



North Bay at Lake Woodmoor Stormwater Management Plan (SWMP)

July 2026

HR Green Project No: 2404118

El Paso County No. SF263

Prepared For:

Lake Woodmoor Development, LLC

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Engineer's Statement

The Stormwater Management Plan was prepared under my direction and supervision and is correct to the best of my knowledge and belief. Said Plan has been prepared according to the criteria established by the County and State for Stormwater Management Plans.

Name: Colleen Monahan, P.E., LEED AP Date: _____

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Seal

I. Site Location & Description

Location

North Bay at Lake Woodmoor referred to as 'the site' herein, is a vacant property in El Paso County, Colorado near the north shoreline of Lake Woodmoor. The site lies within the southeast quarter of Section 11, Township 11 South, Range 67 West of the 6th Principal Meridian, in El Paso County, State of Colorado.

Description of Property

The site is approximately 7.23 acres of undeveloped land consisting of native grasses and weeds, trees, floodway, and an existing gravel maintenance access to an existing sanitary sewer lift station.

The general topography of the site slopes from its northeast corner to the southern property boundary with slopes ranging from 2% to 25%. The site drains generally to the middle of the property to the FEMA floodway in its center, which drains from north to south directly into Lake Woodmoor. The site is a tributary to Lake Woodmoor, and ultimately to Dirty Woman Creek.

Lake Fork of Dirty Woman Creek is the only drainageway that traverses the site from north to south, draining through the middle of the site directly into Lake Woodmoor. There is FEMA floodway and floodplain associated with this drainageway through the middle of the site. Disturbance is proposed within the floodway and floodplain, and an application for a floodplain development permit and zero rise certification is being submitted to Pikes Peak Regional Building Department (PPRBD) as part of this project for work within the floodplain. The ultimate receiving waters for the site is Dirty Woman Creek.

There are existing wetlands on the property at its northeast corner, and along the southern property boundary. These wetlands are not proposed to be disturbed as part of this project.

Existing utilities include raw water, public potable water main, a fire hydrant and lateral, sanitary sewer main and services, a sanitary sewer lift station, electric line, and private storm sewer. In the Deer Creek Road right of way along the properties frontage there is public water main, public sanitary sewer main, electric lines, and telephone lines.

There is no anticipated allowable non-stormwater discharge from natural springs, irrigation, or any other discharge covered by CDPHE Low Risk Guidance. Ground Water is not anticipated.

Neighboring Areas

North Bay at Lake Woodmoor is located southeast of the intersection of Woodmoor Drive and Deer Creek Road. Deer Creek Road borders the northern property boundary of the site, and Lake Woodmoor borders the southern property boundary of the site. The site is bordered on the west by the Cove at Woodmoor condominiums and the east by open space owned by the Woodmoor Improvement Association and the Lake Woodmoor single-family residential neighborhood. Across Deer Creek Road to the north is the Woodmoor Oaks Subdivision.

Construction Activity

This SWMP Report includes the full scope of the development from the initial grading phase to final stabilization. Approximately 0.65 acres are expected to be disturbed in total, and the limits of disturbance are 3.70 acres. Construction activities include the initial roadway corridor earthwork and overlot grading during the

initial grading phase. Construction will begin with setting up perimeter controls, followed by grading activities. Construction will be completed with final stabilization including seeding.

Construction will begin with staking no-disturbance area boundary and setting up perimeter erosion control measures, which will then be followed by the excavation of access driveway corridors. Temporary stabilization measures such as silt fence installation and vehicle tracking control will be installed prior to construction. Stabilized staging area(s) are shown on the GEC plans.

The interim phase of construction includes utility trenching and installation including utility infrastructure, stormwater infrastructure, and driveway paving. Construction control measures utilized during this phase include a concrete washout, and erosion control blanket for permanent seeding. Final control measures will be installed at the end of construction. This will include control measures such as permanent facilities and permanent seeding and mulching. Upon final stabilization of the disturbed area, all temporary control measure should be removed.

There are no anticipated offsite construction easements associated with this project. No concrete batch plants are anticipated. No control measures will be located outside the property line and limits of disturbance.

II. Construction Phasing

Phasing and Sequence Schedule

The proposed sequence of major construction activities and Construction Control Measures for the project as are follows:

1. Stake area not to be disturbed. (Summer 2026)
2. Install VTC, SSA, CWA, and other perimeter erosion and stormwater control measures (i.e. silt fence, etc.) (Summer 2026)
3. Clear, grub and grade site for improvements. Install the initial phase control measures for perimeter control and temporary conditions stormwater diversion including silt fence, and other temporary control measures per GEC and drainage plans. (Summer 2026)
4. Utility, Storm Sewer Installations, and Roadway Paving. Install and maintain perimeter controls and interim/final phase CCM's. (Summer 2026)
5. Landscaping, restoration and final stabilization (Spring 2027). Ensure final stabilization achieved prior to site closure (Spring 2027).

Construction Documentation

Construction drawings are provided with this document showing the Grading and Erosion Control plan for this project and are intended to be a "living" document used by the SWMP Manager to document construction activities. See **Appendix E** for record log.

III. Pre-Development Conditions and Soils

Floodway

This site is within a designated FEMA Floodplain as determined by the flood insurance rate map, community panel number 08041C0276G, effective December 07, 2018. An application for a floodplain development permit and zero rise certification is being submitted to Pikes Peak Regional Building Department (PPRBD) as part of this project for work within the floodplain.

Wetlands

There are existing wetlands on the property at its northeast corner, and along the southern property boundary. These wetlands are not proposed to be disturbed as part of this project.

Existing Vegetation

Existing vegetation and soils were determined from in-person field site visits and existing aerial inspection from Google Earth and the United States Department of Agriculture Natural Resources Conservation Service (NRCS) Web Soil Survey. The site currently contains vegetation consists primarily of native grasses and weeds. Existing vegetation is estimated at 70% density by visual inspection during the in-person field site visit.

Existing Drainage Patterns

Dirty Woman Creek is approximately a 5.04 square mile watershed located in El Paso County, Colorado. This drainage basin is a right-bank tributary to Monument Creek. This project is specifically within the Lake Fork of Dirty Woman Creek. Large-lot single family residential development has occurred throughout most of the basin areas with some higher density development along Interstate 25 and within the Town of Monument.

Existing Slopes

The general topography of the site slopes from its northeast corner to the southern property boundary with slopes ranging from 2% to 25%. The site drains generally to the middle of the property to the FEMA floodway in its center, which drains from north to south directly into Lake Woodmoor. The site is a tributary to Lake Woodmoor, and ultimately to Dirty Woman Creek.

Soils

Per a NRCS soil survey, the western one third of the site is made up of Type B Pring Coarse Sandy Loam, and the eastern two thirds of the site Type D Alamosa Loam. Hydrologic soil groups are an estimate of soils runoff potential. Per the NRCS web soil survey, the description of hydrologic soil groups is as follows:

Group A: Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B: Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C: Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D: Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission

The referenced NRCS web soil survey is presented in **Appendix A**.

The existing soil types have a slight potential for erosion which can be mitigated by employing appropriate downstream construction CMs before/during/after construction to limit potential impacts to stormwater discharges. The potential impacts are sediment discharge into the existing and proposed stormwater conveyance system, Dirty Woman Creek, and downstream properties.

IV. Description of Potential Pollutants

Potential sources of sediment to stormwater runoff include earth moving and concrete/paving activities associated with grading, roadway construction, and landscaping.

Potential pollutants and sources other than sediment to stormwater runoff include trash, debris, fueling and equipment failure. Materials of significance stored on the project site include: sediment, trash & debris, fuels and oils.

Construction activities can produce a variety of pollutants that can potentially cause stormwater contamination. Grading activities remove rocks, vegetation and other erosion controlling surfaces and can result in the exposure of underlying soil to the elements, which can then be displaced into water sources.

Wind and erosion and vehicular transport can produce sediment debris.

Allowable Non-Stormwater Discharge Management

Non-stormwater discharges (NSWDs) are flows that do not consist entirely of stormwater. Some allowable discharges that are not considered pollutants include irrigation, fire hydrant flushing, landscape watering, emergency firefighting, and natural springs. There are no visible natural springs or irrigation sources anticipated to be encountered. Other discharges, such as those pollutants discussed below, are unauthorized and will need to be detected and addressed through a combination of efforts discussed in the following sections.

Potential Sources of Pollution and Best Management Strategies

The following sections highlight the potential sources of pollution at the Project Site and list the “Best Management” strategies that will be used to prevent migration of pollution offsite. This Project Site does not rely on control measures owned or operated by another entity. Chemical materials stored indoors or that have no reasonable chance of impacting storm water quality will not be discussed in this plan.

Materials of significance stored on the project site include:

- Sediment

- Trash & Debris
- Sanitary Wastes
- Fuels & Oils

Wind Erosion & Dust Control

Pollutant: Sediment

Best Management Strategies:

- Daily inspections will occur for areas experiencing excessive winds, vehicle traffic, or precipitation events.
- Water trucks will spray down dust on the project Site as needed to not impact adjacent properties.
- Attention will be given to prevent the over-use of water in dust control operations to minimize any muddying of the surface and possible sediment transportation.

Vehicular Transport

Pollutant: Sediment Tracking

Best Management Strategies:

- Construct a stabilized construction entrance to provide ingress and egress of the site.
- Restrict access to the stabilized construction entrance.
- Fencing will be erected if problems with access control are evident.
- Maintain track out pads by fluffing up the rock material or by adding additional rock as needed.
- Inspect, sweep and clean adjacent streets where track out is evident.

Stockpiles

Pollutant: Sediment

Best Management Strategies:

- Locate stockpiles clear of any water flow paths.
- Locate stockpiles within the property boundary.
- Stockpiles will have erosion control devices as needed installed around the base to prevent the migration of soil.
- Topsoil stock-piles and disturbed portions of the site where construction activity temporarily ceases for at least 14 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in the area.

Grading/Trenching/Import/Export

Pollutant: Sediment Best management Strategies:

- Earth moving will be minimized by the engineering balancing of the site.
- Disturbed portions of the site where construction activity temporarily ceases for at least 14 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in the area.

- Seed bed preparation is not required if soil is in loose condition.
- Prior to seeding, fertilizer shall be applied to each acre to be stabilized in accordance with the manufacturer's specifications.
- If required seeding areas shall be mulched with straw to a uniformed cover. The straw mulch is to be tacked into place by a disk with blades set nearly straight.
- A site specific erosion control drawing has been developed showing the location of Best Management practices to be used during site construction.
- Where indicated on the erosion control plan, Best Management Practices will be installed.
- Material shall be in accordance with the plans and specifications and all construction shall be provided in accordance with the manufacturer's specifications.
- All BMP's will be inspected bi-weekly and cleaned/maintained as required.

Waste, Residual Concrete

Pollutant: Concrete, paint, and Phosphoric Acid Best Management Strategies:

- A cleanup and washout area will be designated and posted.
- Subcontractors will be instructed on the locations and importance of the washout and cleanup areas. No on-site disposal is allowed.
- Instruct subcontractors to remove waste for which proper onsite disposal facilities are not provided back to their own facilities for ultimate transport, storage & disposal.
- Subcontractors and subcontractor employees are held responsible for improper washout.

Sanitary Facilities, Trash Containers & Littering

Pollutant: Bacteria, Ammonia, Trash

Best Management Strategies:

- Portable facilities will be regularly serviced to prevent excessive waste containment and overflow.
- Portable facilities will be located a minimum of 50 feet from state waters. They shall be adequately staked and cleaned on a weekly basis. They will be inspected daily for spills.
- All waste materials will be collected and stored in a container which will meet all local and any state solid waste management regulations.
- Trash dumpsters will be emptied prior to becoming 90% full or when debris control becomes an issue.
- Employees will be instructed on the importance of recycling and waste management and will be held responsible for improper waste management.

Fueling, Hazardous Materials, Equipment Leakage, Fertilizer

Pollutant: Petroleum Hydrocarbons, Ethylene Glycol, Sediment

Best Management Strategies:

- MSDS sheets will be maintained in the project trailer for all onsite materials
- All dry materials such as cement will be covered and protected from rain.
- Secondary containment will be provided for stored fuel, oil, paint and any material classified as hazardous.
- Subcontractors are responsible for hazardous waste removal back to their own facilities for ultimate transportation, storage and disposal.
- Supplies will be kept onsite as necessary to control any potential spill.
- Employees will be held responsible for any illegal dumping.
- Seals will be checked by a qualified professional on all equipment and containers containing significant materials that could contribute potential pollutants and will be replaced as necessary.
- Equipment will be inspected by a qualified professional.
- Drip pans will be available for minor leaks and during fueling operations.
- Fueling nozzles, gauges, hoses, seals, and emergency shutoff valves will be inspected for leaks prior to use.
- Under no circumstances during fueling will the fueling hose/nozzle be left unattended.
- Fertilizers used will be applied only in the minimum amounts recommended by soil tests.
- Once applied, fertilizers will be worked into the soil to limit exposure to storm water.
- Stored fertilizer will be protected from exposure to precipitation and storm water runoff.

There are no major potential pollutants anticipated to be used on the site.

Additional (non-Structural) Best Management Practices for Sediment:

1. Earth moving will be minimized by the engineering balancing of the site.
2. Disturbed portions of the site where construction activity temporarily ceases for at least 14 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in the area.
3. Seed bed preparation is not required if soil is in loose condition.
4. Prior to seeding, fertilizer shall be applied to each acre to be stabilized in accordance with the manufacturer's specifications.
5. If required seeding areas shall be mulched with straw to a uniformed cover. The straw mulch is to be tacked into place by a disk with blades set nearly straight.
6. A site-specific erosion control drawing has been developed showing the location of Best Management practices to be used during site construction.
7. Where indicated on the erosion control plan, Best Management Practices will be installed.
8. Material shall be in accordance with the plans and specifications and all construction shall be provided in accordance with the manufacturer's specifications.
9. All BMP's will be inspected bi-weekly and cleaned/maintained as required.

V. Areas and Volumes

The phase total 0.65 acres is expected to be disturbed for the construction associated with the North Bay at Lake Woodmoor development.

Earthwork Quantities:

Cut Quantity : 117 c.y.

Fill Quantity: 703 c.y.

Net: 586 c.y. FILL

Note: The total disturbed area shall be updated on the SWMP and GEC Plan as changes occur.

VI. Inspection and Record Keeping

The SWMP is a "living document" that is continuously reviewed and modified and is to be kept on-site. The GEC Administrator shall make changes to the SWMP, including but not limited to: additions, deletions, changing locations of BMP's shall be marked in the plans, dated and initialed at time of occurrence.

Self-inspections of the Construction Control Measures must be completed by the certified SWMP Administrator who is sufficiently qualified for the required duties per the El Paso County ECM Appendix 1.5. The below provides the minimum to satisfy the self-inspection requirements. A more frequent self-inspection schedule may be required to ensure Control Measures are operating in compliance with the approved GEC plan.

1. Inspection Schedules:

- a. The GEC Administrator shall make a thorough inspection of the Control Measures:
 - i. At least once every fourteen (14) calendar days.
 - ii. Within 24 hours following any precipitation event (i.e. rain, snow, hail etc.) that causes surface erosion.
 - Alternatively, the GEC Administrator can perform a thorough inspection of the Control Measures once every seven (7) days and forego post-precipitation inspections.
- b. For sites where construction activities have completed and final stabilization measures installed but final stabilization has not yet been achieved, the GEC Administrator shall make a thorough inspection of the Control Measures:
 - i. At least once every month
 - ii. Within 72 hours following any precipitation event that causes surface erosion

2. Inspection Procedures:

- a. Site Inspection & Observation Items:
 - i. Limits of disturbance perimeter and stormwater discharge points
 - ii. All disturbed areas to ensure necessary Construction Control Measures are in place to control potential stormwater runoff.
 - iii. Areas used for material/waste storage.
 - iv. Any areas having a signification potential for storm water pollution (i.e site entrances, concrete washout areas etc.)

- v. All Construction Control Measures identified on the GEC plans.
- b. Inspection Requirements:
 - i. Determine any locations, or potential locations, where pollutants and stormwater may be exiting the site/entering the receiving waters.
 - ii. Evaluate Construction Control measures and determine if they are constructed in accordance with the latest revision of the approved GEC plan and operating effectively.
 - iii. Provide recommendations for the need of additional Construction Control measures and the maintenance of existing measures in disrepair to ensure complication with the City of Colorado Springs Stormwater Construction Manual.
- c. Construction Control Measure Maintenance/Replacement:
 - i. The GEC administrator shall ensure sediment has been removed from perimeter controls and relocated to an area without the potential for sediment to discharge from the site
 - ii. The GEC administrator shall ensure diversion ditches and temporary sediment ponds have not accumulated excess sediment that impedes their functionality.
 - iii. The GEC administrator shall ensure that failed Control Measures are repaired/reinstalled within three (3) calendar days, according to the City of Colorado Springs Stormwater Control Measure details, to ensure pollutants and/or sediment do not discharge from the site. GEC details are provided in Appendix B.
- d. Documentation:
 - i. Update the GEC plan to document the installation/revision of Control Measures
 - ii. Identify Control Measure deficiencies and that noncompliance is resolved within three (3) calendar days.
 - iii. Identify Self-Inspection schedule in most recent inspection form. Inspection form to be provided by contractor/QSM and/or the CO State Inspection Form can be used as a go-by for Self-Monitoring Inspections or used directly. Form will be added to SWMP at a later date.
 - iv. Complete and submit Self-Inspection forms to the City of Colorado Springs within five (5) business days of the completed inspection
 - v. Ensure Self-Inspections are available, either physically or electronically, throughout the duration of the project
 - vi. Self-Inspection Report shall contain at least the following:
 - Inspection Date
 - Name, title, and signature of the GEC Administrator performing inspection
 - Location(s) of illicit discharges of stormwater, sediment or pollutants from the site
 - Location(s) of Construction Control Measures in need of maintenance/repair
 - Location(s) of Construction Control Measures that failed to operate as designed or proved inadequate
 - Location(s) of additional Construction Control Measures not shown on the latest, approved revision of the GEC plan
 - Any deviations from the minimum inspection schedule

VII. Materials Handling

1. General Materials Handling Practices:

- a. Potential pollutants shall be stored and used in a manner consistent with the manufacturer's instructions in a secure location. To the extent practical, material storage areas should be located away from storm drain inlets and should be equipped with covers, roofs or secondary containment as required to prevent stormwater from contacting stored materials. Chemicals that are not compatible shall be stored in segregated areas so that spill materials cannot combine and react.
- b. Disposal of materials shall be in accordance with the manufacturer's instructions and applicable local, state, and federal regulations.
- c. Materials no longer required for construction shall be removed from the site as soon as possible.
- d. Adequate garbage, construction waste, and sanitary waste handling and disposal facilities shall be provided as necessary to keep the site clear of obstruction and Control Measures clear and functional. Waste disposal facilities shall be checked weekly for leaks and emptied on a weekly basis (or when facility is at capacity). Appearance of leaks/overflow will be cleaned and cleared immediately.
- e. Portable toilets will be located a minimum of 10 feet from stormwater inlets and 50 feet from state waters. They will be secured at all four corners to prevent overturning and cleaned on a weekly basis. They will be inspected daily for spills.

2. Specific Materials Handling Practices:

- a. All pollutants, including waste materials and demolition debris, that occur onsite during construction shall be handled in a way that does not contaminate stormwater.
- b. All chemicals including liquid products, petroleum products, water treatment chemicals, and wastes stored onsite shall be covered and protected from vandalism.
- c. Maintenance, fueling, and repair of all equipment and vehicles involving oil changes, hydraulic system drain down, degreasing operation, fuel tank drain down and removal, and other activities which may result in the accidental release of contaminants, shall be conducted under cover during wet weather and on an impervious surface to prevent release of contaminants onto the ground. Materials spilled during maintenance operations shall be cleaned up immediately and properly disposed of.
- d. Wheel wash water shall be settled and discharged onsite by infiltration.
- e. Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Follow manufacturer's recommendations for application rates and procedures.
- f. pH-modifying sources shall be managed to prevent contamination of runoff and stormwater collected onsite. The most common sources of pH-modifying materials are bulk cement, cement kiln dust (CKD), fly ash, new concrete washing and curing waters, waste streams generated from concrete grinding and sawing, exposed aggregate processes, and concrete pumping and mixer washout waters.

VIII. Spill Prevention & Response Plan

1. The primary objective in responding to a spill is to quickly contain the material and prevent or minimize their mitigation into stormwater runoff and conveyance systems. If the release has impacted onsite stormwater, it is critical to contain the released materials onsite and prevent their release into receiving waters.
2. Spill Response Procedures:
 - a. Notify site superintendent immediately when a spill, or the threat of a spill, is observed. The superintendent shall assess the situation and determine the appropriate response.
 - b. If spills represent an imminent threat of escaping onsite facilities and entering the receiving waters, site personnel shall respond immediately to contain the release and notify the superintendent once the situation has stabilized.
 - c. The site superintendent shall be responsible for completing a spill reporting form and for reporting the spill to the appropriate agency.
 - d. Spill response equipment shall be inspected and maintained as necessary to replace any materials used in spill response activities.
3. Spill kits shall be on-hand at all fueling sites. Spill kit locations shall be reported to the GEC administrator.
4. Absorbent materials shall be on-hand at all fueling areas for use in containing advertent spills. Containers shall be on-hand at all fueling sites for disposal of used absorbents.
5. Recommended components of spill kits include the following:
 - a. Oil absorbent pads
 - b. Oil absorbent booms
 - c. 55-gallon drums
 - d. 9-mil plastic bags
 - e. Personal protective equipment including gloves and goggles
6. Concrete wash water: unless confined in a pre-defined, bermed containment area, the cleaning of concrete truck delivery chutes is prohibited at the job site.
7. Notification procedures:
 - a. In the event of an accident or spill, the GEC administrator shall be notified.
 - b. Depending on the nature of the spill and material involved, the Colorado Department of Public Health and Environment, downstream water users, or other agencies may also need to be notified.
 - c. Any spill of oil which 1) violates water quality standards, 2) produces a "sheen" on a surface water, or 3) causes a sludge or emulsion, or any hazardous substance release, or hazardous waste release which exceeds the reportable quantity, must be reported immediately by telephone to the National Response Center Hotline at (800) 424-8802.

IX. Implementation of Control Measures

Stormwater control measures must be installed according to El Paso County design specifications, presented in Appendix D, and the approved Grading and Erosion Control plan this report supports. Within the context of this SWMP's construction activities the following control measures, at a minimum, are required:

- Perimeter Silt Fence
- Vehicle Tracking Control
- Stabilized Staging Area
- Concrete Washout
- Construction Fence
- Stockpile Management
- Inlet Protection
- Culvert Inlet Protection
- Check Dams
- Erosion Control Blanket
- Surface Roughening
- Diversion Ditches (Earth Dikes & Drainage Swales)
- Temporary Sediment Basins
- Temporary Seeding & Mulching

Additional control measures may be required at the discretion of the County Stormwater Inspector.

X. Final Stabilization & Long-Term Stormwater Management Plan

1. Ensure stabilization is achieved prior to site closure. Final stabilization is to take place as a part of a future construction phasing SWMP and is not within the scope of this report.
2. Temporary seeding and mulching will be installed to provide interim stabilization prior to final landscaping installation (Refer to approved Landscape Plan). Final stabilization will be achieved at time of final landscaping. See approved landscaping plans for final stabilization details. Final stabilization is met when 70% of pre disturbance levels, not including noxious weeds, are stabilized. Final stabilization must be achieved prior to removal of temporary stormwater control measures. Anticipated date of final stabilization is May 2026; however this is subject to change. Long term stormwater management will be provided by onsite grass buffer RPA's. The grass buffer RPAs are identified on the GEC plan, and located along the eastern edge of Lots 1-3, the western edge of Lots 4-6, and off the south side of the eastern private access driveway. The El Paso County runoff reduction criteria has been met to meet water quality treatment requirements. Refer to the Final Drainage Report for North Bay at Lake Woodmoor for detailed design information. See below for seeding and mulching details:
 - a. Prior to seeding, fill any eroded rills and gullies with topsoil.
 - b. Ensure all areas are seeded and mulched per the County Stormwater Construction Manual.
 - c. Continue monthly self-inspections of final stabilization methods and the stormwater management system to ensure proper function. If repairs are needed, reseed and re-mulch as needed.
 - d. Control noxious weeds in a manner acceptable to the GEC inspector.
 - e. Seed Mix: See Appendix D for approved seed mixes.
 - f. Seeding Requirements:
 - i. Drill seed whenever possible, seed depth must be 1/3 to 1/2 inch when drill-seeding. Cross drilling should be used whenever possible with the seed divided between the two operations. The second drilling should be perpendicular to the first.

- ii. When drill seeding is not possible or on slopes greater than 3:1, hydro-seeding with tackifier may be substituted at the discretion of the GEC inspector. Hydro-seeding must be lightly raked into soil. Seeding rates are presented in Appendix D.
- iii. All seeded areas must be mulched.
- g. Mulching Requirements:
 - i. Mulching shall be completed as soon as practical after seeding but no more than fourteen (14) days after planting. Erosion control blanket can be used in place of the below mulching methods.
 - ii. Hay or straw mulch:
 - 1. Only certified weed-free and certified-seed free mulch may be used. Must be applied at 2 tons/acre and adequately secured.
 - 2. Crimping shall not be used on slopes greater than 3:1, tackifier must be used in place.
 - iii. Hydraulic mulching:
 - 1. Allowable on steep slopes or areas with limited access
 - 2. If hydro-seeding is used, mulching must be applied secondly.
 - 3. Wood cellulose fibers mixed with water must be applied at a rate of 2,000-2,500 lbs/acre, and tackifier applied at a rate of 100 lbs/acre.

XI. References

El Paso County – Drainage Criteria Manual, latest revision October 31, 2018

El Paso County – Engineering Criteria Manual, latest revision October 14, 2020

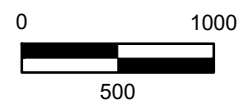
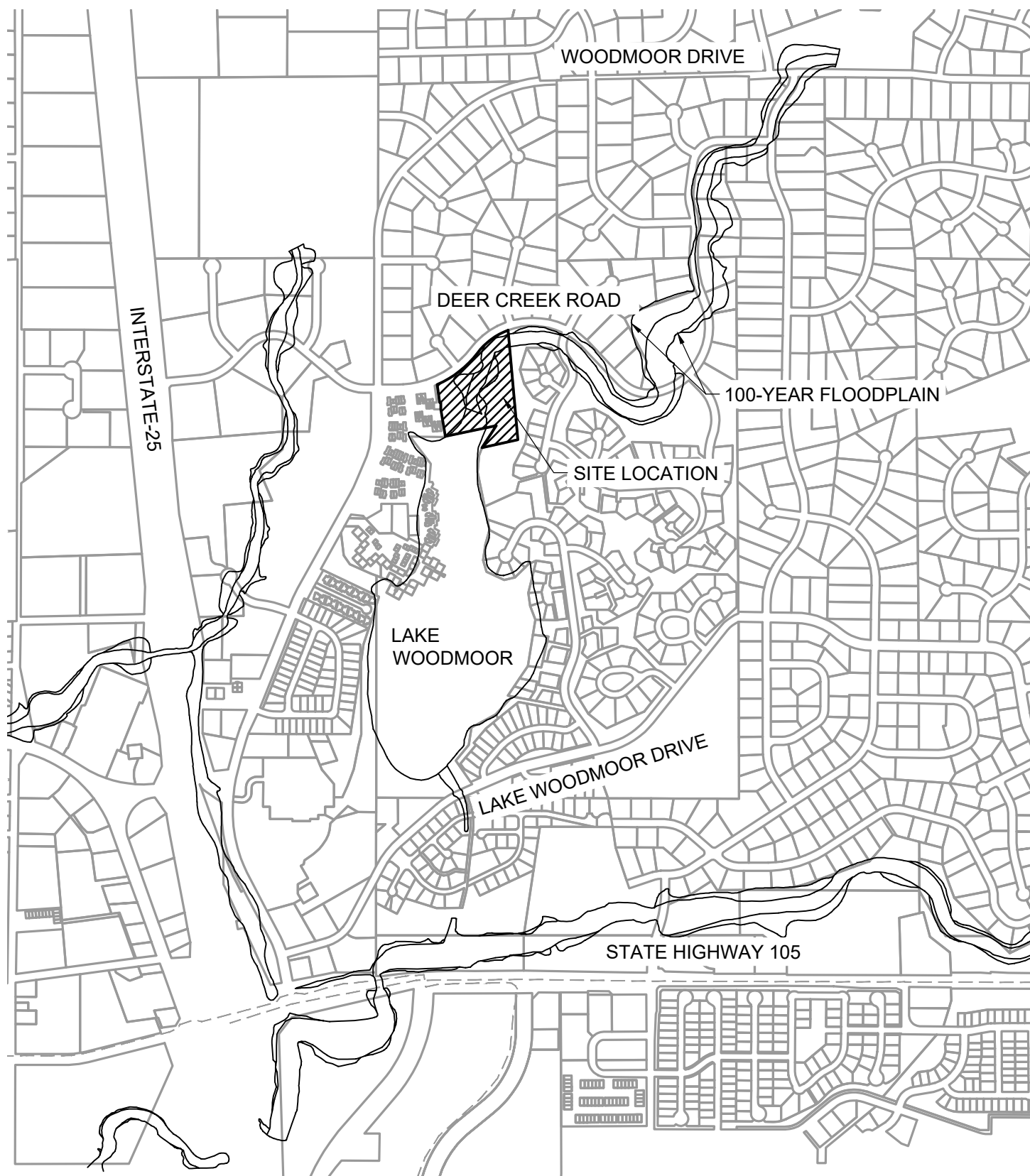
Kiowa Engineering Corporation - "Dirty Woman Creek and Crystal Creek Drainage Basin Planning Study", last revised June 1993.

Mile High Flood District Urban Storm Drainage Criteria Manual Volumes 1, 2, and 3; latest revisions



North Bay at Lake Woodmoor
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Project No.: 2404118
El Paso County, Colorado

APPENDIX A – VICINITY MAP & NRCS SOIL SURVEY & FEMA MAP





FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE)
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee See Notes Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		Cross Sections with 1% Annual Chance
		Water Surface Elevation
		Coastal Transect
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-6627) or visit the FEMA Flood Map Service Center website at <https://msc.fema.gov>. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

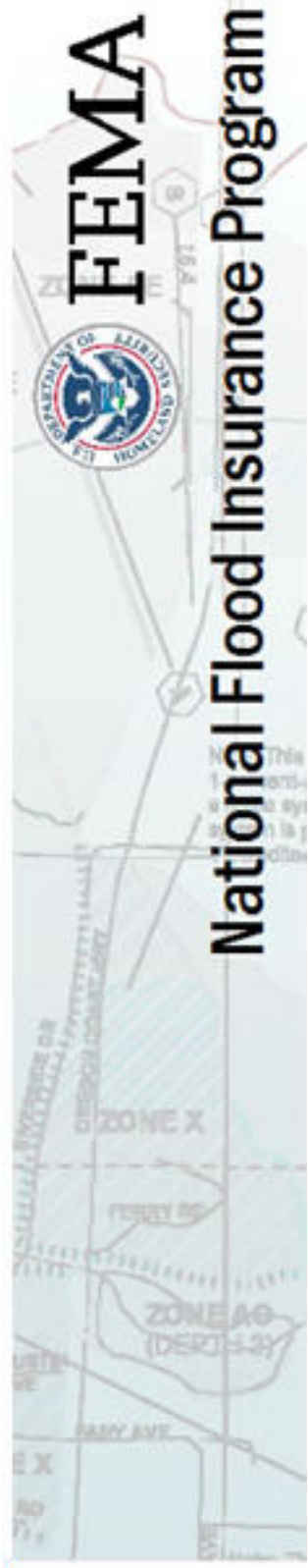
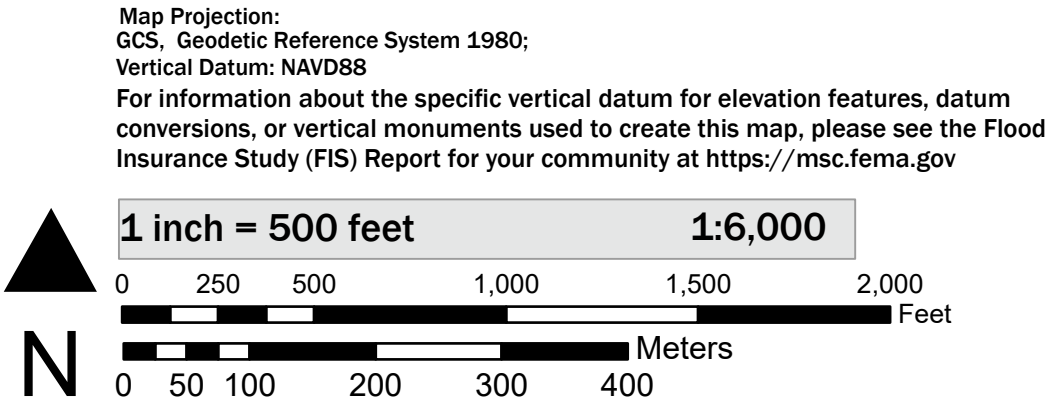
To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by USDA, Farm Service Agency (FSA). This information was derived from NAIP, dated April 11, 2018.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **10/23/2025 3:30 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at <https://www.fema.gov/media-library/assets/documents/118418>

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE



NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

PANEL 276 OF 1275

Panel Contains:	080059	0276
COMMUNITY	080064	0276
EL PASO COUNTY		
TOWN OF PALMER		
LAKE		
TOWN OF MONUMENT		

Hydrologic Soil Group—El Paso County Area, Colorado



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
 Survey Area Data: Version 23, Aug 29, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 23, 2024—Aug 4, 2024

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Alamosa loam, 1 to 3 percent slopes	D	4.3	68.4%
41	Kettle gravelly loamy sand, 8 to 40 percent slopes	B	0.0	0.0%
71	Pring coarse sandy loam, 3 to 8 percent slopes	B	2.0	31.6%
Totals for Area of Interest			6.2	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher



North Bay at Lake Woodmoor
Stormwater Management Report
Project No.: 2404118
El Paso County, Colorado

APPENDIX B –GEC PLANS



APPENDIX C – EL PASO COUNTY CONSTRUCTION CONTROL MEASURES

CONCRETE WASHOUT AREA

CWA



1.0 DESCRIPTION

- Concrete washout areas consist of either an excavated pit or a prefabricated haul-away container designed to contain concrete and concrete waste water.

2.0 PURPOSE

- Used to contain concrete and concrete waste water when the chutes of concrete mixers and hoppers of concrete pumps are rinsed out after delivery.
- Concrete washout areas consolidate solids for easier disposal and prevent runoff of concrete waste water, which is alkaline and contains high levels of chromium.

3.0 IMPLEMENTATION

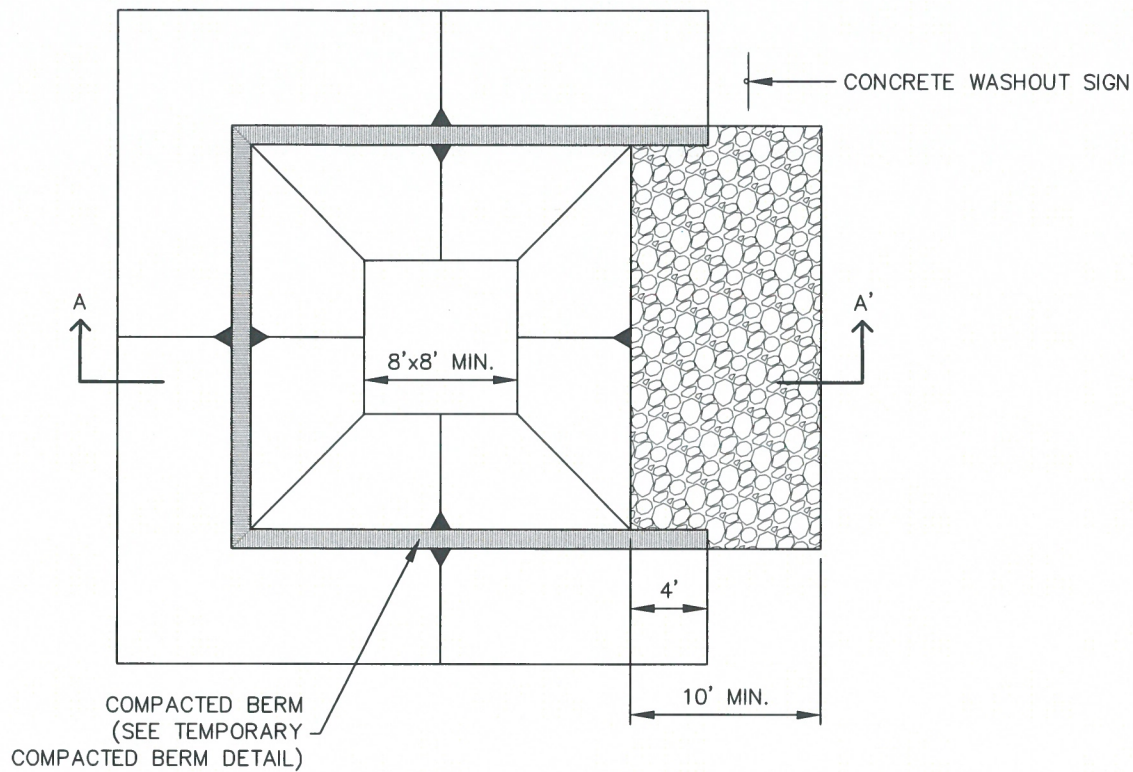
- Locate at least 50 feet away from State Waters, measured horizontally. Unlined concrete washout areas must be located at least 400 feet away from State Waters, and at least 1000 feet away from wells or drinking water sources.
- Do not locate in areas where shallow groundwater may be present, such as near natural drainages, springs, or wetlands.
- Do not place in areas subject to run-on.
- Label areas with appropriate signage.
- The addition of solvents, flocculents, or acid to wash water is prohibited.

4.0 TIMING

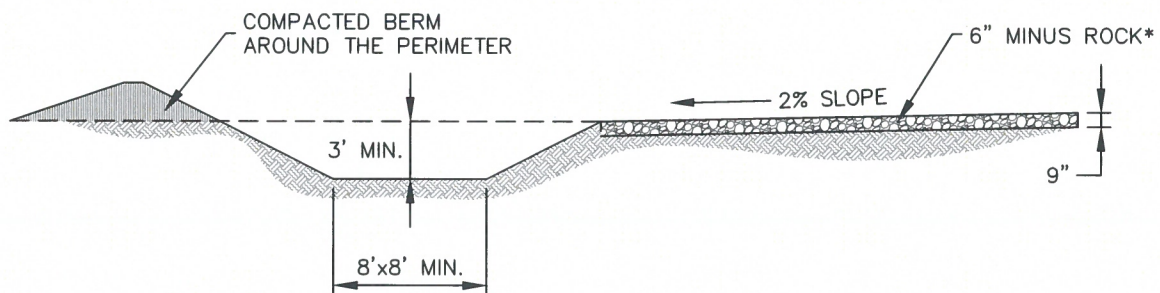
- Install prior to concrete activities.
- Remove after concrete activities have concluded.

5.0 MAINTENANCE

- Clean out facilities once they are 2/3 full, or construct new facilities for additional capacity.
- Concrete waste must be permanently disposed of off-site in an appropriate manner.



CONCRETE WASHOUT AREA PLAN



SECTION A-A'

*ROCK REQUIRED BASED ON
SITE CONDITIONS AT THE
DISCRETION OF THE GEC
INSPECTOR



**CONCRETE
WASHOUT AREA**

APPROVED:		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-CWA-1

INSTALLATION NOTES

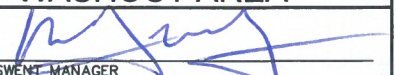
1. SEE PLAN VIEW FOR:
-LOCATION OF CONCRETE WASHOUT AREA
2. LOCATE AT LEAST 50' AWAY FROM STATE WATERS MEASURED HORIZONTALLY.
3. AN IMPERMEABLE LINER (16 MIL. MINIMUM THICKNESS) IS REQUIRED IF CONCRETE WASH AREA IS LOCATED WITHIN 400' OF STATE WATERS OR 1000' OF WELLS OR DRINKING WATER SOURCES.
4. DO NOT LOCATE IN AREAS WHERE SHALLOW GROUNDWATER MAY BE PRESENT.
5. THE CONCRETE WASH AREA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
6. CONCRETE WASH AREA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'.
7. BERM SURROUNDING SIDES AND BACK OF CONCRETE WASH AREA SHALL HAVE A MINIMUM HEIGHT OF 2 FEET.
8. CONCRETE WASH AREA ENTRANCE SHALL BE SLOPED 2% TOWARDS THE CONCRETE WASH AREA.
9. SIGNS SHALL BE PLACED AT THE CONCRETE WASH AREA.
10. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

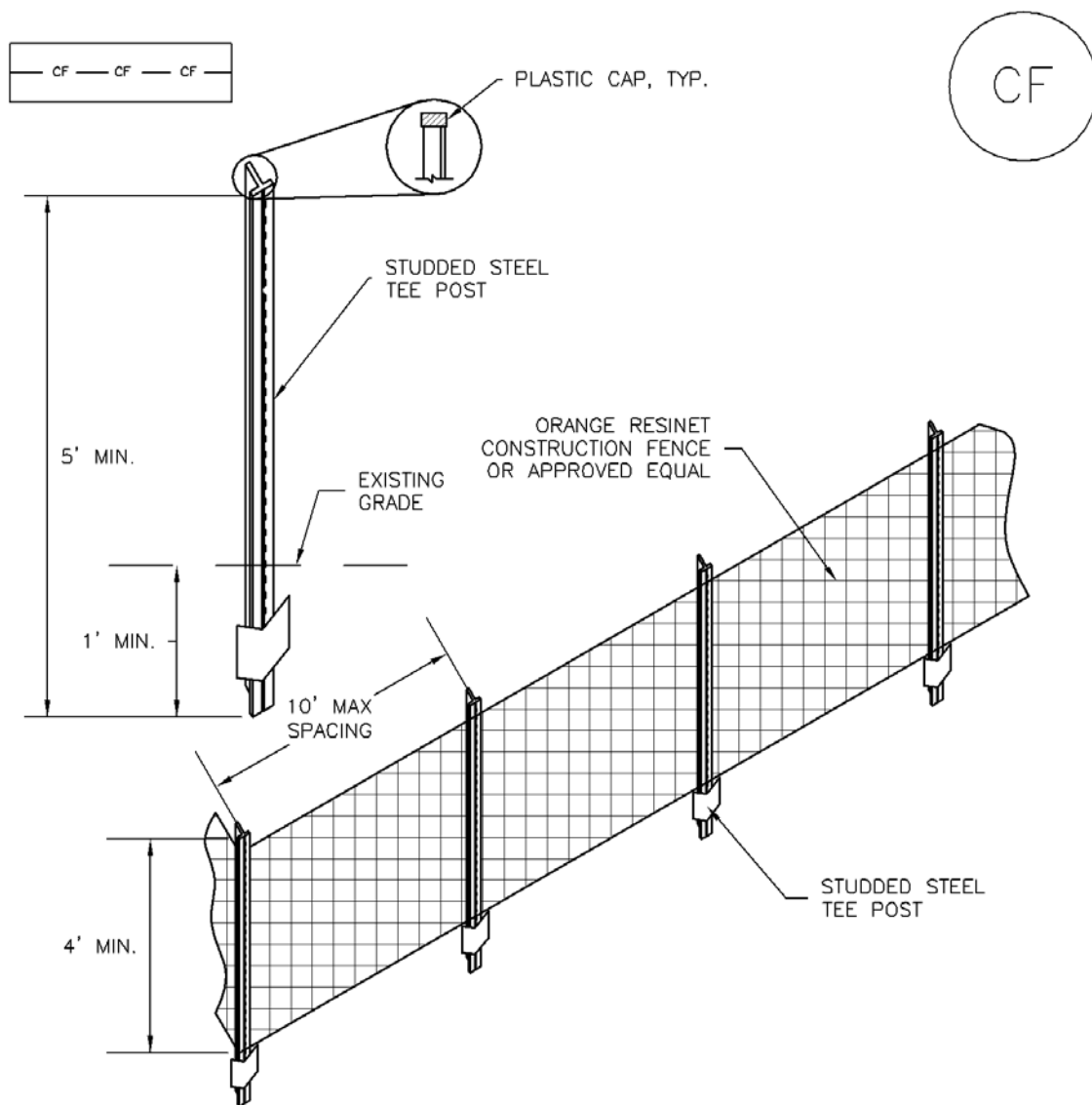
MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. THE CONCRETE WASH AREA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN THE PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF $\frac{2}{3}$ THE HEIGHT OF THE CONCRETE WASH AREA.
3. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE, AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
4. THE CONCRETE WASH AREA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
5. PERMANENTLY STABILIZE AREA AFTER CONCRETE WASH AREA IS REMOVED.



CONCRETE WASHOUT AREA

APPROVED: 		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-CWA-2



CF-1. PLASTIC MESH CONSTRUCTION FENCE

CONSTRUCTION FENCE INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION OF CONSTRUCTION FENCE.
2. CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
3. CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4' HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
4. STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
5. CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.

CULVERT INLET PROTECTION

CIP



1.0 DESCRIPTION

- Culvert inlet protection consists of a permeable sediment barrier installed upstream of a flared end section entrance to a culvert or storm sewer.

2.0 PURPOSE

- Used to prevent sediment and debris from entering a culvert or storm drainage system prior to permanent stabilization of the contributing disturbed area.
- Culvert inlet protection slows down runoff velocity to filter runoff and to promote sedimentation prior to entry into a culvert or storm drainage system.

3.0 IMPLEMENTATION

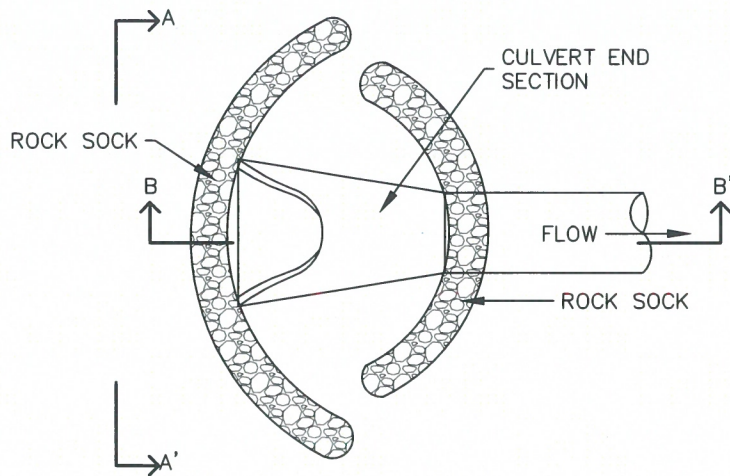
- Install culvert inlet protection at flared end section inlets to culverts and storm sewers that are operable and receiving runoff from disturbed areas during construction.
- Culvert inlet protection is not a stand-alone control measure and should be used in conjunction with other upgradient control measures. Culvert inlet protection with a contributing drainage area including of one acre or more of disturbed area must be part of a treatment train.

4.0 TIMING

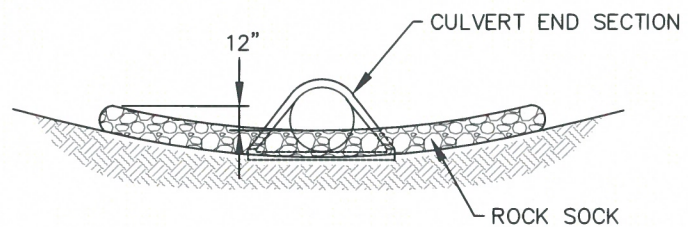
- Install prior to land disturbing activities, or immediately after pipe installation.
- Remove and properly dispose of culvert inlet protection after the contributing drainage area has been permanently stabilized.

5.0 MAINTENANCE

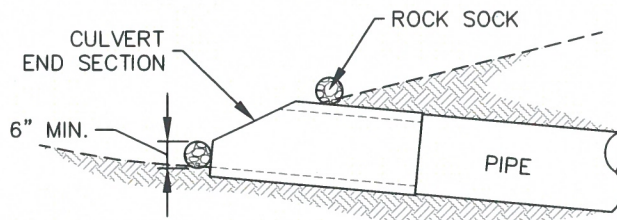
- Remove and properly dispose of sediment when it has accumulated to 1/2 of the height of the rock sock.
- Inspect for displaced rock socks that are no longer protecting the inlet.



CULVERT INLET PROTECTION PLAN



SECTION A-A'



SECTION B-B'

INSTALLATION NOTES

1. SEE ROCK SOCK DETAIL.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS $\frac{1}{2}$ HEIGHT OF THE ROCK SOCK.
3. CULVERT INLET PROTECTION SHALL REMAIN UNTIL THE UPSTREAM AREA IS PERMANENTLY STABILIZED.



CULVERT INLET PROTECTION

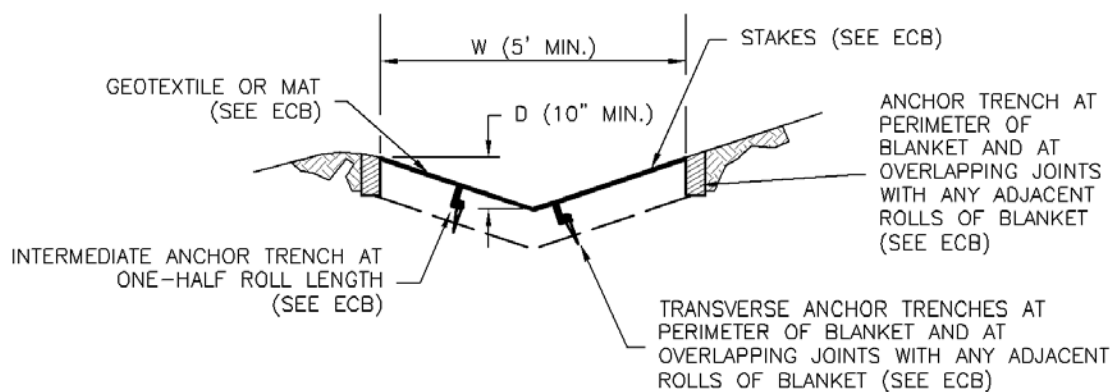
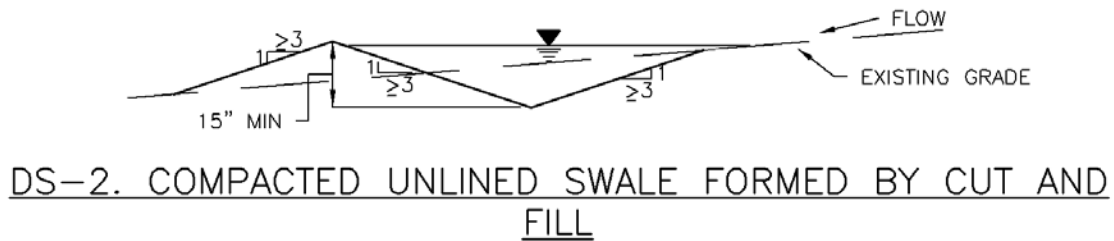
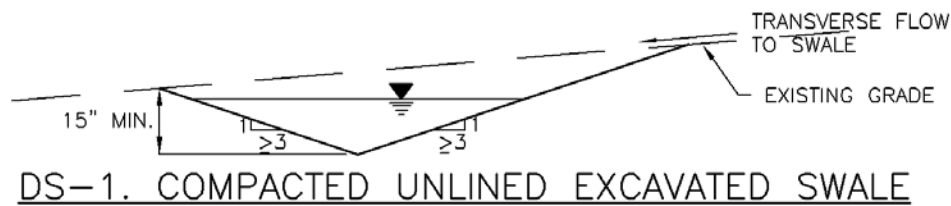
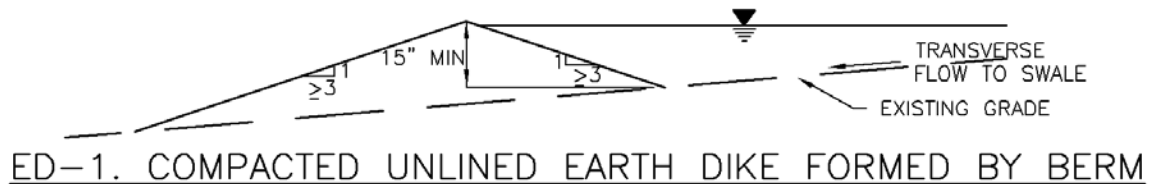
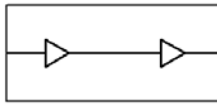
APPROVED:

SWENT MANAGER

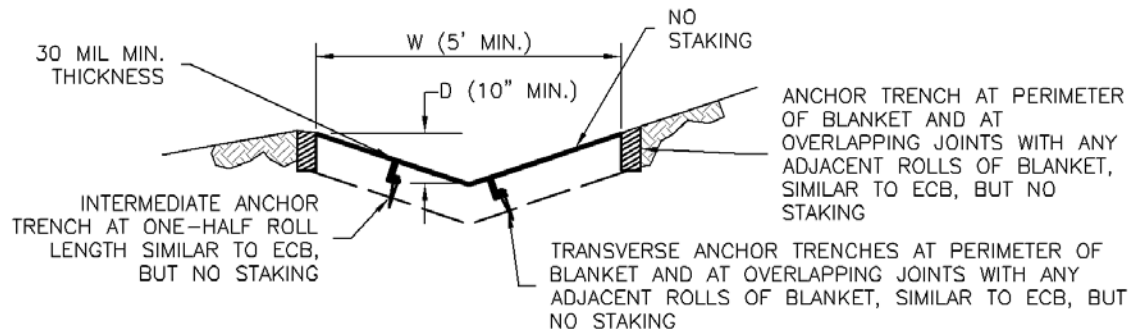
ISSUED:
10/7/19

REVISED:
8/19/2020

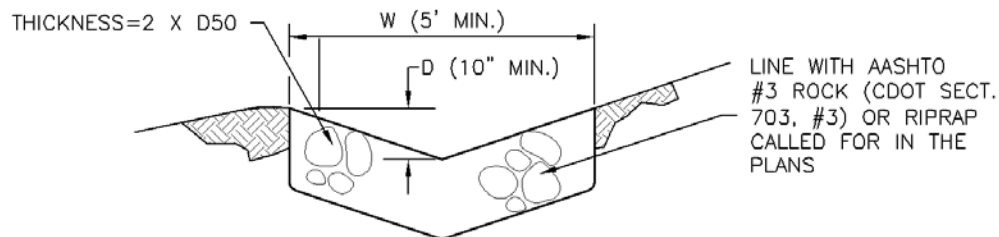
DRAWING NO.
900-CIP



EC-10 Earth Dikes and Drainage Swales (ED/DS)



DS-4. SYNTHETIC LINED SWALE



DS-5. RIPRAP LINED SWALE

EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

1. SEE SITE PLAN FOR:
 - LOCATION OF DIVERSION SWALE
 - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
 - LENGTH OF EACH SWALE.
 - DEPTH, D , AND WIDTH, W DIMENSIONS.
 - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
 - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.
2. SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.
3. EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.
4. EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D698.
5. SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.
6. FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
7. WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

EROSION CONTROL BLANKET

ECB



1.0 DESCRIPTION

- Woven blankets made of natural and biodegradable materials placed on disturbed areas and secured to the ground with staples or stakes.

2.0 PURPOSE

- Used to control erosion, retain sediment resulting from sheet flow, and protect newly seeded areas.

3.0 IMPLEMENTATION

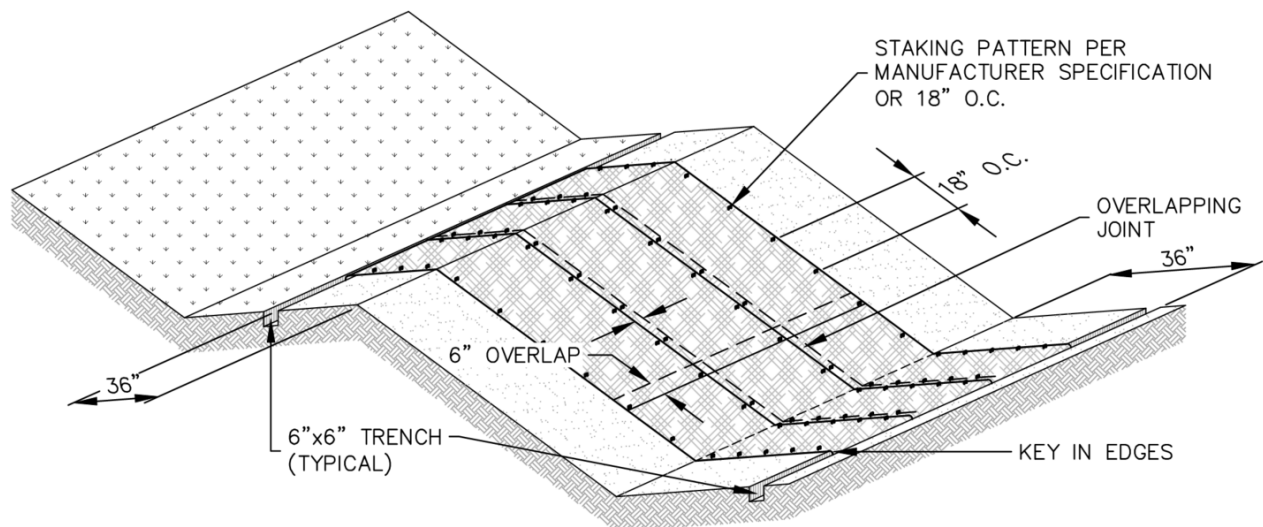
- Install erosion control blankets over uniform surfaces, with no large rocks, vegetation, or rills.
- Properly prepare topsoil and apply seed prior to blanket installation.
- Erosion control blankets must be made from 100% natural and biodegradable materials.
- Turf reinforcement mats may be used in place of erosion control blankets when specified by engineer.

4.0 TIMING

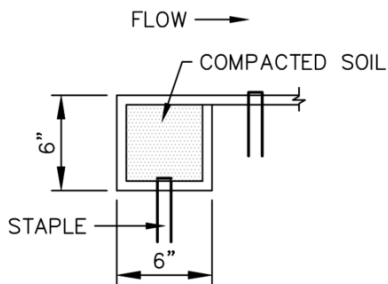
- Install in disturbed areas after final grading and seeding has been completed.
- Leave erosion control blankets in place to biodegrade, or remove if required by the GEC Inspector.

5.0 MAINTENANCE

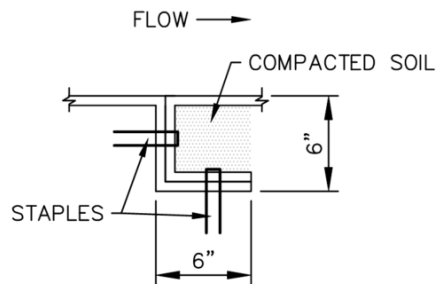
- Any erosion control blanket pulled out, torn, or otherwise damaged shall be repaired or reinstalled.
- Any subgrade areas below the geotextile that have eroded to create a void under the blanket, or that remain devoid of grass shall be repaired, reseeded and mulched and the erosion control blanket reinstalled.
- Broken or damaged staking must be repaired immediately when identified.



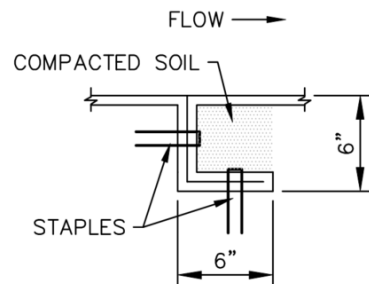
EROSION CONTROL BLANKET



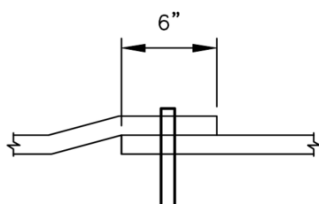
PERIMETER
ANCHOR TRENCH



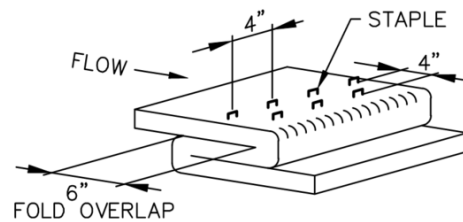
JOINT
ANCHOR TRENCH



INTERMEDIATE
CHECK SLOT



OVERLAPPING
JOINT



STAPLE CHECK
TO BE USED ON SLOPE EVERY 15 FEET



EROSION CONTROL BLANKET

APPROVED:
SWENT MANAGER

ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-ECB-1
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INSTALLATION NOTES

1. 100% NATURAL AND BIODEGRADABLE MATERIALS ARE REQUIRED FOR EROSION CONTROL BLANKETS. TRM PRODUCTS MAY BE USED WHERE APPROPRIATE AS DESIGNATED BY THE ENGINEER.
2. IN AREAS WHERE EROSION CONTROL BLANKETS ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO EROSION CONTROL BLANKET INSTALLATION, AND THE EROSION CONTROL BLANKET SHALL BE IN FULL CONTACT WITH THE SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
3. PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
4. JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF EROSION CONTROL BLANKETS TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL EROSION CONTROL BLANKETS.
5. INTERMEDIATE CHECK SLOT OR STAPLE CHECK SHALL BE INSTALLED EVERY 15' DOWN SLOPES. IN DRAINAGEWAYS, INSTALL CHECK SLOTS EVERY 25' PERPENDICULAR TO FLOW DIRECTION.
6. OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF EROSION CONTROL BLANKETS TOGETHER FOR EROSION CONTROL BLANKETS ON SLOPES.
7. MATERIAL SPECIFICATIONS OF EROSION CONTROL BLANKETS SHALL CONFORM TO TABLE ECB-1.
8. ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING EROSION CONTROL BLANKETS SHALL BE RESEED AND MULCHED.
9. STRAW EROSION CONTROL BLANKETS SHALL NOT BE USED WITHIN STREAMS AND DRAINAGE CHANNELS.
10. COMPACT ALL TRENCHES.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. EROSION CONTROL BLANKETS SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE. TRM MUST BE REMOVED AT THE DISCRETION OF THE GEC INSPECTOR.
3. ANY EROSION CONTROL BLANKET PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW GEOTEXTILE THAT HAVE ERODED TO CREATE A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEED AND MULCHED AND THE EROSION CONTROL BLANKET REINSTALLED.

TABLE ECB-1, EROSION CONTROL BLANKET MATERIAL SPECIFICATIONS

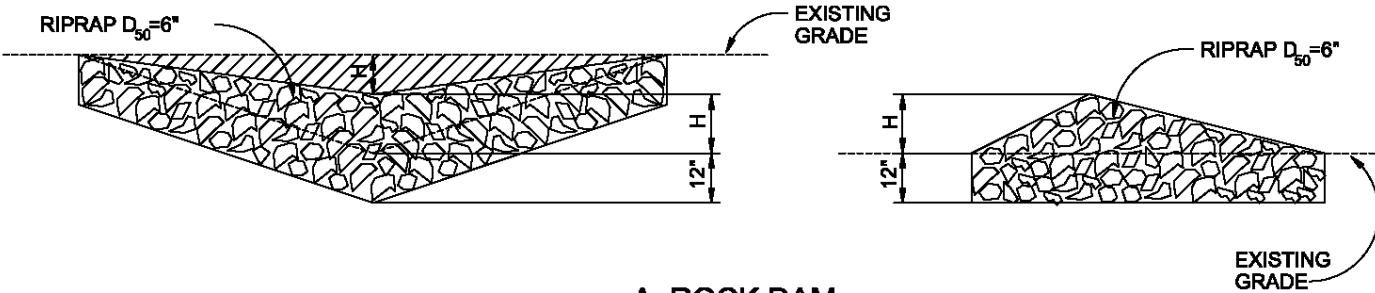
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING
STRAW	—	100%	—	DOUBLE/NATURAL
STRAW-COCONUT	30% MIN.	70% MAX.	—	DOUBLE/NATURAL
COCONUT	100%	—	—	DOUBLE/NATURAL
EXCELSIOR	—	—	100%	DOUBLE/NATURAL



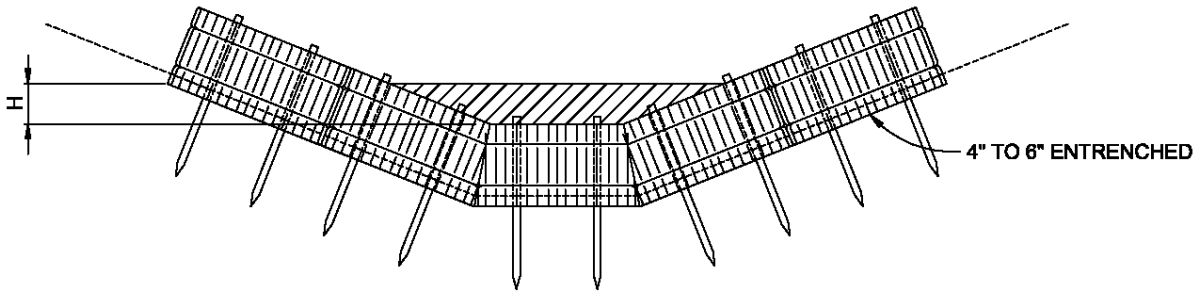
EROSION CONTROL BLANKET

APPROVED: 
SWENT MANAGER

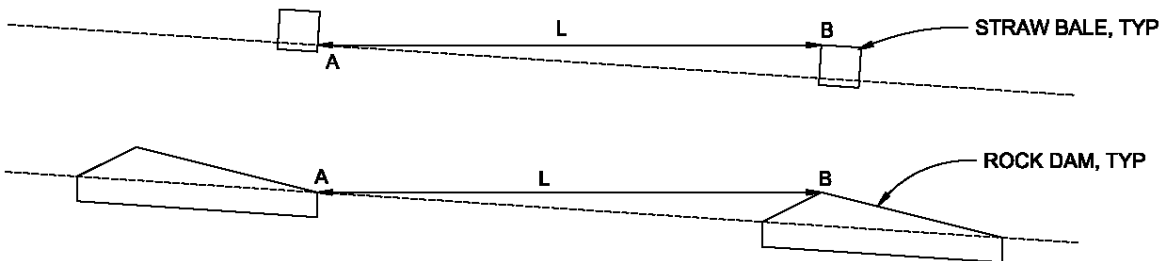
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-ECB-2
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A. ROCK DAM



B. STRAW BALE CHECK DAM
(SEE STRAW BALE BARRIER INSTALLATION)



L= THE DISTANCE SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION.

C. SPACING CHECK DAMS

CHECK DAM
NTS

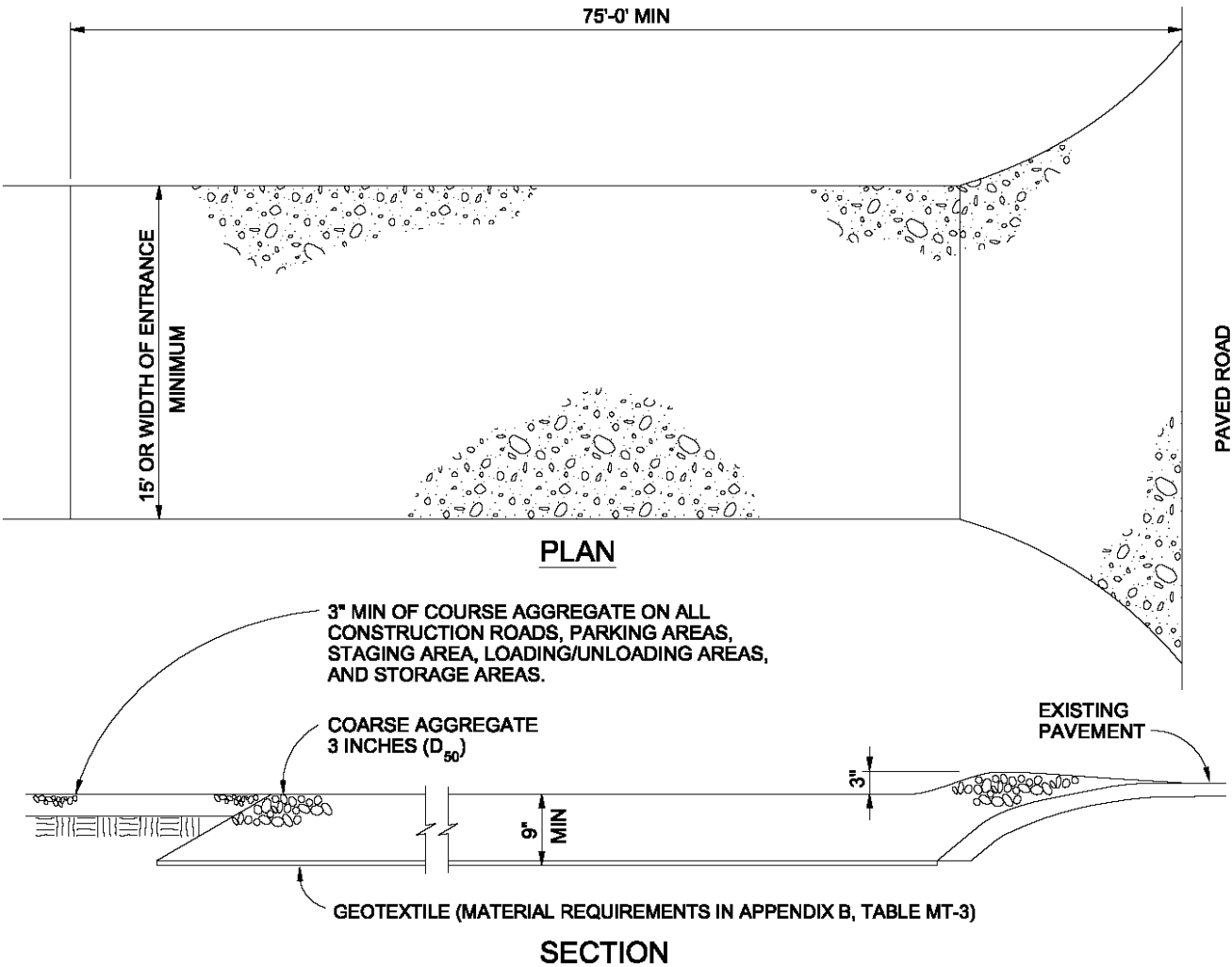
CHECK DAM NOTES

INSTALLATION REQUIREMENTS

1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE SBB-2.
2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.

MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN 1/2 OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
3. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
4. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.



PLAN

SECTION

VEHICLE TRACKING

NTS

VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

- 1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
- 2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP.
- 3. AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
- 4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
- 5. CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

MAINTENANCE REQUIREMENTS

- 1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
- 2. STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
- 3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
- 4. STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
- 5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.

INLET PROTECTION

IP



1.0 DESCRIPTION

- Inlet protection consists of a permeable sediment barrier installed around a storm inlet.

2.0 PURPOSE

- Used to minimize the amount of sediment and debris entering a storm drainage system prior to permanent stabilization of the contributing disturbed area.
- Inlet protection slows down runoff velocity to filter runoff and to promote sedimentation prior to entry into a storm drainage system.

3.0 IMPLEMENTATION

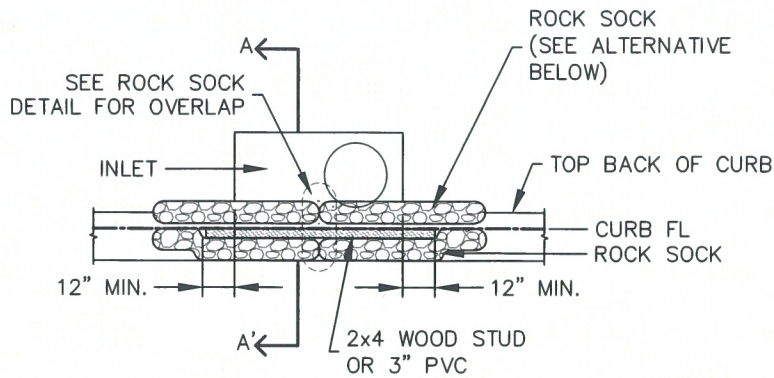
- Install inlet protection at storm sewer inlets that are operable and receiving runoff from disturbed areas during construction.
- Place inlet protection to allow the inlet to function without completely blocking flows into the inlet in a manner that causes localized flooding.
- Inlet protection is not a stand-alone control measure and should be used in conjunction with other upgradient control measures. Inlet protection in areas with a contributing drainage area of one acre or larger must be part of a treatment train.
- When selecting the type of inlet protection, consider factors such as type of inlet, traffic, anticipated flows, ability to secure the inlet protection, safety, and other site-specific conditions.

4.0 TIMING

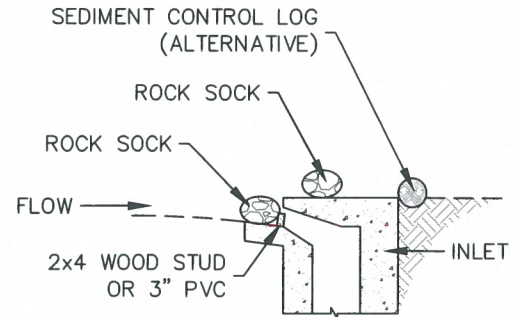
- Install prior to land disturbing activities, or immediately after inlet installation.
- Remove and properly dispose of inlet protection after the contributing drainage area has been permanently stabilized.

5.0 MAINTENANCE

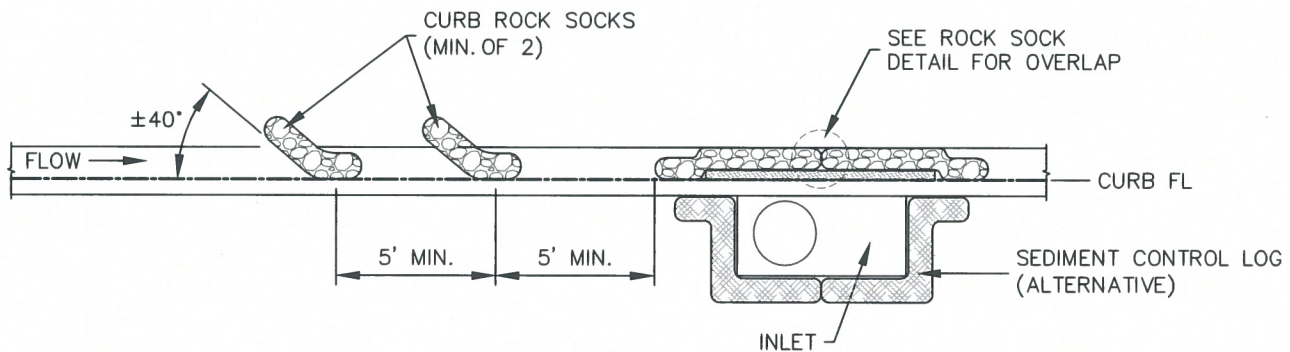
- Remove and properly dispose of sediment when it has accumulated to 1/2 of the design depth of the inlet barrier.
- Inspect for holes or tears that can result in sediment directly entering the inlet.
- Inspect for displaced inlet protection that is no longer protecting the inlet.



CURB INLET PROTECTION PLAN



SECTION A-A'



CURB ROCK SOCKS UPSTREAM OF INLET PROTECTION

INSTALLATION NOTES

1. SEE ROCK SOCK DETAIL FOR INSTALLATION REQUIREMENTS.
2. PLACEMENT OF THE ROCK SOCK SHALL BE APPROXIMATELY 40 DEGREES FROM THE CURB.
3. ROCK SOCKS ARE TO BE FLUSH WITH THE CURB AND SPACED A MINIMUM OF 5' APART.
4. AT LEAST TWO CURB ROCK SOCKS IN SERIES ARE REQUIRED UPSTREAM OF ON-GRADE INLETS.
5. ADDITIONAL ROCK SOCKS MAY BE REQUIRED AT GEC INSPECTOR'S DISCRETION.

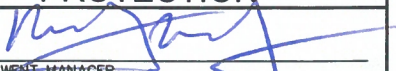
MAINTENANCE NOTES

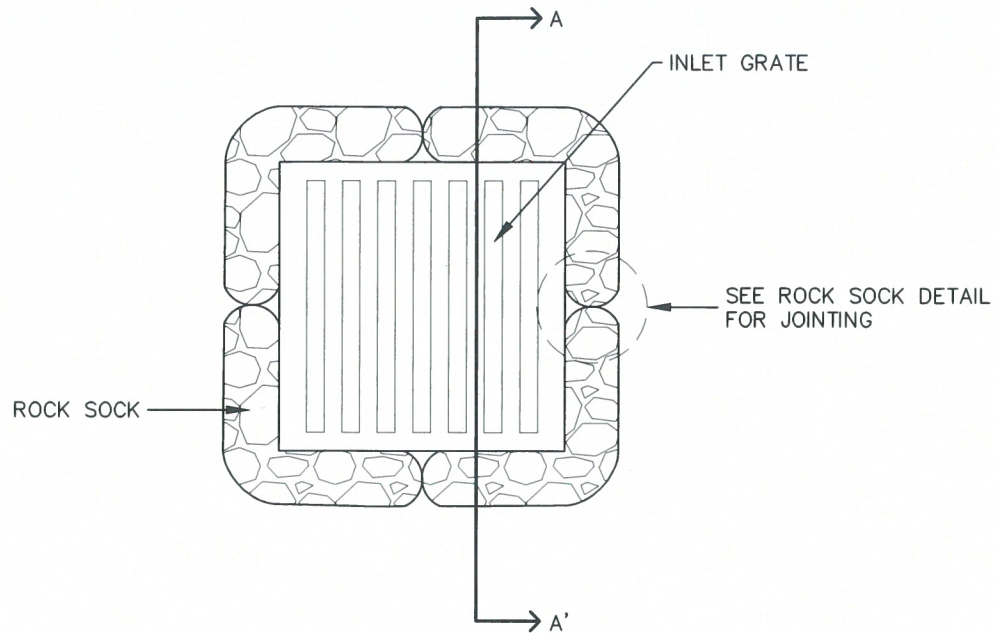
1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES $\frac{1}{2}$ OF THE DESIGN DEPTH OF THE INLET BARRIER.
3. ROCK SOCKS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA BEHIND INLET AFTER ROCK SOCKS ARE REMOVED WHEN REMOVAL IS APPROPRIATE.

IP-1

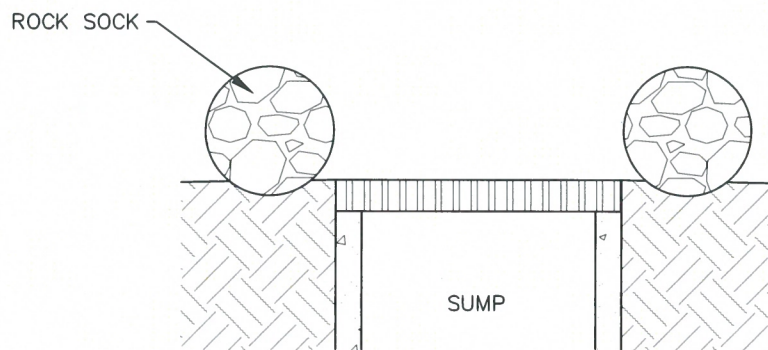


**ON-GRADE INLET
PROTECTION**

APPROVED: 		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-IP-1



ROCK SOCK SUMP INLET PROTECTION PLAN



SECTION A-A'

INSTALLATION NOTES

1. SEE ROCK SOCK DETAIL FOR INSTALLATION REQUIREMENTS.
2. SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS IN PVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL
3. CONTROL MEASURES MUST BE WRAPPED AROUND INLET AS TIGHTLY AS POSSIBLE.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES $\frac{1}{2}$ OF THE DESIGN DEPTH OF THE INLET BARRIER.
3. ROCK SOCKS MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AROUND INLET AFTER ROCK SOCKS ARE REMOVED WHEN REMOVAL IS APPROPRIATE.

IP-2



SUMP INLET PROTECTION

APPROVED:

SWENT MANAGER

ISSUED:

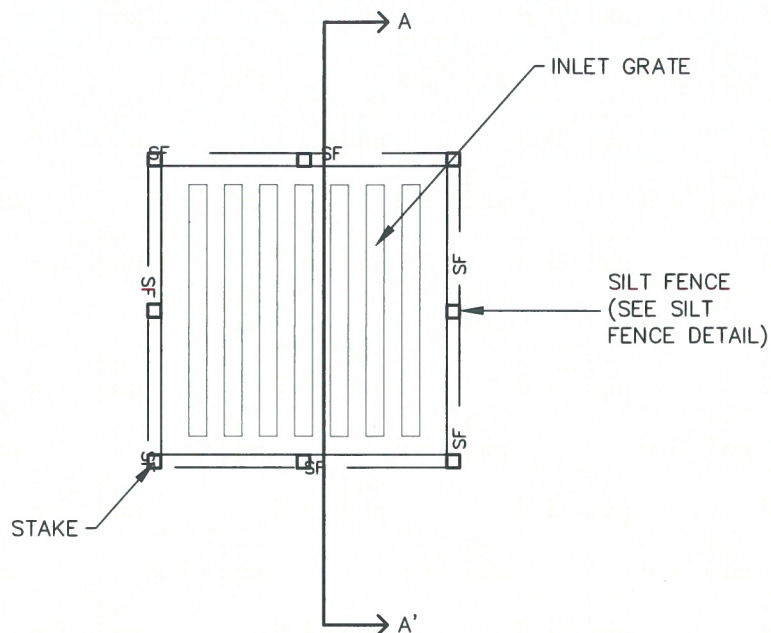
10/7/19

REVISED:

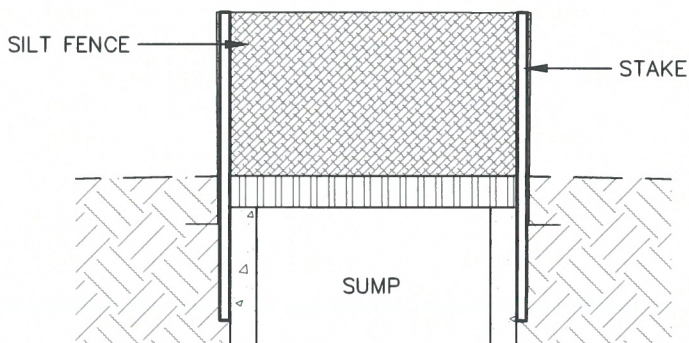
8/19/2020

DRAWING NO.

900-IP-2



SILT FENCE SUMP INLET PROTECTION PLAN



SECTION A-A'

INSTALLATION NOTES

1. SEE SILT FENCE DETAIL FOR INSTALLATION REQUIREMENTS.
2. POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF THREE FEET.
3. SILT FENCE FABRIC SHOULD HAVE A FLOW RATE IN EXCESS OF 30 GALLONS PER MINUTE PER SQUARE YARD SO AS TO ALLOW SOME WATER FLOW AND NOT DAM THE WATER. STANDARD, LOW-FLOW SILT FENCE FABRIC WILL NOT BE ALLOWED.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES $\frac{1}{2}$ OF THE DESIGN DEPTH OF THE INLET BARRIER.
3. SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AROUND INLET AFTER SILT FENCE IS REMOVED WHEN REMOVAL IS APPROPRIATE.

IP-3



SUMP INLET PROTECTION

APPROVED:

SWENT MANAGER

ISSUED:

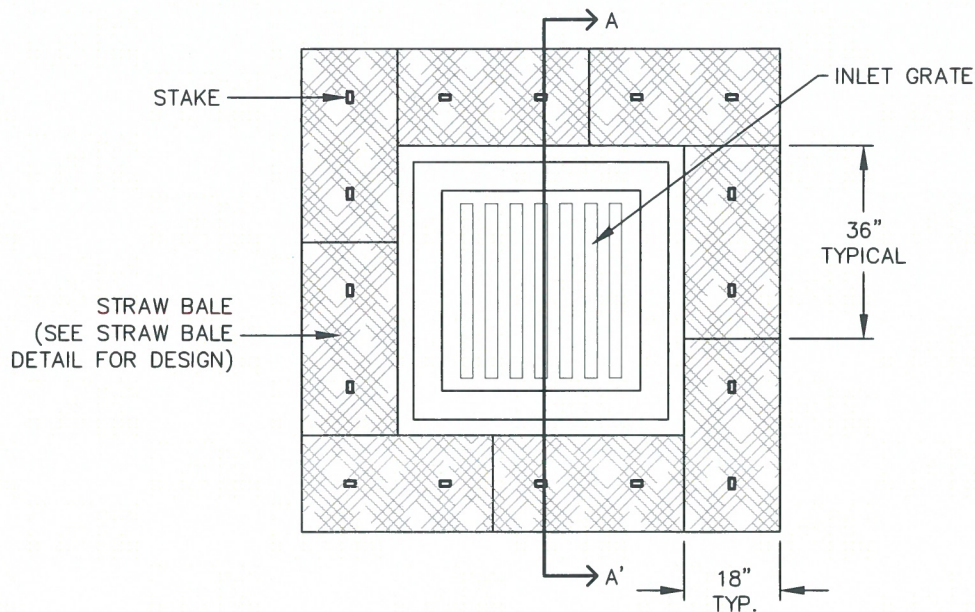
10/7/19

REVISED:

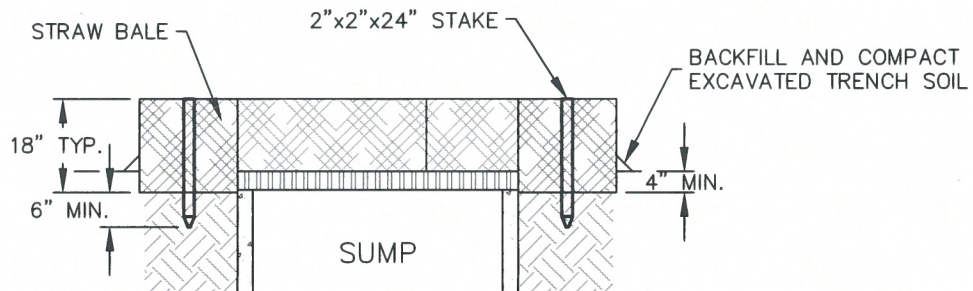
8/19/2020

DRAWING NO.

900-IP-3



STRAW BALE SUMP INLET PROTECTION PLAN



SECTION A-A'

INSTALLATION NOTES

1. BALES SHALL BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE ENDS OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
2. STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.
3. STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
4. STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"x18"x18".
5. A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PAVED SO THAT THE BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALE(S).
6. TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKED SHALL BE 2"x2"x24 (MIN.)". WOODEN STAKES SHALL BE DRIVEN A MINIMUM OF 6" INTO THE GROUND.

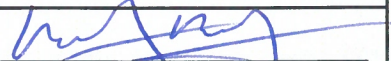
MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN DEPTH OF THE INLET BARRIER.
3. STRAW BALES MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AROUND INLET AFTER STRAW BALES ARE REMOVED WHEN REMOVAL IS APPROPRIATE.
5. STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN OR DAMAGED BEYOND REPAIR.

IP-4



SUMP INLET PROTECTION

APPROVED: 		
SWENT MANAGER		
ISSUED:	REVISED:	DRAWING NO.
10/7/19	8/19/2020	900-IP-4

PORTABLE TOILET

PT



1.0 DESCRIPTION

- The portable toilet detail provides requirements for portable toilet use on construction sites.

2.0 PURPOSE

- Used to minimize the risk of pollutant migration to State Waters.

3.0 IMPLEMENTATION

- Place portable toilet a minimum of 10 feet from the back of curb or on a trailer for road projects or sites that are mostly paved.
- Anchor portable toilet to the ground, at a minimum of two opposing corners (on a diagonal) using U-shaped rebar stakes.

4.0 TIMING

- Install as needed.
- Remove prior to the end of construction. Permanently stabilize any disturbed areas associated with the installation, maintenance, and/or removal of the toilets.

5.0 MAINTENANCE

- Portable toilets shall be serviced at the necessary intervals to eliminate the possibility of overflow.

TOP BACK OF CURB, ATTACHED SIDEWALK, OR OTHER IMPERVIOUS AREAS

EDGE OF ASPHALT

PORTABLE TOILET

10' MIN.

CURB & GUTTER

PORTABLE TOILET PLAN

CONTRACTOR SHALL ANCHOR PORTABLE TOILET TO THE GROUND, AT A MINIMUM OF TWO OPPOSING CORNERS (ON A DIAGONAL) USING U-SHAPED REBAR STAKES

PORTABLE TOILET (TYPICAL)

10' MIN.

ISOMETRIC

CONTRACTOR SHALL ANCHOR PORTABLE TOILET TO THE GROUND, AT A MINIMUM OF TWO OPPOSING CORNERS (ON A DIAGONAL) USING U-SHAPED REBAR STAKES OR OTHER EFFECTIVE ANCHORING

INSTALLATION NOTES

1. PORTABLE TOILETS SHALL BE PLACED A MINIMUM OF 10 FEET BEHIND ALL CURBS, SIDEWALKS, AND OTHER IMPERVIOUS AREAS; 50 FEET FROM STORM INLETS, AND 100 FEET FROM WATERWAYS.
2. PORTABLE TOILETS IN THE RIGHT-OF-WAY ARE REQUIRED TO BE PLACED ON MOBILE TRAILERS AND MUST BE ANCHORED OR WEIGHTED DOWN. PORTABLE TOILETS MAY BE INSTALLED IN ACCORDANCE WITH NOTE #1 IN STAGING AREAS/YARDS.
3. PORTABLE TOILETS SHALL BE SECURELY ANCHORED TO THE GROUND USING U-SHAPED REBAR STAKES, OR OTHER EFFECTIVE ANCHORING.
4. ANCHORING SHALL BE POSITIONED ON AT LEAST TWO OPPOSING (DIAGONAL) CORNERS.
5. TOILET CONTAINMENT PANS MAY BE USED IN PLACE OF A TRAILER AT THE GEC INSPECTOR'S DISCRETION. TOILET CONTAINMENT PANS MUST BE ANCHORED IN PLACE AND MUST NOT BE USED WITHIN THE CITY R.O.W.

PT

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. PORTABLE TOILETS SHALL BE SERVICED AT THE NECESSARY INTERVALS TO ELIMINATE THE POSSIBILITY OF OVERFLOW.
3. WHEN THE PORTABLE TOILETS ARE REMOVED, ANY DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE TOILETS MUST BE PERMANENTLY STABILIZED.

PORTABLE TOILET

APPROVED:

SWENT MANAGER

ISSUED:

2/19/19

REVISED:

8/19/2020

DRAWING NO.

900-PTM

ROCK SOCK

RS



1.0 DESCRIPTION

- A rock sock consists of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter.

2.0 PURPOSE

- Used to slow down the velocity of runoff to filter runoff and to promote sedimentation.
- Rock socks are typically used as either perimeter control or as a part of inlet protection.

3.0 IMPLEMENTATION

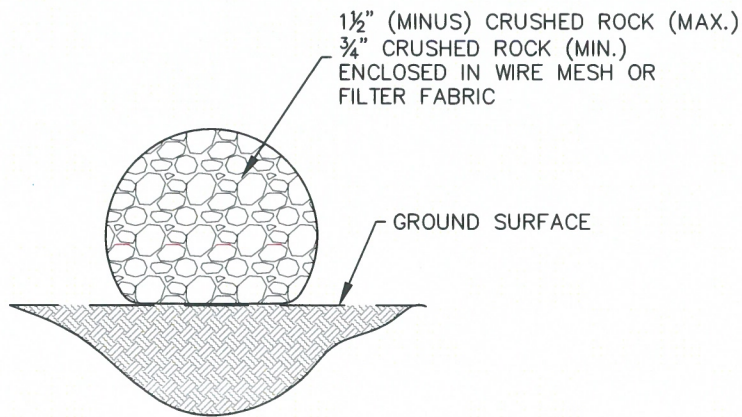
- Rock socks do not require trenching or staking, and are able to be placed on hard surfaces where trenching or staking would be impossible.
- The maximum tributary drainage area per 100 liner feet of rock socks is 1/4 acre.
- When placed in a gutter adjacent to a curb, rock socks should protrude no more than two feet from the curb in order for traffic to pass safely.
- Proprietary rock socks can be used in place of wire mesh rock socks.

4.0 TIMING

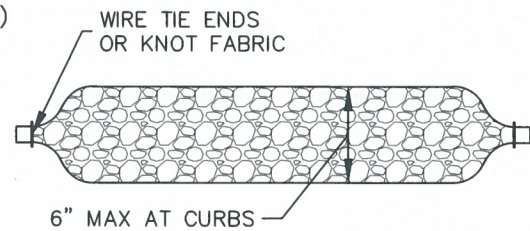
- Install prior to land disturbing activities, or immediately after inlet installation.
- Remove and properly dispose of inlet protection after the contributing drainage area has been permanently stabilized.

5.0 MAINTENANCE

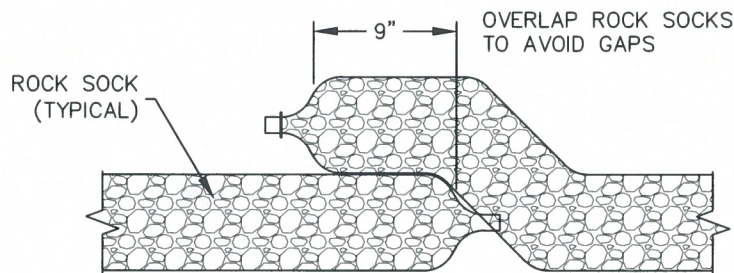
- Remove and properly dispose of sediment when it has accumulated to 1/2 of the height of the rock sock.
- Inspect for and replace damaged or displaced rock socks.



ROCK SOCK SECTION



ROCK SOCK PLAN



ROCK SOCK OVERLAP

GRADATION TABLE

	MASS PERCENT PASSING SQUARE MESH SIEVES
	No. 4
2"	100
1 1/2"	90-100
1"	20-55
3/4"	0-15
3/8"	0-5

MATCHES SPECIFICATIONS FOR
No. 4 COARSE AGGREGATE FOR
CONCRETE PER AASHTO M-43.
ALL ROCK SHALL BE FRACTURED
FACE, ALL SIDES

INSTALLATION NOTES

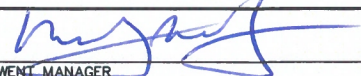
1. CRUSHED ROCK SHALL BE BETWEEN MAX. 1 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET AND MIN. 3/4" CRUSHED ROCK.
2. WIRE MESH SHALL HAVE OPENINGS SMALLER THAN THE SMALLEST SIZE ROCK.
3. WIRE MESH SHALL BE SECURED USING 'HOG RINGS' OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED OR DAMAGED BEYOND REPAIR.
3. ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN THE DEPTH REACHES 1/2 OF THE HEIGHT OF THE ROCK SOCK.
4. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL DISTURBED AREA IS STABILIZED.
5. PERMANENTLY STABILIZE AREA AFTER ROCK SOCKS HAVE BEEN REMOVED.



ROCK SOCK

APPROVED: 		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-RS

SEDIMENT CONTROL LOG

SCL



1.0 DESCRIPTION

- A sediment control log is a temporary sediment barrier consisting of a linear roll of natural materials such as straw, compost, excelsior or coconut fiber.

2.0 PURPOSE

- Used to intercept sheet flow prior to leaving a construction site.
- May be used around the perimeter of a construction site.
- Placed on long slopes to slow down flows.

3.0 IMPLEMENTATION

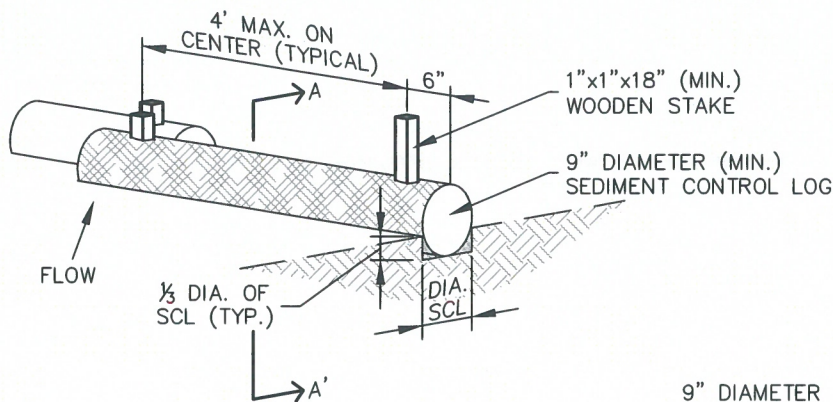
- Install sediment control logs to intercept sheet flow runoff from disturbed areas.
- Install sediment control logs along the contour of slopes or in a manner to avoid creating concentrated flow.
- Place sediment control logs against sidewalk or back of curb when adjacent to these features.
- The maximum tributary drainage area per 100 liner feet of sediment control logs is 1/4 acre.
- Sediment control logs shall consist of straw, compost, excelsior or coconut fiber, and shall be free from any noxious weed seeds or defects.

4.0 TIMING

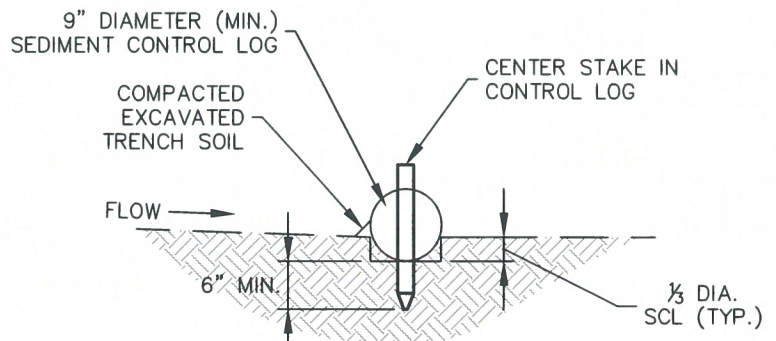
- Install prior to land disturbing activities.
- Remove sediment control logs after the upstream area has been permanently stabilized.

5.0 MAINTENANCE

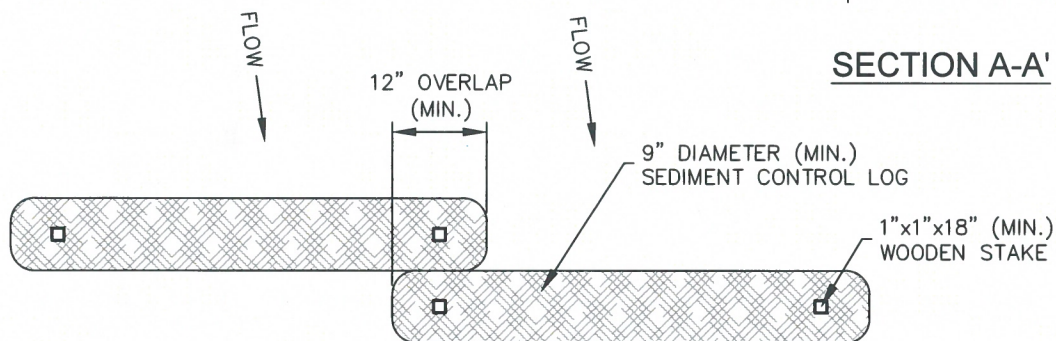
- Remove and properly dispose of sediment when it has accumulated to 1/2 of the height of the exposed sediment control log.
- Inspect for and repair or replace damaged sediment control logs.



SEDIMENT CONTROL LOG



SECTION A-A'



SEDIMENT CONTROL LOG JOINTS

INSTALLATION NOTES

1. ALL SEDIMENT CONTROL LOGS MUST BE EMBEDDED TO $\frac{1}{3}$ OF THE HEIGHT OF THE LOG
2. LARGER DIAMETER SEDIMENT CONTROL LOGS NEED TO BE EMBEDDED DEEPER.
3. PLACE SEDIMENT CONTROL LOG AGAINST SIDEWALK OR BACK OF CURB WHEN ADJACENT TO THESE FEATURES.
4. SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR OR COCONUT FIBER, AND SHALL BE FREE FROM ANY NOXIOUS WEED SEEDS OR DEFECTS INCLUDING RIPS, HOLES AND OBVIOUS WEAR.
5. IF USING AS SLOPE PROTECTION, INSTALL SEDIMENT CONTROL LOGS ALONG THE CONTOUR.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES $\frac{1}{2}$ OF THE HEIGHT OF THE SEDIMENT CONTROL LOG.
3. PERMANENTLY STABILIZE AREA AFTER SEDIMENT CONTROL LOGS HAVE BEEN REMOVED.



SEDIMENT CONTROL LOGS

APPROVED:		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-SCL

SEEDING AND MULCHING

SM



1.0 DESCRIPTION

- The preparation of soil, application of much, and application of seed to disturbed areas.

2.0 PURPOSE

- Used to control runoff and erosion on disturbed areas by establishing vegetative cover.
- Reduces erosion and sediment loss.
- Provides permanent stabilization in disturbed areas.

3.0 IMPLEMENTATION

- All soil testing, soil amendment and fertilizer documentation, and seed load and bag tickets must be added to the CSWMP.
- Properly prepare soil prior to seeding and mulching.
- Apply seed mixes as specified in the City of Colorado Springs Stormwater Construction Manual. Alternative seed mixes are acceptable if included in an approved Landscaping Plan.
- Mulch seeded areas using hay or straw mulch, hydraulic mulching, or install erosion control blanket.

4.0 TIMING

- Seed and mulch disturbed areas after final grading.
- Seeding and mulching may also be used as a temporary erosion control measure during construction.

5.0 MAINTENANCE

- Repair and reseed bare areas as necessary.
- Restrict vehicle access to seeded areas.

SEEDING & MULCHING

ALL SOIL TESTING, SOILS AMENDMENT AND FERTILIZER DOCUMENTATION, AND SEED LOAD AND BAG TICKETS MUST BE ADDED TO THE CSWMP.

SOIL PREPARATION

1. IN AREAS TO BE SEEDED, THE UPPER 6 INCHES OF THE SOIL MUST NOT BE HEAVILY COMPACTED, AND SHOULD BE IN FRIABLE CONDITION. LESS THAN 85% STANDARD PROCTOR DENSITY IS ACCEPTABLE. AREAS OF COMPACTION OR GENERAL CONSTRUCTION ACTIVITY MUST BE SCARIFIED TO A DEPTH OF 6 TO 12 INCHES PRIOR TO SPREADING TOPSOIL TO BREAK UP COMPACTED LAYERS AND PROVIDE A BLENDING ZONE BETWEEN DIFFERENT SOIL LAYERS.
2. AREAS TO BE PLANTED SHALL HAVE AT LEAST 4 INCHES OF TOPSOIL SUITABLE TO SUPPORT PLANT GROWTH.
3. THE CITY RECOMMENDS THAT EXISTING AND/OR IMPORTED TOPSOIL BE TESTED TO IDENTIFY SOIL DEFICIENCIES AND ANY SOIL AMENDMENTS NECESSARY TO ADDRESS THESE DEFICIENCIES. SOIL AMENDMENTS AND/OR FERTILIZERS SHOULD BE ADDED TO CORRECT TOPSOIL DEFICIENCIES BASED ON SOIL TESTING RESULTS.
4. TOPSOIL SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD TO RETAIN ITS STRUCTURE AVOID COMPACTION, AND TO PREVENT EROSION AND CONTAMINATION. STRIPPED TOPSOIL MUST BE STORED IN AN AREA AWAY FROM MACHINERY AND CONSTRUCTION OPERATIONS, AND CARE MUST BE TAKEN TO PROTECT THE TOPSOIL AS A VALUABLE COMMODITY. TOPSOIL MUST NOT BE STRIPPED DURING UNDESIRABLE WORKING CONDITIONS (E.G. DURING WET WEATHER OR WHEN SOILS ARE SATURATED). TOPSOIL SHALL NOT BE STORED IN SWALES OR IN AREAS WITH POOR DRAINAGE.

SEEDING

1. ALLOWABLE SEED MIXES ARE INCLUDED IN THE CITY OF COLORADO SPRINGS STORMWATER CONSTRUCTION MANUAL. ALTERNATIVE SEED MIXES ARE ACCEPTABLE IF INCLUDED IN AN APPROVED LANDSCAPING PLAN.
2. SEED SHOULD BE DRILL-SEEDED WHENEVER POSSIBLE
 - SEED DEPTH MUST BE $\frac{1}{8}$ TO $\frac{1}{2}$ INCHES WHEN DRILL-SEEDED IS USED
3. BROADCAST SEEDING OR HYDRO-SEEDED WITH TACKIFIER MAY BE SUBSTITUTED ON SLOPES STEEPER THAN 3:1 OR ON OTHER AREAS NOT PRACTICAL TO DRILL SEED.
 - SEEDING RATES MUST BE DOUBLED FOR BROADCAST SEEDING OR INCREASED BY 50% IF USING A BRILLION DRILL OR HYDRO-SEEDED
 - BROADCAST SEEDING MUST BE LIGHTLY HAND-RAKED INTO THE SOIL

MULCHING

1. MULCHING SHOULD BE COMPLETED AS SOON AS PRACTICABLE AFTER SEEDING, HOWEVER PLANTED AREAS MUST BE MULCHED NO LATER THAN 14 DAYS AFTER PLANTING.
2. MULCHING REQUIREMENTS INCLUDE:
 - HAY OR STRAW MULCH
 - ONLY CERTIFIED WEED-FREE AND CERTIFIED SEED-FREE MULCH MAY BE USED. MULCH MUST BE APPLIED AT 2 TONS/ACRE AND ADEQUATELY SECURED BY CRIMPING AND/OR TACKIFIER.
 - CRIMPING MUST NOT BE USED ON SLOPES GREATER THAN 3:1 AND MULCH FIBERS MUST BE TUCKED INTO THE SOIL TO A DEPTH OF 3 TO 4 INCHES.
 - TACKIFIER MUST BE USED IN PLACE OF CRIMPING ON SLOPES STEEPER THAN 3:1.
 - HYDRAULIC MULCHING
 - HYDRAULIC MULCHING IS AN OPTION ON STEEP SLOPES OR WHERE ACCESS IS LIMITED.
 - IF HYDRO-SEEDED IS USED, MULCHING MUST BE APPLIED AS A SEPARATE, SECOND OPERATION.
 - WOOD CELLULOSE FIBERS MIXED WITH WATER MUST BE APPLIED AT A RATE OF 2,000 TO 2,500 POUNDS/ACRE, AND TACKIFIER MUST BE APPLIED AT A RATE OF 100 POUNDS/ACRE.
 - EROSION CONTROL BLANKET
 - EROSION CONTROL BLANKET MAY BE USED IN PLACE OF TRADITIONAL MULCHING METHODS.



SEEDING & MULCHING

APPROVED:

SWENT MANAGER

ISSUED:

10/7/19

REVISED:

8/19/2020

DRAWING NO.

900-SM

SILT FENCE

SF



1.0 DESCRIPTION

- Silt fence is a temporary sediment barrier consisting of woven geotextile fabric attached to supporting posts and trenched into the soil.

2.0 PURPOSE

- Used to intercept sheet flow prior to leaving a construction site.
- May be used around the perimeter of a construction site.

3.0 IMPLEMENTATION

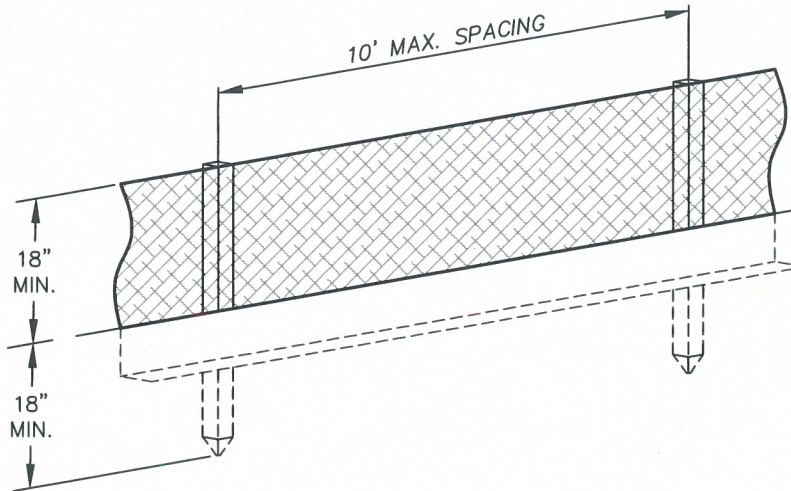
- Install silt fence to intercept sheet flow runoff from disturbed areas.
- Silt fence is not designed to be used as a filter fabric.
- Do not install silt fence across streams, channels, swales, ditches, or other drainageways.
- Install silt fence along the contour of slopes or in a manner to avoid creating concentrated flow (i.e. "J-hook" installation).
- The maximum tributary drainage area per 100 liner feet of silt fence is 1/4 acre.
- Properly installed silt fence should not be easily pulled out by hand and there should be no gaps between the ground and fabric.

4.0 TIMING

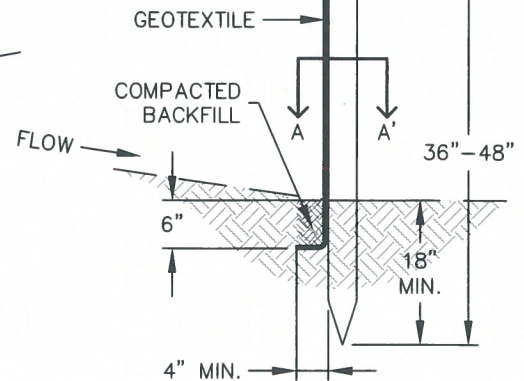
- Install prior to land disturbing activities.
- Remove silt fence after the upstream area has been permanently stabilized.

5.0 MAINTENANCE

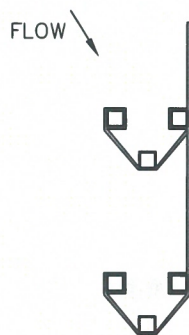
- Remove and properly dispose of sediment when it has accumulated to 1/2 of the height of the exposed silt fence.
- Inspect for and repair or replace damaged silt fence.



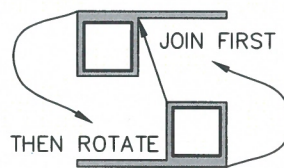
1½"x1½" (RECOMMENDED)
WOODEN FENCE POST
WITH 10' MAX. SPACING



SILT FENCE



J-HOOK INSTALLATION



POSTS SHOULD OVERLAP
SO THAT NO GAPS EXIST



SECTION A-A'

INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED ON A FLAT SURFACE 2'-5' AWAY FROM TOE OF THE SLOPE TO ALLOW FOR PONDING AND DEPOSITION.
2. COMPACT THE TRENCH USING A JUMPING JACK OR WHEEL ROLLING TO THE POINT THAT THE FENCE RESISTS BEING PULLED OUT OF THE GROUND BY HAND.
3. SILT FENCE SHALL BE TAUT WITH NO SAGS AFTER IT HAS BEEN ANCHORED.
4. FABRIC SHALL BE ATTACHED TO POSTS WITH 1" HEAVY DUTY STAPLES OR 1" NAILS. THESE SHOULD BE PLACED VERTICALLY DOWN THE POST, 3" APART.
5. THE PREFERRED INSTALLATION METHOD USES A TRENCHER OR SILT FENCE INSTALLATION DEVICE.
6. INSTALL SILT FENCE ALONG THE CONTOUR OF THE SLOPES OR IN A MANNER TO AVOID CREATING CONCENTRATED FLOW (SUCH AS A "J-HOOK" INSTALLATION).

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE HEIGHT REACHES ½ OF THE DESIGN HEIGHT OF THE SILT FENCE.
3. SILT FENCE MUST REMAIN UNTIL THE UPSTREAM DISTURBANCE AREA IS STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SILT FENCE IS REMOVED.



SILT FENCE

APPROVED:

SWENT MANAGER

ISSUED:
10/7/19

REVISED:
8/19/2020

DRAWING NO.
900-SF

SLOPE TRACKING

ST



1.0 DESCRIPTION

- Slope tracking is a practice where construction equipment is used to create grooves and depressions that run parallel to the contour of the land on slopes.

2.0 PURPOSE

- Used to create variations in the soil surface that slow down the velocity of runoff, increase infiltration, reduce erosion, and trap soil.

3.0 IMPLEMENTATION

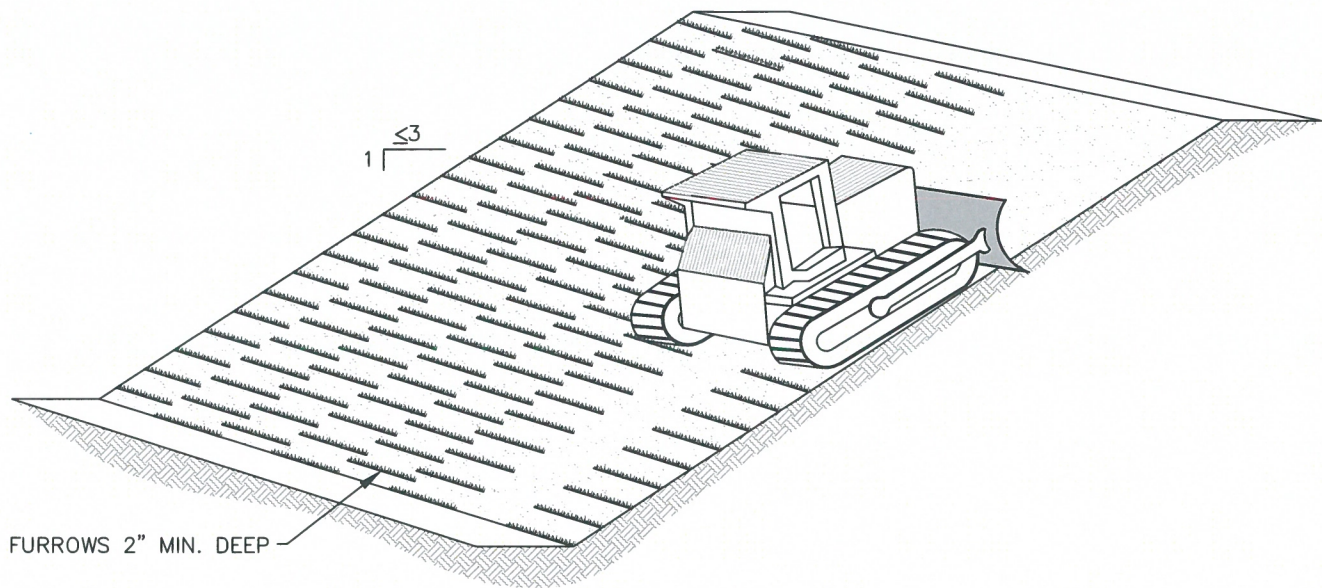
- Use slope tracking on slopes 3:1 or steeper.
- Grooves must be installed along contours to avoid concentrating flow.
- Do not use in areas with extremely sandy or rocky soils.

4.0 TIMING

- Install after land disturbing activities when area is in an interim condition or at final grade.
- Remove prior to permanent stabilization during soil preparation.

5.0 MAINTENANCE

- Inspect areas with tracking for signs of erosion. Repeat slope tracking as needed.
- Do not allow vehicles to drive over tracked areas.



SLOPE TRACKING

INSTALLATION NOTES

1. SLOPE TRACKING MAY BE USED ON SLOPES 3:1 OR STEEPER.
2. TRACKING GROOVES SHALL BE PERPENDICULAR TO THE SLOPE.
3. SLOPE TRACKING SHALL NOT BE USED ON EXTREMELY SANDY OR ROCKY SOILS.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. VEHICLES AND EQUIPMENT SHALL NOT BE DRIVEN OVER AREAS THAT HAVE BEEN SLOPE TRACKED.

ST



SLOPE TRACKING

APPROVED:

SWENT MANAGER

ISSUED:

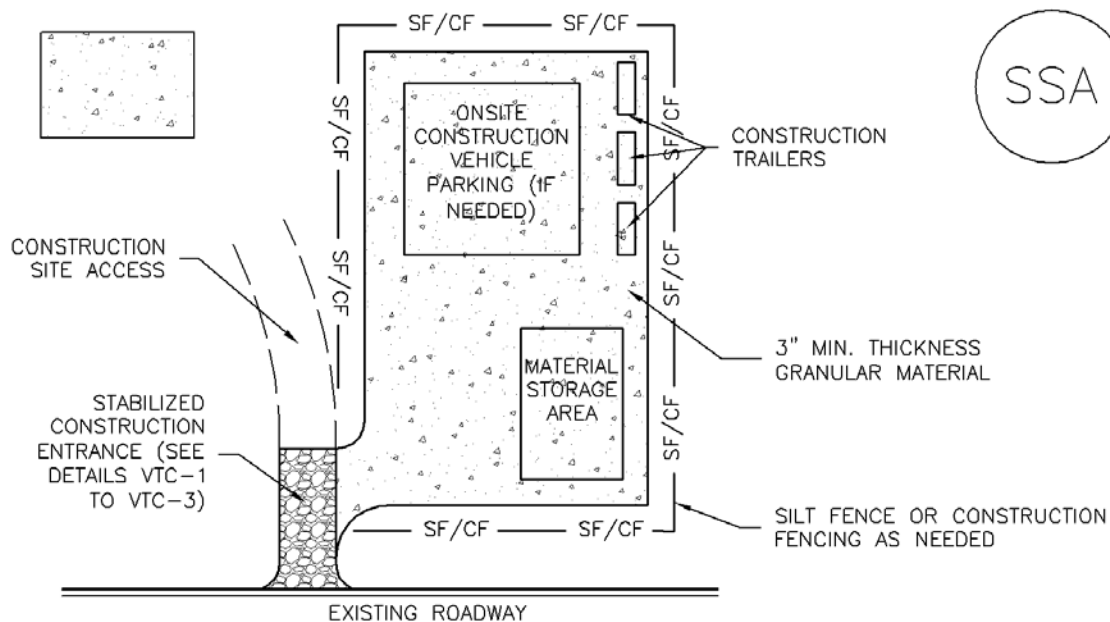
10/7/19

REVISED:

8/19/2020

DRAWING NO.

900-ST



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR
 - LOCATION OF STAGING AREA(S).
 - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.
3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE.
4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR MATERIAL.
5. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.
6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

STOCKPILE PROTECTION

SP



1.0 DESCRIPTION

- Perimeter control placed around stockpiles of soil and other erodible materials.

2.0 PURPOSE

- Used to avoid the migration of sediment and other materials from stockpiles.

3.0 IMPLEMENTATION

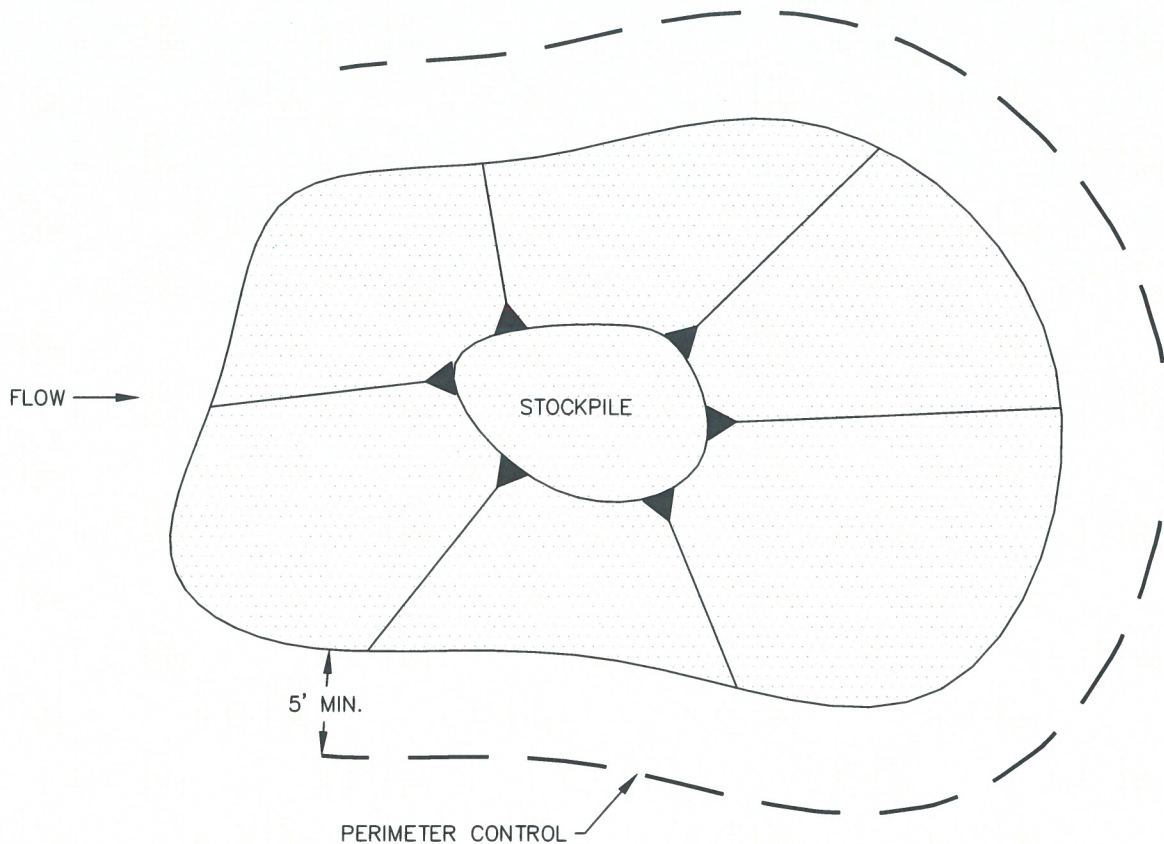
- Install perimeter control around stockpile on downgradient side.
- Stockpile perimeter controls may not be required for stockpiles on the interior portion of a construction site where other downgradient controls including perimeter control are in place.

4.0 TIMING

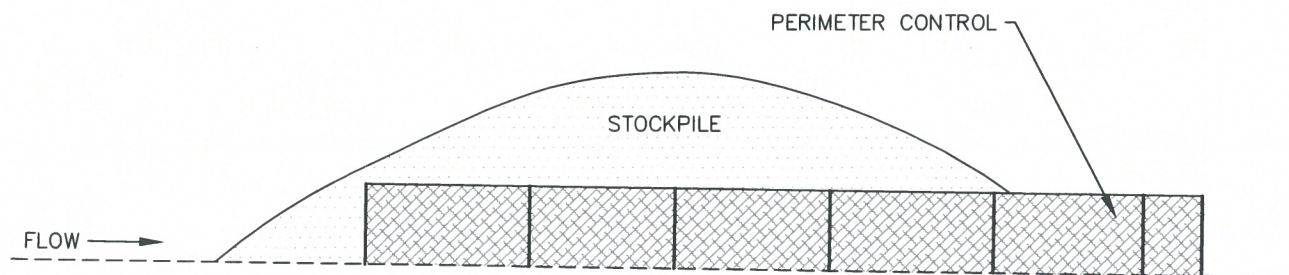
- Install immediately after stockpile has formed or limits are known, whichever occurs first.
- Remove stockpile protection after the stockpile has been removed.

5.0 MAINTENANCE

- Remove and properly dispose of sediment according to the perimeter control detail.
- If perimeter controls must be moved to access stockpile, replace perimeter controls by the end of the work day.
- Inspect for and repair and/or replace perimeter controls as needed to maintain functionality.



STOCKPILE PROTECTION PLAN



STOCKPILE PROTECTION ELEVATION

INSTALLATION NOTES

1. INSTALL PERIMETER CONTROL AROUND STOCKPILE ON DOWNGRAIDENT SIDE. PERIMETER CONTROL MUST BE SUITABLE TO SITE CONDITIONS AND INSTALLED ACCORDING TO THE RELEVANT DETAIL.
2. FOR STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRAIDENT CONTROLS INCLUDING PERIMETER CONTROL ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. IF PERIMETER CONTROLS MUST BE MOVED TO ACCESS STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORK DAY.
3. ACCUMULATED SEDIMENT MUST BE REMOVED ACCORDING TO PERIMETER CONTROL DETAIL.



STOCKPILE PROTECTION

APPROVED:

SWENT MANAGER

ISSUED:

10/7/19

REVISED:

8/19/2020

DRAWING NO.

900-SP

TEMPORARY SEDIMENT BASIN

TSB



1.0 DESCRIPTION

- Temporary sediment basins are small impoundments of water with a small outlet structure built on a construction site.

2.0 PURPOSE

- Used to capture and slowly release runoff prior to discharge from a construction site to allow sediment to settle out.

3.0 IMPLEMENTATION

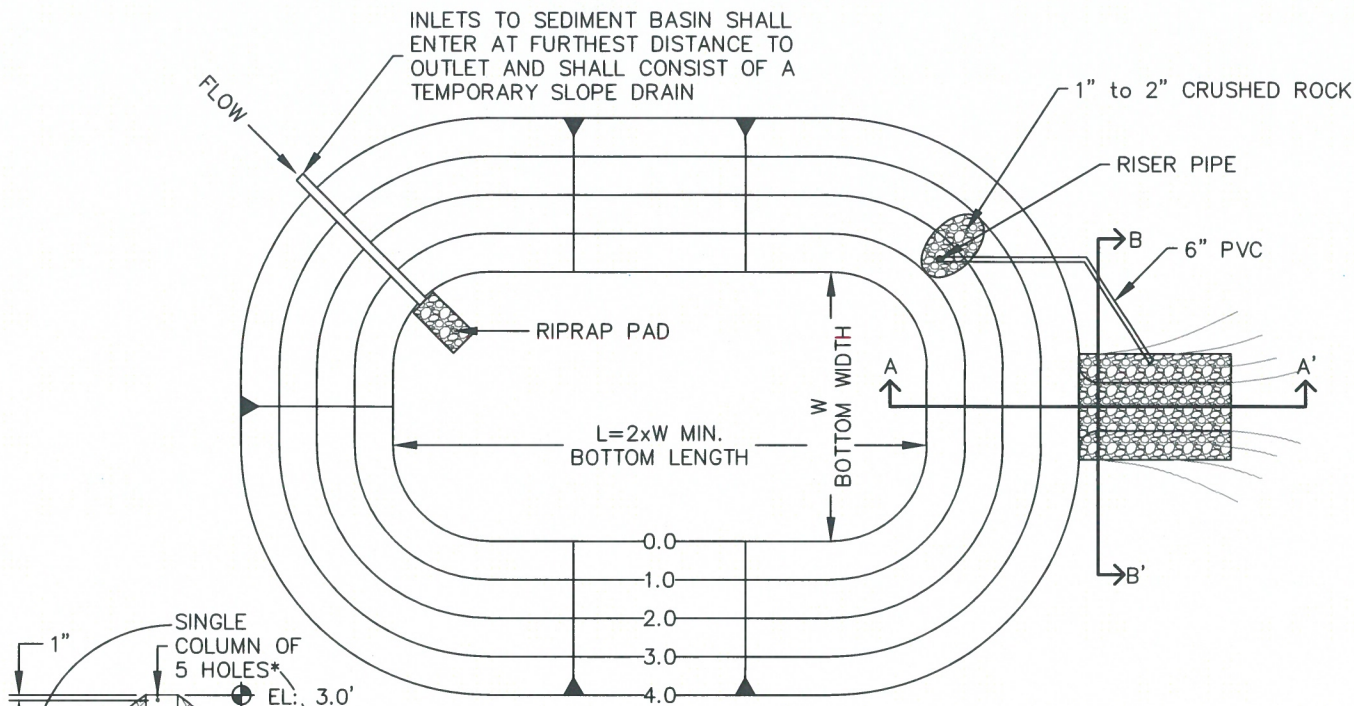
- Temporary sediment basins for drainage areas larger than 15 acres must be individually designed by engineer.
- Erosion and other sediment controls should be implemented upstream of temporary sediment basins.

4.0 TIMING

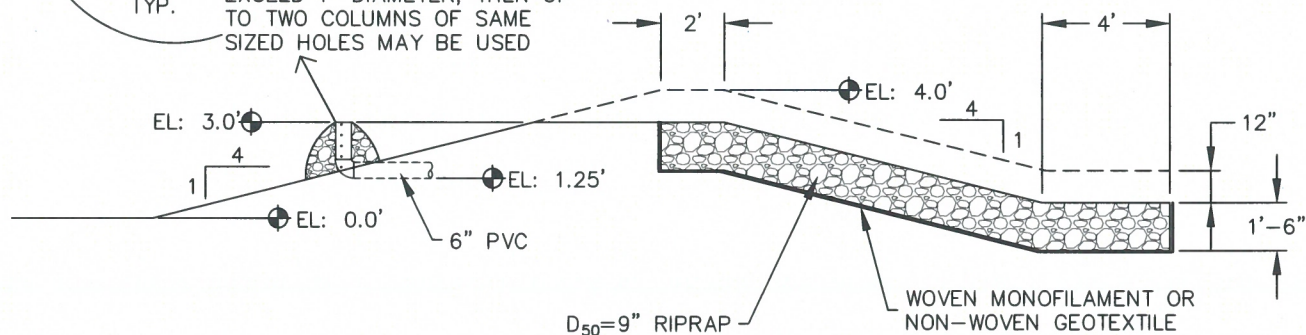
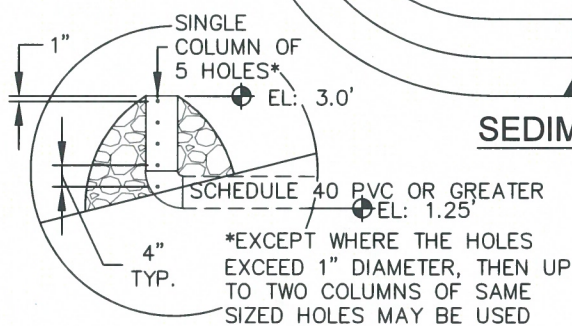
- Install prior to upstream land disturbance.
- Remove temporary sediment basin after upstream area has been stabilized. Permanently stabilize area after basin has been removed.

5.0 MAINTENANCE

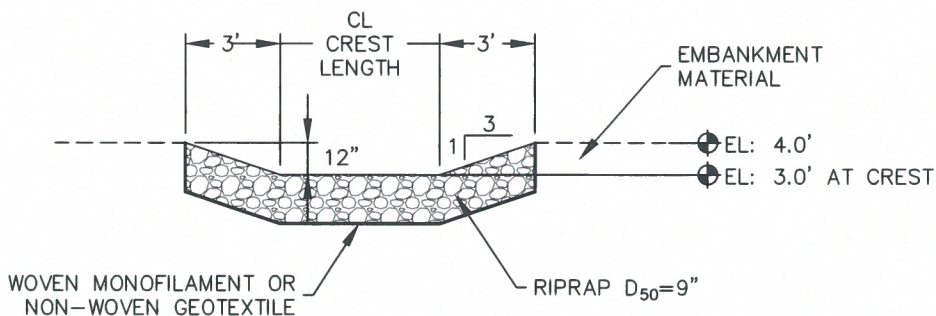
- Remove sediment from basin as needed to maintain the effectiveness of the temporary sediment basin. This is typically when sediment depth reaches one foot.
- Inspect sediment basin embankments for stability and seepage.
- Inspect the inlet and outlet of the basin, repair damage, and remove debris.



SEDIMENT BASIN PLAN



SECTION A-A'



SECTION B-B'



**TEMPORARY
SEDIMENT BASIN**

APPROVED:		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-TSB-1

TABLE SB-1, SIZING INFORMATION FOR
STANDARD SEDIMENT BASIN

UPSTREAM DRAINAGE AREA (ROUNDED TO NEAREST ACRE), (AC)	BASIN BOTTOM WIDTH (W), (FT)	SPILLWAY CREST LENGTH (CL), (FT)	HOLE DIAMETER (HD), (IN)
1	12½"	2	9/32
2	21	3	13/16
3	28	5	½
4	33½	6	9/16
5	38½	8	21/32
6	43	9	23/32
7	47¼	11	25/32
8	51	12	27/32
9	55	13	7/8
10	58¼	15	15/16
11	61	16	31/32
12	64	18	1
13	67½	19	1 1/16
14	70½	21	1 1/8
15	73¼	22	1 3/16

INSTALLATION NOTES

1. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.
2. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES, AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE No. 200 SIEVE
3. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-698.
4. PIPE SCHEDULE 40 OR GREATER SHALL BE USED.
5. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES. DESIGN CALCULATIONS MUST BE APPROVED PRIOR TO IMPLEMENTATION.

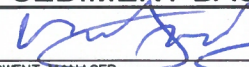
MAINTENANCE NOTES

1. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN CONTROL MEASURES IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
2. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN CONTROL MEASURE EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E. TWO FEET BELOW SPILLWAY CREST).
3. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED.
4. PERMANENTLY STABILIZE AREA AFTER SEDIMENT BASIN REMOVAL.

TSB



TEMPORARY SEDIMENT BASIN

APPROVED: 		
SWENT MANAGER		
ISSUED: 10/7/19	REVISED: 8/19/2020	DRAWING NO. 900-TSB-2



North Bay at Lake Woodmoor
Stormwater Management Report
Project No.: 2404118
El Paso County, Colorado

APPENDIX D – SPILL PREVENTION PLAN

Spill Prevention, Control and Countermeasure (SPCC) Plan

Facility Name: _____
Address: _____

Contact Name: _____
Phone: _____
Fax: _____
Email: _____

Certification: I hereby certify that I have examined the facility, and, being familiar with the provisions of 40 CFR part 112, attest that this SPCC plan has been prepared, or updated within 5 years, in accordance with good engineering practices and meets the requirements listed in 40 CFR part 112.

This plan has been certified by:

Date of certification: _____

Engineer's Seal

Copies of this plan are located at the facility and are available to all employees.

Location(s) of plan(s): _____

I. FACILITY INFORMATION

- a. Facility Name: _____
- b. Mailing Address: _____

- c. Physical address if different: _____

- d. Owner Name: _____
- e. Owner Address: _____

- f. Primary Contact Name: _____
Work Phone Number: _____
Home Phone Number: _____
Mobile Phone Number: _____
- g. Secondary Contact Name: _____
Work Phone Number: _____
Home Phone Number: _____
Mobile Phone Number: _____
- h. Date of Initial Operation: _____

II. SITE ASSESSMENT

a. Location:

Describe where facility is located. For example, "This site is located along Broad Creek about 2 miles north of its confluence with the Choptank River at Holland Point. Road access is from. . . . The site is located on Talbot County ADC map 22 (H5). Latitude is ____ and longitude is ____."

a. Acres of land: _____

Place an X beside all that apply.

- ____ Parts washer
____ Other structures and major equipment:

Please list: _____

Place an X beside all that apply.

- Other services:

Please list: _____

List capacity and contents of each storage container. For example, “One 6,000 gallon above ground tank containing diesel fuel.” Be sure to include diesel, gasoline, waste oil, heating oil, kerosene, paint thinner and other solvents. Also describe the construction of the containers, secondary containment for each, liquid level indicators, alarms and method of corrosion protection for each container.

e. Non-Fixed Storage:

List capacity and contents of each storage container. For example, "One 55 gallon drum for recycled oil." Be sure to indicate what each container is used for, its condition and construction and how secondary containment is provided. _____

f. Total quantity of stored materials:

The combined quantity of the materials listed above: _____ gallons

IV. OIL SPILL HISTORY

Place an X on the appropriate line and proceed accordingly.

_____ There has never been a significant spill at the above named facility.

_____ There have been one or more significant spills at the above named facility. Details of such spill(s) are described below.

For each spill that occurred, supply the following information:

- Type and amount of oil spilled
- Location, date and time of spill(s)
- Watercourse affected
- Description of physical damage
- Cost of damage
- Cost of clean-up
- Cause of spill
- Action taken to prevent recurrence

V. POTENTIAL SPILL VOLUMES AND RATES

Fill in all applicable blanks. Be prepared to show the engineer documentation of flow rates. Your fuel vendor and the manufacturer of your storage and dispensing equipment should be able to provide this documentation.

<u>Potential Event</u>	<u>Volume Released</u>	<u>Spill Rate</u>
Complete failure of a full tank*	___ gallons	instantaneous
Partial failure of a full tank*	1 to ___ gallons	gradual to instantaneous
Tank overflow**	1 to ___ gallons	up to ___ gallons per minute
Leaking during unloading***	up to ___ gallons	up to ___ gallons per minute
Pipe failure****	up to ___ gallons	up to ___ gallons per minute
Leaking pipe or valve*****	several ounces to gallons	up to ___ gallons per minute
Fueling operations*****	several ounces to gallons	up to ___ gallons per minute
Oil and grease	several ounces to quarts	spotting

* Volume of largest tank

** Calculate using the rate at which fuel is dispensed from the delivery truck into your tank(s).

*** Calculate using the rate at which petroleum would be withdrawn from the tank if it should have to be emptied (e.g., if it was being taken out of service).

**** Calculate based on the specifications of your equipment.

VI. SPILL PREVENTION AND CONTROL

a. Spill Prevention:

Provide specific descriptions of containment facilities and practices. Include description of items such as double-walled tanks, containment berms, emergency shut-offs, drip pans, fueling procedures and spill response kits. Also, describe how and when employees are trained in proper handling procedures and spill prevention and response procedures.

[illegible]

b. Spill discharge and flow:

For each potential spill source, describe where petroleum would flow in the event of a spill. For example, “The 6,000 gallon diesel tank has a pre-manufactured secondary containment system capable of holding 110 percent of the total volume of the tank” and, “A spill from engine repair would be contained inside the shop building and quickly cleaned up with oil absorbents.” Incorporate site map by reference (see instructions under *Appendices*).

c. Spill response:

Identify what equipment would be deployed by whom and in what situation. Also, include phone numbers for response agencies, *e.g.*, U.S. Coast Guard, fire department, spill response contractors, etc. A copy of your spill response plan may be attached as an appendix to this SPCC plan in lieu of completing this section.

d. Security

Provide a description of how all containers are protected when the facility is not in operation or unattended. Include a description of fencing, access control, gates, locks, etc. that prevent access by unauthorized individuals.

VII. FACILITY INSPECTIONS

a. Routine Inspections

Name facilities and the frequency with which they are inspected. For example, “The fuel pumps are inspected daily. The materials storage area is inspected monthly.” Describe all facility containers, piping, etc. that is to be inspected. Name the person who has responsibility to implement preventative maintenance programs, oversee on-site inspections, coordinate employee training, maintain records, update the plan as necessary, and ensure that reports are submitted to the proper authorities.

b. Annual Inspections

Include a description of annual comprehensive inspections. For example, “A site inspection is also conducted annually by appropriate responsible personnel to verify that the description of potential pollutant sources are accurate, that the map reflects current site conditions, and that the controls to reduce the pollutants identified in this plan are being implemented and are adequate. This annual inspection will be conducted above and beyond the routine inspections done focusing on designated equipment and areas where potential sources are located.”

VIII. RECORD KEEPING

Describe record keeping procedures. For example, “Record keeping procedures consist of maintaining all records a minimum of three years. The following items will be kept on file: current SPCC plan, internal site reviews, training records, and documentation of any spills or maintenance conducted in regards to these sites.” *Maintenance Inspection, Employee Training, and Record Keeping* logs are included in this template for your use.

IX. MAINTENANCE INSPECTIONS

Maintenance Coordinator: _____. Maintenance Coordinator responsibilities include implementation of preventative maintenance programs and oversight of on-site inspections.

Use this table to record inspections:

Facility Inspected	Date of Inspection	Name of Inspector	Result Pass/Fail	Comments

X. RECORD KEEPING OF INCIDENTAL SPILLS

Record Keeper: _____. Record Keeper responsibilities include maintaining records of incidents, updating the SPCC plan as necessary and ensuring reports are submitted to the proper authorities when necessary.

Incident No.	Type of Incident	Date of Occurrence	How it was Cleaned Up



North Bay at Lake Woodmoor
Stormwater Management Report
Project No.: 2404118
El Paso County, Colorado

APPENDIX E – CSWMP REPORT REVISION LOG

[illegible]



North Bay at Lake Woodmoor
Stormwater Management Report
Project No.: 2404118
El Paso County, Colorado

APPENDIX F – PERMITS & CERTIFICATIONS



2880 International Circle, Suite 110
Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

There are multiple Stormwater Permits. Please refer to Engineering Criteria Manual (ECM) Appendix I to determine which permit is applicable to your project.

This form initially acts as the permit application. Only once this form has been signed & approved, all other required documents have been submitted & approved, and the Notice to Proceed has been issued, does this form become an active permit.

Part I. Property Owner or Authorized Representative (Co-Permit Holder)	
Company/Organization	Lake Woodmoor Holdings LLC
Name or Name of Representative	Mike Ruebenson
Title	COO
Physical Address (not PO Box)	
Street Number and Street Name	9540 Federal Drive Suite 200
City, State, Zip Code	Colorado Springs, CO, 80920
Mailing Address (if differs from above)	
Street Number and Street Name	
City, State, Zip Code	
Phone Number - Office	
Phone Number - Cell	
Email Address	

Part II. Contractor/Operator (Co-Permit Holder)*	
Company/Organization	
Name or Name of Representative	
Title	
Physical Address (not PO Box)	
Street Number and Street Name	
City, State, Zip Code	
Mailing Address (if differs from above)	
Street Number and Street Name	
City, State, Zip Code	
Phone Number - Office	
Phone Number - Cell	
Email Address	

*This section can be left blank through design review but must be filled in no later than at the Pre-Con Meeting.



2880 International Circle, Suite 110
Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

Part III. Qualified Stormwater Manager (QSM)*

Company/Organization	
Name	
Phone Number - Office	
Phone Number - Cell	
Email Address	

*This section can be left blank through design review but must be filled in no later than at the Pre-Con Meeting.

Part IV. Project Information

Project Name	North Bay at Lake Woodmoor
Address (or nearest major cross streets)	Deer Creek Rd & Woodmoor Dr
Acreage	Total: 7.23 acres Proposed Disturbance: _____ acres
Description of Project	A 6 lot detached single-family residential development is proposed with associated private access, utility services, and water quality improvements.
Schedule (input estimated month or season)	Start of Construction: Completion of Construction: Final Stabilization:



2880 International Circle, Suite 110
Colorado Springs, CO 80910
Phone: 719-520-6300
Email: Stormwater@elpasoco.com
publicworks.elpasoco.com/stormwater/

Stormwater Permit Number: ESQ

EL PASO COUNTY
STORMWATER PERMIT FORM
Erosion and Stormwater Quality Control Permit (ESQCP)

EPC Project Number: _____

REQUIRED SUBMISSIONS

See ECM Appendix I for the documentation required to be submitted, reviewed, and approved in conjunction with this Stormwater Permit Form.

RESPONSIBILITY FOR DAMAGE

The County and its officers and employees, including but not limited to the ECM Administrator, shall not be answerable or accountable in any manner for damage to property or for injury to or death of any person, including but not limited to the Permit Holder(s), persons employed by the Permit Holder(s), or persons acting on behalf of the Permit Holder(s), from any cause. The Permit Holder(s) shall be responsible for any liability imposed by law and for damage to property or injuries to or death of any person, including but not limited to the Permit Holder(s), persons employed by the Permit Holder(s), and persons acting on behalf of the Permit Holder(s), arising out of work or other activity permitted and done under a permit, or arising out of the failure to perform the obligations under any permit with respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit.

The Permit Holder(s) shall indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the Board of County Commissioners (BoCC) and ECM Administrator, from all claims, suits or actions of every name, kind and description brought for or on account of damage to property or injuries to or death of any person, including but not limited to the Permit Holder(s), persons employed by the Permit Holder(s), persons acting in behalf of the Permit Holder(s) and the public, resulting from the performance of work or other activity under the permit, or arising out of the failure to perform obligations under any permit with respect to maintenance or any other obligations, or resulting from defects or obstructions, or from any cause whatsoever during the progress of the work or other activity, or at any subsequent time work or other activity is being performed under the obligations provided by and contemplated by the permit, except as otherwise provided by state law. The Permit Holder(s) waives any and all rights to any type of expressed or implied indemnity against the County, its officers or employees. It is the intent of the parties that the Permit Holder(s) will indemnify, save, and hold harmless the County, its officers and employees from any and all claims, suits or actions as set forth above regardless of the existence or degree of fault of or negligence, whether active or passive, primary or secondary, on the part of the County, the Permit Holder(s), persons employed by the Permit Holder(s), or persons acting in behalf of the Permit Holder(s).



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APPLICATION AND PERMIT CERTIFICATION – PERMIT HOLDERS

We, as the Permit Holder(s), hereby certify that this application is correct and complete as per the requirements presented in the El Paso County Engineering Criteria Manual (ECM) and Drainage Criteria Manual (DCM) Volume 2. We, as the Permit Holder(s), have read and will comply with all of the requirements of the submitted Stormwater Management Plan (SWMP), Grading & Erosion Control (GEC) Plan, and any other documents specifying construction control measures to be used on the site, including permit conditions that may be required by the ECM Administrator. We understand that the approved plans are an enforceable part of the ESQCP. We further understand that we are to comply with all requirements set forth by the ECM and DCM Volume 2. We understand that the permitted area is that which is shown as the Limits of Disturbance on the GEC Plans. We further understand that a Construction Permit must be obtained and all necessary construction control measures are to be installed in accordance with the SWMP, GEC Plan, ECM, and DCM Volume 2 before land disturbance begins and that failure to comply will result in a Stop Work Order and may result in other penalties as allowed by law. We understand that the construction control measures are to be maintained on the site and be modified as necessary to protect stormwater quality as the project progresses. We further understand and agree to indemnify, save, and hold harmless the County and its officers and employees, including but not limited to the BoCC and ECM Administrator, from all claims, suits or actions of every name, kind and description as outlined in Responsibility for Damage section above.

Signature of Owner or Representative

Date

Print Name of Owner or Representative

Signature of Contractor/Operator or Representative*

Date

*If signed by a Rep, an Affidavit of Signature Authority must be included

Print Name of Contractor/Operator or Representative

APPLICATION AND PERMIT CERTIFICATION – EL PASO COUNTY

The following signature from the ECM Administrator signifies the approval of this ESQCP Application.

Signature of ECM Administrator

Date