Barrow County
Park 53 South Industrial and Technology Complex – Phase 1 Grading

This Addendum is hereby made a part of the Contract Documents.

Questions and Answers

1. Q: Will the owner be providing geotechnical monitoring & testing?
   A: Yes, see Note 15 under “Project Notes” on C-0.1.

2. Q: Will the owner be providing NPDES monitoring & testing?
   A: No, see notes on C-0.0.

3. Q: Should removal/disposal of silt fencing & tree protection fencing be included or will these remain after our scope & contract is complete?
   A: Removal/disposal of silt fencing and tree protection fencing shall be included in base bid.

4. Q: Is the design intent to balance the earthwork? Can the design grades & elevations be adjusted & coordinated with the design engineer to balance the earthwork?
   A: The site has been designed to be balanced. The design engineer will be available for coordination/adjustment of grades if needed to ensure that the site is balanced.

5. Q: Will surveyed as-builts be required?
   A: Yes, see notes on C-0.0.

6. Q: Is there a mandatory pre-bid meeting?
   A: No.

7. Q: Can bids be submitted via email or do they need to be physically turned in?
   A: Bids must be submitted as directed in the RFB. Emailed bids will not be accepted. **FAILURE TO COMPLY WITH THE INSTRUCTIONS WILL RESULT IN DISQUALIFICATION.**

8. Q: Is there a geotechnical report?
   A: No, there is not geotechnical report available.

9. Q: Regarding the turf reinforcement matting that was added in Addendum #1, is there a specific product requirement?
   A: The turf reinforcement matting must meet GDOT specs for Turf Reinforcement Matting - Type II. Please see the attached specification as reference. Turf matting should be installed a minimum of 75’ in the bottom of the sediment pond for Di #2 and 75’ from the pedestal inlet for Di #1.

10. Q: The site is considerably heavy on the soil. Should the contractor assume exporting the excess material or can the contractor raise the proposed grades to balance or spoil the excess on site?
    A: The site has been designed to be balanced. The design engineer will be available for coordination/adjustment of grades if needed to ensure that the site is balanced.

11. Q: The documents are unclear on how rock would be handled if encountered. The bid form has unit prices for haul off of rock but it does not have a unit price for rock that can be blasted/excavated and spoiled on site. Can you clarify this please?
    A: Please see the revised Bid Form attached.
12. Q: The contract says the contractor is to provide all permits. Can you clarify specifically what permits are required of the contractor?
   A: A Land Disturbance Permit will be required. The design engineer will apply for the permit and submit the NOI.

Attachments:
1. Revised Bid Form
2. GDOT Turf Reinforcement Matting Specs
BID FORM – Page 1 of 2

(Submit an Original and Four Copies)

Park 53 South Industrial & Technology Complex – Phase 1 Grading
Barrow County, GA

SUBMITTED TO: Barrow County Board of Commissioners

SUBMITTED BY: __________________________ (Hereinafter called “Bidder”)

NAME, ADDRESS AND TELEPHONE NUMBER OF CONTRACTOR:

___________________________________
___________________________________
___________________________________
___________________________________

We acknowledge the receipt to Addenda numbered __________ through __________.

BASE BID:

Barrow County Board of Commissioners:

Having carefully examined the Request For Bid and Drawings for Park 53 South Industrial & Technology Complex – Phase 1 Grading, as well as the premises and conditions affecting the Work, the undersigned proposes to furnish all services, labor and materials as called for by Bid Documents for Park 53 South Industrial & Technology Complex – Phase 1 Grading, and complete all Work within sixteen (16) weeks of generation of a Notice To Proceed, in accordance with said documents, for a total bid amount of (complete Page 2 and furnish with Page 1):

___________________________________ ($______________)

Included and attached is a Bid Bond in the amount of five percent (5%) of this Bid.
UNIT PRICES:

The following Unit Prices are amounts to be used for work that will be added or deleted from the Contract by Change Order if the scope of Work is increased or decreased. All Unit Prices are inclusive and complete for labor, equipment, material, mobilization and associated time for the work of each unit price for site operations, installation, applicable taxes, supervision, bonds and insurance, management and supervision, overhead and profit, and all other incidental costs; and are applicable at any point or location at and within the Project.

<table>
<thead>
<tr>
<th>No.</th>
<th>Item</th>
<th>Unit</th>
<th>Unit Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Remove and Haul-Off Unsuitable Soil</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>2.</td>
<td>Remove and Haul-Off Mass Rock (rippable)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>3.</td>
<td>Remove and Haul-Off Trench Rock (rippable)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>4.</td>
<td>Remove and Haul-Off Mass Rock (blasting)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>5.</td>
<td>Remove and Haul-Off Trench Rock (blasting)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>6.</td>
<td>Furnish and Install Suitable Fill, Placed and Compacted</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>7.</td>
<td>Furnish and Install #57 Stone, Placed and Compacted</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>8.</td>
<td>Silt Fence, Type “C”</td>
<td>LF</td>
<td>$</td>
</tr>
<tr>
<td>9.</td>
<td>Erosion Check Dams</td>
<td>EA</td>
<td>$</td>
</tr>
<tr>
<td>10.</td>
<td>Slope Stabilization</td>
<td>SY</td>
<td>$</td>
</tr>
<tr>
<td>11.</td>
<td>Temporary Grassing</td>
<td>AC</td>
<td>$</td>
</tr>
<tr>
<td>12.</td>
<td>Remove Mass Rock and spoil on site (rippable)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>13.</td>
<td>Remove Trench Rock and spoil on site (rippable)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>14.</td>
<td>Remove Mass Rock and spoil on site (blasting)</td>
<td>CY</td>
<td>$</td>
</tr>
<tr>
<td>15.</td>
<td>Remove Trench Rock and spoil on site (blasting)</td>
<td>CY</td>
<td>$</td>
</tr>
</tbody>
</table>

SIGNATURE:

Signed, sealed, and dated this _____ Day of ____________, 2020.

Bidder: _______________________________(Seal)
(Company Name)

By: ________________________________
(Signature)

Printed Name: ________________________________

Title: ________________________________
Section 711—Turf Reinforcement Matting

711.1 General Description
This section includes the requirements for furnishing and placing turf reinforcement matting (TRM) over prepared areas according to the Plans or as directed by the Engineer.

711.1.01 Definitions
General Provisions 101 through 150.

711.02 Related References
A. Standard Specifications
   Section 700—Grassing
B. Referenced Documents
   QPL 49

711.02 Submittals
General Provisions 101 through 150.

711.2 Materials
Use materials listed on QPL 49. TRM is designated Types 1, 2, 3, 4, 5, and 6 and ranges in allowable hydraulic shear stress from Type 1 to Type 6, Type 6 being the highest. Use a TRM type equal to or higher than the TRM type specified by the designer. All TRM types require permanent grass be sown concurrently with installation.

Alternatively, in special cases dependent upon the soil’s vegetative-support quality and the growing season, the designer may specify only grass and mulch or grass and a biodegradable rolled erosion control product for 0-3 psf (0-143 N/m²) shear stress conditions.

<table>
<thead>
<tr>
<th>Type</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Type 3</th>
<th>Type 4</th>
<th>Type 5</th>
<th>Type 6</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-2 psf (0-96 N/m²)</td>
<td>0-4 psf (0-191 N/m²)</td>
<td>0-6 psf (0-287 N/m²)</td>
<td>0-8 psf (0-382 N/m²)</td>
<td>0-10 psf (0-478 N/m²)</td>
<td>0-12 psf (0-574 N/m²)</td>
</tr>
</tbody>
</table>

1 Allowable hydraulic shear stress in the unvegetated condition = 2.0 psf (96 N/m²).

Determine the allowable vegetated and unvegetated hydraulic shear stress for the TRM by using either of the independent laboratories of the Texas Transportation Institute (TTI) or the National Transportation Product Evaluation Program (NTPEP). Use the following large-scale test methods:


Ensure materials meet the following requirements.
A. Preformed TRM

Use TRM with a web of mechanical or melt-bonded polymer nettings, monofilaments, or entangled fibers to form a dimensionally stable matrix. Bond the TRM with one of the following:

- Polymer welding
- Thermal fusion
- Polymer fusion
- Fibers placed between two high-strength, biaxially oriented nets bound by parallel-lock stitching with polyolefin, nylon, or polyester threads

Use TRM with enough strength and elongation to limit stretching and maintain its shape before, during, and after installation under dry or wet conditions. Provide TRM with stabilized components that avoid ultraviolet degradation and are inert to chemicals normally encountered in a natural soil environment. Ensure the TRM conforms to the following minimum-value physical properties:

<table>
<thead>
<tr>
<th>Category</th>
<th>Grab Tensile Strength</th>
<th>UV Stability</th>
<th>Allowable Hydraulic Shear Stress</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>lb/ft (kN/m)¹,²</td>
<td></td>
<td>lb/ft² (N/m²)</td>
</tr>
<tr>
<td>Type 1</td>
<td>125 (1.82)</td>
<td>80%</td>
<td>0.2 (0.96)</td>
</tr>
<tr>
<td>Type 2</td>
<td>125 (1.82)</td>
<td>80%</td>
<td>0.4 (0.191)</td>
</tr>
<tr>
<td>Type 3</td>
<td>125 (1.82)</td>
<td>80%</td>
<td>0.6 (0.287)</td>
</tr>
<tr>
<td>Type 4</td>
<td>150 (2.19)</td>
<td>80%</td>
<td>0.8 (0.382)</td>
</tr>
<tr>
<td>Type 5</td>
<td>175 (2.55)</td>
<td>80%</td>
<td>1.0 (0.478)</td>
</tr>
<tr>
<td>Type 6</td>
<td>200 (2.92)</td>
<td>80%</td>
<td>1.2 (0.574)</td>
</tr>
</tbody>
</table>

¹ Machine direction, ASTM D6818

² In field conditions requiring high loading and/or high survivability requirements (e.g., the TRM having to bear heavy-equipment loading), tensile strength of 3,000 lb/ft (44 kN/m) or greater may be required

³ Percentage of strength of an unexposed sample retained

⁴ As calculated in accordance with the methods detailed in the FHWA HEC 15, 2005, document

⁵ Exposure in carbon arc light in accordance with ASTM D 822 and ASTM G 152 is required.

B. Stakes or Staples

Use 1 in. by 3 in. (25 mm by 75 mm) wooden stakes made from sound stock cut in a triangular shape. Cut stakes 12 in. to 18 in. (300 mm to 450 mm) long depending on soil compaction. Use metal staples with the following characteristics:

- 11-gauge steel
Section 711-Turf Reinforcement Matting

- U shape
- Legs at least 8 in. (200 mm) long
- Crown 2 in. (50 mm) across

When the construction plans specify deep anchors be used along with stakes or staples for zones of shear stress greater than 12 psf (574 N/m²) as an alternative to using riprap, follow the TRM manufacturer’s guidelines for anchor selection and installation procedures and provide the Engineer with the details of the recommended procedure. Use anchors listed on the QPL 49.

711.2.01 Delivery, Storage, and Handling
General Provisions 101 through 150.

711.3 Construction Requirements

711.3.01 Personnel
General Provisions 101 through 150.

711.3.02 Equipment
General Provisions 101 through 150.

711.3.03 Preparation

A. Site Preparation
Before protecting areas with TRM, prepare the area according to Section 700, with the following steps:

1. Bring the area to final grade.
2. Plow the area.
3. Lime the area.
4. Fertilize the area.
5. Grass the area.

Provide a smooth, firm, and stable surface free of rocks, clods, roots, or other obstructions preventing the TRM from fully contacting the soil.

711.3.04 Fabrication
General Provisions 101 through 150.

711.3.05 Construction

A. Installing TRM
Do not use TRM in areas where rock crops out. Install the TRM either in ditches or on slopes according to the manufacturer’s instructions and provide the Engineer with the details of the recommended procedure. In the absence of specific instructions from the manufacturer, install the TRM according to the following requirements:

1. Ditches
   To install the TRM in ditches:
   a. Cut a transverse trench 6 in. wide by 9 in. deep (150 mm wide by 225 mm deep) at the ends of the TRM.
   b. Cut longitudinal, 4 in. (100 mm) deep anchor slots along each side of the TRM along the full length of the ditch and bury the TRM edges. The Engineer will require additional or deeper anchor slots or deep anchors for large volumes of water that cause high shear stress.
c. Roll out the center strip of TRM, starting at the lower end of the ditch.
d. Roll out each adjacent strip of TRM to overlap the preceding strip at least 3 in. (75 mm).
e. Overlap the ends of each TRM roll 3 ft (1 m) with the upslope mat on top. Stretch the TRM to the bottom of the slot, folding it back and staking through two layers of material.
f. Stake each strip of TRM at 1 ft (300mm) intervals in each anchor slot, with one stake serving the overlapped edges of adjoining strips.
g. Backfill and compact the slot.
h. Fold the TRM back over the slot and continue in the upstream direction (closed anchor slot).
i. Stake the TRM snugly in the longitudinal slots and at intervals a maximum of 5 ft (1.5 m) along the ditch (open anchor slot).
j. Backfill and dress the longitudinal anchor slots.

711.3.06 Quality Acceptance
General Provisions 101 through 150.

711.3.07 Contractor Warranty and Maintenance
General Provisions 101 through 150.

711.4 Measurement
TRM completed and accepted is measured for payment by the square yard (meter) of surface measured.

711.4.01 Limits
Overlaps and anchor slots are incidental to the work and are not measured for payment.

711.5 Payment
This work will be paid for at the Contract Price per square yard (meter) for TRM completed, in place, and accepted. Payment is full compensation for furnishing and installing the TRM according to this Specification.

Preparation of the area and grassing will be paid for according to Section 700.

Payment will be made under:

<table>
<thead>
<tr>
<th>Item No. 711</th>
<th>Turf reinforcement matting, Type ___</th>
<th>Per square yard (meter)</th>
</tr>
</thead>
</table>

711.5.01 Adjustments
General Provisions 101 through 150.