SECTION  – stone countertops

1. General
   1. SUMMARY

SPEC NOTE: Edit the following to reflect project conditions. Delete sink requirement if sinks are not part of the scope of work on this Project.

* + 1. This Section includes requirements for supply and installation of stone countertops on top of millwork, ready to accept under mount sinks indicated on Mechanical Drawings.
  1. REFERENCE Standards
     1. American Society for Testing of Materials (ASTM):
        1. ASTM C503/C503M-15, Standard Specification for Marble Dimension Stone.
        2. ASTM C568/C568M-15, Standard Specification for Limestone Dimension Stone.
        3. ASTM C615C615M‑18e1, Standard Specification for Granite Dimension Stone.
        4. ASTM C616/C616M-15, Standard Specification for Quartz-Based Dimension Stone.
        5. ASTM C629/C629M-15, Standard Specification for Slate Dimension Stone.
  2. SUBMITTALS
     1. Provide product information in accordance with Section 01 33 00 – Submittal Procedures.
     2. Action Submittals: Provide the following samples before starting any work:
        1. Product Data: Indicate product description, fabrication information, and compliance with specified performance requirements.
        2. Shop Drawings: Submit shop drawings indicating dimensions, component sizes, fabrication details, attachment provisions and coordination requirements with adjacent work.
        3. Samples for Initial Selection: Submit minimum 305mm x 305mm (12" x 12") samples. Indicate full colour and pattern variation.
        4. Consultant recognizes that stone is a natural material, and that variations in tone and hue, and hairline cracks are normal to this material; however, countertops will be rejected at site under the following conditions:
           1. Finish, texture colour and hue are outside of a reasonable range of variation based on the submitted samples.
           2. Cracks visible from greater than 915 mm from surface of countertop.
     3. Project Closeout Submissions:
        1. Operation and Maintenance Data: Submit manufacturer’s care and maintenance data, including repair and cleaning instructions in accordance with Section 01 33 00 – Submittal Procedures: Operations and Maintenance Data.
  3. QUALITY ASSURANCE
     1. Qualifications: Provide proof of qualifications when requested by Consultant:
        1. Fabricator: Use a fabricator having a minimum of three (3) years experience in fabrication and installation of stone countertops and have training and certification from the manufacturer for work of similar scope and complexity as that required for the project.
        2. Installer: Install using personnel experienced in installation decorative stone countertops of similar design and complexity as that required for this Project.
  4. DELIVERY, STORAGE AND HANDLING
     1. Delivery and Acceptance Requirements: Deliver components to project when areas are ready for installation.
        1. Transport stone countertops with care, securely anchored to pallet, to prevent damage to materials or finishes.
        2. Transport stone countertops to the site after completion of adjacent construction that could damage materials of this Section.
     2. Storage and Handling Requirements:
        1. Store stone countertops indoors in an area adjacent to installation.
        2. Block off floor.
        3. Tilt slightly and secure to prevent fall over.
        4. Protect and wrap to prevent abuse, damage, or soiling.
  5. SITE CONDITIONS
     1. Site Measurements: Verify dimensions by site measurements before fabrication and indicate measurements on shop drawings where stone countertops are indicated to fit between or around other construction; coordinate fabrication schedule with construction progress to avoid delaying the Work.
     2. Established Dimensions: Establish dimensions and proceed with fabricating stone countertops without site measurements where site measurements cannot be made without delaying the Work; coordinate construction to ensure that actual site dimensions correspond to established dimensions; allow for trimming and fitting.

1. Products
   1. COUNTERTOP MATERIALS
      1. Provide Grade 1 stone only; seconds material will not be acceptable, sealed in accordance with manufacturer’s standard to prevent staining and discolouration, and as follows:

SPEC NOTE: Select one of the following Stone types for the countertop. Delete the stone types not required on this Project.

* + - 1. Stone:
         1. Granite: In accordance with ASTM C615, selected for architectural finishing.
         2. Marble: Conforming to TTMAC Manual and Guide Specification Marble ‑ Exterior and Interior and ASTM C503 Classification [I Calcite] [II Dolomite], Soundness Group [A Sound, free from spalls cracks, open seams, pits, or other defects impairing structural integrity] [[B Natural Faults], with flaws, voids and lines filed with polyester wax or epoxy cement], selected for architectural finish.
         3. Travertine: In accordance with ASTM C568, [low] [medium] [high] density, selected for architectural finishing.
         4. Limestone: In accordance with ASTM C568; Classification III High Density, selected for architectural finish in sizes, colours and finish as indicated on drawings.
         5. Slate: In accordance with ASTM C629; Classification II Interior, selected for architectural finishing.]
         6. Quartz: In accordance with ASTM C616; Classification [I Sandstone] [II Quartzitic Sandstone] [III Quartzite], selected for architectural finishing.]

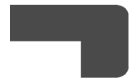
SPEC NOTE: Edit the following four (4) paragraphs to reflect the Project conditions.

* + - 1. Colour: Colour and Manufacturer: As indicated in Section 09 06 05 – Product and Finish Schedule.
      2. Finish: [[High Gloss] [Satin] Polished] [Honed] [Flamed]
      3. Thickness: 19mm (3/4")
      4. Edge Profile: [[19 mm] [38 mm]] [Square Polish] [D-Nose] [Top Bevel] [Double Bevel] [Bull Nose] [Ogee].

SPEC NOTE: Select one of the following edge profiles and delete the profiles not needed.

**19 mm Square Polish 38 mm Square Polish 19 mm D-Nose**

**38 mm D-Nose 19 mm Top Bevel 38 mm Double Bevel**

**19 mm Bull Nose 38 mm Bull Nose 19 mm Ogee**

* 1. COUNTERTOP SUPPORT MATERIALS
     1. Steel Support Framing: Refer to Section 05 70 00 – Decorative Metal, fabricate steel support framing to support weight of stone materials and to account for cut outs and openings required for installation.
     2. Wood Core: Fabricate countertop core from shop sanded exterior grade veneer core plywood, as indicated in Section 06 40 23 – Interior Architectural Woodwork.
     3. Shims: Fabricator’s standard shim materials to fully support stone slab on wood core to provide flat and level installation that does not transfer stresses that could cause cracking in stone slab.
     4. Fasteners: As recommended by manufacturer and as follows:
        1. Draw Bolt Fasteners: Mitre butt joint fastener, adjustable and requiring no special tools for installation, galvanized.
        2. Non-Exposed Fasteners: Fabricators choice consistent with quality level specified; exposed fasteners will not be permitted.
  2. ACCESSORIES
     1. Joint Adhesive: Manufacturers recommended adhesive designed to create chemically bonded, inconspicuous, nonporous joints.
     2. Sealant: Mildew resistant, silicone sealant, as specified in Section 07 92 00 – Joint Sealants. Colour: As selected by the Consultant from the manufacturer’s standard product line.
     3. Stone Sealer: Clear penetrating sealer as recommended by manufacturer having zero Volatile Organic Compounds (VOC).
     4. Cleaner: Type recommended by manufacturer.
  3. FABRICATION
     1. Fabricate units to maximum size capable of being safely transported and handled to place of final installation in accordance with shop drawing and manufacturers written instructions using a fabricator certified by the manufacturer.
     2. Fabricate and machine shapes to profiles indicated on Drawings; obtain all dimensions affecting fabrication and installation from job site before starting fabrication.

SPEC NOTE: Delete the following paragraph if sinks are not part of this Project

* + 1. Cut, drill and shape fabrications as required to receive plumbing fittings and services, and built-in accessories, provide edge treatments, back splashes, and other details as indicated on Drawings.
    2. Finish edges and surfaces true, level and even with inconspicuous joints between having no voids formed using manufactures standard joint adhesive and reinforcing strips.
    3. Make cut outs with 3mm (1/8") radius corners to prevent stress cracking.
    4. Fabrication assemblies with tolerances as follows:
       1. Variation in component size: + 3mm (1/8").
       2. Location of openings: + 3mm (1/8") from indicated location.
    5. Match numbered components assembled on site; number items to show proper location on site; number on back using material that will not show or telegraph through finished assemblies.
    6. Provide anchorage to receive Work of other Sections scheduled and detailed to be installed.

1. Execution
   1. EXAMINATION
      1. Examine substrates, areas, and conditions where installations of stone countertops occur, with Installer present, for compliance with manufacturers requirements. Verify that substrates and conditions are satisfactory for installation and comply with requirements specified.
         1. Carefully inspect the backup structure and millwork to verify that it is ready to accept the work of this Section.
         2. Verify all anchors, seats, connections attached to miscellaneous metal supports properly and securely fastened in correct locations.
         3. Verify access to point of installation for each stone unit.
   2. INSTALLATION
      1. Seal stone materials before shipping to site.
      2. Support stone countertops evenly to prevent stress fractures.
      3. Apply a thin bead of adhesive to top edges of base cabinet and set stone on top, square to face of cabinet work; cut out openings to match fixtures required and remove from countertops after final set of adhesives.
      4. Secure and tighten connections with equal torque to prevent stress fractures after stone units are properly aligned, vertically and horizontally with each other and with other related building components.
      5. Seal joints between countertops and adjacent materials, and between abutting countertops with silicone sealant.

SPEC NOTE: Delete the following three (3) paragraphs if sinks are not part of this Project.

* + 1. Adhere under mount sinks to countertops using manufacturer's recommended adhesive and mounting hardware.
    2. Install backsplashes and end splashes as indicated on Drawings; adhere to countertops using manufacturer's standard colour matched silicone sealant.
    3. Coordinate plumbing connections and electrical requirements with affected Sections of work.
  1. CLEANING AND PROTECTION
     1. Keep components and hands clean during installation; remove adhesives, sealants, and other stains as work progresses; keep components clean until Substantial Performance for the Project.
     2. Demonstration: Inform Owner of cleaning techniques and required cleansing materials.
     3. Repair or replace damaged work that cannot be repaired to match installed work at no additional cost to the Owner.
     4. Protect stone surfaces and corners liable to damage with wood blocking, sacking, or other means, to prevent damage and chipping of installed countertops until Substantial Performance of the Project.

END OF SECTION