

## SECTION 02210

### SEDIMENT EXCAVATION AND DISPOSAL

#### PART 1 - GENERAL

##### 1.01 DESCRIPTION OF WORK:

- A. Contractor shall furnish all labor, materials, equipment, supervision, and shall perform all operations required to complete the work shown on the Drawings, as directed by CTDEEP, as herein specified, and as required to properly complete the work.
- B. The work includes, but is not necessarily limited to the following as outlined in these specifications or shown on the Contract Drawings:
  - 1. Excavation of sediments from various and separate river channel sites as identified on the Drawings to the elevations and grades as shown on the Drawings or as otherwise directed by CTDEEP. Contractor may excavate in the wet from the channel with onsite drying or excavate in the dry with by pass flows.
  - 2. Grading for temporary maintenance access roads into the river channel sediment sites, and/or provision and use of timber mats, and specialized equipment as may be required for all sediment excavation.
  - 3. All excess manmade or natural debris, objects and materials not suitable for disposal as sediment shall become the property of the Contractor and shall be removed from the site and properly disposed.
  - 4. Loading, hauling, and disposal of sediment to a licensed landfill or disposal facility approved by CTDEEP. Contractor shall be responsible for sediment and erosion control, pedestrian safety, site preparation, minimizing truck tracking onto public roads, spill control and cleanup including sweeping.

##### 1.02 QUALITY ASSURANCE:

###### A. General:

Perform excavation in compliance with applicable requirements of governing authorities having jurisdiction.

Install and maintain erosion and sediment controls in accordance with Section 02050 - Sediment and Erosion Controls.

1. Special Requirements:

- a. Protection: Comply with all applicable regulations and safety orders at the place of construction. Protect this and adjacent properties from all damage due to this operation. Protect open excavations, trenches, etc., with fences, covers or railings as required to maintain safe pedestrian and vehicular traffic.
- b. Responsibility: The Contractor is responsible for the finished condition of his work. Notify CTDEEP promptly in writing if any condition exists that is contrary to requirements. Without extra cost to CTDEEP, restore street pavements, walks, curbs, gutters, trees, etc., that may be damaged in the performance of work under this section, in a manner prescribed by any authorities having jurisdiction.
- c. Setting and Establishing Finish Elevation Lines: All elevations, grades, lines, etc., required to complete the work under this Section shall be arranged and paid for by the Contractor, and performed by a qualified employee of the Contractor. It is the Contractor's sole responsibility to establish elevations, and to set and protect stakes during operations.
- d. Truck Washing: Contractor shall submit a plan detailing how tracking of sediment onto public ways will be prevented, including the location of all truck washing stations; sources of water; and wash water handling, management, and disposal.

2. Unusual Conditions:

- a. The Contractor shall not work in excessively wet or other unfavorable weather. No work under this Section may be conducted when, in the opinion of CTDEEP, the work cannot be conditioned in such a manner that downstream areas are protected from turbidity and siltation.
- b. Other unusual conditions encountered during operations, if not covered herein, shall be brought promptly to the attention of CTDEEP and appropriate instructions will be issued. Rock, soft

spots at locations where structural bearing value is required, and other such concealed site conditions are in this category.

1) Codes and Standards:

- i. All work and materials shall conform to the latest applicable sections under the state's various jurisdictions; the Standard Specifications for Roads, Bridges, and Incidental Construction, Connecticut Department of Transportation, latest edition, hereinafter referred to as the "Standard Specifications"; as well as the codes and standards referenced in the individual sections. In case of conflict, the codes and standards referenced in the individual sections shall govern.
- ii. All work and materials shall also be in full accordance with the latest rules, regulations, and safety orders of the State's Division of Industrial Safety OSHA, A.N.S.I. - A10.1 Safety Code for Building Construction, and all other state, county, Town, municipality, and the utility laws rules, and regulations. Nothing in these Drawings and Specifications shall be construed to permit work not conforming to the above.

1.03 JOB CONDITIONS:

- A. Anticipated Site Conditions: It is anticipated that the work required under this Section may require planned sequencing, specialized equipment, timber mats, or temporary gravel access roads into or within the river channel. The work will also require the formation of sediment drying sites and re-handling of sediments in order to complete all of the sediment excavation. The Contractor's use of such excavation aides will not result in additional payments or compensation by CTDEEP.
- B. Site Information: Data on indicated subsurface conditions are not intended as representations or warranties of accuracy or continuity. It shall be expressly understood that CTDEEP will not be responsible for interpretations or conclusions drawn therefrom by Contractor. Data is made available for convenience of Contractor.
  1. Limited analysis of the pond bottom sediments for physical and chemical characteristics have been conducted by a registered

laboratory for CTDEEP. Results of this analysis are attached at the end of this section of the Specifications. Certain tested parameters exceed the Residential Direct Exposure criteria and as such sediments are to be disposed of at an environmentally acceptable site. Disposal site(s) are to be proposed and accepted by CTDEEP prior to removal of sediment from any of the project sites.

2. Test borings and other exploratory operations may be made by Bidders at their own expense. Any borings proposed by the Contractor must first be approved by CTDEEP.
3. Original channel construction plans indicate the bottom of excavation sites may be earthen with placed riprap on the side slopes. Contractor is not to remove riprap.

C. Existing Utilities:

1. Locate existing underground utilities. Contact Call-Before-You-Dig (1-800-922-4455) a minimum of 72 hours prior to any excavation work.
2. Should uncharted or incorrectly charted utilities be encountered, consult utility company and CTDEEP immediately for directions. Cooperate with CTDEEP and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to the satisfaction of utility company, Owner and CTDEEP. Provide minimum 48-hour notice to CTDEEP and utility company prior to interruption.

D. Construction Procedures: The Contractor shall have control over and shall be solely responsible for construction means, methods, techniques, sequences and procedures. The Contractor shall assume full responsibility for his actions and shall be responsible for adequately insuring against all claims that may arise from any construction procedure.

E. Use of Explosives: The use of explosives is prohibited.

F. Protection of Persons and Property:

1. Barricade open excavations and post warning signs and lights. Operate warning lights as required by authorities having jurisdiction.

2. Protect all existing structures during construction. Perform excavation within drip line of large trees by hand; protecting the root system.
- G. Dust Control: Control dust on and near the work area. Thoroughly moisten, as necessary, all surfaces to prevent dust from being a nuisance to the public, and operation of existing facilities. Contractor shall be responsible to address all complaints related to fugitive dust and shall correct such issues that arise by means such as window and/or vehicle washing.
- H. Sequencing: In general sediment removal work from site to site will sequentially proceed in an upstream to downstream direction unless requested by the Contractor to proceed in a different sequence and as accepted by CTDEEP.

#### 1.04 SAFETY:

- A. General: The Contractor is solely responsible for designing and constructing stable temporary excavations and should shore, slope, or bench the sides of the excavation as required to maintain the stability of both the excavation sides and bottom. Construction site safety is the sole responsibility of the Contractor, who shall also be solely responsible for the means, methods and sequencing of construction operations. Under no circumstances should the information provided in these Drawings and Specifications be interpreted to mean that CTDEEP or any representative of CTDEEP is assuming responsibility for construction site safety or the Contractor's activities; such responsibility is not being implied and should not be inferred.
- B. Regulations: All excavations shall be made in conformance with all applicable laws and regulations. In particular, all excavations shall be in conformance with the regulations of the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). These regulations are the Occupational Safety and Health Standards Excavations found in 29 CFR Part 1926 Subpart P Excavations, as amended.
- C. Excavations and Slopes: The Contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soils exposed in the excavations as part of the Contractor's safety procedures. The Contractor's "responsible person" should establish a minimum lateral distance from the crest of all slopes for all vehicles and spoil piles.

Likewise, the Contractor's "responsible person" should establish protective measures for exposed slope faces.

1.05 DISPOSAL OF EXCAVATED MATERIALS:

- A. All excavated materials from this section shall be transported to and disposed of at a licensed landfill or disposal facility approved by CTDEEP in accordance with all federal, state, and local laws and regulations.

1.06 SUBMITTALS:

- A. Prior to initiating excavation, the Contractor shall submit in writing a Proposed Sediment Excavation Plan for review and acceptance by CTDEEP. This proposal shall outline the timing and sequence of excavation procedures as well as methods for sediment control, dewatering of sediment, sediment removal, location and means of truck washing, truck hauling of sediment, and tracking and spill prevention and cleanup procedures. The sequence of all excavation operations shall be such as to insure the efficient removal of materials in a timely manner with a minimum impact on existing drainage patterns. The sequence of operations must comply with the terms of any environmental permits issued for this project.
- B. The Contractor shall submit the locations of all intended off-site disposal sites to CTDEEP along with written agreements executed by land owners that are not licensed landfills. The Contractor shall be responsible for obtaining all permits and other regulatory review for disposal of sediments at off-site locations. Removal of excavated sediments to off-site disposal sites may not commence until CTDEEP has reviewed and approved of the disposal sites.
- C. If, in the opinion of CTDEEP, any work planned does not meet the requirements stipulated or does not comply with issued permits, the Contractor shall make all necessary adjustments to the plan prior to continuing with the work under this Section.

**PART 2 - PRODUCTS**

Not Applicable to this Section.

## **PART 3 - EXECUTION**

### **3.01 GENERAL CONSTRUCTION METHODS:**

- A. Diversion of Water: The Contractor shall provide for the diversion of water as specified in Section 02090 – Control and Diversion of Water.
- B. Equipment: Contractor shall not refuel equipment or perform equipment maintenance within the river channel. No equipment shall be left within the river channel limits when Contractor personnel are not on site to move it. Equipment may be refueled in the designated staging area(s) or off-site at a distance in excess of fifty feet to the river channel.

### **3.02 EXCAVATION AND DISPOSAL OF SEDIMENTS:**

- A. Excavation of sediments shall be conducted in conformity with the requirements of the Drawings and as ordered by CTDEEP.
- B. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or instability of material excavated. Maintain sides and slopes of excavations in safe condition until completion of backfilling. See Sub-section 1.04 SAFETY in this section.

- C. Dryness of Sediments:

Sediments to be excavated and loaded into vehicles for hauling to the disposal area shall be dried and drained sufficiently such that they release no free draining liquids within the containers used for transport. The standard shall be the Paint Filter Test, EPA Method No. 9095.

When these conditions cannot be met due to the sediments containing excessive moisture, the Contractor shall further dry the sediments by stacking, harrowing, or other effective method within the project area such that the sediment moisture content is reduced to suitable levels.

- D. Rock: Bedrock within the excavation sites is not to be excavated. If bedrock is encountered, the Engineer shall be informed. Excavation shall be made to the level of the bedrock within the limits of grading as shown on the Drawings. Boulders of 1 cubic yard or greater volume shall be considered rock.

E. Limits of Excavation in River Channel:

1. The Drawings indicate the lines and grades to which the river channel is to be excavated. The lines and grades on the Drawings indicate the lower boundary of Sediment Excavation that will be paid for by CTDEEP.
2. Over-excavation beyond the area of work and grades indicated on the Drawings and the elevations indicated on the Drawings will not be permitted without the written approval of CTDEEP. Riprap sides slopes and channel bottom are not to be excavated and if disturbed, shall be restored by the Contractor at no additional cost to CTDEEP.
3. Over-excavation beyond the area of work and contours indicated on the Drawings and the elevations indicated on the Drawings will not be paid for without the Contractor having first obtained written approval of CTDEEP prior to the over-excavation.
4. The Contractor shall excavate sediments to lines and grades as indicated on the Drawings and profiles or to a firm, granular bottom, or riprap side slopes, whichever is attained first.

F. Disposal Site: The Contractor shall be solely responsible to see that sediment disposal and work at any disposal site is done in full compliance with all Federal, State, and Local laws.

~~G. Truck Washing: The Contractor shall wash trucks prior to entrance onto any paved surfaces. Washing shall thoroughly clean truck tires and undercarriage with a pressure water spray. Truck washing operations shall be conducted in such a manner that all drainage will be directed away from paved surfaces, the waterways or any catch basins. Wash waters shall not be discharged into to other downstream areas, waterways, or diversion channels. The Contractor shall supply all hoses, fittings, and nozzles necessary to conduct truck washing activities and supply the water. Contractor shall pay any utility for possible use of water from a hydrant or any private party supplier of water. Contractor shall maintain wash area and remove and properly dispose of sediments collected.~~

H. Truck Spillage: Leakage or spillage of sediments or soils from a truck onto a public or private paved area shall be immediately cleaned by the Contractor and CTDEEP immediately notified. Tracking of sediments or soils onto public roads will be removed within 24 hours by the Contractor

by hand or power brooming or a sweeper truck to the satisfaction of CTDEEP or the road owner at no additional cost to CTDEEP. If requested by CTDEEP, Contractor shall propose modifications to the work plan to eliminate future spillages. If spillage continues, Contractor will stop continued hauling until successful corrective actions are instituted to the satisfaction of CTDEEP.

- I. Protection of Existing Utilities: The excavation of sediments may reveal existing drainage pipes or other materials that are underneath the sediments and are not shown on the Drawings. Before excavation can commence, the Contractor and CTDEEP shall walk the perimeter of sediment removal site to locate any visible utilities. If any utilities are subsequently discovered during excavation, the Contractor shall notify CTDEEP before continuing work in the area of the utility. All utilities determined to be abandoned shall be removed within the grades shown on the Drawings. Active utilities are to be maintained in place and shall not be disturbed unless otherwise directed by CTDEEP.
  
- J. Disposal of Excavated Sediment Materials: All sediments and soil excavated from the river channels shall be disposed of according to their designation as either “Unregulated Materials” at an on-site or other location designated by CTDEEP or “Regulated Materials” at a legal, off-site location selected by the Contractor and accepted by CTDEEP. Delivery and transport shall be consistent with all local, state and federal regulations. All excavated materials of this section removed for off-site disposal shall become property of the Contractor. A suitable disposal facility or site provided by the Contractor and accepted by CTDEEP shall be utilized and managed consistent with all local, state, and federal regulations.
  
- K. Disposal of Unsuitable Material: Any large manmade or natural objects not suitable for disposal under this Section shall become the property of the Contractor. Such objects would include, but are not limited to, the following: tires and other car parts, appliances, pipe, shopping carts, concrete, tree stumps, large tree limbs, and other non-sediment materials. At no additional cost to CTDEEP, the Contractor shall dispose of these materials in an appropriate location consistent with all local, state and federal regulations.

## **PART 4 - COMPENSATION**

### **4.01 METHOD OF MEASUREMENT:**

- A. **General:** It is the intent of this project to excavate, remove and dispose sediment materials to the lines and grades shown on the Drawings. The estimated quantity of materials to be removed from the river channel is approximate only and must be verified by survey from which the volume, in cubic yards, shall be measured, in place, by the method of average end areas. The only earthwork component to be separately measured for payment will be Sediment Excavation from within the river channels from designated sites. All other earthwork such as trenching, excavation for structures, excavation for access drives, disposal site preparation, and excavation for the erosion and sediment controls shall not be measured for payment under this item.
- B. Sediment excavation beyond the limits indicated on the Drawings shall not be measured for payment unless approved by CTDEEP prior to the over-excavation taking place.
- C. Sediment Excavation and Disposal – Unregulated Materials will be measured for payment by the cubic yard.
- D. Sediment Excavation and Disposal – Regulated Materials will be measured for payment by the cubic yard.

### **4.02 BASIS OF PAYMENT:**

- A. **Sediment Excavation and Disposal – Unregulated Materials:** Excavation and disposal of sediments as unregulated materials will be paid for at the contract unit price per cubic yard for "Sediment Excavation and Disposal – Unregulated Materials" for the volume of these sediments removed. This price shall include all equipment, fuel, tools, transportation and labor incidental to the completion of the excavation, including disposal and management of the sediments in accordance with the provisions of the Drawings and these specifications, including truck washing. No payment will be made for over excavation beyond the limits indicated on the Drawings unless previously approved by CTDEEP. All other earthwork such as trenching, excavation for structures, excavation for the access drives, disposal site preparation and restoration, and excavation for the erosion and sediment controls shall not be paid for under this item.
- B. **Sediment Excavation and Disposal – Regulated Materials:** Excavation and disposal of sediments as regulated materials will be paid for at the

contract unit price per cubic yard for "Sediment Excavation and Disposal – Regulated Materials" for the volume of these sediments removed. This price shall include all equipment, fuel, tools, transportation and labor incidental to the completion of the excavation, including disposal and management of the sediments in accordance with the provisions of the Drawings and these specifications, including truck washing. No payment will be made for over excavation beyond the limits indicated on the Drawings unless previously approved by CTDEEP. All other earthwork such as trenching, excavation for structures, excavation for the access drives, disposal site preparation and restoration, and excavation for the erosion and sediment controls shall not be paid for under this item.

- C. Changes to amount of Sediment Excavation and Disposal: CTDEEP reserves the right to increase or decrease the quantity of excavation by 25% over or under the estimated quantity without altering the accepted bid price per cubic yard.

4.03 PAYMENT ITEM:

<u>Pay Item</u>	<u>Description</u>	<u>Pay Unit</u>
02210-1	Sediment Excavation and Disposal -Unregulated Materials	Cubic Yard
02210-2	Sediment Excavation and Disposal -Regulated Materials	Cubic Yard

**\*\*\*\*\* END OF SECTION \*\*\*\*\***