

SECTION 31 25 00

SLOPE PROTECTION AND EROSION CONTROL

PART 1—GENERAL

1.01 SUMMARY

- A. Work Included: Erosion control devices.
- B. Related Sections and Divisions: Applicable provisions of Division 01 shall govern work in this section.

1.02 PAYMENT

- A. All costs associated with slope protection and erosion control shall be included in CONTRACTOR's Bid for lump sum bid as stated on the Bid form. This work shall include, but is not limited to, erecting fence, excavation, placing posts, backfilling, attaching woven wire and geotextile fabric; placing ditch checks; installing sediment traps; removing the fence at completion of project; cleaning and repairing; removing or spreading accumulated sediment to form a surface suitable for seeding; replacing silt fence and damages caused by overloading of sediment material or ponding of water adjacent to silt fence; and furnishing labor, tools, equipment, and incidentals necessary to complete the work in accordance with the Contract.
- B. Furnish and install erosion control mat where specified and as shown on the Drawings. Mat shall be paid for at the unit price bid per square yard by type.

1.03 REFERENCES

- A. State of Texas Department of Transportation Storm Water Management Guidelines for Construction Activities.
- B. Standard Specifications: Unless otherwise indicated, Standard Specifications shall refer to the State of Texas Department of Transportation, Standard Specifications for the Construction and Maintenance of Highways, Streets, and Bridges.
- C. Texas Commission on Environmental Quality (TCEQ) Erosion Control Best Management Practices (BMPs).

1.04 SUBMITTALS

- A. CONTRACTOR shall submit to ENGINEER a Stormwater Pollution Prevention Plan (SWP3) when a SWP3 is required for the project. CONTRACTOR shall also submit all required supporting documents including, but not limited to, a Notice of Intent (NOI) and a Notice of Termination (NOT) for stormwater discharges associated with construction activity under the Texas Pollutant Discharge Elimination System.

1.05 REGULATORY REQUIREMENTS

- A. Land disturbance greater than one acre, but less than five acres (small project), it shall be CONTRACTOR's responsibility to:
1. Obtain a copy of the most recent version of the TCEQ Construction General Permit and comply with all requirements set forth therein.
 2. Develop and implement a SWP3.
 3. Complete, sign, and post a site notice using the appropriate TCEQ form.
 4. Implement erosion and sediment control practices necessary to meet all applicable Federal, State, and Local Performance Standards.
 5. Perform all inspection, maintenance, and record keeping activities required by the permit including, but not limited to, inspecting erosion and sediment control facilities weekly and within 24 hours of a precipitation event of 0.5 inches or greater. CONTRACTOR shall maintain written reports of all inspections.
 6. Pay any fines or other fees resulting from failure of CONTRACTOR to comply with permit requirements.
 7. When applicable, provide notification to the operator of any Municipal Separate Storm Sewer System (MS4) when storm water will be discharging into the MS4. Notice shall be provided a minimum of two days before discharge commences.
- B. CONTRACTOR and its subcontractors shall execute and sign the following certification:
- "I certify under penalty of law that I understand the terms and conditions of the Texas Pollutant Discharge Elimination System Permit that authorizes the storm water discharges associated with industrial activities from the construction site and as may be detailed in the Contract Documents. I agree to indemnify and hold OWNER harmless from any claims, demands, suits, causes of action, settlements, fines, or judgments and the costs of litigation, including, but not limited to, reasonable attorneys fees and costs of investigation and arising from a condition, obligation or requirement assumed or to be performed by CONTRACTOR for storm water pollution and erosion control."
- C. CONTRACTOR shall pay any fines or other fees resulting from failure of CONTRACTOR to comply with the permit requirements.
- D. If at any point throughout the course of the project, the area of land disturbance increases above one acre five acres for any reason, it shall be CONTRACTOR's responsibility to obtain a copy of the most recent version of the TCEQ Construction General Permit and comply with all additional erosion and sediment control requirements, pay all additional fees associated with complying with permit requirements, submit NOI, NOT, and any NOC required, develop and implement a SWP3, and pay any fines or fees resulting from failure of CONTRACTOR to comply with permit requirements.

1.06 QUALITY CONTROL

- A. Construct and maintain erosion sediment control measures in accordance with the Conservation Practice Standards.
- B. Check facilities weekly and after any rainfall event, and make needed repairs within 24 hours.

PART 2--PRODUCTS

2.01 EROSION CONTROL PRODUCTS

- A. Temporary erosion control products and slope protection shall meet all applicable requirements of Item 506 of the Standard Specifications and the TCEQ Erosion Control BMPs.
- B. Erosion Control Mat: The following erosion control mat will be used on this project. ERCM: Per TxDOT Item 169 Class I, Type B soil retention blanket.
- C. A 300 mm by 300 mm sample of a product proposed for erosion mat or turf reinforcement mat is required to verify that it is prequalified. When a sample is submitted, it shall be accompanied by the manufacturer's literature for the proposed product.
- D. Erosion control mats shall be anchored with biodegradable staples. Biodegradable staples shall be a minimum 5 inches in length.

PART 3--EXECUTION

3.01 GENERAL

- A. Install devices before construction activities begin.
- B. Proceed carefully with construction adjacent to stream channels to avoid washing, sloughing, or deposition of materials into the stream. If possible, the work area should be diked off and the volume and velocity of water that crosses disturbed areas be reduced by means of planned engineering works (diversion, detention basins, berms).
- C. Unless noted on drawings, do not remove trees and surface vegetation.
- D. Expose the smallest practical area of soil at any given time through construction scheduling. Make the duration of such exposure before application of temporary erosion control measures or final revegetation as short as practicable.
- E. CONTRACTOR shall provide a "qualified" inspector to inspect erosion control and sediment controls once in place. Inspector shall have prior experience with and knowledge of installation and maintenance of erosion and pollution controls. Unless stricter requirements are mandated by DNR or by any local permits, project site erosion control inspection shall be conducted every seven days and after each one-half-inch rainfall or greater. CONTRACTOR shall maintain hard copies of the inspection reports for the duration of the Project.
- F. Any necessary repairs to erosion and sediment control facilities shall be provided within 24 hours to all corrective measures noted on the inspection reports to address pollution issues. CONTRACTOR shall submit to OWNER a written notice stating the times, dates and actions taken to rectify the defective erosion and sediment controls.

- G. CONTRACTOR shall also make any necessary additions for erosion and sediment control as may result from on-site conditions or the progress of the Work or as may be required by DNR or OWNER.
- H. Disturbed areas shall be stabilized with temporary or permanent measures within 14 calendar days of the soil disturbance or redisturbance.
- I. All temporary erosion and sediment control measures shall be removed within 30 days after final stabilization is achieved or after the temporary measures are no longer needed. All sediment accumulated in temporary and permanent facilities shall be removed and properly disposed of and the area restored.
- J. Install all erosion control products and devices in accordance with the manufacturer's recommendations, Item 506 of the Standard Specifications, and the TCEQ Erosion Control BMPs.

3.02 EROSION CONTROL MAT

- A. In areas on the Drawings defined as requiring slope restoration, shall consist of 6 inches of topsoil and ECRM. Seeding of an area shall be beneath the ECRM.
- B. Erosion control mats shall be installed on all disturbed surfaces receiving seed restoration as shown on erosion control drawings.
- C. Mats shall be installed in accordance with manufacturer's requirements.
- D. Place mats immediately after seeding operations have been completed. Before mat placement, remove all material or clods over 1 1/2 inches in diameter and all organic material or other foreign material which may interfere with the mat bearing completely on the soil.
- E. Any small stones or clods which prevent contact of the mat with the soil shall be pressed in the soil with a small lawn-type roller or by other means. The mat shall have its lateral edge so impressed in the soil so as to permit runoff water to flow over it.
- F. The matting strips shall be rolled on or laid in direction of flow. Spread mat evenly and smoothly in a natural position without stretching and with all parts bearing on soil. Place blanket with netting on top. Overlap adjacent strips at least 4 inches. Overlap strip ends at least 10 inches. Make overlaps with upgrade section on top.
- G. Bury upgrade end of each strip of fabric or blanket at least 6 inches in a vertical slot cut in the soil and press soil firmly against the imbedded fabric or blanket.
- H. Anchor mats in place with vertically driven staples, driven until their tops are flush with the soil. Space staples on 3-foot centers along mat edges and stagger space at 3-foot centers through the center. Place staples at 10-inch centers at end or junction slots.
- I. Reseed areas damaged or destroyed during erosion mat placing operations as specified for original seeding.
- J. Dispose of surplus excavated materials during erosion mat placing operation as specified for original seeding.

- K. Following mat placement, uniformly apply water to the area to moisten seed bed to 2-inch depth and in a manner to avoid erosion.
- L. Maintain erosion mat and make satisfactory repairs of damage from erosion, traffic, fires, or other causes until Work is accepted.

END OF SECTION