SECTION 00963 - SIGNAL SUPPORT DRILLED SHAFTS

(Follow all instructions and make all edits with "Track Changes" turned on. If there are no instructions [purple text] above a subsection, paragraph, sentence, or bullet, then include it in the Project. Delete all purple text before preparing the final document. All other modifications to this Section will require ODOT Technical Resource and State Specifications Engineer approval.)

Comply with Section 00963 of the Standard Specifications modified as follows:

00963.30 Personnel Qualifications - Replace this subsection, except for the subsection number and title, with the following:

Perform the Drilled Shaft construction Work using a company and personnel experienced in Drilled Shaft construction work. Submit a list to the Engineer for approval identifying the on-site supervisors and drill rig operators assigned to the Project and the companies experience relevant to the Project. Submit experience relevant to the anticipated subsurface materials, groundwater conditions, shaft size, depth, and all special construction techniques required. Before the preconstruction conference, provide the following information to verify the firm's experience and the qualifications of personnel scheduled to perform the Drilled Shaft construction:

- Submit a project reference list of at least three separate foundation projects, successfully completed in the last 5 years, with Drilled Shafts of diameters and depths equal to or larger than those shown in the Plans and in ground conditions similar to those indicated. Include a brief description of each project and the owner's contact person's name and current phone number for each project listed.
- Submit a resume for on-site supervisors with at least 2 years' experience in supervising construction of Drilled Shaft foundations of similar diameter and depth and scope to those shown in the Plans and in similar geotechnical conditions to those described in the geotechnical report. Submit experience that includes the direct supervisory responsibility for the on-site construction operations.
- Submit a resume for drill operators with at least 1 year experience in the construction of Drilled Shaft foundations.

The Engineer will respond within 21 Calendar Days after receipt of the submittal. Do not begin Work on any Drilled Shafts until the qualifications have been approved. The Engineer may suspend the Drilled Shaft construction if the Contractor substitutes unapproved personnel during construction. Submit requests for substitution of either on-site supervisors or drill operators to the Engineer, who will have 7 Calendar Days to respond to each request. Additional costs resulting from the suspension of Work due to the changing of personnel is the Contractor's responsibility, and no adjustment in Contract Time resulting from the suspension of Work is allowed.

00963.40(a) Drilled Shaft Installation Plan - Replace the paragraph that begins "The Engineer will approve …" with the following paragraph:

The Engineer will approve or reject the Drilled Shaft installation plan within 21 Calendar Days after receipt of all submissions. Provide any additional information and submit a revised plan, if requested, for review and approval. All procedural approvals given by the Engineer are subject to trial in the field and will not relieve the Contractor of the responsibility to satisfactorily complete the Work. Submit requests for modification of adopted procedures to the Engineer. Allow 21 Calendar Days for approval of modifications. Do not begin Drilled Shaft construction Work until all Drilled Shaft submittals have been approved.

00963.41 Drilled Shaft Coordination Meeting - Replace the paragraph that begins "If the Contractor's key …" with the following paragraph:

If the Contractor's key personnel change, or if the Contractor proposes a significant revision of the approved shaft installation plan, hold an additional meeting before any additional shaft construction operations are performed.

00963.42 Construction Tolerances - Replace the paragraph that begins "Frequently check the plumbness …" with the following paragraph:

Frequently check the plumbness alignment and dimensions of the shaft during construction. Correct all out-of-tolerance shaft excavations and completed shafts to the satisfaction of the Engineer. Correct out-of-tolerance Drilled Shafts at no additional cost to the Agency, and no extension of the Project completion date is granted. Materials and Work necessary to complete corrections for out-of-tolerance Drilled Shafts resulting from the removal of unexpected Drilled Shaft obstructions is paid for according to 00195.20.

00963.43(a) General - Replace the paragraph that begins "Frequently check the plumbness …" with the following paragraph:

Excavate Drilled Shafts to the dimensions and elevations shown or as directed. Provide and maintain stabilized Drilled Shaft sidewalls for the full depth of the excavation, using approved Materials, Equipment and methods. If caving or other unstable conditions occur during any construction procedure, stop further construction, notify the Engineer, and stabilize the shaft excavation by approved methods and submit a revised installation plan that addresses the problem and prevents further instability. Do not continue with shaft construction until any damage that occurred has been repaired according to the Specifications and until receiving the Engineer's approval of the revised shaft installation plan.

00963.43 (e) Lost Tools - Replace this subsection, except for the subsection number and title, with the following:

Promptly remove drilling tools lost in the excavation. Lost tools will not be considered unexpected obstructions. Remove lost tools without additional compensation. Drilling tools lost during the course of removing unexpected Drilled Shaft obstructions is paid according to 00195.20.

00963.47(a) Concrete Placement - Replace the paragraph that begins "Allow a maximum of 60 …" with the following paragraph:

Allow a maximum of 60 minutes between concrete placements and use no concrete older than 90 minutes from batch time. Use procedures for concrete placement ensuring that the concrete within the shaft becomes a monolithic, homogeneous unit.

00963.47(d) Casing Removal - Replace this subsection, except for the subsection number and title, with the following:

Remove all Temporary Casing during or after completion of concrete placement. Do not start Temporary Casing removal until the level of fresh concrete within the casing has reached a depth of 10 feet or the level necessary to adequately counteract the external hydrostatic pressure head. As the Temporary Casing is withdrawn, maintain a minimum 5 feet head of concrete above the bottom of the casing. A slight downward movement of the casing while exerting downward pressure, or hammering or vibrating the casing is allowed to facilitate extraction. Extract the casing so that concrete is cast directly against the surrounding in situ material. Check the elevation of the top of the reinforcing cage before and after Temporary Casing extraction for conformance with the construction tolerance criteria of 00963.42. Casing that cannot be extracted during or immediately after the concrete placement operation may be cause for rejection of the shaft.

00963.48 Drilled Shaft Testing and Acceptance - Replace this subsection, except for the subsection number and title, with the following:

Acceptance of Drilled Shafts is based on the Engineer's review of the field inspection reports and visual observations during Drilled Shaft construction. The Engineer has final authority on the approval of Drilled Shafts.

00963.90 Payment - Replace the paragraph that begins "Payment will be payment …" with the following paragraph:

Payment will be payment in full for furnishing and placing all Materials, and for providing all Equipment, labor, and Incidentals necessary to complete the Work as specified.

Replace the paragraph and bullets that begins "No separate …" with the following paragraph and bullets:

No separate or additional payment will be made for:

- Excavating the shafts and disposing of the excavated material
- Furnishing, placing, splicing and removing temporary shaft casing and forms
- Concrete and all reinforcement
- Anchor rods, anchor plates, nuts, and washers