SECTION 04 43 13

THIN VENEER NATURAL STONE

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\*\* NOTE TO SPECIFIER \*\* Paramount Stone Co.; Thin veneer stone products.
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This section is based on the products of Paramount Stone Co., which is located at:
338 Courtland Ave.
Stamford, CT 06906
Tel: 203-353-9119
Fax: 203-353-9094
Email: [request info (info@paramountstone.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Paramount+Stone+Co.&coid=50600&rep=&fax=203-353-9094&message=RE:%20Spec%20Question%20(04112par):%20%20&mf=)
Web: [www.paramountstone.com](http://www.paramountstone.com)
 [ [Click Here](http://www.arcat.com/arcatcos/cos50/arc50600.html) ] for additional information.
Showroom
Tel: (203) 957-3863
Fax (203) 957-3864
335 Westport Avenue, Norwalk, CT 06851
Web: www. http://www.paramountstone.com
Email: info@paramountstone.com
Paramount Stone provides quality craftsmanship in design, fabrication, and installation of marble, granite, quartz and building stone in the Tristate area. We have a custom design solution for all budgets. No matter how complex or simple the design, our highly trained staff will work with you to complete the project successfully. Visit our showroom and let us help guide you to the perfect creation. On-site marble and granite fabrication, On-site Indiana limestone and bluestone fabrication, Design Consultation, Free estimates, prompt delivery, Complete line of mason's tools and supplies, fully stocked yard, building stones include: bluestone, veneer, wall stone, landscape boulders, all custom fabrication of pool coping, stair treads, radius cuts all done on premises.
This specification includes Thinstone Veneer with Rock-solid durability and timeless beauty. It looks like stone and it feels like stone because it is 100% natural stone in its native form, but precision cut to 0.75" to 1.25" deep and can weigh between 11 to 13 lbs per square foot. Certain stone products are also available in full bed veneer 3-6 inches thick. Paramount Thinstone is lightweight and versatile, luxurious yet economical. Affix it to almost any hard surfaceindoors or outdoors and maintain your sumptuous decor for decades to come. Locally sourced, natural, unadulterated stone is inherently eco-friendly and "green," Because it's thin, you get twice as much coverage with half the stone, saving you time, energy and money.

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Thin Veneer Natural Stone.
		2. Stacked Stone Ledger Panels.
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete..
		2. Section 04 27 23 - Cavity Wall Unit Masonry.
		3. Section 05 40 00 - Cold-Formed Metal Framing.
		4. Section 05 50 00 - Metal Fabrications.
		5. Section 06 11 00 - Wood Framing.
		6. Section 07 27 26 - Fluid-Applied Membrane Air Barriers .
		7. Section 07 62 00 - Sheet Metal Flashing and Trim.
		8. Section 07 65 26 - Self-Adhering Sheet Flashing.
		9. Section 07 90 00 - Joint Protection.
		10. Section 09 24 13 - Adobe Finish.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM C 91 - Standard Specification for Masonry Cement.
		2. ASTM C 97 - Standard Specification for Absorption and Bulk Specific Gravity of Dimension Stone.
		3. ASTM C 99 - Standard Specification for Modulus of Rupture of Dimension Stone.
		4. ASTM C 144 - Aggregate for Masonry Mortar.
		5. ASTM C 170 - Standard Specification for Compressive Strength of Dimension Stone.
		6. ASTM C 207 - Standard Specification for Hydrated Lime for Masonry Purposes.
		7. ASTM C 270 - Mortar for Unit Masonry.
		8. ASTM C 568 - Standard Specification for Limestone Dimension Stone.
		9. ASTM C 615 - Standard Specification for Granite Dimension Stone.
		10. ASTM C 616 - Standard Specification for Quartz-Based Dimension Stone.
		11. ASTM C 780 - Preconstruction Evaluation of Mortar for Plain & Reinforced Masonry.
		12. ASTM C 847 - Standard Specification for Metal Lath.
		13. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
		14. ASTM D 226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing.
		15. ACI 530/ASCE 5/TMS 402 - Building Code Requirements for Masonry Structures.
		16. ACI 530.1/ASCE 6/TMS 602 - Specifications for Masonry Structures.
		17. PCA - Portland Cement Plaster (Stucco) Manual
	1. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. 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.
		3. Shop Drawings: Submit shop drawings, including plans, elevations, sections, and details, indicating layout, dimensions, anchorages, and jointing methods.
		4. Verification Samples: For each finish product specified, two full size samples, representing actual product, color, and patterns.
		5. Certificate: Certify mortar mix and accessories conform to specified requirements.
		6. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
		7. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.
	2. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in products specified in this section with minimum 10 years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum five years documented experience.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. Sample Panel: Construct sample panel at location indicated or directed, and as follows:
			1. Recommended Size: 4 feet by 4 feet (1.2 m by 1.2 m).
			2. Include all stone unit types and sizes to be used including a typical corner condition, special shapes and mortar joint treatment. Clean the sample panel using the same materials and tools as planned for the final stone masonry construction.
			3. Obtain Architect's acceptance of sample panel before beginning construction activities of this section.
			4. Do not remove sample panel until construction activities of this section have been accepted by the Architect.
		2. Preconstruction Meetings: Conduct preconstruction meetings including the Architect, Contractor, stone masonry subcontractor, and the flashing subcontractor to verify project requirements, substrate conditions, installation instructions and other requirements. Comply with Division 1 requirements.
	1. DELIVERY, STORAGE, AND HANDLING
		1. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer
		2. Storage:
			1. Store materials in accordance with BSI - Recommended Best Practices.
			2. Store materials in manufacturer's unopened packaging until ready for installation
			3. Store stone materials on pallets on dry, level surface and cover with tarps
			4. Do not stack pallets
			5. Mortar: Mortar: Store mortar in accordance with mortar manufacturer's instructions.
		3. Handling: Handle materials in accordance BSI - Recommended Best Practices. Protect materials during handling and installation to prevent damage or contamination.
	2. SEQUENCING
		1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
		2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
	3. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by BSI - Recommended Best Practices for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
		2. Hot and Cold Weather Requirements shall be in accordance with ACI 530.1/ASCE 6/TMS 602 Specifications for Masonry Structures.
		3. Ambient Temperature shall be 40 degrees F (4.4 degrees C) or above during erection of stone masonry. When ambient temperature falls below 50 degrees F, mortar mixing water shall be heated.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Paramount Stone Co., which is located at: 338 Courtland Ave.; Stamford, CT 06906; Tel: 203-353-9119; Fax: 203-353-9094; Email: [request info (info@paramountstone.com)](http://admin.arcat.com/users.pl?action=UserEmail&company=Paramount+Stone+Co.&coid=50600&rep=&fax=203-353-9094&message=RE:%20Spec%20Question%20(04112par):%20%20&mf=); Web: [www.paramountstone.com](http://www.paramountstone.com)
		2. .

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Select the Collection, Product and colors and cuts required from Paramount Stone Literature or by direct visual inspection of samples. Thinstone is a natural material and therefore actual color will vary. Natural stone is a relatively hard, naturally formed material or petrified matter, produced by nature. Part of its beauty are the veins, color variation, striation, and an infinite number of anomalies. Therefore, considerable variations including, but not limited to color, texture, size, and cleft may be present.

* 1. THIN VENEER NATURAL STONE
		1. Canterbury Blend
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		2. Burchard Tan
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		3. Blue Ridge
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		4. Rowayton Rounds
			1. Rounds: 4 inches by 4 inches to 12 inches by 18 inches.
		5. Burchard Gray
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		6. CT Fieldstone Rounds
			1. Rounds: 4 inches by 4 inches to 12 inches by 18 inches.
		7. Kensington
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		8. Kinsley
			1. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			2. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
		9. Old Spruce Mt.
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		10. Saybrook Rounds
			1. Rounds: 4 inches by 4 inches to 12 inches by 18 inches.
		11. New England Blend
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
		12. Watch Hill
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		13. Clapboard Hill
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
		14. New England Split
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			3. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			4. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		15. Byram
			1. Ashlar: 3 inches by 4 inches to 8 inches by 18 inches.
			2. Ledge Cut: 1 inch by 4 inches to 4 inches by 18 inches.
			3. Mosaic: 4 inches by 4 inches by 12 inches by 18 inches.
			4. Square and Rectangle: 4 inches by 4 inches to 12 inches by 18 inches.
			5. Strip: 1 inch by 4 inches to 4 inches by 18 inches.
		16. Stacked Stone Ledger Panels: Cut to 0.74 inch to 1.25 inches thick. Panel sizes \_\_\_\_\_\_\_\_\_\_\_???
			1. Alaska Gray
			2. Alaska Gray (Honed)
			3. Amber Falls
			4. Artic Golden Panel
			5. Artic White
			6. Artic White Honed
			7. Brown Wave
			8. Calcutta Cressa 3D
			9. California Gold
			10. Canyon Creek
			11. Casa
			12. Blend 3D Honed
			13. Casa Blend 3D Multi Finish
			14. Charcoal Pencil
			15. Charcoal Rust
			16. Coal Canyon
			17. Coal Canyon 3D
			18. Colorado Canyon Pencil
			19. Cordoba Noche
			20. Durango Cream
			21. Durango Cream 3D Honed
			22. Fossil Rustic
			23. Glacial Black
			24. Glacial Black 3D
			25. Gold Rush
			26. Golden Honey
			27. Golden Honey Pencil
			28. Golden White
			29. Gray Oak
			30. Gray Oak 3D Honed
			31. Mountain Bluestone
			32. Nevada Gold
			33. Princess White
			34. Roman Beige
			35. Rustic Gold
			36. Sage Green
			37. Sierra Blue
			38. Silver Travertine
			39. Sparkling Autumn
			40. Statuarietto Capri 3D Honed
			41. Tuscany Scabes
			42. White Oak 3D Honed
			43. White Oak Multi Finish
			44. White Oak Splitface
	2. ACCESSORIES

\*\* NOTE TO SPECIFIER \*\* Edit the following three paragraphs to suit the project requirements. Delete if not required. Use paragraph A when thin masonry veneer is installed over metal siding or open stud back-up; Use paragraph B for use over wood sheathing or existing concrete or masonry back-up.

* + 1. Expanded Metal Lath Paper Backed: ASTM C 847; galvanized, self furring mesh of weight to suit application; backed with paper.
		2. Expanded Metal Lath: ASTM C 847, galvanized, self-furring, minimum 2.5 lb or 18 gage
		3. Anchorage: Tie wire, nails, screws and other metal supports, galvanized, of type and size to suit application and to rigidly secure materials in place.
		4. Setting buttons or shims; lead or plastic

\*\* NOTE TO SPECIFIER \*\* Edit the following two paragraphs to suit the project requirements. Delete if not required. Paragraph E is typically used with wood sheathing and paragraph F with concrete or masonry without lath.

* + 1. Building Paper: ASTM D 226, Type 1, No. 15 asphalt saturated felt.
		2. Concrete Bonding Agent: Water-based polyvinyl acetate type.
		3. House Wrap: Air/vapor barrier polyomeric membrane as specified in Section 07 27 26 - Fluid-Applied Membrane Air Barriers .
	1. MORTAR

\*\* NOTE TO SPECIFIER \*\* Paragraph A is a packaged Masonry Cement; paragraphs B, C, and D is for field proportioned masonry materials. Delete one or leave both giving the Contractor the option to select one based on his needs.

* + 1. Masonry Cement: Complying with ASTM C 91:
			1. Type N or S for above grade applications.
			2. Type S for below grade applications.

\*\* NOTE TO SPECIFIER \*\* Select one Color as appropriate. For special color additives, select from natural pigments for maximum color stability. Delete those paragraphs not required

* + - 1. Color, gray.
			2. Color, white or colored is optional.
			3. Color \_\_\_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Select one Lime/Portland Cement Type as appropriate. Delete the paragraph not required.

* + 1. Portland Cement: Complying with ASTM C 150:
			1. Type I.
			2. Type \_\_.

\*\* NOTE TO SPECIFIER \*\* Select one Color as appropriate. For special color additives, select from natural pigments for maximum color stability. Delete those paragraphs not required.

* + - 1. Color, gray.
			2. Color, white.
			3. Color \_\_\_\_\_\_\_.
		1. Mortar Aggregate: Complying with ASTM C 144, standard masonry type
		2. Hydrated Lime: Complying with ASTM C 207:

\*\* NOTE TO SPECIFIER \*\* Select one lime Type as appropriate. Delete those not required.

* + - 1. Type S.
			2. Type SA.
		1. Water: Clean and potable.
	1. MIXES
		1. Mortar Mixing for Masonry with Tooled Joints:
			1. Mix mortar ingredients in accordance with ASTM C270, using Proportion Specification Type N. Mix only in quantities needed for immediate use.
			2. Do not use anti-freeze compounds to lower freezing point of mortar.
		2. Jointless Dry-Stack Mortar:
			1. Mix Mortar in accordance with ANSI A118.4
			2. Add color pigments in accordance with pigment manufacturer's instructions
1. EXECUTION

\*\* NOTE TO SPECIFIER \*\* Verify crack control design is correctly indicated and detailed on Drawings in accordance with National Concrete Masonry Association; TEK 10-1A for Crack Control Design, TEK 10-2B for control joint design and locations, TEK 19-4A for Flashing Strategies for Concrete Masonry Walls, and TEK 19-5A for Flashing Details for Concrete Masonry Wall

* 1. EXAMINATION
		1. Do not begin installation until backing structure is plumb, bearing surfaces are level and substrates are clean and properly prepared.
		2. Verify that built-in items are in proper location, and ready for roughing into stone masonry.
		3. Notify Architect of unsatisfactory preparation before proceeding.

\*\* NOTE TO SPECIFIER \*\* Edit paragraphs 3.2, 3.3, 3.4 and 3.5 to suit project requirements. Delete paragraphs not required.

* 1. PREPARATION FOR INSTALLATION OVER PLYWOOD, GYPSUM OR OTHER SHEATHING
		1. Cover sheathing with house wrap covered with waterproof building paper applied with all joints lapped shingle style a minimum of 4 inches (102 mm) and with all seam and holes taped.
		2. Install metal lath in accordance with ASTM C1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.
		3. Attach metal lath to wood supports using galvanized nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally. Fasten with a minimum of a 1 inch (25 mm) penetration of the wood studs. Stop lath 1 inch (25 mm) from finished edges.
		4. Continuously reinforce internal angles with corner mesh.
		5. Place lath vertically above each top corner and each side of door and glazed frames.
	2. PREPARATION FOR INSTALLATION OVER FORMED CONCRETE OR CONCRETE MASONRY

\*\* NOTE TO SPECIFIER \*\* Edit to suit project conditions. Use paragraph A and B for use with mortar directly over clean concrete or concrete masonry. Use paragraph B over clean or new concrete and concrete masonry. Delete if not required.

* + 1. Clean or sandblast concrete masonry to assure a proper mortar bond. Verify no bituminous, water repellent, or form release agents exist on concrete surface that are detrimental to mortar bond.
		2. Apply bonding agent in accordance with the manufacturers printed instructions.

\*\* NOTE TO SPECIFIER \*\* Edit to suit project conditions. Use the following paragraphs for use with mortar applied to metal lath fastened to concrete or concrete masonry. Delete if not required.

* + 1. Install metal lath in accordance with ASTM C1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.
		2. Attach metal lath to concrete using galvanized concrete nails at maximum 6 inches (152 mm) on center vertically and 16 inches (406 mm) on center horizontally. Stop lath 1 inch (25 mm) from finished edges.
		3. Continuously reinforce internal angles with corner mesh.
		4. Place lath vertically above each top corner and each side of door and glazed frames.
	1. PREPARATION FOR INSTALLATION OVER METAL SIDING OR OPEN STUD
		1. Install paperbacked metal lath in accordance with ASTM C1063. Apply metal lath taut, with long dimension perpendicular to supports. Lap ends minimum 1 inch (25 mm) Secure end laps with tie wire where they occur between supports.
		2. Attach metal lath to support members using galvanized 1-1/4 inch (32 mm) type S-12 Panhead Super Tight Screws as manufactured by United States Gypsum. Screws shall penetrate a minimum of 3/8 inch (0.9525 cm) into the metal siding support members. Provide 1 fastener per SF of surface area and do not exceed 6 inches (152 mm) on center in any one direction.
		3. Place minimum 4 inch (100 mm) wide strips of metal lath centered over junctions of dissimilar backing materials. Secure rigidly in place.
		4. Place lath vertically above each top corner and each side of door and glazed frames.
		5. Apply scratch coat in accordance with PCA Plaster (Stucco) Manual.
		6. Apply scratch coat to nominal thickness of 1/2 to 3/4 inch (12.5 to 19 mm) over metal lath surfaces.
		7. Moist cure scratch coat for minimum period of 48 hours.
		8. After curing, dampen previous coat prior to applying mortar and thin stone veneer.
	2. APPLICATION OF BASE COAT STUCCO:
		1. Apply scratch coat in accordance with PCA Plaster (Stucco) Manual.
		2. Apply scratch coat to nominal thickness of 1/2 to 3/4 inch over metal lath surfaces.
		3. If weather is hot or surface is dry, dampen previous coat before applying mortar and thin stone veneer.
		4. If scratch coat is done in advance; use notch trowel to create texture for better bond. Smooth surface is not acceptable for bond after curing, dampen previous coat prior to applying mortar and thin stone veneer.
	3. PREPARATION FOR INSTALLATION OF THIN VENEER STONE

\*\* NOTE TO SPECIFIER \*\* Refer to the Absorption rating in STONE PROPERTIES for each specified stone.

* + 1. Prepare stone prior to placement in accordance with the Stone Properties Absorption Rates specified as follows:
			1. Before setting absorptive stones with more than 1 percent absorption rating such as Carmel Cream, mist or brush the back of the stone with water to make it damp, but not saturated, saturated stone will not adhere to the mortar.
			2. Do not pre-wet dense stones such as Aqua Grantique, Sandy Creek or other varieties with less than 1 percent absorption.
		2. Coordinate placement of reinforcement, anchors and accessories, flashings and other moisture control products supplied by other sections.
		3. Clean all built-in items of loose rust, ice, mud, or other foreign matter before incorporating into the wall. All ferrous metal built into the wall shall be primed or galvanized.
		4. If required, provide temporary bracing during installation of masonry work. Maintain bracing in place until building structure provides permanent support.
	1. INSTALLATION OF THIN VENEER STONE
		1. Install thin veneer stone and mortar in accordance with ACI 530.1/ASCE 6/TMS 602 Specifications for Masonry Structures.
		2. Maintain masonry courses to uniform dimension(s). Form vertical and horizontal joints of uniform thickness.
		3. Pattern Bond:
			1. Lay out stone in advance with the bedface, splitface or weather edge exposed. Take care to avoid a concentration of any one color to any one wall surface.
			2. Maintain an approximate 1/2 inch (12.5 mm) joint, as stone allows.
			3. Do not use stacked vertical joints.
			4. Lay out work in advance and distribute color range of stone uniformly over total work area.
		4. Placing and Bonding:
			1. Dampen substrate as required to reduce excessive suction.
			2. Apply mortar in accordance with PCA Plaster (Stucco) Manual to a thickness of 1/2 to 3/4 inch (12.5 mm to 19 mm) Do not spread more than a workable area of 5 to 10 SF (.46 to .93 SM) so that mortar will not set before stone is applied.
			3. Lay thin veneer stone in a full bed of mortar with full head joints.
			4. Work from the bottom up laying corner pieces first.
			5. Remove excessive mortar as work progresses.
			6. Do not shift or tap veneer stone after mortar has achieved initial set. Where adjustment is required, remove mortar and replace.
			7. Isolate top of veneer stone from horizontal structural framing members and slabs or decks with compressible joint filler and sealant in accordance with Section 07 90 00 - Joint Protection.
		5. Joining Work: Where fresh masonry joints partially set masonry.
			1. Remove loose stone and mortar.
			2. Clean and lightly wet surface of set masonry.
			3. To avoid a horizontal run of masonry rack back 1/2 (12.5 mm) the length of stone in each course.
			4. Toothing is not permitted.
		6. Joints:
			1. Lay stone with an approximate 1/2 inch (12.5 mm) mortar joint, as stone allows.
			2. Tool joints when "thumb-print inch hard with a round jointer slightly larger than the width of the joint.
			3. Trowel-point or concave tool exterior joints below grade.
			4. Flush cut joints to be finished with a soft brush only.
			5. Retempering or mortar is not permitted.
			6. Use non-corrosive stone shims as required to maintain uniform joint thickness.

\*\* NOTE TO SPECIFIER \*\* Flashings, weeps and wall penetrations require special attention on drawing details. Located and detail properly.

* + 1. Flashing:
			1. Clean surface of masonry smooth and remove any projections, which could damage flashings.
			2. Place flashing on a bed of mortar.
			3. Cover flashing with mortar.
			4. Provide weep vents at head joints placed every 16 inches (406 mm) along the first course immediately above flashing or as recommended by weep vent manufacturer.
			5. Use a non-corrosive, fluid conducting polymer mesh such as "Mortar Net inch, "Control Cavity inch, "CavClear inch or equal to keep the air space behind the installed veneer stone, clear of mortar and mortar droppings.

\*\* NOTE TO SPECIFIER \*\* Verify control and expansion joints are correctly indicated and detailed on Drawings. Control joints shall be designed in accordance with National Concrete masonry Association TEK 10-2B for control joint design and locations.

* + 1. Control and Expansion Joints: Keep joints open and free of debris. Coordinate control joint in accordance with Section 07 90 00 - Joint Protection for sealant performance.
		2. Sealant Recesses: Provide open joint 3/4 inch (19 mm) deep and 1/4 inch (6 mm) wide, where masonry meets doors, windows and other exterior openings. Coordinate sealant joints in accordance with Section 07 90 00 - Joint Protection for sealant performance.
		3. Cutting And Fitting: Cut and fit for chases, pipes, conduit, sleeves, grounds, and other penetrations and adjacent materials. Coordinate with other sections of work to provide correct size, shape, and location.
	1. DRY-STACK INSTALLATION
		1. Install thin veneer stone and mortar in accordance with manufacturer's instructions and ACI 530.1/ASCE 6/ TMS 602.
		2. Maintain masonry courses to uniform dimensions. Form vertical and horizontal joints of uniform thickness.
		3. Pattern Bond:
			1. Lay out work in advance and distribute color range of stone uniformly over total work area.
			2. Lay stone with face exposed.
			3. Take care to avoid a concentration of any one color to any one wall surface.
			4. Maintain squared and uniform profile.
			5. Do not use stacked vertical joints.
		4. Placing and Bonding:
			1. Dampen substrate as required to reduce excessive suction.
			2. Use thin-set mortar in accordance with ANSI A118.4 for exterior dry stack installation.
			3. Apply mortar to thickness of 1/4 inch to back of stone.
			4. Press firmly to seat each stone as placed.
			5. Work from bottom up, laying corner pieces first.
			6. Remove excessive mortar as work progresses.
			7. Do not shift or tap veneer stone from horizontal structural framing members and slabs or decks with compressible joint filler and sealant as specified in Section 07 90 00 - Joint Protection.
		5. Joints:
			1. Lay stone with reasonably uniform joints, as stone allows.
			2. Remove excess mortar as stone is pressed into position.
			3. Use non-corrosive stone shims as required to maintain joint thickness.
		6. Control and expansion Joints:
			1. Keep joints open and free of debris.
			2. Coordinate control joints as specified in Section 07 90 00 - Joint Protection.
		7. Sealant Recesses:
			1. Provide open joints 3/4 inch deep and 1/4 inch wide, where masonry meets doors, windows, and other exterior openings.
			2. Coordinate sealant joints as specified in Section 07 90 00 - Joint Protection.
		8. Cutting and Fitting:
			1. Cut and fit thin veneer stone for chases, pipes, conduit, sleeves, grounds, and other penetrations and adjacent materials.
			2. Coordinate with other work to provide correct size, shape, and location.
		9. During the progress of the work, cover top of unfinished stone masonry work for protection from weather.
	2. FIELD QUALITY CONTROL

\*\* NOTE TO SPECIFIER \*\* Include for testing of mortar and grout when assurance of mix quality is critical to the project

* + 1. Test mortar and grout in accordance with Section 01 11 13 - Work Covered by Contract Documents.
		2. Testing of Mortar Mix: In accordance with ASTM C 780, Annex A4, for mortar aggregate ratio and ASTM C 780, Annex A5, for mortar water content.
	1. PROTECTION
		1. Protect installed products until completion of project.
		2. Cover the top of unfinished stone masonry work to protect it from the weather.
		3. Touch-up, repair or replace damaged products before Substantial Completion.
	2. CLEANING

\*\* NOTE TO SPECIFIER \*\* Some methods for removing hardened mortar involve the use of methods and materials such as strong acid, and overaggressive sandblasting, and high-pressure cleaning, which are harmful to stone masonry units and are not recommended by Krukowski Stone Co., Inc..

* + 1. Keep face of stone free of mortar as work progresses.
		2. If residual mortar is on face of stone, allow drying partially and brushing mortar off surface and sponge off residue.
		3. When work is complete and mortar has set for 2 to 3 days, clean surface from top to bottom using mild masonry detergent.
		4. Do not use harsh cleaning materials or methods that could damage stone
		5. Do not use metal brushes or acids for cleaning

END OF SECTION