

SECTION 190

WATERING

190.1 DESCRIPTION

This work consists of furnishing and applying water either directly on the road or to the materials being incorporated in the work. These provisions do not apply to any water used in the production or curing of concrete.

The Contractor shall be responsible for providing water for compaction of earthen and granular materials used for, but not limited to, grading, subgrade preparation, and trench backfill. The Contractor is also responsible for water needed for sod and seed irrigation, street cleaning, dust control, and other miscellaneous items. The City will provide water for water main testing and dechlorination.

If the Contractor elects to purchase water from the City's water system, he will be required to pay for meter fees and installation onto a fire hydrant. Contact the City's Water Division to arrange for meter hook-ups to be added to fire hydrants and to obtain the current rate that will be charged.

190.2 MATERIALS

The water shall be furnished by the Contractor and shall be free from injurious matter.

190.3 CONSTRUCTION REQUIREMENTS

Watering may be accomplished by sprinkling, pre-irrigation, pre-mixing or by other methods approved by the Engineer. The contractor shall make every reasonable effort to minimize fugitive dirt or dust because of construction activities. The Engineer may require the Contractor to water or take other actions necessary to prevent blowing dirt and/or dust and other nuisance conditions.

- A. Sprinkling:** Sufficient equipment shall be available to apply the amount of water required to secure the proper compaction before evaporation, absorption or drainage prevents or interferes with the specified results to be obtained.
- B. Pre-Irrigation:** Pre-irrigation of excavation areas shall be under the control of the Engineer. The Engineer shall have the authority to prohibit or stop pre-irrigation when wind, temperature or soil conditions are such that satisfactory results cannot be obtained.

If requested, the Contractor shall furnish to the Engineer the manufacturer's charts for recommended pressure, rate of discharge and effective area of irrigation for the various nozzles to be used. The pressure at the sprinkler head or nozzle shall be adjusted to minimize atomization and subsequent evaporation. The recommendation

of the manufacturer shall be followed. The use of pressure reducing valves may be required to maintain uniform nozzle pressure.

Prior to pre-irrigation, the Contractor shall drill test holes to the depth and spacing required over the area to be watered to determine the average natural moisture percentage present in the soil and the average optimum moisture requirement. Unless otherwise permitted, drill holes shall be at least 6 in. in diameter.

The Contractor shall furnish the Engineer, for review, a plan showing the limits of excavation, sprinkler placement, depth of cut to be watered by each sprinkler and the anticipated length of operating time of each sprinkler.

Should soil or vegetation conditions warrant, the Engineer may require the Contractor to rip areas to be pre-irrigated. Such ripping shall be along the contour of the ground to a minimum depth of 2 feet.

Pre-irrigated areas shall not be excavated until a sufficient time has elapsed, normally about one day per foot of excavation depth, to allow the water to penetrate to the lower levels of the cut.

Prior to the start of grading operations, the Contractor shall drill test holes in the pre-irrigated areas to check the penetration of moisture.

C. Pre-Mixing: Water added to the material before delivery or placement on the roadbed shall be mixed uniformly into the material. The amount of water added shall be carefully controlled to conform to the requirements of the particular item of work.

D. Equipment Loading/Filling: Equipment filled from City water mains or other potable water systems shall be equipped with an air gap or backflow preventer to prevent backflow into the potable water system.

190.4 METHOD OF MEASUREMENT

The costs for purchasing, loading, transporting and applying/incorporating water shall be incidental to the various items where water is required. There will be no separate payment for water.

190.5 BASIS OF PAYMENT

Payment will be full compensation for equipment, labor and incidentals necessary to complete the work as specified.

END OF SECTION