A. Final inspection will be performed by a firm appointed and paid for by the owner in accordance with section 01410.

END OF SECTION









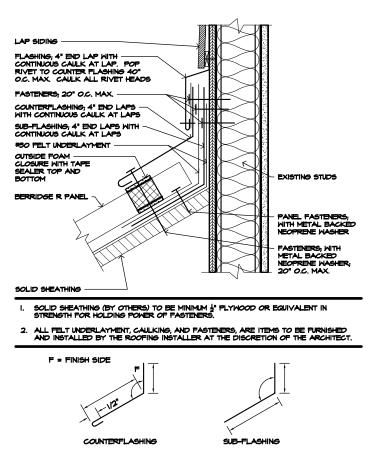
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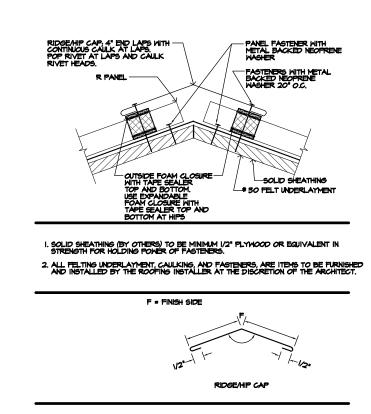
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SHEET NAME: 'R' PANEL **SPECIFICATIONS AND KEY PLAN**

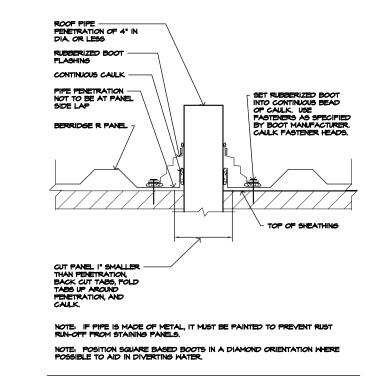
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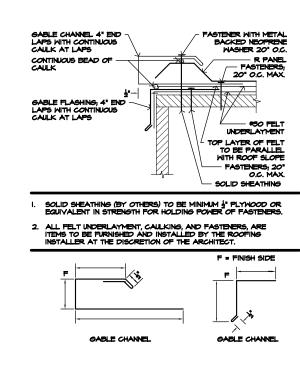




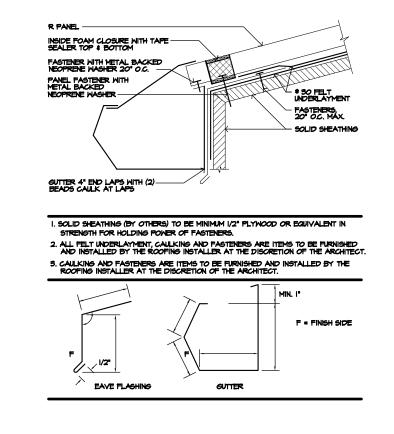




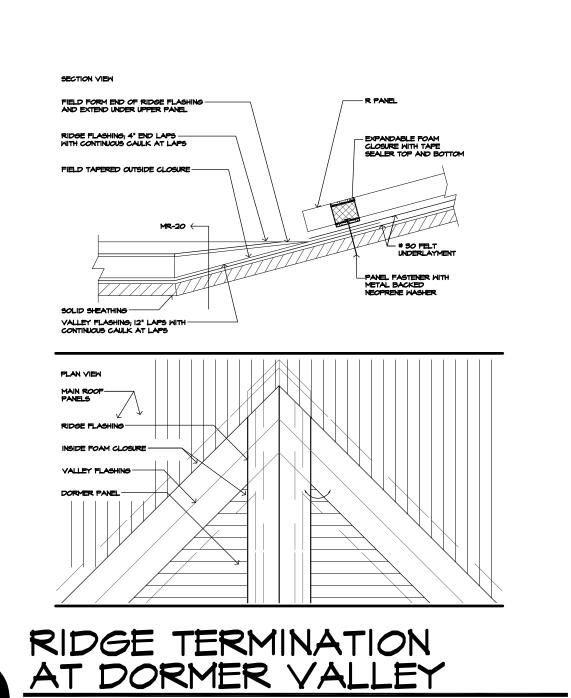


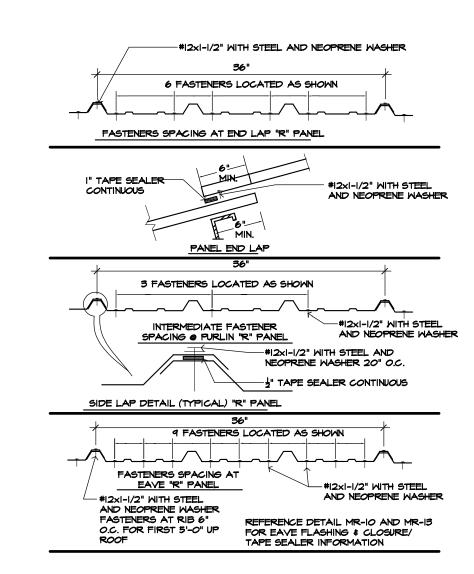


GABLE DETAIL R-PANEL



EAVE DETAIL SOLID SHEATHING SCALE: NTS





FASTENER LOCATIONS WOOD DECK



A Native American Owned Firm

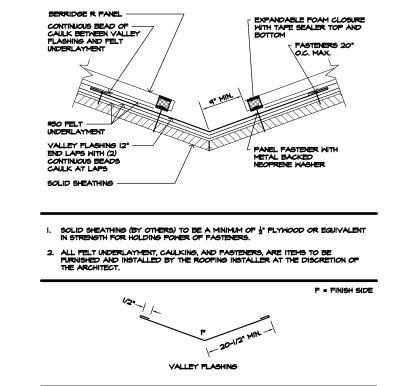
GH2 PROJECT NUMBER: 20210121.29

ISSUE DATE: 12/01/2022

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OTHER ISSUE DATES: NO. DESCRIPTION

DETAILS - 'R' PANEL





SECTION 073113 - ASPHALT SHINGLES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Asphalt shingle roofing.B. Flexible sheet membranes for eave protection, underlayment, and valley protection.
- C. Associated metal flashings and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 061500 Wood Decking: Roof decking.
 B. Section 072100 Thermal Insulation: Nailable rigid insulation.
 C. Section 076200 Sheet Metal Flashing and Trim: Edge and cap
- flashings.

 D. Section 077123 Manufactured Gutters and Downspouts.

1.03 REFERENCE STANDARDS

- A. ASTM D226/D226M Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing 2017.
- B. ASTM D1970/D1970M Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.
- C. ASTM D3161/D3161M Standard Test Method for Wind Resistance of Steep Slope Roofing Products (Fan-Induced Method) 2020
- D. ASTM D4586/D4586M Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- E. ASTM D7158/D7158M Standard Test Method for Wind Resistance of Asphalt Shingles (Uplift Force/Uplift Resistance Method) 2020.
- F. ASTM F1667 Standard Specification for Driven Fasteners: Nails, Spikes, and Staples 2021.
- G. ICC-ES AC188 Acceptance Criteria for Roof Underlayments 2012, with Editorial Revision (2015).
- H. ICC-ES AC207 Acceptance Criteria for Polypropylene Roof Underlayments 2012, with Editorial Revision (2015).
- I. NRCA (RM) The NRCA Roofing Manual 2022.
- J. SMACNA (ASMM) Architectural Sheet Metal Manual 2012.
- K. UL (DIR) Online Certifications Directory Current Edition.

1.04 SUBMITTALS

- A. See Section 013000 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating material characteristics.
- C. Shop Drawings: For metal flashings, indicate specially configured metal flashings, jointing methods and locations, fastening methods and locations, and installation details.
- Samples: Submit two samples of each shingle color indicating color range and finish texture/pattern; for color selection.
- E. Manufacturer's Installation Instructions: Indicate installation criteria and procedures.
- F. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 1. See Section 016000 Product Requirements, for additional

1.05 MOCK-UP

- A. Provide mock-up of 100 sq ft (9.2 sq m) including underlayment.
- B. Locate where directed.

provisions.

C. Mock-up may remain as part of the Work.

1.06 FIELD CONDITIONS

A. Do not install shingles or eave protection membrane when surface temperatures are below 45 degrees F (7 degrees C).

1.07 WARRANTY

- A. See Section 017800 Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a one year period after Date of Substantial Completion.
- C. Provide 30 year (minimum) manufacturer's defect warranty
- D. Provide twenty year manufacturer's warranty for wind damage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- B. Algae Resistant Asphalt Shingles:1. GAF; Layer Lock or Lifetime Shingles: www.gaf.com/#sle.
- 2. Substitutions: See Section 016000 Product Requirements.

2.02 ASPHALT SHINGLES

- A. Asphalt Shingles: Asphalt-coated glass felt, mineral granule surfaced, complying with ASTM D3462/D3462M.
- Fire Resistance: Class A, conforming to ASTM E108.
 Wind Resistance: Class F, when tested in accordance with
- ASTM D3161/D3161M.
 3. Algae Resistant.
- 4. Hail Impact Rating: Class 3 or 4.5. Self-sealing or interlocking type.
- 6. Style: Staggered edge butt.7. Color: As selected by Architect

2.03 SHEET MATERIALS

- A. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
- Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.
- Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
- B. Underlayment: Self-adhering rubber-modified asphalt sheet complying with ASTM D1970/D1970M; 22 mil, 0.022 inch (0.55 mm) total thickness; with strippable release film and woven polypropylene sheet top surface.
- C. Flexible Flashing: Self-adhering polymer-modified asphalt sheet complying with ASTM D1970/D1970M; 40 mil, 0.040 inch (1.0 mm) total thickness; with strippable treated release paper and polyethylene sheet top surface.

2.04 ACCESSORIES

- A. Roofing Nails: Standard round wire shingle type, galvanized steel, stainless steel, aluminum roofing nails, or copper roofing nails, minimum 3/8 inch (9.5 mm) head diameter, 12 gage, 0.109 inch (2.77 mm) nail shank diameter, 1-1/2 inch (38 mm) long and complying with ASTM F1667.
- B. Nails: Standard round wire shingle type, of hot-dipped zinc coated steel, 10 wire gage, 0.1019 inch (2.59 mm) shank diameter, 3/8 inch (9.5 mm) head diameter, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.
- C. Nails: Standard round wire shingle type, of hot dipped zinc coated steel, minimum 3/8 inch (9.5 mm) head diameter and 10 wire gage, 0.1019 inch (2.59 mm) shank diameter, 1-1/4 inch (31 mm) long.
- D. Staples: Standard wire shingle type, of hot dipped zinc coated steel, 16 wire gage, 0.0508 inch (1.29 mm) diameter, 15/16 inch (23.8 mm) crown width, of sufficient length to penetrate through roof sheathing or 3/4 inch (19 mm) into roof sheathing or decking.
- E. Plastic Cement: ASTM D4586/D4586M, asphalt roof cement.
- F. Lap Cement: Fibrated cutback asphalt type, recommended for use in application of underlayment, free of toxic solvents.
- G. Ridge Vents: Plastic, extruded with vent openings that do not

permit direct water or weather entry; flanged to receive shingles.

2.05 METAL FLASHINGS

- A. Metal Flashings: Provide sheet metal eave edge, gable edge, ridge, ridge vents, open valley flashing, chimney flashing, dormer flashing, and other flashing indicated or required for project.
- Form flashings to protect roofing materials from physical damage and shed water.
 Form sections square and accurate to profile, in maximum possible lengths, free from distortion or defects detrimental
- to appearance or performance.

 3. Hem exposed edges of flashings minimum 1/4 inch (6 mm)
 on underside
- on underside.

 4. Coat concealed surfaces of flashings with bituminous paint.
- B. Steel Sheet Metal: Prefinished and galvanized steel sheet, 26 gage, 0.0179 inch (0.45 mm) minimum thickness, G90/Z275
- C. Bituminous Paint: Acid and alkali resistant type; black color.

hot-dipped galvanized; PVC coated, match roof color.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions prior to beginning work.
- B. Verify that roof deck is of sufficient thickness to accept fasteners.
- Verify that roof penetrations and plumbing stacks are in place and flashed to deck surface.
- D. Verify roof openings are correctly framed.
- E. Verify deck surfaces are dry, free of ridges, warps, or voids.

3.02 PREPARATION

- A. Seal roof deck joints wider than 1/16 inch (1.5 mm) as recommended by shingle manufacturer.
- B. At areas where eave protection membrane is to be adhered to substrate, fill knot holes and surface cracks with latex filler.
- C. Broom clean deck surfaces before installing underlayment or eave protection.

3.03 INSTALLATION - EAVE PROTECTION MEMBRANE

- A. Install eave protection membrane from eave edge to minimum 4 ft (1200 mm) up-slope beyond interior face of exterior wall.
- B. Install eave protection membrane in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- C. Apply 4 inch (100 mm) wide band of plastic cement over deck

flange of eave edge flashings, and embed an 18 inch (450 mm) wide strip of eave protection membrane. Place starter strip with eave edge flush with face of flashings. Secure in place. Lap ends minimum 6 inches (150 mm).

3.04 INSTALLATION - UNDERLAYMENT

- A. Underlayment At Roof Slopes Up to 4:12: Install two layers of underlayment over area not protected by eave protection, with ends and edges weather lapped minimum 4 inches (100 mm). Stagger end laps of each consecutive layer. Nail in place.
- B. Underlayment At Roof Slopes Greater Than 4:12: Install underlayment perpendicular to slope of roof, with ends and edges weather lapped minimum 4 inches (100 mm). Stagger end laps of each consecutive layer. Nail in place. Weather lap minimum 4 inches (100 mm) over eave protection.
- C. Items projecting through or mounted on roof: Weather lap and seal watertight with plastic cement.

3.05 INSTALLATION - VALLEY PROTECTION

- A. Install one ply of sheet metal flashing crimped to guide water, minimum 18 inches (450 mm) wide, centered over valleys.
- B. Install flexible flashing in accordance with manufacturer's
- instructions and NRCA (RM) applicable requirements.

 C. Weather lap joints minimum 2 inches (50 mm).
- D. Nail in place minimum 18 inches (450 mm) on center, 1 inch (25 mm) from edges.
- E. At Exposed Valleys: Install one layer of sheet metal flashing, minimum 24 inches (600 mm) wide, centered over open valley and crimped to guide water. Weather lap joints minimum 2 inch (50 mm) wide band of lap cement along each edge of first, press roll roofing into cement, and nail in place minimum 18 inches (450 mm) on center, 1 inch (25 mm) from edges.
- 3.06 INSTALLATION METAL FLASHING AND ACCESSORIES
- A. Install flashings in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Weather lap joints minimum 2 inches (50 mm) and seal weather
- tight with plastic cement.

 C. Items Projecting Through or Mounted on Roofing: Flash and seal

3.07 INSTALLATION - SHINGLES

weather tight with plastic cement.

- A. Install shingles in accordance with manufacturer's instructions manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Project first course of shingles 3/4 inch (19 mm) beyond fascia
- C. Extend shingles 1/2 inch (13 mm) beyond face of gable edge fascia
- D. Complete installation to provide weather tight service.
- 3.08 PROTECTION
- A. Do not permit traffic over finished roof surface.

END OF SECTION 073113







SKEENATION CER HOUSING

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ISSUE DATE: **12/01/2022**

BIDDING SET

GH2 PROJECT NUMBER: **20210121.29**

OTHER ISSUE DATES:

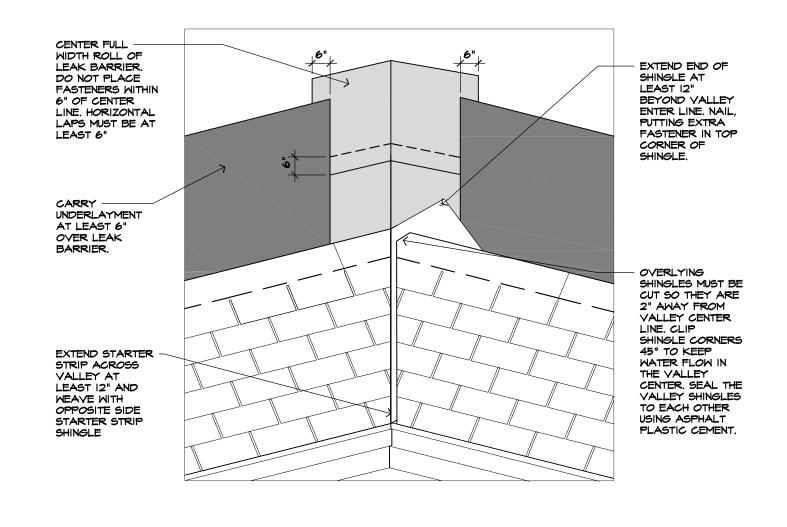
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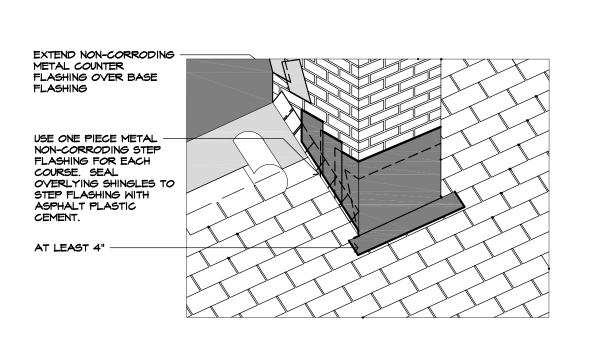
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SHINGLES
SPECIFICATIONS AND

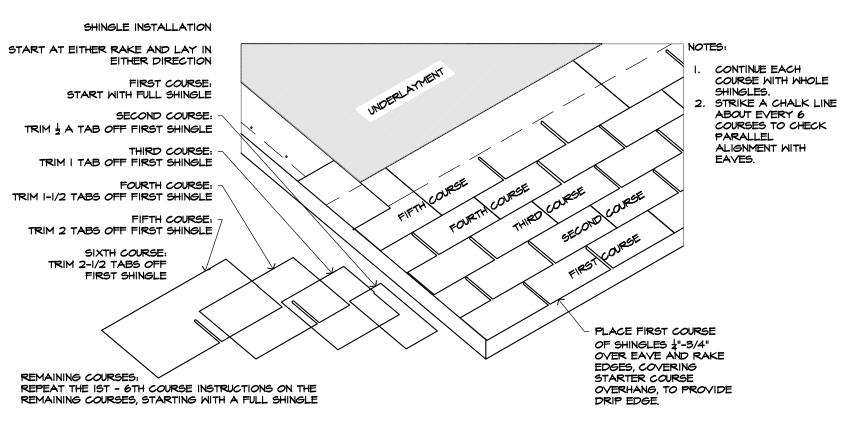
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KEY PLAN



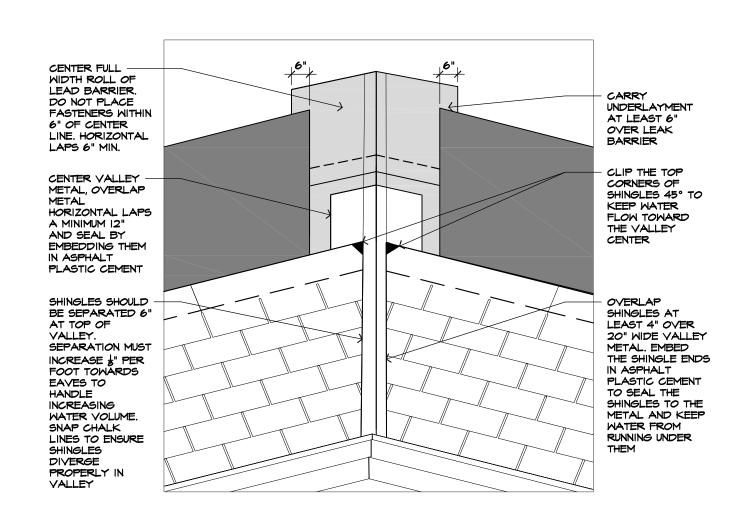


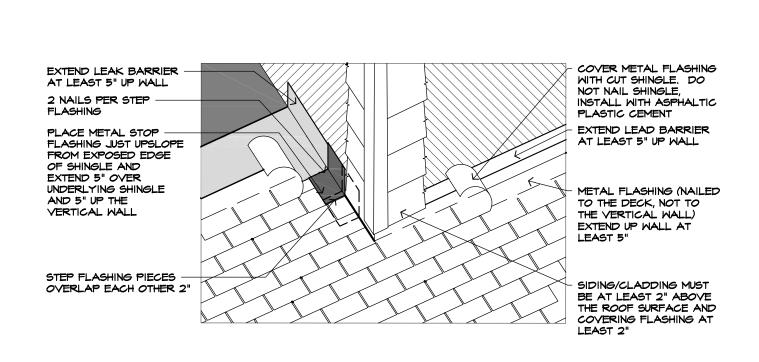


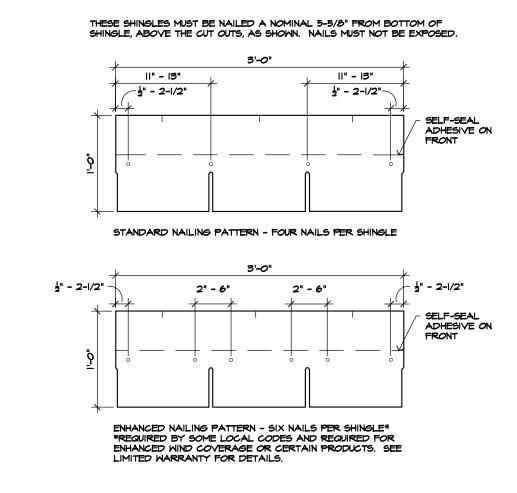








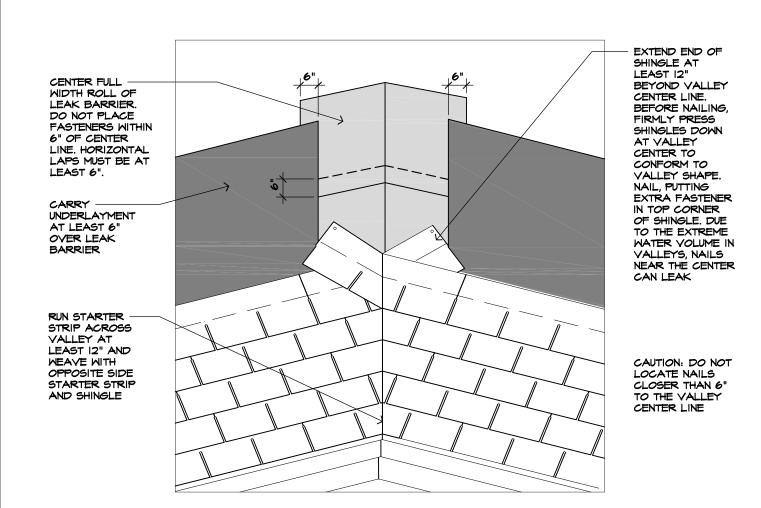


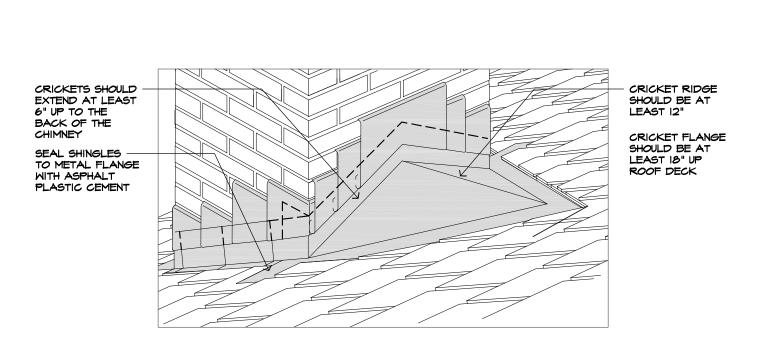


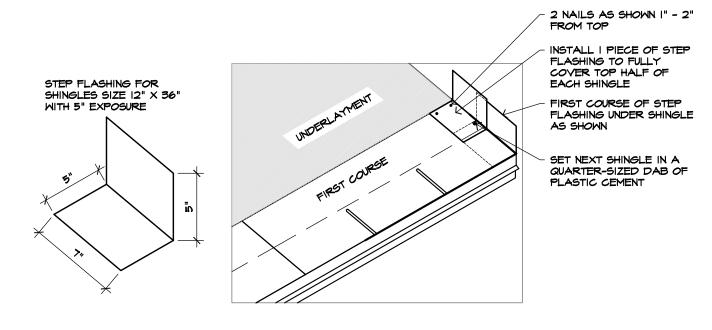


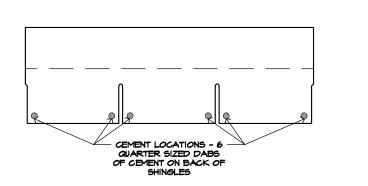


NAIL PLACEMENT DETAIL























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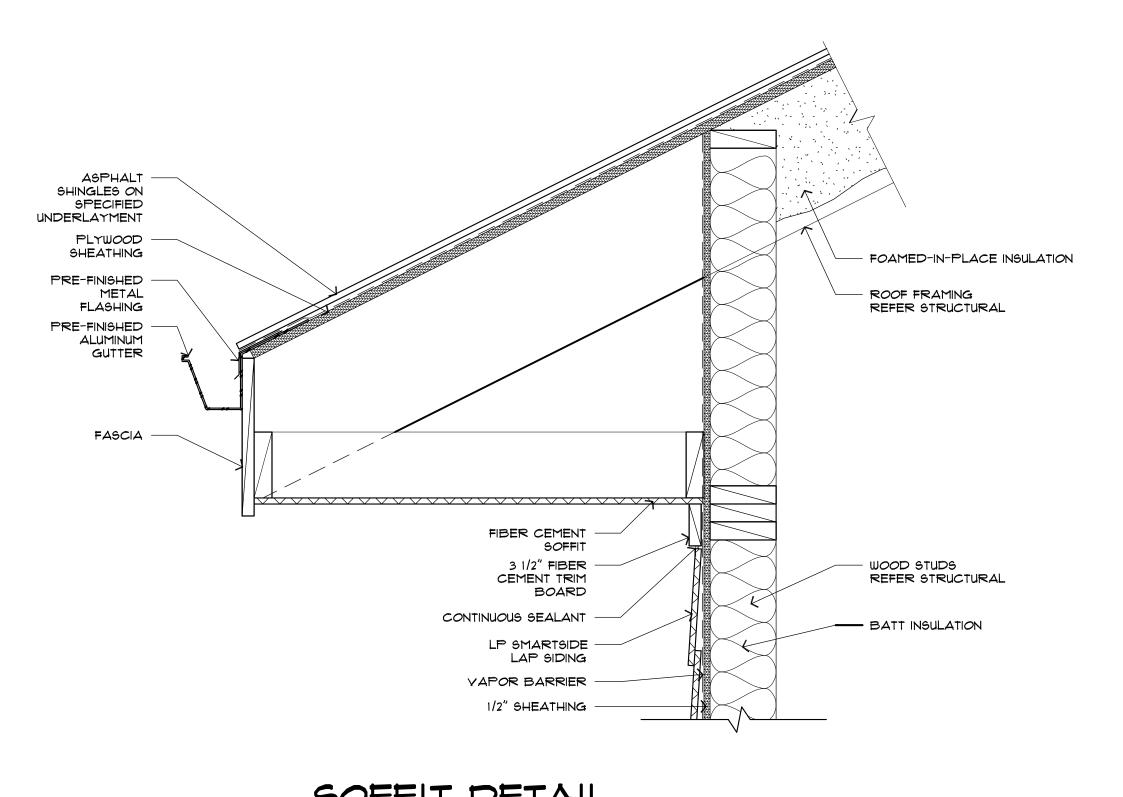
ISSUE DATE: 12/01/2022

ISSUE: **BIDDING SET**

OTHER ISSUE DATES: NO. DESCRIPTION

SHEET NAME **DETAILS - SHINGLES**





SCALE: NTS

/ ½" GYPSUM BOARD

CORNER BEAD

- CONTINUOUS CAULK

EDGE OF EXISTING

EXISTING STOOL

— ½" GYPSUM BOARD

LP SMARTSIDE LAP SIDING (OR EQUAL) - ENSURE

OF THE DRIP EDGE

FLEXIBLE FLASHING OVER NAILING FIN

CONTINUOUS SEALANT

WINDOW HEAD JAMB

WINDOW CENTER RAIL

CONTINUOUS SEALANT

FLEXIBLE FLASHING -OVER NAILING FIN

WINDOW SILL

IX4TRIM

LAP SIDING -

MINDOM DETAIL

EXTERIOR SIDING

SCALE: NTS

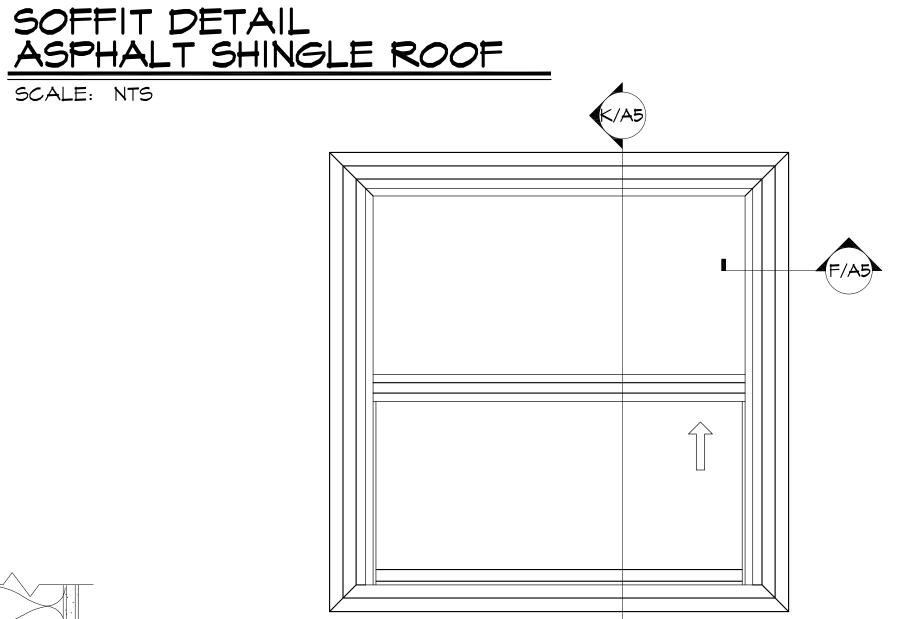
QUAKER - MANUFACTURER

VINYL SERIES (OR EQUAL)

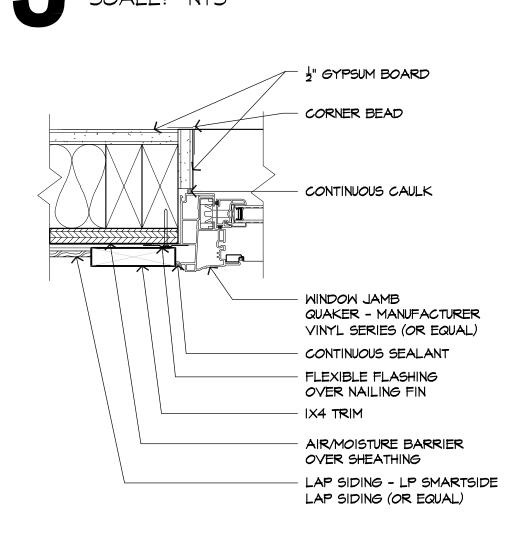
AIR/MOISTURE BARRIER
OVER SHEATHING

FLASH, SHIM, AND GAP 3"

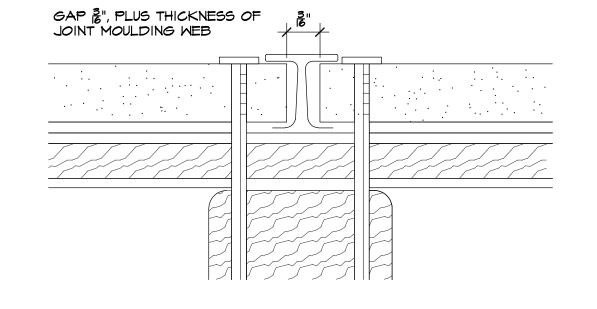
COMPLETE PAINT COVERAGE

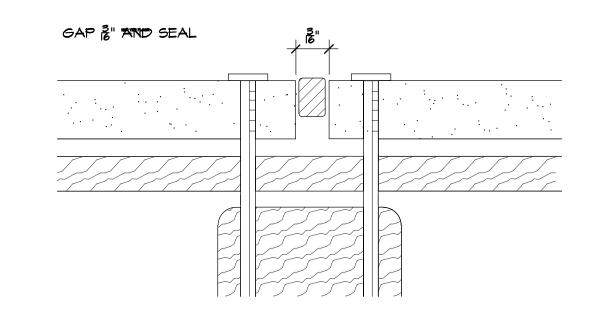


WINDOW (A) QUAKER VINYL SERIES



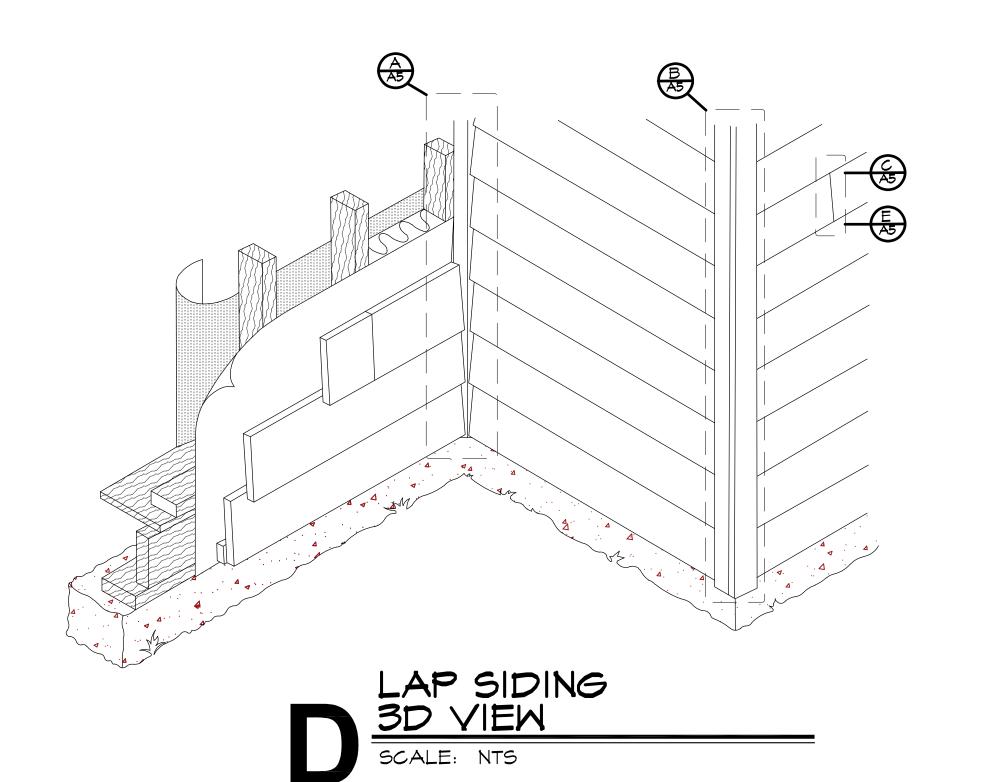


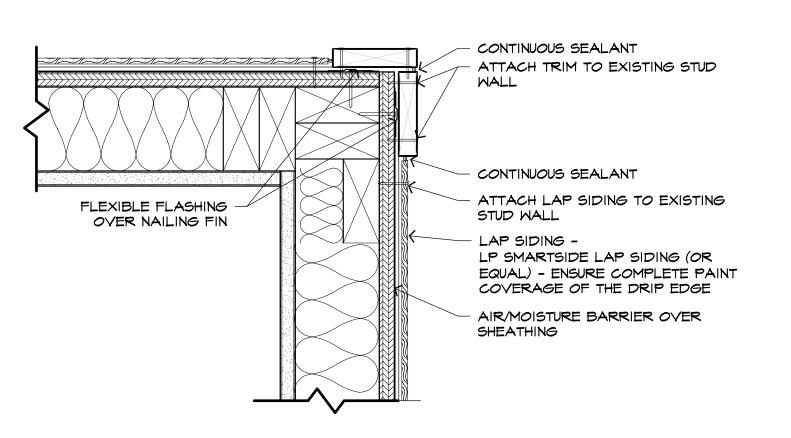


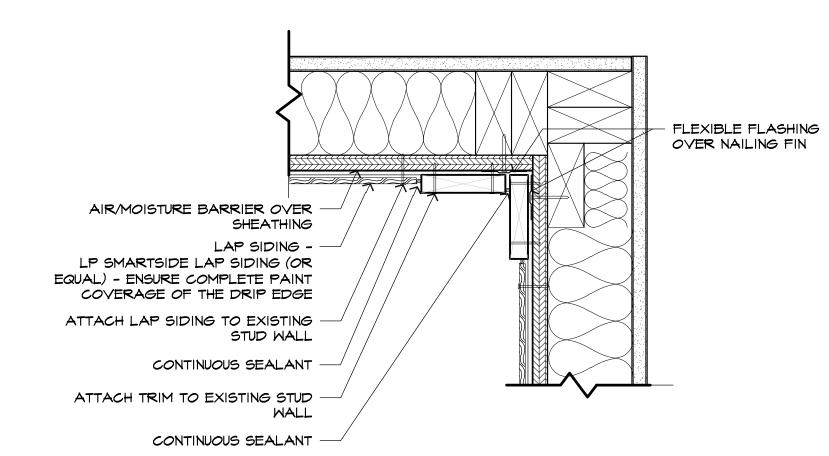




















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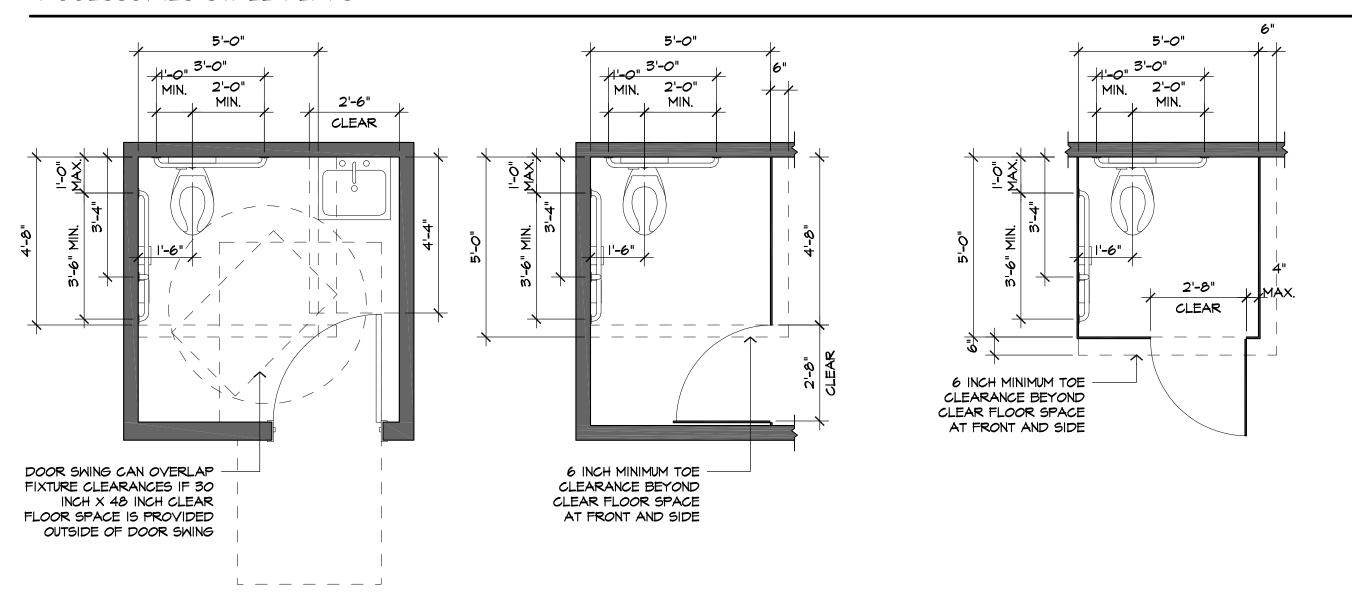
ISSUE DATE: 12/01/2022

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SHEET NAME: **DETAILS - SHINGLES AND SIDING**

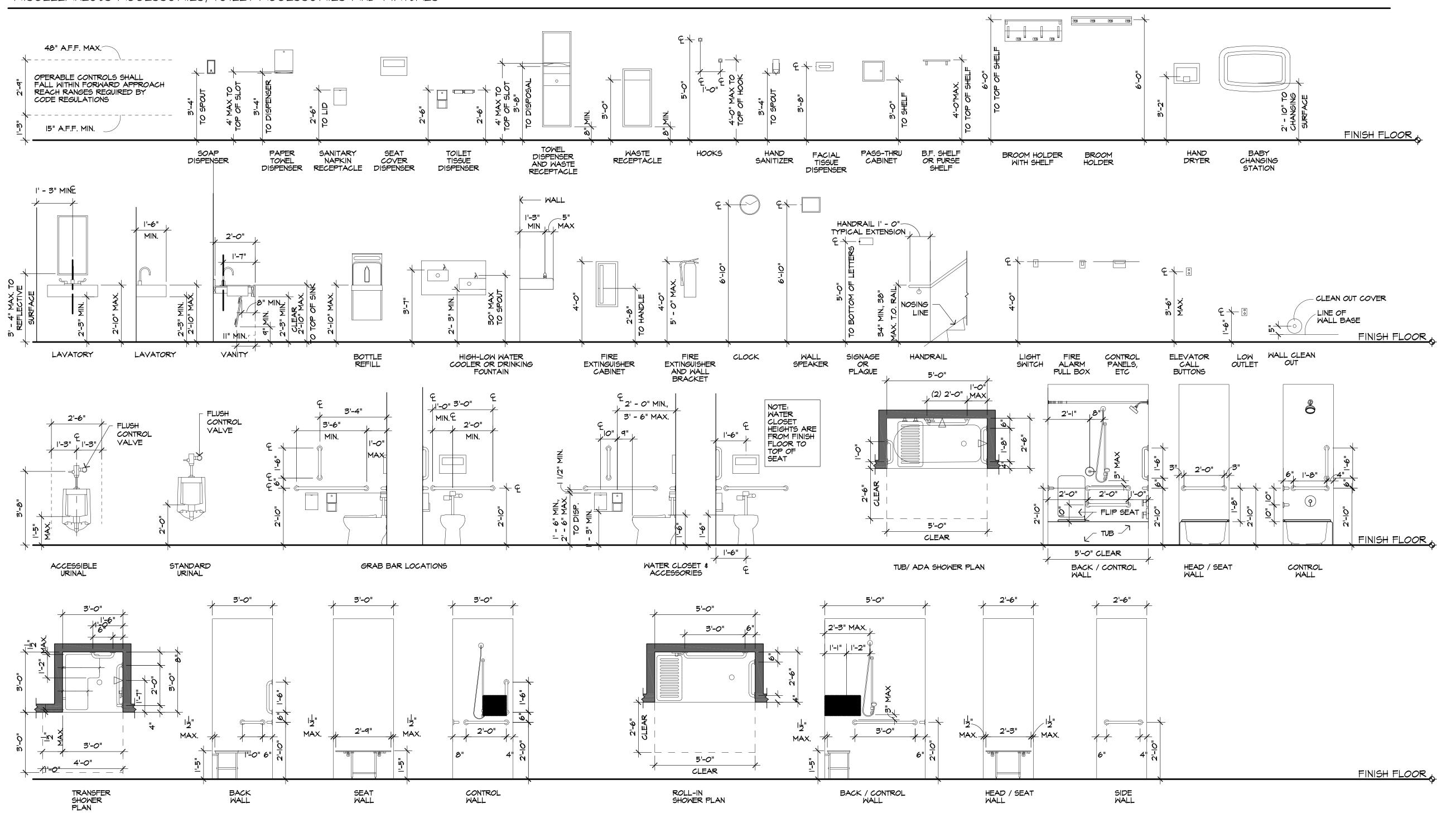
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NOTES

- MOUNTING HEIGHTS SHOWN ARE FOR ALL ACCESSORIES AND FIXTURES REQUIRED, UNLESS NOTED OTHERWISE OR DIMENSIONED ON DRAWINGS FOR SPECIFIC CONDITIONS.
- 2. CLEARANCES, MOUNTING HEIGHTS AND LOCATIONS INDICATED APPLY TO SPECIFIC LOCATIONS THROUGHOUT PROJECT WHERE FIXTURES OCCUR. REFER TO FLOOR PLANS, ENLARGED FLOOR PLANS, A400 SERIES AND INTERIOR ELEVATIONS FOR FIXTURE LOCATIONS AND ADDITIONAL INFORMATION.
- 3. B.F. DENOTES ACCESSIBLE BARRIER FREE REQUIREMENTS.

MISCELLANEOUS ACCESSORIES, TOILET ACCESSORIES AND FIXTURES







5

PEAKER HOUS

DRESS HERE

A R C H I T E C
A Native American Owned For
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