

SECTION 01010

GENERAL REQUIREMENTS

PART I - GENERAL

1.01 DESCRIPTION

- A. This project consists of the stabilization of the top of the existing berm known as the "Continental Divide Trail" at Eagle Marsh Nature Preserve. The project is located at Eagle Marsh, Ft. Wayne, Allen County.
- B. The Contractor shall perform all work required to complete the project in accordance with the contract documents.

1.02 BID:

- A. The Base Bid shall include all work and requirements indicated by the Bidding Documents. The Base Bid shall include all work and requirements for 5000 linear feet of top of berm stabilization.
- B. The Contractor shall not be allowed extra compensation by reason of any matter or thing concerning which the Contractor could have fully informed himself prior to bidding. No verbal agreement, understanding or conversation with an agent or employee of the Owner, either before or after the execution of this contract, shall affect or modify the terms or obligations herein contained.
- C. Indicate on Bid Form (DAPW 13) the amount to be added to the Base Bid for the 1 alternate. Alternate 1 is an add alternate to include the additional cost to extend the work to the rock fill section shown on the plans.
- D. Provide Supplemental Unit Price form (Page 2A - Bid Form) with bid.
 - 1. Supplemental Unit Price is an amount proposed by bidders, state on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.
 - 2. Supplemental Unit Prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

1.03 SITE ACCESS PRIOR TO BIDDING:

Bidders may obtain access to the construction site for on-site inspection prior to bidding at the pre-bid meeting as indicated in the Notice to Bidders.

Property Contact: Betsy Yankowiak, Little River Wetlands Project

260-341-6368

Owner Contact: Jomary Baller, Department of Natural Resources

317-372-8242

1.04 USE OF CONTRACT DOCUMENTS:

- A. Contractor shall examine all Specifications and Drawings for the Work, including those that may pertain to Work Contractor does not normally perform with its own forces.
- B. Contractor shall use all of the Project Drawings and Specifications:

1. For a complete understanding of the Project.
2. To determine the type of construction and systems required.
3. For coordination with other contractors.
4. To determine what other work may be involved in various parts or phases.
5. To anticipate and notify others when work by others will be required.
6. And all other relevant matters related to the project.

C. Contractor is also bound by all requirements of the Contract Documents which are applicable to, pertain to, or affect its work, as may be shown or inferred by the entire set of Project Drawings and Specifications.

1.05 COMMENCEMENT AND COMPLETION OF WORK:

- A. The Contractor shall start the project within ten (10) days after the date of the execution of the Contract, except that **no work can begin prior to August 1, 2020.**
- B. Work shall not commence until all labor, materials and equipment are available so Work can continue without interruption or delay.
- C. Substantial Completion of the work shall be September 15, 2020. Final seeding will be reviewed for conformance with performance standards by **October 15, 2020.**
- D. This project, or portion thereof, will not be ready for substantial completion review until test and performance evaluations are completed, all items are installed, and area is clear of construction rubbish and debris.

1.06 BUILDER'S RISK INSURANCE:

- A. The Builders Risk insurance requirements as specified in the General Conditions (11.2.5) are waived for this project.

1.07 SUBMISSION OF POST-BID INFORMATION: Submit the following information within ten (10) days of receipt of Notice to Proceed.

- A. Designation of the work to be performed by the Contractor with his own forces.
- B. A list of Subcontractors.
- C. A list of manufacturers and suppliers.
- D. A Progress schedule for the work in relation to the entire Project.
- E. A Schedule of Values. This schedule, when approved by the Owner shall be used as a basis for the Contractor's Applications for Progress and Final Payments.

1.08 MEASUREMENT AND PAYMENT - LUMP SUM

Payment for Lump Sum projects will be based on the accepted schedule of values for the project. No separate measurement for payment will be performed for Lump Sum Work. All Work described in the Specifications and/or shown on the Drawings shall be included in the Lump Sum Bid.

1.09 WORKING HOURS:

- A. Contractor shall perform all construction activity between sunrise and sunset and shall not be performed on Saturdays, Sundays, or during the period beginning at 12:00 noon on the last weekday (Monday through Friday) proceeding and continuing until Sunrise on the day following New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas, unless previous arrangements are made with the Property Contact.
- B. All work performed at other times shall be only by approval from the Property Contact, and shall not constitute a change in the contract amount.

1.10 PROGRESS MEETINGS

Progress meetings will be held throughout progress of the Work at intervals agreed to by Owner and Contractor.

1.11 EXISTING SITE CONDITIONS:

- A. Data on the drawings pertaining to present conditions, dimensions, type of construction, obstructions on or near site, location of utilities, etc. have been obtained from sources believed reliable, but accuracy of such data is not guaranteed and is furnished solely for accommodation of the Contractor.
- B. Before starting excavations, Contractor shall locate existing underground utilities in all areas of the work. Contractor shall be responsible for avoidance of utilities.

1.12 CONSTRUCTION AND STORAGE AREA:

- A. The Contractor shall confine the construction operations and storage of materials within the project construction work limits.
- B. The ingress and egress to the project site is on top of the existing berm as noted on the Construction Documents. Soil disturbance outside of the construction limits is prohibited.
- C. Except for permanent site improvements provided under the Contract, Contractor shall restore property disturbed during the Work to the conditions which previously existed.
- D. Parking and Deliveries:
 - 1. Contractor is responsible for control of traffic by vehicles and persons within the limits of its operations.
 - 2. Parking for employees, subcontractors, and agents of Contractor shall be in areas subject to approval of Owner.
 - 3. Access to the site for delivery of construction material or equipment shall be subject to approval of Owner.

- E. The Contractor shall be responsible for the protection of all facilities during the entire period of service. Any damages to the existing facilities, roads, laws, driveways, or other State owned property caused by the contractor shall be repaired by the Contractor at his/her expense and in a manner and schedule approved by the Owner.
- F. The Contractor shall power wash any mechanical equipment or vehicle to be used on the job site to remove all mud and debris prior to unloading on the site. This is necessary to prevent contamination by invasive species seeds that may be attached to the equipment.

1.13 SUBSTITUTIONS:

- A. Substitutions shall be made in accordance with the requirements of Article 7 of the General Conditions.

1.14 ARCHEOLOGICAL AND HISTORICAL ARTIFACTS:

- A. If any objects are uncovered during construction which could possibly be of historic archeological importance, this shall be immediately report to Owner. Work at that spot shall not proceed further until Owner has evaluated the object and the area where it was found and approved continuation of the work.
- B. If any construction time is lost due to such objects being found, an equal number of calendar days will be added to the project completion time given in the specifications.

END OF SECTION

Technical Specifications
For
Eagle Marsh
Top of Berm Stabilization

Eagle Marsh Nature Preserve
Allen County, Indiana

Project Number ENG2102908001

Indiana Department of Natural Resources
June 2020

Item No. 1 - Mobilization and Demobilization

Description.

This work shall consist of all work necessary for the movement of personnel and equipment to and from the project site, for the establishment and removal of all facilities necessary to the performance of the work.

Mobilization shall include all activities and associated costs for transportation of Contractor's personnel, equipment, and operating supplies to the site; establishment of an office, building, and other necessary general facilities for the Contractors operations at the site. Mobilization and demobilization activities must be coordinated with the LWRP Site Manager.

Prior to mobilization to the site, the Contractor shall have all underground utilities in the project area located and marked. The Contractor shall be responsible for the avoidance of utilities.

The Contractor shall power wash any equipment and vehicles to be used on the job site to remove all mud and debris prior to unloading on the site. This is necessary to prevent contamination by invasive species seed that may be attached to equipment. A visual inspection may be completed by a representative of the property at the staging area prior to the equipment/vehicle being allowed on the site.

The contractor will provide all materials and equipment necessary to complete project.

Item No. 2 – Traffic Control

Description.

The work shall consist of establishing traffic control and maintaining safe, convenient use of public roads and rights-of-way.

General Requirement.

The Contractor's operations shall cause no unnecessary inconvenience to the public. The public rights-of-way shall be maintained at all times.

Item No. 3 – Erosion and Pollution Control

Description.

The work consists of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air from construction activities.

General Requirements.

Silt Fence. Prior to construction, Contractor shall install silt fence or equivalent where the berm slope is steeper than 4:1 ratio and at the staging area as specified in the plans.

Silt fence shall be installed down-slope of all areas to be protected and installed as shown on the plans.

Silt fence shall remain in place until permanent soil stabilization has become established.

General Erosion Control. Plan and execute construction and earth work by methods to control surface drainage from cuts and fills to prevent erosion and sedimentation. Keep to a minimum, the area of bare soil exposed at one time.

Seeding to protect disturbed areas shall occur as soon as reasonably possible following completion of earthwork activity.

Provide methods to control surface water, runoff, subsurface water, and water from excavations to prevent damage to the Work, the site, or adjoining areas.

The Contractor has full responsibility of inspecting the erosion control measures on a daily basis. At a minimum, practices need to be inspected weekly, within 24 hours after each storm event over ½ inch and daily during prolonged storm events. Failing practices shall be repaired or replaced immediately.

Comply with all federal, state, and local statutes, rules and regulations associated with control of storm water run-off from construction activities.

Other Pollutants. Vehicle fluids, including oil, grease, petroleum, and coolants Drip pans and/or absorbent pads should be used during vehicle and equipment maintenance work that involved fluids, unless the maintenance work is performed over an impermeable surface in a dedicated maintenance area. Inspect onsite vehicles and equipment daily at startup for leaks, and repair immediately. Properly dispose of used oils, fluids, lubricants and spill cleanup materials. Do not place used oil in a dumpster or pour into a storm drain or watercourse.

In regards to fuel storage, material storage, equipment parking, etc. the contractor will be responsible to comply with Rule 5 requirements. All pollutants shall be contained on site and properly disposed of.

Trash cans shall be utilized on site for general litter during and after construction.

Item No. 4 – Excavation/Foundation Compaction

Description.

The work shall consist of the excavation required by the drawings and specifications and the disposal of the excavated materials to an appropriate off-site location.

General Requirements.

This work shall consist of excavation of the soil on the existing berm crest. Excavation will occur to allow the installation of the stabilization products and, with compaction, will create a uniform berm crest when the project is completed. Excavations shall not occur off the top of berm.

All surplus or unsuitable excavated materials are designated as waste and must be hauled off the berm. The spoil can be temporarily stockpiled at the staging area as shown on the plans, but then shall be disposed of by the Contractor at sites of his own choosing away

from the site of work. The disposal shall be in an environmentally acceptable manner that does not violate local rules and regulations.

Compact subgrade prepared for stabilization product installation with three passes of vibratory equipment such as a smooth drummed vibratory roller CAT CS433, or equivalent. Ensure sufficient overlap on each trip such that the entire subgrade surface is compacted uniformly. If deformation exceeds 1" remove subgrade soil and replace with suitable material. Operate compaction equipment at low speeds and low frequency vibration.

Item No. 5 – Geotextile

Description.

The work consists of furnishing all material, equipment, and labor necessary for the installation of geotextile.

General Requirement.

Non-woven Geotextile. The material used shall be Mirafi® 140N by Tencate Geosynthetics or equivalent.

Installation of Non-Woven Geotextile. Storage and handling of geotextiles shall be in accordance with the manufacturer's recommendations. The geotextile shall not be exposed to direct sunlight, ultraviolet rays, water, temperatures greater than 140°F, mud, dirt, dust, or debris to the extent that its strength, toughness, or permeability requirements are diminished. Each geotextile roll shall be labeled or tagged to provide product identification sufficient for inventory and quality control purposes. Exposure of geotextiles to the elements between lay down and cover shall be a maximum of 14 days. At the time of installation, the geotextile may be rejected and shall be replaced with no additional payment for defects, rips, flaws, deterioration, or damage incurred during manufacture, transportation, storage, or construction.

Adjacent pieces of geotextile may be joined by sewing if approved, or by overlapping and pinning. The minimum overlap shall be 18 inches. Securing pins shall be steel, 6" circle top pins, or approved equal. Securing pins shall be inserted through both strips of overlapped geotextile at spacing intervals of 4 evenly spaced pins including a pin at each end. The geotextile strip shall be placed so that the lower strip will be overlapped by the next higher strip.

Whether the fabric is joined by sewing or pinning, additional pins shall be installed as necessary to prevent any slippage of the fabric regardless of location.

**TABLE 1
GEOTEXTILE MATERIAL PROPERTIES (MIRAFI® 140N OR EQUIVALENT)**

TEST	METHOD	REQUIREMENTS*
Tensile Strength	Grab Tensile Strength, ASTM D 4632	120 lbs (534 N)
Tensile Elongation	ASTM D 4632	50%
Puncture Strength	ASTM D 6241	310 lbs (223 N)
Trapezoid Tear	ASTM D 4533	50 lbs

Ultraviolet Degradation at 50 h	ASTM D 4355	70% strength retained
Apparent Opening Size (AOS)	ASTM D 4751	AOS shall be No. 70 (0.212 mm) standard sieve or filter
Permeability**	ASTM D 4491 (Permittivity)	135 gpm/sq.ft.

Item No. 6 – GeoWeb®, or approved equivalent

Description.

The work consists of furnishing all material, equipment, and labor necessary for the installation of GeoWeb product or equivalent.

General Requirement.

This work shall consist of GeoWeb® GW30V, or approved geocell equivalent. The 4" geocell will be laid in approximately 9 feet wide section on the berm crest in 32 feet long sections; and installed per manufacturer's specifications.

**TABLE 2
GeoWeb® Properties**

TEST	METHOD	REQUIREMENTS
Material Composition	ASTM D1505 or D792	Polymer – Polyethylene with density of 58.4 to 60.2 lb/ft ²
Minimum Environmental Stress Cracking Resistance	ASTM D5199	Prior to Texture: 50 mil -5% +10% (1.27 mm -5% +10%) After Texture: 60 mil -5% +10% (1.52 mm -5% +10%)

The GeoWeb®, or approved equivalent, will be connected via the ATRA® Key, or approved equivalent. The top edges of adjacent cell walls shall be flush when connecting. Align the I-slots for interleaf and end to end connections. The GeoWeb® panels shall be connected with ATRA® Keys at each interleaf and end to end connection.

Item No. 7 – Backfill and Compaction

Description.

This work consists of the installation of earth backfill required by the plans and specifications.

General Requirement.

Suitable backfill will be a loam soil consisting of a mixture of clay, silt, and sand suitable for topsoil as a growing medium.

The loam properties for the soil can be checked by collecting a handful of soil, add moisture, and forming in the hand until it creates a ball. Next the soil will be squeezed between the thumb and forefinger to create a ribbon that detaches from the ball. If the soil will form a ball in the palm of the hand and the ribbon formed is less than one inch, the loam soil will be suitable for backfill. The contractor shall check the backfill periodically throughout the day to make sure the soil meets the qualification for loam.

The inspector may reject infill soil that fails to meet the qualities as described above.

Backfill shall not be placed until the required excavation and foundation compaction has been completed and the stabilization products have been installed.

Backfill material shall contain no frozen soil, sod, brush, roots, or other perishable material. Rock particles larger than the maximum size specified shall be removed.

Backfill shall be placed in a manner that prevents damage to the stabilization products and allows the products to assume the loads from the backfill gradually and uniformly.

The top surface of the berm shall be maintained approximately level, except that a crown or cross slope of about 2% shall be maintained to ensure effective drainage.

During placement and compaction of backfill, the moisture content of the material being placed shall be maintained within the specified range.

Backfill shall be compacted according to the following:

Compaction of the backfill shall consist of the following:

1. After approximately 6" of backfill (approximately 2" above the top of the stabilization product) has been placed, 3 (three) passes with a smoothed drum vibratory roller CAT CS433, or equivalent, on a low vibratory frequency. The contractor will take care not to damage GeoWeb®, or approved equivalent.
2. After compaction of infill, an additional 2" of overdressing shall be placed upon the compacted infill. The top dressing of the soil infilled stabilization product (approximately 2" above stabilization product) shall be compacted with 4 (four) passes with a single or double drum walk behind roller prior to final seeding.

Item No. 8 – Permanent Seeding

Description.

The work consists of preparing the area for seeding; furnishing, and placing seed as specified. It is expected that the seeding will be installed no later than September 15th.

General Requirements.

The Contractor shall submit a plan and schedule for approval by the Project Manager for seeding 2 weeks prior to the scheduled commencement of work.

The finished berm crest shall be planted with perennial ryegrass (*Lolium perenne*). The seed used shall be Pickseed-Perennial Ryegrass Seed by DLF Trifolium sold in 50 lb bags, or approved equivalent. The seed will be planted per suppliers recommendations.

Protection and performance of the newly seeded areas is the responsibility of the Contractor.

Water, if needed, shall be provided by the Contractor. Watering activities may not cause soil disturbance outside of the project area.

Establishment of dense stand of permanent vegetation free from mounds and depressions is the responsibility of the Contractor. The Project Manager shall conduct a field inspection of all seeded areas on or within 7 days of October 15. The inspection shall consist of a random search of the seeded area. Acceptance will be granted if the seeded area meets the following parameters:

- 80% of the seeded area shows 85% total cover
- Within the seeded area, any bare spots greater than 1 foot in size will not be allowed, unless otherwise approved by the Project Manager.