ITEM 17551.4021 M - PERMANENT CASING FOR BORED-IN PILES

DESCRIPTION

General

Install permanent casing for bored-in piles with the specified diameter, length and minimum thickness at all bored-in pile locations as shown on the plans or changed, in writing, by the Engineer.

The Contractor performing the work described in this specification shall be the same one who installs the bored-in piles.

Conduct all tasks associated with this item in accordance with all Federal, State, County and Local regulations.

MATERIALS

Provide new flush joint steel casing conforming to ASTM A252 and to the Grade as shown on plans.

Basis Of Acceptance:

Furnish the Engineer with two certified copies of records of the physical tests performed on the newly manufactured casing in accordance with the above ASTM requirements. In addition, provide a manufacturer's statement of certification which explicitly verifies that the material and workmanship comply with the current ASTM standards for ASTM A252 Grade, as specified, with each heat. This certification shall constitute sufficient basis of acceptance at the job site.

Provide water conforming to Subsection 712-01 for any drilling fluid.

Provide a grout containing the components meeting the requirements, and in the proportions, as follows:

COMPONENT	NYSDOT SPECIFICATION REQUIREMENT	PROPORTION
Portland Cement Type 2	Subsection 701-01	85 Kg (57 L)
Water	Subsection 712-01	132 L
Bentonite (ground to pass a 200 mesh sieve)	N/A	11 Kg. (11 L)

CONSTRUCTION DETAILS

General

Removing or relocating existing utilities, structures or structural members will not be allowed for installation convenience only.

A. Submittals

Submit installation details to the Deputy Chief Engineer Technical Services (D.C.E.T.S.) for approval at least thirty (30) days prior to starting the work. Provide the following:

1. Details of equipment and procedures for permanent casing installation.

2. Procedures for advancing through boulders and other obstructions.

3. Procedures for containment of drilling fluid and spoil, and disposal of spoil.

4. Where applicable, drawings that show that the specific work can be performed under limited headroom conditions and as close to obstructions as site conditions warrant to install the permanent casing at the locations shown on the plans.

5. Layout drawings which show the proposed sequence of permanent casing installation, and how it will be coordinated with bored-in pile installation.

B. Permanent Casing Installation and Soil Removal

Install the permanent casing prior to the bored-in pile installation. Install the permanent casing so that the center of each casing does not vary from the plan location by more than 75 mm. Do not allow the permanent casing to vary from the vertical or established batter by more than 20 mm per meter as measured above ground. Install the top of the permanent casing to within 50 mm of the elevation shown on the plans, or where ordered, in writing, by the Engineer.

Install the permanent casing by rotating or oscillating it while applying a static vertical load. Remove all material from inside the permanent casing by flushing the inside of the casing with water or other drilling fluid. Do not drill or flush ahead of the permanent casing by more than 0.3 m.

If obstructions are encountered during excavation for a permanent casing, progress through them by means of coring or a tricone roller bit. Use of drop type impact hammers or blasting are not permitted. Use of a down-the-hole hammer must be approved by the D.C.E.T.S. The vibration level induced by any approved down-the-hole hammer must not exceed the ambient vibration level.

When positive flushing is used to progress the installation and the installation is completed, pump grout inside and outside the casing until the entire length of casing is fully supported to the satisfaction of the Engineer. Utilize the grout mix as previously specified. Unless approved by the Engineer, do not progress another casing within a radius of five (5) casing diameters or 1.5 m, whichever is greater, until the grout has set a minimum of twenty-four hours.

Control the procedures and operations so as to prevent the soil at the bottom of the hole from flowing into the hole. Such inflow might cause mining, damage or settlement to adjacent structures, tunnels, utilities or adjacent ground. If mining, damage or settlement occurs, halt operations. Provide a written plan to prevent a reoccurrence to the Engineer for review. Resume work only after the Engineer has approved the plan in writing. Repair all damage and settlement to the satisfaction of the Engineer, at no additional cost to the State.

Control drilling fluid water and dispose of spoil in accordance with the approved procedure.

METHOD OF MEASUREMENT

The quantity for permanent casing will be measured by the number of linear meters furnished and satisfactorily installed below cut off elevation as required by the Contract Plans or changed, in writing, by the Engineer.

BASIS OF PAYMENT

Include the cost of furnishing all labor, materials, and equipment necessary to install permanent casing in the unit price bid per linear meter.

Payment for bored-in-piles will be made under a separate item.