

PART 1 – GENERAL

1.1 RELATED SECTIONS

- A. Division 01 – General Requirements
- B. 31 10 00 – Site Clearing
- C. 31 20 00 – Earth Moving
- D. 31 23 00 – Excavation and Fill
- E. 32 90 00 – Planting
- F. 32 92 00 – Lawns and Grasses
- G. 32 93 00 – Plants
- H. 33 05 00 – Common Work Results for Utilities (for site drainage controls)
- I. 33 10 00 – Water Utilities
- J. 31 25 13 – Silt Fence
- K. 31 25 16 – Straw Bale Barriers
- L. 31 25 19 – Sediment Basins and Traps

1.2 REFERENCES, CODES, AND STANDARDS

- A. American Society for Testing and Materials (ASTM)
 - 1. 1.2.1.1 ASTM D6462 – Standard Practice for Installation of Turf Reinforcement Mats
 - 2. 1.2.1.2 ASTM D5141 – Standard Guide for Sampling and Testing Silt Fence Materials
 - 3. 1.2.1.3 ASTM D5035 – Standard Test Method for Breaking Force and Elongation of Textile Fabrics
- B. U.S. Environmental Protection Agency (EPA)
 - 1. 1.2.2.1 EPA Construction General Permit (CGP)
 - 2. 1.2.2.2 EPA Stormwater Management Best Practices
- C. Federal Highway Administration (FHWA)
 - 1. 1.2.3.1 FHWA Hydraulic Engineering Circular No. 22 (HEC-22) – Erosion Control
- D. U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS)
 - 1. 1.2.4.1 NRCS Conservation Practice Standards – Critical Area Planting (342), Sediment Basin (350)
- E. International Code Council (ICC)
 - 1. 1.2.5.1 International Building Code (IBC) – Site Safety and Environmental Controls
- F. State and Local Codes and Regulations – Comply with all applicable local erosion and sediment control ordinances and permits.
- G. Sedimentation Control Requirements
- H. Occupational Safety and Health Administration (OSHA) Standards – Safety related to erosion control installation

1.3 DEFINITIONS

- A. Erosion Control – Measures used to prevent soil particles from being detached and transported by wind or water.
- B. Sedimentation Control – Practices to prevent eroded soil from leaving the project site and entering water bodies or stormwater systems.

- C. Temporary Controls – Erosion and sedimentation control measures implemented during construction activities and removed or replaced after site stabilization.
- D. Permanent Controls – Measures installed for long-term soil stabilization and sediment control after construction completion.

1.4 ACTION SUBMITTALS

- A. Product Data – Submit manufacturer’s technical data, installation instructions, and material safety data sheets (MSDS) for each erosion and sedimentation control product.
- B. Erosion and Sediment Control Plan – Submit a detailed plan including type, location, installation details, and maintenance procedures for all temporary and permanent controls.
- C. Construction Schedule – Submit a schedule indicating timing of erosion and sedimentation control installation relative to earthwork activities.
- D. Samples – Submit physical samples of key erosion control materials such as silt fence fabric, erosion control blankets, and sediment logs for approval prior to installation.
- E. Certificates – Submit certification of compliance with applicable standards for manufactured erosion control products.

1.5 INFORMATIONAL SUBMITTALS

- A. Inspection Reports – Submit reports from erosion and sediment control inspections performed during construction.
- B. Maintenance Logs – Submit logs documenting maintenance and repair activities for erosion and sedimentation controls.
- C. Qualifications – Submit qualifications of personnel responsible for installation and inspection of erosion and sedimentation controls.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications – Engage experienced installers with a minimum of three years’ experience in erosion and sedimentation control systems similar in scope and complexity.
- B. Regulatory Compliance – Comply with requirements of federal, state, and local regulatory agencies having jurisdiction over erosion and sedimentation control.
- C. Inspection and Testing – Conduct inspections at intervals not exceeding seven calendar days and within 24 hours after any storm event of 0.25 inches or greater, documenting condition and performance of controls.
- D. Material Compliance – Use only materials meeting the requirements of referenced standards and approved submittals.
- E. Environmental Protection – Implement controls to prevent off-site sedimentation and protect water quality per EPA CGP and local permit conditions.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Delivery – Deliver erosion and sediment control materials in original, unopened packages or containers bearing manufacturer’s name, product identification, and batch number.
- B. Storage – Store materials in a clean, dry location protected from exposure to sunlight, moisture, and contaminants.

- C. Handling – Handle materials to prevent damage; avoid dragging or dropping materials. Protect fabric and blankets from tearing, punctures, or deterioration during installation.
- D. Stockpile Management – Stockpile soil and erosion control materials away from drainage courses and protected by temporary controls to prevent sediment runoff.

1.9 WARRANTY

- A. Manufacturer’s Warranty – Provide manufacturer’s standard warranty for erosion control products against defects in materials and workmanship for a minimum period of one year from date of installation.
- B. Installer’s Warranty – Installer shall warrant that erosion and sedimentation controls have been installed in accordance with manufacturer’s instructions, project specifications, and approved plans for a minimum period of one year from date of acceptance.
- C. Corrective Action – Promptly repair or replace erosion and sediment control measures found defective or failing within warranty period at no cost to the Owner.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Silt Fence and Sediment Control Products:
 - 1. Tenax Corporation
 - 2. North American Green, LLC
 - 3. Stormwater Management, Inc.
 - 4. Filtrexx International LLC
 - 5. Mirafi (TenCate)
- B. Erosion Control Blankets and Turf Reinforcement Mats:
 - 1. North American Green, LLC
 - 2. Curlex (American Excelsior Company)
 - 3. Propex Global
 - 4. Profile Products LLC
 - 5. West Coast Turf Products
- C. Straw Bales and Wattles:
 - 1. Local agricultural suppliers (certified weed free)
- D. Sediment Basins and Check Dams:
 - 1. Stormwater Management, Inc.
 - 2. ADS (Advanced Drainage Systems)
 - 3. ACF Environmental, Inc.

2.2 MATERIALS

- A. Silt Fence Fabric
 - 1. Filter fabric shall be a woven or non-woven synthetic geotextile meeting ASTM D5141 and ASTM D5035 requirements.
 - 2. Minimum tensile strength: 120 lbs per ASTM D5035.
 - 3. Apparent opening size (AOS): 30 to 50 US standard sieve size.
- B. Posts for Silt Fence

1. Wood posts: Untreated, minimum 2 inch by 2 inch by 48 inches in length.
2. Steel posts: U-shaped with minimum 1.33 lb/ft weight and minimum 48 inches long.
- C. Erosion Control Blankets and Mats
 1. Biodegradable blankets composed of straw, coconut fiber, or wood excelsior with UV degradation within 12 months.
 2. Turf reinforcement mats made of synthetic materials with minimum 5-year durability.
- D. Straw Bales
 1. Certified weed-free, well-tied, minimum dimensions 14 inches by 18 inches by 36 inches.
- E. Sediment Logs and Wattles
 1. Cylindrical tubes filled with straw, coconut fiber, or composted materials encased in UV resistant netting.
- F. Sediment Basins and Check Dams
 1. Constructed of rock, gravel, or manufactured structural materials as per design requirements.
- G. Filter Bags and Fabric Tubes
 1. Durable, UV stabilized geotextile fabric designed for sediment filtration and water flow.

2.3 ACCESSORIES

- A. Stakes, wire, staples, and fasteners compatible with erosion control materials and installation requirements.
- B. Biodegradable erosion control mesh or twine for securing blankets and mats.
- C. Warning and safety signage as required by OSHA and local regulations.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Verify that site conditions are acceptable for erosion and sedimentation control installation including grading, drainage patterns, and soil conditions.
- B. Confirm that necessary permits, approvals, and erosion control plans have been received and reviewed.
- C. Inspect delivered materials for compliance with specifications and storage conditions.

3.2 PREPARATION

- A. Clear and grub areas of vegetation and debris only as necessary to install erosion and sediment controls.
- B. Protect existing vegetation and natural buffers not designated for removal.
- C. Prepare soil surfaces for installation of erosion control blankets and mats by smoothing and ensuring proper moisture content.

3.3 INSTALLATION

- A. 3.3.1 Silt Fence
 1. Install silt fence along contour lines as shown on erosion control plans, prior to commencement of earthwork.

2. Excavate trench at least 6 inches deep to anchor fabric and backfill with compacted soil.
 3. Secure fabric to posts with staples or wire ties at maximum 12 inches on center.
 4. Posts shall be spaced a maximum of 6 feet apart.
 5. Overlap fabric ends a minimum of 12 inches at joints.
- B. 3.3.2 Straw Bale Barriers
1. Install on level contour lines with stakes driven through bales at minimum 24 inches on center.
 2. Place bales end-to-end with minimal gaps and securely tethered.
 3. Backfill and compact soil on uphill side to prevent water flow beneath bales.
- C. d. Replace bales as they deteriorate or become ineffective.
- D. 3.3.3 Erosion Control Blankets and Turf Reinforcement Mats
1. Install on slopes steeper than 3:1 or as indicated on plans.
 2. Anchor blankets with staples or pins at spacing recommended by manufacturer.
 3. Overlap adjacent blankets a minimum of 6 inches following manufacturer's instructions.
 4. Seed and fertilize soil prior to blanket installation unless otherwise directed.
- E. 3.3.4 Sediment Basins and Traps
1. Construct basins according to design drawings and NRCS standards.
 2. Install outlet structures and energy dissipation devices as specified.
 3. Maintain basins free of sediment accumulation exceeding design capacity.
- F. Sediment Logs and Wattles
1. Install along contour lines or at perimeter of disturbed areas.
 2. Secure firmly to ground with stakes placed at intervals not exceeding 4 feet.
- G. Temporary Diversions and Drainage Controls
1. Construct berms, ditches, or swales to divert runoff away from disturbed areas.
 2. Use temporary piping or lined channels as required to prevent erosion.

3.4 MAINTENANCE AND MONITORING

Perform weekly inspections and after storm events to assess condition and effectiveness of erosion and sediment controls.

Repair or replace damaged or ineffective controls immediately.

Remove accumulated sediment from behind controls when sediment reaches 50 percent of barrier height.

Maintain controls until disturbed areas are permanently stabilized with vegetation or other approved measures.

Document maintenance activities and inspection results in logs submitted as per 1.5.2.

3.5 REMOVAL

Remove temporary erosion and sedimentation controls after final site stabilization is achieved and as approved by the Owner or governing agencies.

Dispose of removed materials in accordance with local regulations and environmental requirements.

Restore disturbed areas caused by removal operations to original or specified condition.

3.6 PROTECTION

- A. Protect installed erosion and sedimentation controls from damage by construction activities and equipment.

- B. Restrict access and vehicle traffic over protected areas.
- C. Provide signage and barriers as required for public and worker safety.

END OF SECTION