ROAD COMMISSION FOR OAKLAND COUNTY

SPECIAL PROVISION
FOR
MAINTAINING STREAM FLOW

a. Description

This work shall be done in accordance with sections 208, 401, and 704 of the *Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction*, EGLE Permit, Soil Erosion and Sedimentation Control Manual and as directed by the Engineer, except as herein provided

This work consists of designing, installing, maintaining and removing construction dams (including dewatering) and bypass pumping or installation of a temporary culvert to work in a dry condition, maintain water flows, and aquatic life passage.

b. Materials

Steel sheet piling shall be of the continuous interlocking type, either new or used in good condition. Temporary steel sheet piling shall have a minimum nominal section modulus of 18.1 inches cubed per foot of wall. Cold-rolled sheeting will be permitted for all applications. Alternative materials will be considered on a case by case basis. Any alternative materials shall be submitted in writing to the Engineer for review and approval, a minimum of 15 working days before intended use, with a detailed plan of installation and operation.

Provide materials in accordance with the following:

Coarse Aggregate, 6A.....902
Open-Graded Aggregate, 34R.....902
Culvert Pipe.....909
Filter Bags.....910
Geosynthetics.....910
Sand and Stone Bags.....916

c. Construction

The Contractor shall install a construction dam, at the locations specified on the plans, in order to provide a dry construction site. The construction dam shall only consist of one of the following: steel sheet piling, stone sand bags, or an MDOT approved proprietary product.

1. Design and Installation

Design, installation, maintenance and removal of the temporary construction dam, dewatering, and bypass pumping and/or temporary culvert are the responsibility of the Contractor. In accordance with subsection 104.02 of the *MDOT 2020 Standard Specifications for Construction*, the Contractor shall submit a proposed design to the

Engineer for review 10 working days before anticipating starting work. Work may only begin after the Engineer's approval of the design.

The Contractor may use either, or a combination of, by-pass pumping and/or a temporary by-pass culvert as approved by the Engineer.

2. Dewatering and Bypass Pumping or Temporary Culvert

The dewatering and bypass pumping operations shall be performed in a proper and predetermined sequence such as to create a stable area to work in. Dewatering and bypass pumping rates shall be performed and sufficiently maintained so as to not cause harmful effects to up and down stream properties, utilities, and pavements. The consequences of surface runoff and surface flood water caused by climatic conditions must be taken into consideration in designing the dewatering and bypass pumping system. An assumed flow from a 10-year storm event of 100 cfs is provided for information only and is intended to provide the relative magnitude of work. The Contractor is responsible for determining the actual flow rates required for dewatering and bypass pumping of the site. The dewatering and bypass pumping system shall be designed based upon the Contractor’s flow rates. The pump (s) utilized to maintain stream flow should not violate any local noise ordinances.

A temporary culvert may be used to maintain stream flow. The culvert shall be sized, installed and maintained as to not cause harmful effects to up and down stream properties, utilities, and pavements. The consequences of surface runoff and surface flood water caused by climatic conditions must be taken into consideration in designing the dewatering and temporary culvert system. An assumed flow from a 10-year storm event of 100 cfs is provided for information only and is intended to provide the relative magnitude of work. The Contractor is responsible for determining the actual flow rates required for the installation of a temporary culvert for the site. The temporary culvert shall be designed based upon the Contractor’s flow rates.

3. Filter Bags or Sediment Traps

Dewatering operations shall utilize a sediment basin or filter bag to settle out/filter out sediment from water discharged into the watercourse. The sediment basin or filter bag shall be located a sufficient distance from the watercourse or wetland to allow for proper settling or filtering through natural vegetation and/or gravel berm. The sediment trap or filter bag shall be provided, installed, maintained and removed as described in section 208 of the *MDOT 2020 Standard Specifications for Construction.*

A series of Gravel Filter Berms shall also be used in conjunction with the sediment trap to filter the water prior to re-entry into the watercourse.

The Sediment Basin and Gravel Filter Berms must be of adequate size to still the water for a sufficient time to remove the suspended particles. If the water returning to the watercourse remains turbid, the Sediment Basin may need to be expanded. A

second Sediment Basin may be required in conjunction with a Filter Bag, in addition to the original Sediment Basin and Gravel Filter Berms.

d. Measurement and Payment

Pay Item	**Pay Unit**
Maintaining Stream Flow	Lump Sum

Maintaining Stream Flow includes designing, furnishing, installing, maintaining and removing the temporary construction dam, including dewatering and filtration as noted in this special provision. It also includes designing, furnishing, installing, maintaining, and removing materials, supplies, equipment needed to maintain the watercourse while the construction dam(s) are in place.

Excavation and backfill required beyond the limits shown in the plans as a result of the maintaining stream flow system selected will not be paid for separately but shall be included in the payment for **Maintaining Stream Flow**.

Soil erosion controls used per the *MDOT Soil Erosion and Sedimentation Control Manual* or as directed by the Engineer shall also be included in the payment for Maintaining Stream Flow.

Any damage to the surrounding areas, both upstream and downstream, as a result of construction operations from sediment or water shall be repaired by the Contractor at Contractor’s expense.