

Special Specification 4131

Concrete Obelisk Structure



1. DESCRIPTION

Furnish the materials, fabricate, and erect a concrete obelisk structure as shown on the plans and required by this specification.

2. MATERIALS

Use materials conforming to the pertinent requirements of the following Standard Specification Items and Departmental Material Specifications:

Item 421, "Hydraulic Cement Concrete"

Item 427, "Surface Finishes for Concrete"

Item 440, "Reinforcement for Concrete"

DMS – 4675, "Cementitious Grouts and Mortars for Miscellaneous Applications"

DMS – 6100, "Epoxies and Adhesives" and

DMS – 6310, "Joint Sealants and Fillers."

Construct concrete elements using Class "C" concrete (HPC) with $f'c = 3,600$ psi minimum

Use approved joint fillers, grout, and other incidental materials as shown on the plans.

3. FABRICATION

- 3.1. **Options.** Concrete obelisk structure has been designed as a cast-in-place concrete structure with the option of a 1 ft. precast pyramid shaped section at the top. Structure may be constructed in a single or multiple concrete pours provided that all dimensions and finishes conform to details shown in the plans and provisions herein. An alternate construction method for the obelisk with use of precast concrete elements is allowed. If Contractor elects to use precast elements, submit signed and sealed drawings showing erection method and sequence of construction, concrete strengths, reinforcing details, connection details, and provide all lifting hardware specifications for review and approval.
- 3.1.1. **Shop Drawings.** Before any fabrication, prepare and submit shop drawings for the proposed construction of the concrete obelisk structure that will clearly identify sequence of construction, location of construction joints, form liner details for eagle shape, all structural dimensions, reinforcing details, proposed material and all stone veneer details. Upon construction completion, submit 1 set of reproducible as-built drawings.
- 3.1.1.1. **Concrete Mockup.** Contractor is to provide multiple 2 ft. x 2 ft. concrete mockups for approval by the Engineer before construction. Mockups of aesthetic form liners must be an accurate representation of anticipated finishes and illustrate several detailed elements of each concrete obelisk structure. Once approved, mockups will be used as the standard of comparison for the final concrete surface textures, opaque sealer colors, and construction techniques. Mockups will set quality standards for materials and execution. If ordered by the Engineer, additional mockups will be constructed and finished until a satisfactory texture and finish is achieved.
- 3.1.1.2. **Natural Stone Veneer Mockup.** A 2 ft. x 2 ft. mockup of natural stone veneer is to be installed at the base of the obelisk for approval by the Engineer. Mockup of natural stone veneer should exhibit the anticipated variation of stone shapes, reliefs, colors, and coursing. Mortar color should be as specified on plans and

applied for approval as part of this mockup. Natural stone veneer mockup may be used as part of the final concrete obelisk structure with approval from the Engineer.

3.1.1.3. All mockups will be considered subsidiary to this Item.

3.1.1.4. **Form Liner** Form liners are to be rigid, dimensionally stable, non-absorptive material, warp and buckle free. Form liners will provide continuous and true concrete surfaces within fabrication tolerances indicated; non-reactive with concrete and suitable for producing required finishes. Furnish with manufacturer's recommended liquid-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent surface or joint treatments of concrete. Contractor must refer to plan details for form liner pattern and color information. The form liners must release without leaving pieces of liner material on the concrete and without pulling or breaking concrete from the surface. Form liners that in the opinion of the Engineer become damaged or worn will be replaced by the Contractor. Replacement of form liners will be considered incidental to the work and will not entitle the contractor to additional compensation. Horizontal splices in the form liners will not be permitted except at joint locations.

4. CONSTRUCTION

Construct elements conforming to the design and details shown on the plans and to the pertinent requirements of the following Items:

Item 416, "Drilled Shaft Foundations" and
Item 420, "Concrete Substructures."

Forms. Concrete obelisk structure forms are to be set plumb and must not exceed 1/2 in. per 10 ft. of height for the overall vertical tolerance of the obelisk (plumb from top to bottom).

Exercise care while erecting elements. Contractor must have provisions for repairing elements that are damaged. These provisions should be provided to the Engineer before the repair is made. Final acceptance of any repairs will be at the discretion of the Engineer. Areas that do not exhibit the surface or aesthetic detail specified will be tooled or replaced at the Contractor's expense so as to exhibit the specified finish.

5. MEASUREMENT

This Item will be measured by each concrete obelisk structure installed.

6. PAYMENT

The work performed and material furnished in accordance with this Item and measured as provided for under "Measurement" will be paid for at the unit price bid for "Concrete Obelisk Structure." This price is full compensation for furnishing, designing, and installing materials including concrete obelisk structure foundation (drilled shaft and footing); concrete obelisk structure; stone veneer and precast cap at obelisk base; for form liner and mockup manufacturing, for hauling and erecting all elements; and for all labor, tools, equipment, and incidentals.