

CONSTRUCTION SPECIFICATION

11. REMOVAL OF WATER

1. SCOPE

The work shall consist of the removal of surface water and ground water as necessary to perform the construction required by the contract in accordance with the specifications. It shall include: (1) constructing, installing, building, and maintaining all necessary temporary water containment facilities, channels, and diversions, (2) furnishing, installing, and operating all necessary pumps, piping, and other facilities and equipment, and (3) removing all such temporary works and equipment after their intended function is no longer required.

2. DIVERTING SURFACE WATER

The Contractor shall install, maintain and operate all cofferdams, channels, flumes, sumps, and all other temporary diversion and protective works needed to divert stream flow and other surface water through or around the construction site. Control of surface water shall be continuous during the period that damage to construction work could occur. Unless otherwise specified and/or approved, the diversion outlet shall be into the same drainage way that the water would have reached before being diverted.

The Contractor shall furnish the Engineer in writing, a proposed plan for diverting surface water before beginning any construction activities for which a diversion is required, unless waived in Section 8 of this specification. Acceptance of this plan, or the waiving of the plan requirement, will not relieve the Contractor of the responsibilities related to this activity during the process of completing the work as specified.

3. DEWATERING THE CONSTRUCTION SITE

Foundations, cutoff trenches, and all other parts of the construction site shall be dewatered and kept free of standing water and muddy conditions as necessary for the proper execution of the work. The Contractor shall furnish, install, operate, and maintain all drains, sumps, pumps, casings, well points, and all other equipment required to properly dewater the site as specified. Dewatering systems that cause a loss of soil fines from the foundation areas will not be permitted.

4. DEWATERING BORROW AREAS

The Contractor shall maintain all borrow areas free of surface water and otherwise provide for timely and effective removal of surface and subsurface water that accumulates within the borrow area, unless waived in Section 8 of this specification. Borrow material shall be processed as necessary to achieve proper and uniform moisture content at the time of placement.

If pumping to dewater borrow areas is included as a bid item of work in the bid schedule, each pump discharge pipe shall be equipped with a water meter. Meters shall be such that the measured quantity of water is accurate within three (3) percent

of the true quantity. The Contractor shall provide necessary support to perform accuracy tests of the water meters when requested by the Engineer.

5. EROSION AND POLLUTION CONTROL

Removal of water from the construction site, including the borrow areas, shall be accomplished in a manner that erosion and the transporting of sediment and other pollutants are minimized. Dewatering activities shall be accomplished in a manner that the water table water quality is not altered. Pollution control activities shall not conflict with the requirements of Construction Specification 5, Pollution Control, if it is a part of this contract.

6. REMOVAL OF TEMPORARY WORKS

When temporary works are no longer needed, the Contractor shall remove and return the area to a similar condition that existed prior to construction. Areas where temporary works were located shall be graded for slightly appearance with no obstruction to natural surface water flows or the proper functioning and access to the works of improvement installed. The Contractor shall exercise extreme care during the removal stages to minimize the loss of soil sediments and debris that was trapped during construction.

Pipes, casings, and any other material used to dewater the site shall be removed from temporary wells. The wells shall be filled to ground level with clean gravel or other suitable material approved by the Engineer unless specified otherwise in Section 8 of this specification. The Contractor shall exercise extreme care to prevent pollution of the ground water by these actions.

7. MEASUREMENT AND PAYMENT

Method 1 Items of work listed in the bid schedule for removal of water, diverting surface water, and dewatering construction sites and borrow areas will be paid for at the contract lump sum prices. Such payment will constitute full compensation for all labor, equipment, tools and all other items necessary and incidental to the completion of the work.

Method 2 Items of work listed in the bid schedule for removal of water, diverting surface water, dewatering construction sites, and dewatering borrow areas will be paid for at the contract lump sum prices. Such payment will constitute full compensation for furnishing, installing, operating, and maintaining the necessary trenches, drains, sumps, pumps, and piping, and for all labor, equipment, tools, and all other items necessary and incidental to the completion of the work, except that additional payment for pumping to dewater borrow areas and the removal of water will be made as described in the following paragraph.

If pumping to dewater borrow areas is a contract bid item, payment will be made at the contract unit price which shall be the price per 1,000 gallons shown in the bid schedule. Such payment will constitute full compensation for pumping only.

Compensation for equipment and preparation and for other costs associated with pumping will be included in the lump sum payment for removal of water or the lump sum payment for dewatering the borrow areas. Payment will be made only for pumping that is necessary to dewater borrow areas that cannot be effectively drained by gravity or that must have the water table lowered to be usable as a suitable borrow source. Pumping for other purposes will not be included for payment under this item.

All Methods The following provisions apply to all methods of measurement and payment. Compensation for any item of work described in the contract, but not listed in the bid schedule, will be included in the payment for the contract line item to which it is made subsidiary. Such items and the items to which they are made subsidiary are identified in Section 8 of this specification.