

**SECTION 04400
STONE**

PART 1 - GENERAL

1.1 SUMMARY:

A. Section Includes:

1. Stone masonry, general.

B. Related Sections:

1. Section 01400 - Quality Control: Testing.
2. Section 04100 - Mortar and Grout.
3. Section 04150 - Masonry Accessories: Reinforcement, veneer anchors and accessories.
4. Section 04200 - Unit Masonry: Brick and block masonry.
5. Section 04460 - Limestone.
6. Section 04470 - Sandstone: Lyons stone.

1.2 SYSTEM DESCRIPTION:

A. Material Acquisition:

1. Exterior walls on the main campus will generally be of native stone.
2. Stone may be procured from independent quarries.
3. Final trimming and splitting is done on the site.

LEED MRc5: Regional Materials

Specify stone that has been harvested and manufactured within a 500 mile radius of the project. Require the location in the submittal.

1.3 QUALITY ASSURANCE:

A. Installer Qualifications:

1. Installer for all stone masonry work may be pre-qualified prior to bidding on this project. Refer to bidding information for pre-qualification requirements.

IT IS AT THE DISCRETION OF THE
DESIGN TEAM IN CONSULTATION WITH
THE UNIVERSITY REPRESENTATIVE
WHETHER THIS IS REQUIRED FOR EACH
PROJECT.

2. Engage an Installer experienced in the type of stonework required having not less than 5 years successful experience on projects of similar size and scope.

B. Fabricator Qualifications:

1. Engage a firm which has successfully fabricated stone similar to the quality specified for a period of not less than 5 years and which is equipped to provide the quantity shown without delaying the work.

C. Mock-Up:

1. Construct 4' x 6' cavity wall panel, matching an area on an existing building designated by the Owner, including:
 - a. Corner and 2' return.
 - b. Cavity wall insulation.
 - c. Block backup joint reinforcement and ties or stud backup and ties.
 - d. Colored mortar.
 - e. Location: As directed by Architect and the Owner.
 - f. Provide lifting eyes for transporting.
2. Mock-up panel will be used to approve color blend, pattern and technique of laying. Additional mock-up panels will be required until a panel is approved.
3. Mock-up will be reviewed for acceptance by the Owner and the Architect.
4. Notify Architect prior to laying stone for mock-up. Lay up stone "dry" for preliminary approval of layout.

D. Standards:

1. Obtain each type of stone from one quarry with consistent color range and texture throughout the work.

PART 2 - PRODUCTS

2.1 NATIVE STONE:

- A. Architect shall work with the Campus Architect in selecting and specifying the stone blend.
- B. Refer to Sections 04460 - Limestone and 04470 - Sandstone.
- C. Stone Anchors and Dowels:

1. In addition to those specified in Section 04150, provide type and size required to securely anchor and fasten stonework in place.

PART 3 - EXECUTION

3.1 INSTALLATION:

- A. Lay native face stone work from outside face of walls.
- B. Lay stones on natural flat beds in horizontal courses.

- C. Shape stone to fit each other approximately. Knock off weak portions to bring stones to even bearing.
- D. The general pattern for sandstone veneer is to be 2 against 1, a few 3 against 1, and some 2 against 2. No 3 against 3 will be permitted. No continuous horizontal joints to exceed 7' in length (unless specifically requested: coordinate / relief angles) nor vertical joints to exceed 12" in height. 20% of vertical joints may be angled.
- E. Clip 60% of sandstone units on both ends for an average projection of 1" to 1-1/2" from face of wall. Cut stone at building corners to a straight vertical line from top to bottom of wall.
- F. Grout full the void between stone and backup with slush mortar as stone is laid.
- G. Joints: 1/2" to 3/4" wide. Provide both vertical and beveled head joints. Work all joints so that all joints are in the same plane.
- H. Provide 4" minimum overlap in coursing.
- I. Completed stone work shall match accepted mock-up panel. Do not use stone units with chips, voids, stains or other defects which might be visible in the finished work.
- J. Maintain pattern consistency throughout building.
- K. Built-In Items:
 - 1. Steel Door Jambs: Grout steel door jambs set in masonry full of mortar as wall is built.
 - 2. Flashings: Refer to Section 07600 to ensure that flashings are in proper place before proceeding with stone work.
 - 3. Accessories: Install weep holes, fabric flashing and other accessories in accordance with Section 04150.

NEWER BUILDINGS ARE PROJECTING IN EXCESS OF 2".

L. Control Joints:

- 1. Install vertical control joints at approximately 20' o.c. (or other spacing as recommended by the design consultant) and at column lines. Some latitude in spacing increases may be acceptable if approved by Owner/Architect/Engineer.
- 2. Relate joints to building design.
- 3. Saw cut 1/8" joints after stone is laid. Caulk.

SHOW ALL CONTROL JOINTS ON ALL ELEVATIONS.

END OF SECTION 04400

