

**Part 1            General**

**1.1               SCOPE**

- .1       This section defines the Contractor's responsibilities for Quality Control (QC) from the stone production to the Cap-des-Rosiers work delivery.
- .2       Specific requirements for Quality Control of quarried stone materials are addressed by the Stone Materials Control (SMC) Plan, as described in Section 35 31 24 – Stone Production.
- .3       Specific requirements for Quality Control for stone placement, including verification surveys required to establish payment quantities, are described in Section 35 31 25 – Stone Placement.
- .4       Independent Quality Assurance (QA) activities shall be performed by Departmental representative. These QA activities are intended to provide independent observations of conformance to the requirements of the Plans and Specifications, and in no way relieve the Contractor of his responsibilities for Quality Control.

**1.2               RELATED SECTIONS**

- .1       Section 35 31 24 – Stone Production.
- .2       Section 35 31 25 – Stone Placement.

**1.3               QUALITY CONTROL**

- .1       The Contractor shall:
  - .1       Be responsible for Quality Control (QC) and shall establish and maintain an effective Quality Control program. The Quality Control program shall include the personnel, procedures and organization necessary to produce an end product that complies with the Contract requirements. The program shall cover all construction operations, both on-site and off-site, and shall be keyed to the proposed construction sequence.
  - .2       Monitor Quality Control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce work of specified quality.
  - .3       Comply with manufacturers' instructions, including each step in construction sequence.
  - .4       Should manufacturers' instructions conflict with specification, request clarification from Departmental Representative before proceeding.
  - .5       Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
  - .6       Perform work with persons qualified to produce workmanship of specified quality.

**1.4               TOLERANCES**

- .1       Monitor tolerance control to produce acceptable work. Do not permit tolerances to accumulate.

- .2 Comply with manufacturers' and specified tolerances. Should manufacturers' tolerances conflict with specification, request clarification from Departmental Representative before proceeding.

## **1.5 REFERENCES**

- .1 For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- .2 Conform to reference standard by date of issue current on date for receiving Tenders, except where a specific date is established by code.
- .3 Obtain copies of standards where required by product specification sections.

## **1.6 MEASUREMENT AND PAYMENT**

- .1 No measurement will be made under this section. All costs associated with developing and maintaining an effective Quality Control program shall be included in the bid prices contained in the tender form.

## **1.7 INSPECTION**

- .1 Allow Departmental Representative access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.
- .2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Departmental Representative instructions, or law of Place of Work.
- .3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.
- .4 Departmental Representative will order part of Work to be examined if Work is suspected to be not in accordance with specification. If, upon examination such work is found not in accordance with specification, correct such Work and pay cost of examination and correction. If such Work is found in accordance with specification, Departmental Representative shall pay cost of examination and replacement.

## **Part 2 Products**

### **2.1 NOT USED**

- .1 Not Used.

**Part 3            Execution**

**3.1                QUALITY CONTROL PLAN**

- .1        The Contractor shall furnish for review by the Departmental Representative, not later than fifteen days after receipt of Notice of acceptance of offer, the Contractor's proposed Quality Control Plan. The plan shall identify personnel, procedures, control, instructions, tests, records, and forms to be used. The Departmental Representative will consider an interim plan for the first fifteen days of operation. Construction will be permitted to begin only after acceptance of the Contractor's Quality Control Plan or acceptance of an interim plan applicable to the particular feature of work to be started. Work outside of the features of work included in an accepted interim plan will not be permitted to begin until acceptance of the Contractor's Quality Control Plan or another interim plan containing the additional features of work to be started.
- .2        The Quality Control Plan shall include, as a minimum, the following to cover all construction operations, both on-site and off-site, including work by sub-contractors, fabricators, suppliers, and purchasing agents:
  - .1        A description of the Quality Control organizations, including a chart showing lines of authority and acknowledgment that the Contractor's Quality Control staff understands that they shall implement the three-phase control system for all aspects of the work specified. The staff shall include a Contractor's Quality Control System Manager who shall report to the Project Manager or someone higher in the Contractor's organization. Project Manager in this context shall mean the individual with responsibility for the overall management of the project, including quality and production.
  - .2        The name, qualifications (in resume format), duties, responsibilities, and authorities of each person assigned a Quality Control function.
  - .3        A copy of the letter to the Contractor's Quality Control System Manager signed by an authorized official of the firm which describes the responsibilities and delegates sufficient authorities to adequately perform the functions of the Contractor's Quality Control System Manager, including authority to stop work which is not in compliance with the Contract. The Contractor's Quality Control System Manager shall issue letters of direction to all other various quality control representatives outlining duties, authorities and responsibilities.
  - .4        Procedures for tracking construction deficiencies from identification through acceptable corrective action. These procedures will establish verification that identified deficiencies have been corrected.
  - .5        Acceptance of the Contractor's Quality Control Plan by the Departmental Representative is required prior to the start of construction. Acceptance is conditional and will be predicated on satisfactory performance during the construction.
  - .6        After acceptance of the Quality Control Plan, the Contractor shall notify the Departmental Representative in writing a minimum of seven calendar days prior to any proposed change. Proposed changes are subject to acceptance by the Departmental Representative

**3.2                QUALITY CONTROL PHASES**

- .1        Quality Control is the means by which the Contractor ensures that the construction, to include that of sub-contractors and suppliers, complies with the requirements of the Contract. The controls shall be adequate to cover all construction operations, including both on-site and off-

site activities, and will be keyed to the proposed construction sequence. The controls shall include at least three phases of control to be conducted by the Contractor's Quality Control System Manager for all definable features of work, as follows:

- .1 Preparatory Phase: This phase shall be performed prior to beginning work on each definable feature of work and shall include:
  - a) A review of each paragraph of applicable Specifications.
  - b) A review of the Contract Plans.
  - c) A check to assure that all materials and/or equipment have been tested, submitted, and approved.
  - d) A check to assure that provisions have been made to provide required control inspection and testing.
  - e) Examination of the work area to assure that all required preliminary work has been completed and is in compliance with the specification.
  - f) A physical examination of required materials, equipment, and sample work to assure that they are on hand, conform to approved shop drawing or submittal date, and are properly stored.
  - g) Discussion of procedures for constructing the work, including amendments necessary to resolve repetitive deficiencies. Document construction tolerances and workmanship standards for that phase of work.
  - h) A check to ensure that the Departmental Representative has accepted the portion of the Quality Control Plan for the work to be performed.
- .2 Initial Phase: This phase shall be accomplished at the beginning of a definable feature of work. The following shall be accomplished:
  - a) A check of completed work to ensure that it is in compliance with specification requirements.
  - b) Verification of full specification compliance. Verify required Quality Control inspection and testing.
  - c) Establish level of workmanship and verify that it meets minimum acceptable workmanship standards. Compare with accepted test sections and sample panels if appropriate.
  - d) Resolve all differences.
  - e) The initial phase should be repeated for each new crew to work on-site, or any time acceptable specified quality standards are not being met.
- .3 Follow-up Phase: Daily checks shall be performed to assure continuing compliance with specification requirements, including control testing, until completion of the particular feature of work. The checks shall be made a matter of record in the Contractor's Quality Control documentation and submitted to the Departmental Representative. Final follow-up checks shall be conducted and all deficiencies corrected prior to the start of additional features of work that may be affected by the deficient work. The Contractor shall not build upon or conceal non-conforming work.

### **3.3 STONE MATERIALS CONTROL PLAN**

- .1 The Contractor is responsible for, and shall establish and maintain, a Stone Materials Control (SMC) plan to assure all stone materials incorporated in the Work are in compliance with the specifications. Section 35 31 24 – Stone Production defines specific requirements for the SMC plan that shall be implemented by the Contractor for this project.

### **3.4 SURVEY CONTROL, PROJECT LAYOUT AND STONE PLACEMENT SURVEYS**

- .1 The Contractor is responsible for, and shall establish and maintain all survey control as required to perform the work required by the specification. Project control monuments are depicted on the Drawings.
- .2 The Contractor is responsible for project layout, including establishing and maintaining the Survey Control Line (SCL), and is also responsible for construction surveys as required to perform the work required by the specification.
- .3 The Contractor is responsible for, and shall undertake, verification surveys for all work performed at the site to assure compliance with the specifications. Verification surveys will be used to establish quantities for payment, and shall be conducted in the presence of the Departmental Representative unless waived by the Departmental Representative.
- .4 Section 35 31 25 – Stone Placement defines specific survey requirements to be implemented by the Contractor for this project, including survey control, project layout, construction surveys and verification surveys.

### **3.5 COMPLETION INSPECTION**

- .1 At the completion of all work, the Contractor's Quality Control System Manager and Departmental Representative shall conduct an inspection of the Work and develop a "punch list" of items that do not conform to the Plans and Specifications. The Contractor shall provide an estimated date by which the Contractor's Quality Control System Manager or staff shall make a second inspection to ascertain that all deficiencies have been corrected and so notify the Departmental Representative.

### **3.6 DOCUMENTATION**

- .1 The Contractor shall maintain current records of Quality Control operations, activities, and tests performed, including the work of sub-contractors and suppliers. These records shall be on an acceptable form and shall include factual evidence that required Quality Control activities and/or tests have been performed, including but not limited to the following:
  - .1 Contractor/sub-contractor and their area of responsibility.
  - .2 Test and/or control activities performed with results and references to requirements of Plans and/or Specifications.
  - .3 Identify submittals reviewed, with Contract reference.
  - .4 Conflicts in Plans and/or Specifications.
  - .5 As-built Contract Drawings consisting of a complete set of Contract Drawings marked in red to depict all conditions differing from the original Plans.

.6 Shop drawings as finally approved.

**END OF SECTION**