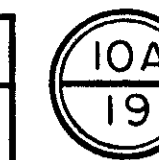


FHWA REGION	STATE	PROJECT
5	OHIO	



LAKE COUNTY
LAK-2-530

ITEM SPECIAL - DRILLED SHAFTS

This item shall consist of furnishing and installing drilled shafts of the type and size called for by the Plans. The Contractor shall furnish all labor, materials, and appurtenances required to complete the work as specified.

Excavation for the drilled shafts shall be performed by rotary drilled methods using any practical methods and machinery acceptable to the Engineer.

No concrete shall be placed in any drilled shaft excavation without prior approval from the Engineer. The drilled shafts excavation shall be inspected immediately before the concrete is placed.

The concrete for the drilled shafts shall be placed as per Item 511 except as modified by the Plans. The concrete placement operation in each shaft should be continuous from start to finish. The concrete shall be placed in each shaft against the existing bedrock and footing and shall be placed promptly after the final inspection of the shaft. If practicable, the concrete shall be placed in a clean dry excavation. Care shall be taken to assure that concrete is not being placed in moving water.

If the Engineer determines that dewatering is not practicable, the Contractor will be given permission to place the concrete under water. To place concrete under water the drilled shaft excavation shall be filled with water such that all water motion has ceased. The concrete shall then be placed by means of a pump. The pump equipment shall be so arranged that no vibrations result which might damage freshly placed concrete. Pipes carrying concrete from the pump to the shaft should be laid out with a minimum of bends and with no unauthorized change in size.

The equipment shall be suitable in kind and adequate in capacity for the work required. The use of aluminum pipe as a conveyance for the concrete will not be permitted. An adequate quantity of grout mortar or regular concrete with coarse aggregate omitted shall be pumped through the equipment ahead of the regular concrete to provide lubrication to the pumping system. The concrete used for lubrication shall not be placed in the shaft. The lubrication process will not be repeated as long as the pumping operations are continuous. The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. In order to prevent the contamination of the concrete placed initially at the bottom of the shaft, the outlet end of the pumping pipe shall be sealed with a diaphragm or plug that is flushed out when the hydrostatic pressure from the column of concrete exceeds that of the water in the shaft. The initial rate of concrete placement must be carefully controlled so as not to displace the reinforcing cage. The conveying system shall be water tight and the outlet end shall always remain well below the top of the freshly placed concrete. When the concrete reaches the top of the drilled shaft all laitance shall be removed.

Concrete for all drilled shafts shall be Class S concrete and shall be in accordance with Item 511, except as modified and supplemented herein. The required slump is six (6) inches, plus or minus one-half inch. The maximum allowable water to cement ratio shall be 0.50. If concrete is placed under water, the requirement of adding 10 percent more cement to the concrete mix shall be waived.

Reinforcing shall meet the requirements of Item 509. The reinforcing steel shall be grade 60. The spiral reinforcing steel may be plain bars ASTM A82 or A615. The reinforcing steel shall be completely assembled prior to placement and the length shall be as necessary to construct each drilled shaft.

Payment for furnishing and installing drilled shafts will be made at the contract unit per each, which shall include all labor, materials, and equipment necessary to complete the item as specified.

STATE OF OHIO						1A / 8
DEPARTMENT OF TRANSPORTATION						
BUREAU OF BRIDGES AND STRUCTURAL DESIGN						
DRILLED SHAFTS						
BRIDGE NO. LAK-2-0530						
S.R. 2 OVER CHAGRIN RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
R.L.E.		T.G.C.		C.P.D.	11-3-81	