Special Note for Modular Concrete Retaining Wall

1. **DESCRIPTION**

Except as specified herein, perform all work in accordance with the Department's Standard and Supplemental Specifications and Standard and Sepia Drawings, current editions. Article references are to the Standard Specifications. Furnish all equipment, labor, materials, and incidentals for the following work items:

(1) Maintaining and Controlling Traffic; (2) Site preparation; (3) Preparing the design, furnishing the materials, and installing the modular concrete retaining wall to the lines, grades and dimensions shown in this Proposal; and (4) any other work as specified by the Contract.

1. **MATERIALS**

All materials shall be manufactured in accordance with manufacturer’s recommendations and specifications. All materials shall be sampled and tested in accordance with the Department's Sampling Manual and the materials shall be available for sampling a sufficient time in advance of the use of the materials to allow for the necessary time for testing unless otherwise specified in these Notes.

1. **Maintain and Control Traffic.** See Traffic Control Plan.
2. **Erosion Control.** See Special Note for Erosion Control.
3. **CONSTRUCTION METHODS**
4. **Maintain and Control Traffic.** See Traffic Control Plan.
5. **Site Preparation.** All site preparation shall be as approved or as directed by the Engineer. Be responsible for all site preparation including, but not limited to: clearing and grubbing, staking, excavation, backfill,and removal of obstructions or any other material not covered by other items. Perform all site preparation only as approved or directed by the Engineer.
6. **Staking.** See Special Note for Staking.
7. **Modular Block Retaining Wall.** Before beginning installation, the Contractor shall furnish to the Engineer drawings prepared by a licensed Professional Engineer in Kentucky for review and approval. The design shall be in accordance with the current editions of the AASHTO LRFD Bridge Design Specifications and the Kentucky Transportation Cabinet Department of Highways Standard Specifications for Road and Bridge Construction. All work shall be performed in accordance with Manufacturer’s procedures and recommendations.
8. **On-Site Inspection.** Each Contractor submitting a bid for this work shall make a thorough inspection of the site prior to submitting his/her bid and shall thoroughly familiarize themselves with the existing conditions so that the work can be expeditiously performed after a contract is awarded. Submission of a bid will be considered evidence of this inspection having been made.
9. **Property Damage.** The Contractor shall be responsible for all damage to public and/or private property resulting from the Contractor’s activities. Repair or replace damaged roadway features in like kind materials and design as directed by the Engineer at no additional cost to the Department. Repair or replace damaged private property in like kind materials and design to the satisfaction of the owner and the Engineer at no additional cost to the Department.
10. **Coordination with Utility Companies**. Locate all underground, above ground, and overhead utilities prior to beginning construction. The Contractor shall have the responsibility for contacting and maintaining liaison with all utility companies that have utilities located within the project limits. Do not disturb existing overhead or underground utilities. It is not anticipated that any utility facilities will need to be relocated and/or adjusted; however, in the event that it is discovered that the work does require that utilities be relocated and/or adjusted, the utility companies will work concurrently with the Contractor while relocating their facilities. The Contractor shall be responsible for repairing all utility damage that occurs due to the Contractor’s operations.
11. **Right of Way Limits.** The Department has not established exact limits of the Right-of-Way. Unless a consent and release form is obtained from the adjoining property owner, limit work activities to the obvious Right-of-Way and staging areas secured by the Contractor at no additional cost to the Department. In the event that private improvements (i.e. fences, buildings, etc.) encroach upon the Right-of-Way, the contractor shall notify the Engineer and limit work activities in order to NOT disturb the improvements. If they become necessary, the Department will secure consent and releases from property owners through the Engineer. Be responsible for all encroachments onto private lands.
12. **Clean Up, Disposal of Waste.** Clean up the project area as work progresses. Dispose of all removed excess material, debris, and other waste at approved sites off the Right of Way obtained by the Contractor at no additional cost to the Department. See the Special Provision for Waste and Borrow Sites.
13. **Final Dressing, Seeding and Protection.** Grade all disturbed areas to blend with the adjacent roadway features and to provide a suitable seed bed. Apply Class A Final Dressing to all disturbed areas. Sow all disturbed earthen areas with the applicable seed mixture(s) according to Section 212.03.03.
14. **Erosion Control.** See Special Note for Erosion Control.
15. **Control.** Perform all work under the absolute control of the Department. Obtain the Engineer’s approval of all designs required to be furnished by the Contractor prior to incorporation into the work. The Department reserves the right to have other work performed by other contractors and its own forces, and to permit public utility companies and others to do work during the construction within the limits of, or adjacent to, the project. Conduct operations and cooperate with such other parties so that interference with such other work will be reduced to a minimum. The Department will not honor any claims for money or time extension created by the operations of such other parties.

Should a difference of opinion arise as to the rights of the Contractor and others working within the limits of, or adjacent to, the project, the Engineer will decide as to the respective rights of the various parties involved in order to assure the completion of the Department’s work in general harmony and in a satisfactory manner, and the Engineer’s decision shall be final and binding upon the Contractor.

1. **GEOTECHNICAL NOTES**
2. The wall shall be designed in accordance with the AASHTO LRFD Bridge Design Specifications, current edition.
3. Live load surcharges shall be applied in accordance with the AASHTO LRFD Bridge Design Specifications, current edition.
4. Temporary sheeting, shoring, cofferdams, and/or a dewatering method may be required to facilitate foundation construction.
5. As noted in Section III, the modular concrete retaining wall supplier shall provide final design calculations for approval. The following parameters shall be utilized for design of the modular concrete retaining wall;

Backfill slope 0°

Unit weight of insitu soil backfill: 120 pcf

Friction angle of insitu soil backfill: 28°

Unit weight of the granular backfill: 110 pcf

Friction angle of granular backfill: 35°

Unit weight of existing foundation soils: 120 pcf

Friction angle of existing foundation soils: 32°

1. Embedment of the footing must be a minimum of 3.5 feet below the final grade. Solid rock excavation will be required. (1.5’ of the large-block + 2’ leveling pad).
2. The backfill behind the wall shall consist of non-erodible Granular Embankment under laid with Geotextile Fabric Type IV.
3. Size the wall footings at the Service Limit State using Factored Nominal Bearing Resistances given below. For checking bearing resistance at Strength and Extreme Limit States, use Resistance Factors of 0.55 and 1.0, respectively, applied to the Nominal Resistances.

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| --- | --- | --- |
| **Bearing Surface** | **Factored Nominal Bearing Resistance at Service Limit State** | **Nominal Bearing Resistance** |
| Existing Soil | 5.16 ksf | 9.37 ksf |

1. Due to the use of LIDAR survey information and the variability in the rock line the potential for field adjustments should be anticipated.
2. Rip rap is required at the toe of the retaining wall to minimize the potential for scour. The rip rap shall be placed on a 1:1 slope and shall extend 2 feet above the flowline and for the full length of the wall. The riprap shall be under laid with Geotextile Fabric Type I.
3. Foundation embankment benches shall be placed in accordance with Standard Drawing RGX-010 along the temporary slope behind the wall and/or as directed by the Engineer.
4. **METHOD OF MEASUREMENT**
5. **Maintain and Control Traffic.** See Traffic Control Plan.
6. **Erosion Control.** See Special Note for Erosion Control.
7. **Staking.** See Special Note for Staking.
8. **Site Preparation.** Other than the bid items listed, site preparation will NOT be measured for payment, but shall be incidental to the project bid items.
9. **Modular Block Retaining Wall.** The Department will measure the finished in-place area of this item in Square Feet. Measurement will be made of the exposed face of the wall from the top of the wall to the top of leveling pad for the length of the wall.
10. **Clean Up, Disposal of Waste, Final Dressing, Seeding and Protection**. The Department will NOT measure for payment the following activities: Clean Up, Disposal of Waste, and Final Dressing. These activities shall be incidental to the project bid items. Seeding and Protection shall be measured according to Section 212.
11. **BASIS OF PAYMENT**
12. **Maintain and Control Traffic.** See Traffic Control Plan.
13. **Erosion Control.** See Special Note for Erosion Control.
14. **Staking.** See Special Note for Staking.
15. **Modular Concrete Retaining Wall.** The Department will make payment for the completed and accepted quantities under the bid item: RETAINING WALL (MODULAR CONCRETE). Any temporary sheeting, shoring, cofferdams, and/or a dewatering method that may be required to facilitate foundation construction shall be incidental to this bid item. The Department will consider payment full compensation for all work and incidentals necessary to excavate and prepare site/foundation, and install the Modular Block Retaining Wall at the location shown in the proposal or as directed by the Engineer.