

**STATE OF SOUTH DAKOTA
DEPARTMENT OF TRANSPORTATION**

**SPECIAL PROVISION
FOR
CONSTRUCTION PRACTICES IN STREAMS
INHABITED BY THE TOPEKA SHINER**

AUGUST 29, 2018

I. DESCRIPTION

This project crosses a stream inhabited by the Topeka shiner, a federally endangered species. The Contractor shall implement the following conditions to minimize the impact of a stream crossing construction on the Topeka shiner. Failure to implement the following conditions may result in violation of the Endangered Species Act.

II. MATERIALS (None Required)

III. CONSTRUCTION REQUIREMENTS

A. GENERAL CONSTRUCTION

The Contractor shall not perform construction activities within the stream, along the stream banks, and in areas that drain into the stream unless comprehensive and effective best management practices (BMPs), that will prevent sediment, fuels, chemicals, concrete wash water, and other pollutants from entering into the stream, are in place and functioning properly. The Contractor shall maintain erosion and sediment controls in good working condition until the Contractor restores vegetation to 70% of the pre-disturbance condition. Erosion and sediment controls implemented shall be those appropriate for the specific site conditions. The Contractor shall not place fill material below the ordinary high water elevation except as directed by the plans or as allowed by the United States Army Corps of Engineers 404 permit.

B. MEASUREMENT OF STREAM TURBIDITY

The Contractor shall not allow construction activities that produce sediment discharges that increase stream turbidity (i.e., water clarity) by more than 50 Nephelometric Turbidity Units (NTU) over the background turbidity level. The Contractor shall cease all construction methods that produce sediment discharges exceeding this turbidity standard and may resume only after the Engineer has approved an acceptable plan. The Contractor shall immediately notify the Engineer if the Contractor suspects that stream turbidity has been

increased. The Engineer will monitor the turbidity during all stages of the project.

- 1. Turbidity Meter and Maintenance:** The Engineer will take measurements with a Global Water WQ 770 turbidity meter or equivalent. The Engineer will maintain and operate the turbidity meters in accordance with manufacturer specifications and technical manual.
- 2. Definition of Turbidity Sample:** The definition of a turbidity sample is the average of five measurements taken at a sampling location.
- 3. Obtaining a Turbidity Sample:** The Engineer will submerge the sensor of the turbidity meter in the stream and allow the sensor to run continuously for at least one minute before taking the first turbidity measurement. The Engineer will take subsequent turbidity measurements at thirty second intervals until five measurements have been obtained. The Engineer will take turbidity measurements in accordance with manufacturer specifications and technical manual.
- 4. Location of Turbidity Samples:** The Engineer will measure turbidity at two sampling locations. The Engineer will take a control sample from a point 100 feet upstream of the work area to determine the background turbidity level. The Engineer will take another sample from a point 100 feet downstream of the work area. The Engineer may modify the location of turbidity samples at the Engineers discretion depending on constraints such as easement limits. The Engineer will measure turbidity at the midpoint of the stream.
- 5. Documentation of Turbidity Sample Measurements:** The Engineer will record turbidity data on a Stream Turbidity Inspection Form (DOT-283) and be delivered to the SDDOT Environmental Office within 14 calendar days of testing. Turbidity samples that indicate a 50 NTU increase over the background turbidity level shall be immediately reported to the Department's Biologist (Biologist).
- 6. Frequency of Turbidity Measurements:** Turbidity measurements shall be taken in conjunction with normal storm water inspections. Turbidity measurements shall also be taken at the Engineer's discretion during construction activities that may result in increased turbidity (e.g., placing riprap or installing a coffer dam).

C. DE-WATERING, ISOLATED WORK AREAS, AND WATER EXTRACTION

If fish are present or suspected to be present within a work area isolated from the remaining water body, the Department will not allow construction activities within that enclosed area until the Biologist has moved the fish from the enclosed area to the greatest extent possible considering site conditions. The

Biologist shall be notified prior to the installation of any temporary water barriers that may isolate stream segments or the dewatering of any stream segments. The Biologist shall be notified if stream discharge reenters any areas previously cleared of fish.

The Contractor shall use fish screens on all pump intakes that may be exposed to fishes. The Contractor shall size pump intake screens to prevent fish from being entrained into the pump intake or from being impinged on the intake screen. Screen mesh shall not have openings that exceed 1/8" measured diagonally across the opening. The surface area of fish screens shall be at least 18 ft². The Biologist shall be contacted to determine the appropriate surface area for fish screens used on pumps extracting water at a rate exceeding 500 gallons per minute.

The extraction of water for use during construction from streams will not be permitted unless approved by the Biologist. The Contractor shall provide the Biologist with the estimated volume of water the Contractor will extract, the duration (timeframe) of the extraction, the rate at which the extraction of water will occur, and the location(s) where the extraction of water will occur.

D. TEMPORARY WORKS (FALSEWORK AND WORK PLATFORMS)

Falsework or work platforms shall conform to Section 423 of the specifications and any applicable requirements of this provision.

Temporary piling shall be cutoff at or driven flush with the streambed, or extracted in a manner that minimizes sedimentation as much as possible, when no longer needed.

The Contractor shall consider how to install and remove falsework or work platforms when preparing the construction plan and include any special construction methods or sequencing that may be required to protect the Topeka shiner.

Design of temporary works shall be as specified in Section 423 of the specifications.

E. REMOVAL OF STRUCTURES & OBSTRUCTIONS

Removal of structures and obstructions shall conform to Section 110 of the specifications and any applicable requirements of this provision.

Construction, demolition, and removal operations conducted over or in the vicinity of the stream shall be controlled to prevent materials from falling in the waterway. The Contractor shall promptly remove any materials that fall into the

waterway or into areas below the ordinary high water elevation by hand or with equipment located above the stream bank at the discretion of the Engineer.

F. TEMPORARY DIVERSION CHANNELS

The Contractor shall construct temporary diversion channels constructed according to Standard Plate number 734.30 to approximately the existing channel slope, roughness, and width to allow upstream fish movement during normal stream discharges.

G. PRECONSTRUCTION MEETING AND CONTRACTOR WORK PLAN

The Contractor shall notify the Biologist of the preconstruction meeting. The Biologist will review the conditions of this provision and all environmental permits. The Contractor shall provide an estimated date at the pre-construction meeting when the Biologist needs to be on site to conduct fish transfer. The Contractor shall notify the Engineer 2 business days before the Biologist needs to be on site.

The Contractor shall submit a detailed Contractor work plan prior to the preconstruction meeting to the Engineer for Biologist approval. The Contractor work plan shall include products, materials, and methods of construction and removal for temporary water barriers, cofferdams, and diversion channels including de-watering, handling, storage, and disposal of excavated material and pumped effluent. The Contractor work plan shall include all necessary information to provide assurance that the Contractor has adequately addressed the conditions of this provision. Work shall not proceed without approval of the Contractor work plan by the Biologist.

IV. METHOD OF MEASUREMENT

- A. Temporary Water Barriers:** The Department will measure temporary water barriers to the nearest foot.
- B. Cofferdams:** The Department will measure cofferdams in accordance with Section 423.4 of the specifications.
- C. Dewatering:** The Department will not measure dewatering.
- D. Temporary Works:** The Department will measure for temporary works in accordance with Section 423.4 of the specifications.
- E. Removal of Structures and Obstructions:** The Department will measure removal of structures and obstructions in accordance with Section 110.4 of the specifications.

- F. Temporary Diversion Channel for Box Culverts:** The Department will measure temporary diversion channel for box culverts in accordance with Standard Plate number 734.30.
- G. Temporary Stream Diversion for Box Culvert Extensions:** The Department will measure temporary stream diversions for box culvert extensions on a per each basis.
- H. Temporary Stream Diversion for Pipe Culvert Extensions:** The Department will measure temporary stream diversions for pipe culvert extensions on a per each basis.
- I. Erosion Control for Box Culvert Extension:** The Department will not measure for erosion and sediment control for box culvert extensions.
- J. Erosion Control for Pipe Culvert Extension:** The Department will not measure for erosion and sediment control for pipe culvert extensions.
- K. Erosion Control for Bridge:** The Department will not measure for erosion and sediment control for bridge.

V. BASIS OF PAYMENT

- A. Temporary Water Barriers:** The Department will pay for temporary water barriers at the contract unit price per foot. The Department will make payment for this bid item only once at each location, regardless of the number of times the barrier is changed or moved at that location. Payment will be full compensation for labor, equipment, materials, and all incidentals necessary for constructing the temporary water barrier.
- B. Cofferdams:** Payment for cofferdams shall be as specified in Section 423.5 of the specifications.
- C. Dewatering:** The Department will not pay for dewatering. All costs associated with dewatering shall be incidental to the other bid items.
- D. Temporary Works:** Payment for temporary works shall be as specified in Section 423.5 of the specifications.
- E. Removal of Structures and Obstructions:** Payment for removal of structures and obstructions shall be as specified in Section 110.5 of the specifications.
- F. Temporary Diversion Channel for Box Culverts and Pipe:** Payment for temporary diversion channels for box culverts shall be in accordance with Standard Plate number 734.30.

- G. Temporary Stream Diversion for Box Culvert Extensions:** The Department will pay for temporary stream diversion for box culvert extensions at the contract unit price per each. The Department will make payment for this bid item only once, regardless of the number of times the diversion is changed or moved at this site. Payment will be full compensation for labor, equipment, materials, and all incidentals necessary for constructing the temporary diversion.
- H. Temporary Stream Diversion for Pipe Culvert Extensions:** The Department will pay for temporary stream diversion for pipe culvert extensions at the contract unit price per each. The Department will make payment for this bid item only once, regardless of the number of times the diversion is changed or moved at this site. Payment will be full compensation for labor, equipment, materials, and all incidentals necessary for constructing the temporary diversion.
- I. Erosion Control for Box Culvert Extension:** The Department will pay for erosion control for box culvert extension at the contract lump sum price. The contract lump sum price shall be full compensation for all labor, equipment, materials, and incidentals necessary to install and maintain erosion and sediment control measures for box culvert extensions. The Department will measure and pay for erosion control measures not shown on the approved Construction Plan under their respective bid items (i.e. silt fence, erosion bale, etc.).
- J. Erosion Control for Pipe Culvert Extension:** The Department will pay for erosion control for pipe culvert extension at the contract lump sum price. The contract lump sum price shall be full compensation for all labor, equipment, materials, and incidentals necessary to install and maintain erosion and sediment control measures for pipe culvert extensions. The Department will measure and pay for erosion control measures not shown on the approved Construction Plan under their respective bid items (i.e. silt fence, erosion bale, etc.).
- K. Erosion Control for Bridge:** The Department will pay for erosion control for bridge at the contract lump sum price. The contract lump sum price will be full compensation for all labor, equipment, materials, and incidentals necessary to install and maintain erosion and sediment control measures for necessary for bridge construction. The Department will measure and pay for erosion control measures not shown on the approved Construction under their respective bid items (i.e. silt fence, erosion bale, etc.).

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