



NEW JERSEY WATER SUPPLY AUTHORITY

MANASQUAN RESERVOIR WATER SUPPLY SYSTEM

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Technical Specification for Maintenance and Repairs to two (2) FMC model 45A 10'-00" x 18'-00" Traveling Water Screens for Manasquan River Intake

This work will occur in the Manasquan River intake pump building located at 2061 Hospital Road, Allenwood, NJ 08720. Within the intake building, there are eight traveling water screens that rest on a concrete floor slab which extends to the river's edge. 16.5 feet above this floor slab is the intake building's upper floor, where the water screen drives and covers are located. There is wall ladder access to the bottom on both the front and back of each water screen. Beyond the water screens is the pump sump from which the intake pumps draw water. The wet well's concrete floor is 8.5 feet below the floor slab where the water screens rest.

The foot shaft and sprocket assembly of each traveling water screen is normally submerged in 4.5 to 5 feet of river water. Typically, there are two to three 4-day periods per month where the water level reaches 7 feet. This varies based on rainfall, and it is the Contractor's responsibility to consider that.

The work entails complete replacement of the steel foot shaft and painted cast iron sprocket assembly on traveling screen #6, working underwater as necessary. The existing equipment, which should be replaced in-kind, consists of a lower shaft and stooody bearings.

Perform all work on traveling screen #6 first.

Bring up the existing steel foot shaft and sprocket assembly of unit #6 from underwater in such pieces that they can be inspected, repaired, and reused on unit #5 or in the future on another water screen.

Perform all work on traveling screen #5 last. Reuse the foot shaft and sprocket assembly from traveling screen #6 in #5 if it is in significantly better condition than the shaft and sprocket assembly in #5.

Replace all tooth inserts on both main head sprockets at the tops of traveling screens #5 and #6 that rotate the carrier chains (two sprockets per screen for a total of four).

Replace all bolts and locknuts on the tooth inserts.

For both carrier chains on units #5 and #6 (four chains total), the Contractor must completely replace the chains with the 400 series non-lubricated heat treated chain assembly.

Any chain that is replaced must have sealed bearings rather than greased bearings.

Adjust the carrier chain to proper tension after replacement of pins/bushings etc.

Replace any tray bolts and connectors necessary when reconnecting the tray frames to carrier chain.

Contractor must use certified divers for all underwater work required.

There could be 1 foot of soft sediment at the base of the two water screens. The Contractor should include the time needed to clear the work area of this material if needed with his own equipment and expense included in the bid.

A Sisco 10-ton electric hoist is available above the traveling water screens for use in removing any parts. The bottom of the crane beam is at a height of 25' above the floor where the traveling water screen covers rest.

General:

On traveling screen #6, the side plates of the basket are binding in the bottom guide tray such that the screens cannot be rotated to remove the baskets at this time. A ½-inch groove is worn into the bottom plate. Raising the upper sprocket may create enough slack to free up the fins from the groove when the unit is run in reverse. An underwater adjustment may have to be made to free the chain so that the unit can be safely dismantled. Reversing the mechanism currently causes the shear pins to break.

Additional Documentation:

A copy of the original service manual is available to the successful bidder if needed.

Work Area:

