**SPSRW-XX, Pump Around Operation**

Version Date: 8/3/2021 Revision Date: XX/XX/XXXX by XXX

**1.0 DESCRIPTION**

Pump around operation includes all work necessary for the installation and maintenance of the pump around operation. This specification is required for *continuous natural stream base flow* sustained between precipitation events, which is defined as base flow herein. Work shall be performed in the dry by pumping base flow around project work area(s) for sediment and erosion control purposes as may be necessary or directed by the Engineer and to conform to the plans, specifications, details, permits, local laws, state laws, federal laws, and the Charlotte Land Development Standards where applicable.

The pump around operation shall provide a passageway for the base flow around the storm drainage work area(s). This pump around operation is for storm drainage work only and should not be considered for use with other construction activity such as sanitary sewer bypass pumping. Storm drainage work may include but is not limited to, removal and/or installation of pipe culvert, box culvert, bottomless pipe arch or culvert; stream channel improvement; or stream channel restoration. Contractor is responsible to maintain all active storm drainage systems and/or overland conveyance, including during rain events.

**2.0 METHODS AND MATERIALS**

Pump around operation methods, measures, materials, and works shall include, but are not limited to, the following:

Pump Around Operation System:

Pump Around Pump – A silent or quiet-rated (70db at 25 feet) pump(s), located *upstream* of an Impervious Dike shall be used to convey the base flow around the working area(s) during storm drainage work. The pump shall be contained inside a cased pump well, and filter stone shall surround the casing to prevent the intake of sediment fines. The intake for the drain mechanism should be located near the top of the water column unless otherwise specified by the Engineer. The pump system shall include temporary flexible hose in sufficient length to pump the water from the upstream end of the working area(s) to the downstream end at the Temporary Stabilized Outlet.

Dewatering System:

Dewatering Pump – A silent or quiet-rated (70db at 25 feet) pump(s) located *within* the limits of the working area shall be used to dewater the working area of any groundwater or infiltration in order to perform storm drainage work in the dry. The pump(s) include temporary flexible hose in sufficient length to pump and dewater from the working area to the Special Stilling Basin.

Temporary Stabilized Outlet - Shall be used in accordance with the plans and detail to control the effluent from all pump around operation measures, unless native streambed stone material is deemed suitable by designer at discharge location.

Storm water conveyance - Contractor is responsible for safely conveying storm water runoff resulting from precipitation events at all times including when installing storm drainage work in an existing or new alignment. During periods of dormant stream work and/or storm drainage culvert activity, Contractor shall provide temporary tie-ins, diversion ditches, or other means and methods to safely convey base flow and storm water runoff from precipitation events.

Restoration – Contractor shall restore working area to existing conditions or as required by the plans and permits. This shall include but not limited to removing, disposing, hauling, and restoring area where pump around and dewatering pumps were installed, temporary stabilized outlets, temporary flexible hose, and all other incidentals impacted by the pump around operation.

**3.0 SUBMITTALS**

Prior to starting pump around operations, Contractor shall submit all necessary specifications of pumps and associated materials to be used for the pump around and dewatering portions of work for review and approval by the Engineer. This shall include, but not limited to, an overall plan indicating specific locations of pumps, intakes and discharges, impervious dikes, and special stilling basins; size, quantity, noise specifications of pumps - pump well casing detail, temporary stabilized outlet material, flexible hose size and material; and surface runoff from rain event plan showing locations of temporary tie-in and/or diversion ditches needed to control storm flow during rain events. Contractor will be required to continuously maintain the systems and protect the working area(s) and surrounding structures subject to flooding.

**4.0 MEASUREMENT**

Measurement will be made as described below:

The Pump Around Operation specified under this Section shall be measured at the contract unit price per day. No separate measurement of materials will be made under this item. The Dewatering System is incidental and will not be measured under the Pump Around Operation.

Any pumping required that totals four (4) hours or more in a single calendar day will constitute a day of pumping and will be paid for at the contract unit price. Pumping for less than four (4) hours in a single calendar day will be considered incidental to the cost of the work. No additional payment will be made.

Impervious Dikes will not be measured under this section but will be measured in accordance with the *Impervious Dike* Special Provision.

Special Stilling Basins will not be measured under this section but will be measured in accordance with the *Special Stilling Basin* Special Provision.

**5.0 PAYMENT**

The payment will be made at the contract unit price per day for “Pump Around Operation.” Such payment will be full compensation for all elements of work required in accordance with the special provision including, but not limited to, furnishing all labor, materials, equipment, supplies, supervision, tools; performing all work necessary for the installation, maintenance, and removal of pump equipment in conjunction with storm drainage work, stream restoration/stabilization construction, culvert installation; furnishing project submittals; and other incidentals necessary to complete all work referenced herein. Payment shall only be made on calendar days the Contractor is actively progressing with storm drainage work which necessitates the pump around operation. Pump around operation used by the Contractor while not actively progressing with storm drainage work shall be at their own expense.

The Dewatering System is incidental to the Pump Around Operation and no separate payments will be made.

Impervious Dikes shall be paid separately in accordance with *Impervious Dike* Special Provision.

Special Stilling Basin shall be paid separately in accordance with S*pecial Stilling Basins* Special Provision.

Payment will be made under:

**PUMP AROUND OPERATION DY**