

**SECTION 09 75 11
GRANITE FACING**

This guide specification utilizes recommendations and formats contained in references of the Construction Specifications Institute (CSI), including the CSI Practice Guides (formerly the Project Resource Manual), incorporating SectionFormat, PageFormat and MasterFormat, latest Editions, insofar as practicable.

This Section must be carefully reviewed and edited by the user to meet the Project requirements and should be coordinated with related Specification Sections and the Drawings.

Where Specification indicates information as "shown on Drawings" or similar phrases, the Drawings are required to show this information or the text needs to be modified appropriately.

Where Specification indicates bracketed text, e.g. [text], make appropriate selection and delete the remainder of text within additional brackets, highlighting, and bold face type.

Consult Dakota Granite Company for assistance in editing this Specification guide for the specific applications.

This Specification was current at the time of publication but is subject to change. Please confirm the accuracy of these specifications with the manufacturer prior to use.

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PART 1 - PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes:

01. Interior dimension stone hand set with anchors utilizing a cavity wall:

SPECIFIER: Select applicable units in subparagraphs below.

- a. Wall cladding.
 - b. Column cladding.
 - c. Interior trim including window stools, base, and similar units.
02. Installation materials.
 03. Joint sealant and filler.
 04. Miscellaneous materials.

1.02 RELATED REQUIREMENTS

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

B. Related Sections:

SPECIFIER: Select applicable Divisions or Sections in subparagraphs below related to the Work of this Section; adjust actual Section numbers and names as necessary.

- 01. [Division 04 Section "Unit Masonry"] [Section 04 20 00 - Unit Masonry];** for installing masonry inserts for anchoring granite facing.
- 02. [Division 04 Section "Exterior Stone Cladding"] [Section 04 42 00 - Exterior Stone Cladding];** for exterior granite facing.
- 03. [Division 05 Section "Cold-Formed Metal Framing"] [Section 05 40 00 - Cold-Formed Metal Framing];** for steel framing backup.
- 04. [Division 07 Section "Joint Sealants"] [Section 07 92 00 - Joint Sealants];** for sealant material and filler requirements, and for installation requirements.

1.03 DEFINITIONS

A. Definitions contained in ASTM C119 apply to this Section.

B. Metric conversions are shown in a table at the end of this Section.

1.04 REFERENCE STANDARDS

SPECIFIER: Use care when indicating the edition date of the referenced standards; these standards are subject to regular review, and updated accordingly. Edit list below to eliminate references not contained in the final text.

A. American National Standards Institute (ANSI)

01. ANSI A108/A118/A136.1, 2011, American National Standards Specifications for the Installation of Ceramic Tile; a compilation which includes the following:
 - a. ANSI A108.10, Installation of Grout in Tilework
 - b. ANSI A118.6, Standard Cement Grouts for Tile Installation
 - c. ANSI A118.7, Polymer Modified Tile Grouts for Tile Installation

B. ASTM International (ASTM)

01. ASTM A240-11a, Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
02. ASTM A276-10, Standard Specification for Stainless Steel Bars and Shapes
03. ASTM B221-08, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes
04. ASTM C59-00(2011), Standard Specification for Gypsum Casting Plaster and Gypsum Molding Plaster
05. ASTM C114-11b, Standard Test Methods for Chemical Analysis of Hydraulic Cement
06. ASTM C11911, Standard Terminology Relating to Dimension Stone
07. ASTM C144-11, Standard Specification for Aggregate for Masonry Mortar
08. ASTM C150-11, Standard Specification for Portland Cement
09. ASTM C20706(2011), Standard Specification for Hydrated Lime for Masonry Purposes

10. ASTM C27003, Standard Specification for Mortar for Unit Masonry
 11. ASTM C61511, Standard Specification for Granite Dimension Stone
 12. ASTM C1242-10, Standard Guide for Selection, Design, and Installation of Dimension Stone Attachment Systems
 13. ASTM F59302(2008), Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs
 14. ASTM F59409e1, Standard Specification for Stainless Steel Nuts
- C. National Building Granite Quarries Association, Inc. (NBGQA)

NOTE: For the Specifier's convenience, a copy of the NBGQA document referenced below is published in the Dakota Granite "Architectural" Catalog, available upon request.

01. Specifications for Architectural Granite, 2010

1.05 SEQUENCING

- A. Coordinate installation of concrete or masonry inserts. Furnish setting drawings, templates, and directions for installing such items.

1.06 ACTION AND INFORMATIONAL SUBMITTALS

SPECIFIER: Revise Section number in the paragraph below to match that used in the Project Manual.

- A. Submit in accordance with Section [01 33 00] [Other]:
01. Product Data:
 - a. For each granite type and each manufactured product shown on Drawings or specified.
 - b. For each granite variety used on Project, include physical property data.
 02. Shop Drawings: Show fabrication and installation details for granite cladding.
 - a. Include dimensions and profiles of granite units.
 - b. Show locations and details of joints.
 - c. Show locations and details of anchors.
 - d. Include elevations and details of graphics and inscriptions, if any.
 - e. Include structural analysis data signed and sealed by the qualified professional engineer.
 03. Granite Samples: Submit samples of each granite type required, exhibiting the full range of color characteristics expected in the completed Work.
 - a. Submit a minimum of 2 each, 12 inches by 12 inches (305 mm by 305 mm) in size, and in each color and finish specified.
 - b. In the case of more variegated granite, submit color photos in addition to the number of samples to show the full range of color and markings.
 04. Other Samples:
 - a. Mortar: Full range of exposed color and texture; furnish 2 mortar keys in each color selected.
 - b. Grout: Full range of exposed color and texture; furnish 2 grout keys in each color selected.
 - c. Sealant: For each type and color of joint sealant required; actual sealant installed within (between) 2 small representative samples of granite selections, not less than 3 inches (76 mm) square.
 05. Certificates: Submit a letter of certification from the granite fabricator, stating the material being furnished is the specified material and there are sufficient reserves available to supply the Project and furnish replacement units if needed.
- B. Graphics and Inscriptions: Electronic files for drawings of graphics and inscriptions work will be provided by the Architect.
- C. Quality Assurance/Control Submittals:

SPECIFIER: Select Division 07 or Section 07 92 00 in subparagraph below; adjust actual Section number and name as necessary.

01. Sealant Compatibility Test Report: Submit test report from sealant manufacturer, in accordance with [Division 07 Section "Joint Sealants"] [Section 07 92 00 - Joint Sealants] stating that sealants will not stain granite.
02. Submit welding certificates.
03. Stone Test Reports:
 - a. Preliminary Test Reports: Submit test reports for proposed granite prior to final selection. Preliminary test reports shall be indicative of the granite to be proposed for the Project.
 - b. Material Test Reports: From a qualified independent testing agency.
 - 1) Provide reports for each granite type.
 - 2) For metal components.

- D. Maintenance Data: For granite facing to include in maintenance manuals. Include product data for stone-care products used or recommended by installer, and names, addresses, and telephone numbers of local sources for products.

1.07 QUALITY ASSURANCE

- A. Compliance:
 - 01. Comply with the provisions of the Building Code, these specifications, and standards referenced in Article 1.04 REFERENCE STANDARDS, except where more stringent requirements are shown on the Drawings or specified herein.
- B. Granite Supply: Each type of granite shall come from a single quarry, with sufficient reserves to satisfy the requirements of the Project. The granite supplier shall have the capabilities to cut and finish the stone without delaying the Project.
- C. Fabricator Qualifications: Shop that employs skilled workers who custom-fabricate granite similar in material, design, and extent to that indicated for this Project, and whose work has resulted in applications with a record of successful in-service performance.
- D. Installer Qualifications: Experienced stone setters skilled in installing granite similar in material, design, and extent to that indicated for this Project, and whose work has resulted in applications with a record of successful in-service performance.

SPECIFIER: Delete paragraph below if fabricator and installer are 2 different entities.

- E. Single Source Responsibility for Granite Work: Engage a qualified installer to assume complete responsibility for fabrication and installation of granite to comply with specified requirements.
 - 01. For granite types that include same list of varieties and sources, provide same variety from same source for each.

SPECIFIER: Delete paragraph below if a mock-up is not required.

- F. Mock-up: Provide a mock-up of the granite installation in the approved colors and finishes, erected at the site in a location determined by the Architect, and agreed upon by the Contractor, and the fabricator.

SPECIFIER: Indicate size of mock-up or reference Drawings for location of mock-up in subparagraph below; approved mock-ups which are subsequently removed on or before Substantial Completion, and not incorporated in the Work, shall be provided at the Owner's expense.

- 01. Size: **[Insert dimensions] [Refer to Drawings for size and location]** .
- 02. Include back-up construction, anchors, mortar and sealant, in types, colors, and profiles specified or shown.
- 03. When approved, the mock-up will become the standard for the Project.

SPECIFIER: Select removal or incorporation of mock-up in subparagraph below.

- 04. **[Remove mock-up(s) at Substantial Completion or when requested by the Architect.] [Approved mock-up(s) may become part of completed Work if undisturbed at time of Substantial Completion.]**

1.08 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store and handle materials to prevent deterioration or damage.
 - 01. Carefully pack and load granite for shipment using reasonable care and customary precautions against damage in transit. Do not use material for blocking or packing, which may cause staining or discoloration.
 - 02. Stack granite on timber or platforms at least 4 inches (102 mm) above the ground. Use care to prevent staining or discoloration during storage.
 - 03. If storage is to be for a prolonged period, use polyethylene or other suitable plastic film placed between wood blocking and finished surfaces of completely dry stone.
 - 04. Properly store cementitious materials on elevated platforms, under cover, and in dry location.
 - 05. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.
 - 06. Store polymer additives in unopened containers and protected from freezing.
 - 07. Store installation accessories, including metal items, to prevent corrosion and contamination.

1.09 FIELD CONDITIONS

- A. Environmental Limitations: Do not install granite stairs until construction in spaces is complete and ambient temperature and humidity conditions are maintained at the levels indicated in the referenced Standards, and in manufacturer's written instructions.

SPECIFIER: Paragraph A above is preferred; paragraphs A and B below are suggested when paragraph A above is not selected.

- A. Cold-Weather Requirements: Comply with ACI 530.1/ASCE 6/TMS 602.
- B. Hot-Weather Requirements: Comply with ACI 530.1 ASCE 6/TMS 602.
- C. Field Measurements: Verify dimensions of construction to receive granite facing by field measurements before fabrication, and indicate measurements on shop drawings.

PART 2 - PRODUCTS

2.01 GRANITE SOURCE

- A. Varieties and Source: Subject to compliance with requirements, provide granite from the following source:
 - 01. Granite Source: Dakota Granite Company; 1(605) 432-5580.
- B. Substitutions: Suppliers seeking approval of their products are required to comply with the Owner's Instructions to Bidders.
- C. Granite Source Examination: Make quarried blocks available for examination by Architect.

2.02 PERFORMANCE REQUIREMENTS

- A. Design Requirements:
 - 01. Stone Anchors and Anchoring: ASTM C1242.
- B. Safety Factors: Loads indicated without exceeding allowable working stress of stone determined by dividing stone's average ultimate strength by the following factors:

SPECIFIER: Select safety factors in subparagraphs below; VERIFY with Structural Engineer of Record, and revise as necessary.

- 01. Safety Factor: **[3] [other]**.
- 02. Safety Factor for Concentrated Stresses: **[4] [other]**.
- 03. Safety Factor for Anchors: **[4] [other]**.

2.03 GRANITE MATERIAL

- A. General:
 - 01. Granite: ASTM C615; match Architect's samples.

SPECIFIER: Indicate individual Types in paragraph below, including applicable characteristics; add paragraphs as necessary to meet Project requirements.

- B. Granite Type **[Insert Drawing Designation Type]**:
 - 01. Granite Variety: **[Insert granite variety]**.
 - 02. Finish: **[Antique] [Brushed] [Honed] [Polished] [Sandblasted] [Split-face] [Thermal] [Other]**.
 - 03. Thicknesses:
 - a. Unless otherwise indicated, provide units with not less than the following thicknesses: **[3/4 inch (19 mm)] [11/4 inches (32 mm)] [11/2 inches (38 mm)] [2 inches (51 mm)]**.

2.04 SETTING MATERIALS

- A. Molding Plaster: ASTM C59.
- B. Portland Cement: ASTM C150, Type I, white.
 - 01. Provide natural color or white cement as required to produce mortar color indicated.

SPECIFIER: Retain subparagraph below if recommended by stone source to limit staining.

- 02. Low-Alkali Cement: Not more than 0.60 percent total alkali when tested according to ASTM C114.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Aggregate: ASTM C144.
- E. Water: Potable.
- F. Bonding Stone Adhesive: 2-part epoxy-resin or polyester-resin stone adhesive with an initial set time of not more than 2 hours at 70 degrees F.

SPECIFIER: Select color to match granite or specify another color n subparagraph below.

- 01. Color: **[Match granite] [Other]**.

2.05 JOINT GROUT

SPECIFIER: Select grout type from paragraphs A through D below; sanded grout may not be appropriate for polished granite as its use may result in surface scratching; VERIFY with granite source.

- A. Sand-Portland Cement Grout: ANSI A108.10, composed of white or gray cement and white or colored aggregate as required to produce required color.
- B. Standard Sanded Cement Grout: ANSI A118.6.
- C. Standard Unsanded Cement Grout: ANSI A118.6.
- D. Polymer-Modified Tile Grout: ANSI A118.7.
 - 01. Polymer Type: Acrylic resin in liquid-latex form for addition to prepackaged dry grout mix.
 - 02. Provide products by one of the following:
 - a. Bonsal
 - b. Bostik Findley, Inc.
 - c. C-Cure
 - d. Custom Building Products
 - e. DAP, Inc.
 - f. Laticrete International, Inc.
 - g. MAPEI Corp.
 - h. TEC Specialty Construction Brands; H. B. Fuller Company.

SPECIFIER: Select sanded grout for joints which exceed 1/8 inch (3 mm) in subparagraph below.

- 03. Grout Type: **[Sanded] [Unsanded]**.
- E. Grout Colors:

SPECIFIER: Select color if other than matching granite in subparagraph below; third option may become expensive when large quantities are required and a selection is postponed until after bidding is completed.

- 01. **[Match granite] [Insert other color] [As selected by Architect from manufacturer's full range of colors]**.

2.06 JOINT SEALANTS

SPECIFIER: Select Division 07 or Section 07 92 00 in paragraphs below; adjust actual Section number and name as necessary.

- A. Joint Fillers and Sealants: Provide materials complying with requirements specified in **[Division 07 Section "Joint Sealants"] [Section 07 92 00 - Joint Sealants]**.

SPECIFIER: If a sealant other than that specified below is desired, ensure that selected sealant will not stain granite, through stain testing performed by the sealant manufacturer on the actual granite specified.

- 01. Single-component, silicone sealant; Class 25, Use M (masonry).
- 02. Colors: Provide colors of exposed sealants to match colors of grout in granite adjoining sealed joints, unless otherwise specified.
- B. Sealant for Filling Kerfs: Elastomeric sealants indicated below that comply with applicable requirements in **[Division 07 Section "Joint Sealants"] [Section 07 92 00 - Joint Sealants]**.
 - 01. Single-component, nonsag, urethane sealant; Class 25, Use T (traffic), and Use M (masonry).

2.07 STONE ANCHORS AND ATTACHMENTS

- A. Anchors:
 - 01. Stainless Steel: ASTM A240, Type 304.
 - a. Fasteners for Stainless Steel Anchors: Annealed stainless steel bolts, nuts, and washers; ASTM F593 for bolts and ASTM F594 for nuts, Alloy Group 1.
 - 02. Extruded Aluminum: ASTM B221, alloy and temper as required to support loads imposed without exceeding allowable design stresses, but not less than strength and durability properties of Alloy 6063T6.
 - a. Fasteners for Extruded-Aluminum Anchors: Annealed stainless steel bolts, nuts, and washers; ASTM F593 for bolts and ASTM F594 for nuts, Alloy Group 1.
- B. Dowels: Stainless steel, ASTM A276, Type 304.

SPECIFIER: Select tieback material in subparagraph below; there are no ASTM standards for wire used as a tie or anchor, but building codes do define wire gage or diameter and noncorrosive requirements; VERIFY with Structural Engineer of Record and review details in MIA's "Dimension Stone Design Manual".

- C. Wire Tiebacks: **[No. 9 AWG copper and copper-alloy] [or] [0.120 inch diameter, stainless steel] wire.**

2.08 STONE ACCESSORIES

- A. Temporary Setting Shims: Rigid plastic shims, nonstaining to granite, sized to suit joint thickness.
- B. Setting Shims: Strips of resilient plastic or neoprene, nonstaining to granite, of thickness needed to prevent point loading of granite on anchors and of depths to suit anchors without intruding into required depths of pointing materials.

2.09 MISCELLANEOUS MATERIALS

- A. Cleaner: Granite cleaner specifically formulated for granite types, finishes, and application indicated, as recommended by granite producer. Do not use cleaning compounds containing acids, caustics, harsh fillers, or abrasives.

2.10 GRANITE FABRICATION - GENERAL

- A. Fabricate granite to comply with requirements indicated and with NBGQA's "Specifications for Architectural Granite".
- B. Select granite for intended use to prevent fabricated units from containing cracks, seams, and starts that could impair structural integrity or function.
- C. Cut granite from one block or contiguous, matched blocks in which natural markings occur.
- D. Fabricate granite facing in sizes and shapes required to comply with requirements indicated, including details on Drawings and final shop drawings.
- E. Cut granite to produce pieces of thickness, size, and shape indicated and to comply with fabrication and construction tolerances recommended by applicable granite association.
 - 01. Clean sawed backs of granite to remove rust stains and iron particles.
 - 02. Dress joints straight and at a right angle to face.
 - 03. Cut and drill holes in stone for anchors, supports, and lifting devices.
 - 04. Shape beds to fit supports.
 - 05. Provide openings, reveals, and similar features as needed to accommodate adjacent work.
 - 06. Produce moldings with abrasive shaping wheels made to reverse contour of molding shape.
 - 07. Miter moldings at corners with edges of miters slightly eased at outside corners.
- F. Finish exposed faces and edges of granite to match selected granite finish.

2.11 GRANITE WALL AND COLUMN CLADDING FABRICATION

- A. Granite Nominal Thickness:

SPECIFIER: Indicate applicable thickness in subparagraph below.

- 01. Not less than the following: **[3/4 inch (19 mm)] [1 1/4 inches (32 mm)] [1 1/2 inches (38 mm)] [2 inches (51 mm)]**.

SPECIFIER: Indicate clear minimum depth of cavity in paragraph below.

- B. Maintain minimum clearances of **[3/4 inch (19 mm)] [1 inch (25 mm)]** between backs of granite and work behind granite. Do not back check granite less than 1 inch (25 mm) thick.
- C. Joint Width and Filler:

SPECIFIER: Indicate joint width and filler type in subparagraph below.

- 01. **[1/16 inch (1.5 mm) wide grouted joints] [1/8 inch (3 mm) wide grouted joints] [1/8 inch (3 mm) wide sealant-filled joints]**.

2.12 GRANITE WALL BASE AND TRIM FABRICATION

- A. Wall Base:

SPECIFIER: Select physical characteristics of stone and its installation in subparagraphs below.

- 01. Nominal Thickness: **[3/4 inch (19 mm)] [other]**.
- 02. Top-Edge Detail: **[Straight, slightly eased at corner] [other]**.
- 03. Ends: **[Butt ends into casings] [other]**.
- 04. Joints: **[1/16 inch (1.5 mm) wide grouted joints] [other]**.

- B. Trim:

SPECIFIER: Select physical characteristics of stone and its installation in subparagraphs below.

- 01. Nominal Thickness: **[3/4 inch (19 mm)] [other]**.
- 02. Top-Edge Detail: **[Straight, slightly eased at corner] [other]**.
- 03. Joints: **[1/16 inch (1.5 mm) wide grouted joints] [other]**.

SPECIFIER: Select physical characteristics of stone and its installation in subparagraphs below.

01. Profile: Match [profiles indicated on Drawings] [other].
02. Joints: [1/16 inch (1.5 mm) wide grouted joints] [other].

SPECIFIER: Delete Article below if not a part of the Project.

2.13 GRANITE GRAPHICS AND INSCRIPTIONS

- A. Carve and cut graphics and inscriptions in accordance with final shop drawings. Use skilled stone carvers experienced in the successful performance of work similar to that indicated.

SPECIFIER: Select one of the following paragraphs below for graphics and inscriptions incorporation; consult granite supplier for recommendations.

- B. Abrasively etch graphics and inscriptions in accordance with final shop drawings.
- C. Laser etch graphics and inscriptions in accordance with final shop drawings.

2.14 MORTAR AND GROUT MIXES, AND MIXING

- A. Spotting Plaster: Stiff mix of molding plaster and water.
- B. Mortar: Comply with referenced standards and with manufacturer's written instructions for mix proportions, mixing equipment, mixer speeds, mixing containers, mixing time, and other procedures needed to produce mortar of uniform quality and with optimum performance characteristics.
 01. Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water-repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated. Do not use calcium chloride.
 02. Combine and thoroughly mix cementitious materials, water, and aggregates in a mechanical batch mixer, unless otherwise indicated. Discard mortar when it has reached initial set.
- C. Setting Mortar: Comply with ASTM C270, Proportion Specification, Type N.
- D. Grout: Comply with mixing requirements of referenced ANSI standards and with manufacturer's written instructions.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Examine surfaces indicated to receive granite facing and conditions under which granite will be installed, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.
 01. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION PREPARATION

- A. Clean dirty and stained granite surfaces by removing soil, stains, and foreign materials before setting. Clean granite by thoroughly scrubbing with nonmetallic fiber brushes and then drenching with clear water. Use only mild cleaning compounds that contain no caustic or harsh materials or abrasives.

3.03 CONSTRUCTION TOLERANCES

- A. Variation from Plumb: For vertical lines and surfaces, do not exceed 1/8 inch in 8 feet (3 mm in 2.4 m); 1/4 inch (6 mm) maximum.
- B. Variation from Level: For lintels, sills, chair rails, horizontal bands, horizontal grooves, and other conspicuous lines, do not exceed 1/8 inch in 10 feet (3 mm in 3 m); 1/4 inch in 20 feet (6 mm in 6 m); 3/8 inch (10 mm) maximum.
- C. Variation of Linear Building Line: For position shown in plan and related portions of walls and partitions, do not exceed 1/8 inch in 8 feet (3 mm in 2.4 m); 1/4 inch in 20 feet (6 mm in 6 m); 3/8 inch (10 mm) maximum.
- D. Variation in Cross-Sectional Dimensions: For thickness of walls from dimensions indicated, do not exceed plus or minus 1/8 inch (3 mm).
- E. Variation in Joint Width: Do not vary joint thickness more than 1/16 (1.5 mm) or 1/4 of nominal joint width, whichever is less.
- F. Variation in Plane between Adjacent Stone Units (Lipping): Do not exceed 1/32 inch (0.80 mm) difference between planes and adjacent units.

3.04 SETTING GRANITE - GENERAL

- A. Do necessary field cutting as granite is set. Use power saws with diamond blades to cut granite. Cut lines straight and true, with edges eased slightly to prevent chipping.
- B. Contiguous Work: Provide reveals and openings as required to accommodate contiguous work.
- C. Set granite to comply with requirements indicated on Drawings and final shop drawings. Install anchors, supports, fasteners, and other attachments indicated or necessary to secure stone in place. Shim and adjust anchors, supports,

and accessories to set granite accurately in locations indicated, with edges and faces aligned according to established relationships and indicated tolerances.

- D. Erect granite units level, plumb, and true with uniform joint widths. Use temporary shims to maintain joint width.
- E. Provide expansion, control, and pressure-relieving joints of widths and at locations indicated.

SPECIFIER: Select Division 07 or Section 07 92 00 in subparagraph below; adjust actual Section number and name as necessary.

- 01. Sealing of expansion, control, and pressure-relieving joints is specified in **[Division 07 Section "Joint Sealants"] [Section 07 92 00 - Joint Sealants]**.
- 02. Keep expansion, control, and pressure-relieving joints free of plaster, mortar, grout, and other rigid materials.
- F. In-Progress Cleaning: Clean granite facing as work progresses. Remove adhesive, grout, mortar, and sealant smears immediately.

3.05 INSTALLATION OF GRANITE CLADDING

- A. Cladding: Set units firmly against setting spots. Locate setting spots at anchors and spaced not more than 18 inches (457 mm) apart across back of unit, but provide no fewer than one setting spot per 2 sq. ft. (0.19 sq. m.), unless otherwise indicated.
 - 01. Use Portland cement mortar for setting spots where granite is applied to inside face of exterior walls.
- B. Anchors: Provide a minimum of 4 anchors per panel up to 12 sq. ft. (1.11 sq. m.) in face area, plus a minimum of 2 additional anchors for each additional 8 sq. ft. (0.74 sq. m.)

3.06 INSTALLATION OF GRANITE TRIM

- A. Granite Trim:
 - 01. Window Stools: Set granite window stools on wood or metal framing or wood blocking in a full bed of adhesive. Hold adhesive back from exposed edges of joints to allow for grouting.
 - 02. Other Trim Units: Adhere units to plywood backing with full spread of water-cleanable epoxy adhesive. Hold adhesive back from exposed edges of joints to allow for grouting.

3.07 GROUTING JOINTS

- A. General:
 - 01. Grout joints in granite to comply with ANSI A108.10.
- B. Grout joints after setting; remove temporary shims before grouting.

SPECIFIER: Select desired aesthetic affect of joints in Paragraph below.

- C. **[Strike joints flush with adjacent granite surfaces] [Tool joints uniformly and smoothly with plastic tool]**, using care not to scratch or abrade granite finishes.

3.08 SEALING JOINTS

SPECIFIER: Select Division 07 or Section 07 92 00 in paragraph below; adjust actual Section number and name as necessary.

- A. General: Prepare joints and install joint fillers and sealants of type and at locations indicated to comply with applicable requirements in **[Division 07 Section "Joint Sealants"] [Section 07 92 00 - Joint Sealants]**
 - 01. Remove temporary shims before applying sealants.

3.09 ADJUSTING

- A. Remove granite facing and related work with the following defects, and replace with new units to match adjacent units, unless otherwise specified herein:
 - 01. Broken, chipped, stained, and otherwise damaged granite. Granite may be repaired if methods and results are approved by Architect.
 - 02. Defective joints, including misaligned joints.
 - 03. Granite facing and joints not matching approved samples and mock-ups.
 - 04. Granite facing not complying with other requirements indicated.
- B. Replace in a manner that results in granite facing which matches approved samples and mock-ups, complies with other requirements, and shows no evidence of replacement.

3.10 CLEANING

- A. Final Cleaning: Clean granite facing no fewer than 6 days after completion of grouting and pointing, using clean water and soft rags or stiff-bristle fiber brushes. Do not use wire brushes, acid-type cleaning agents, cleaning compounds with caustic or harsh fillers, or other materials or methods that could damage granite.

3.11 PROTECTION

- A. Protect granite surfaces, edges, and corners from construction damage. Use untreated wood, plywood, heavy cardboard, or other nonstaining material, to prevent damage.
- B. Before inspection for Substantial Completion, remove protective coverings and clean surfaces using procedures and materials recommended by granite supplier.

END OF SECTION

NOTE: The following metric conversions shall apply where English measurements are indicated in the text:

1/64 inch	(0.40 mm)
1/32 inch	(0.80 mm)
1/16 inch	(1.5 mm)
1/8 inch	(3 mm)
3/16 inch	(5 mm)
1/4 inch	(6 mm)
5/16 inch	(8 mm)
3/8 inch	(10 mm)
1/2 inch	(13 mm)
5/8 inch	(16 mm)
3/4 inch	(19 mm)
13/16 inch	(20 mm)
1 inch	(25 mm)
13/16 inches	(30 mm)
11/4 inches	(32 mm)
11/2 inches	(38 mm)
15/8 inches	(41 mm)
2 inches	(51 mm)
3 inches	(76 mm)
4 inches	(102 mm)
6 inches	(152 mm)
7 inches	(178 mm)
8 inches	(203 mm)
10 inches	(254 mm)
12 inches	(305 mm)
16 inches	(406 mm)
18 inches	(457 mm)
24 inches	(610 mm)(0.6 m)
48 inches	(1220 mm)(1.2 m)
8 feet	(2440 mm)(2.4 m)
10 feet	(3 m)
20 feet	(6 m)
40 feet	(12 m)