

dredged materials. The Contractor shall determine the requirements for staging and fabrication areas for dredging equipment based on his proposed operational methods. Acquisition of real estate interests in any such area and/or required permits for the particular type land use shall be the sole responsibility of the Contractor, the Owner being held harmless from any liability or legality of procurement, use, or restoration. The Contractor shall give the Engineer ten (10) days written advance notice of the date he plans to modify his order of work in order that required Owner actions may be started sufficiently in advance of the Contractor's operations.

## **1.5 Character of Material**

1.5.1. The sampling location plan and the results of laboratory tests on soils are located in Appendix 2 of these specifications. Sampling results include physical and chemical composition, including grain size analysis and plasticity characteristics. The Contractor shall make his own interpretation(s) of this information in determining the character of materials to be excavated.

1.5.2. Materials to be removed under this contract within the required dredging prism consist of primarily channel maintenance materials consisting of soft mud and silt. Large and small debris may exist within the limits of the required dredging, although the Engineer is not aware of any debris.

## **1.6 Obstructions**

Timber piles exist within the limits of Station 0+00 and 4+00. These piles shall be completely removed as part of the work. A derelict vessel exists within the channel near the timber piles. The wreck shall be removed as part of the work. The Owner has no knowledge of other existing wrecks, abandoned structures, or other material within the indicated limits of dredging of such size or character that would require the use of special or additional plant for its economical removal.

## **1.7 Submittals**

1.7.1. Prior to any dredging work, the Contractor shall submit the following for approval by the Engineer. No work shall begin without approval by the Engineer.

1.7.2. Dredging Operation Plan including the following:

1. Complete project team organization with duties, responsibilities, and authorities clearly defined.
2. Names and specifications for all dredging and support plant to be used for each specific work element.
3. Order of work.
4. Schedule.
5. Detailed anchoring and mooring plans.
6. Plan for marking and lighting of floating plant and equipment.
7. Survey Plan: Written plan presenting the job survey effort.
8. Coordinates and land elevations of all control points for electronic positioning and vertical control.
9. Certificates: Manufacturer's guarantee of accuracy of electronic positioning system for dredging surveys.
10. Quality Control procedures.

- 3.3.2. Placement of dredged material at the Little Creek Wildlife Area shall conform to the requirements and procedures set forth these specifications and as shown on the Contract Drawings.
- 3.3.3. Navigation to and from the Little Creek Wildlife Area shall be along Little River. Land access to the Little Creek Wildlife Area shall be from Route 9.
- 3.3.4. A joint inspection of the Little Creek Wildlife Area will be conducted by the Contractor, DNREC and the Engineer prior to commencing operations and upon completion of operations to ascertain any damages or deficiencies.
- 3.3.5. The Contractor is advised that other activities may occur at the Little Creek Wildlife Area. The Contractor shall be responsible for coordinating his activities with DNREC to avoid interference with each other's operations.
- 3.3.6. Storage Areas
  - 3.3.6.1. All operations related to the storage of equipment and materials shall be confined to the areas approved by DNREC. The Contractor shall include his requirements for storage space in his plan of operation submitted for approval.
  - 3.3.6.2. Use of storage areas other than those approved by DNREC must be submitted for approval and not interfere with traffic or other operations. The Contractor shall not store pipe or equipment on the crown or slopes of the existing levees.
  - 3.3.6.3. Temporary buildings (storage sheds, shops, offices, etc.) may be erected and utilities may be installed by the Contractor upon approval by DNREC, and shall be built with labor and materials furnished by the Contractor without expense to DNREC. Such temporary buildings and utilities shall remain the property of the Contractor and shall be removed by him at his expense upon the completion of the work. Upon approval by DNREC, such buildings and utilities may be abandoned and need not be removed.
  - 3.3.6.4. The Contractor shall use only established roadways or construct and use such temporary roadways as may be authorized by DNREC. Where materials are transported in the prosecution of the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local law or regulation. When it is necessary to cross any roadways, curbs or utilities, protection against damage shall be provided by the Contractor and any damaged roadways, curbs or utilities shall be repaired promptly by, or at the expense of the Contractor.
  - 3.3.6.5. The Contractor shall be responsible for any necessary maintenance or improvement, and periodic clean-up of the storage areas.
- 3.3.7. Speed Limit: Observe all posted speed limits. Employees shall be cautioned to slow down in the vicinity of the Operations Buildings and for pipe crossings, and to watch out for heavy equipment and pedestrians. Vehicles shall be operated in a

- 3.5.1. If any shoals, lumps, or lack of design depth be disclosed by examination of the post-dredging survey, the Contractor shall be required to continue dredging until the design depth is obtained. If the bottom material is soft and the shoal areas are small and form no material obstruction to navigation, the removal of such shoals may be waived at the discretion of the Engineer. At the completion of any additional dredging, a new post-dredging survey shall be completed at the expense of the Contractor. The Contractor shall notify the Engineer when additional soundings are to be made. Plots and electronic files of the new post-dredging survey and final quantity computations shall be submitted for the approval of the Engineer for final examination and acceptance of the work. When the area is found to be in a satisfactory condition, it will be accepted as final.
- 3.5.2. After acceptance of the completed work by the Owner, the Contractor shall prepare and submit to the Engineer final survey information in hardcopy and electronic (AutoCAD) formats. Survey data shall include plan view drawings with soundings (bathymetry plot), channel lines, features, and other structures at 1-inch = 50-foot scale, dredging area cross-sections at minimum 25-foot stations perpendicular to the baseline of dredging showing pre-dredging and post-dredging surfaces with the design dredging template, and processed survey data. Dates of the surveys and horizontal and vertical datum shall be provided with the survey data.
- 3.5.3. Final Acceptance of work and corrections made thereon will not be reopened after having once been made, except on evidence of collusion, fraud or obvious error, and the acceptance of a completed section shall not change the time of payment of the retained percentages of the whole or any part of the work.

## **Part 4 – Compensation**

### **4.1 Measurement**

- 4.1.1. Dredging and Dredged Material Placement shall be measured on a cubic yard basis. Volumes shall be calculated by computing the total volume between the bottom surface shown by soundings of the pre-dredging survey approved by the Engineer and the bottom surface shown by the soundings of the post-dredging survey approved by the Engineer and accepted as final, within the limits of allowable overdepth as described above. Payment will not be made for excessive dredging.
- 4.1.2 The volume of material removed and paid for shall be computed using the Average End Area Method comparing sections from the pre-dredging and post-dredging hydrographic surveys. Both surveys shall be controlled from the same common baseline of dredging and the same common horizontal and vertical datum as shown on the Contract Drawings. Surveys shall be taken on section lines at minimum 25 foot stations perpendicular to the baseline and on minimum ten (10) foot centers along each section line. Survey drawings shall include plan view and cross-sections at each section line extending beyond the adjacent federal channel limit.
- 4.1.3 Removal of Timber Piles shall be measured on a per each basis for complete removal of timber piles within the Little River dredging limits.

4.1.4 Removal of Derelict Vessel shall be measured on a lump sum basis for complete removal of the wreck within the Little River dredging limits.

## **4.2 Payment**

4.2.1. Payment for "Dredging and Dredged Material Disposal," complete, shall be made at the Unit Price Bid per cubic yard under Item No. 2 on the Bid Form.

4.2.2. Payment for "Removal of Timber Piles," complete, shall be made at the Unit Price per Each Bid under Item No. 3 on the Bid Form.

4.2.3. Payment for "Removal of Derelict Vessel," complete, shall be made at the Lump Sum Price Bid under Item No. 4 on the Bid Form.

4.2.4. The above prices shall include all the work described in this Section and shown on the Contract Drawings including all labor, materials, supplies, services, loading, unloading, transportation, fuel power, water surveys, and equipment necessary to complete the work in every respect to the satisfaction of the Engineer.

END OF SECTION