

Construction Activities
Stormwater Management Plan (SWMP)

Peaceful Ridge at Fountain Valley Subdivision
Address: 9573 Peaceful Ridge Drive, El Paso County, CO 80925

Permittee:

Name: Peaceful Ridge Development Company
Address: 3 Widefield Blvd., Widefield, CO 80911
Phone Number: (719) 392-0194

GEC Administrator:

Name: _____ Cell Phone: _____
Address: _____
Office Phone Number: _____

Prepared for:

Widefield Investment Group
aka Glen Development Company
3 Widefield Boulevard
Colorado Springs, Colorado 80911

Prepared by:

Kiowa
Engineering Corporation

1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

Kiowa Project No. 21031

November 23, 2021



PCD File No. CDR2215

Signature Page 1

Peaceful Ridge at Fountain Valley Subdivision

Contractor's Statement

I will comply with the requirements of the SWMP including Construction Control Measure inspection requirements and final stabilization requirements. I acknowledge the responsibility to determine whether the construction activities on these plans require Colorado Discharge Permit System (CDPS) permitting for stormwater discharges associated with construction activity.

Name of Contractor: _____

Authorized Signature: _____ Date _____

Printed Name: _____

Title: _____

Phone Number: _____

Address: _____

Email Address: _____

Engineer's Statement

This Engineer of Record:

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.

Andrew W. McCord

Date: October 5, 2021

Engineer of Record Signature

Signature Page 2

Reviewer's Statement

Review Engineer:

The Stormwater Management Plan was reviewed and found to meet the checklist requirements except where otherwise noted or allowed by an approved deviation request.

Review Engineer

Date: _____

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SWMP Site Map - Figure 2	Error! Bookmark not defined.

STATE STORMWATER DISCHARGE PERMIT REQUIREMENTS

At least ten days prior to the anticipated start of construction activities (i.e. the initial disturbance of soils associated with clearing, grading, excavation activities, installation of structural Construction Control Measures, or other activities), for projects that will disturb one (1.0) acre or more, the owner or operator of the construction activity must submit an application as provided by the Colorado Department of Public Health and Environment, Water Quality Control Division (Division). This form may be reproduced and is also available from the Division's web site. Applications received by the Division are processed and a permit certification and other relevant materials will be sent to the attention of the legally responsible person. The application contains certification of completion of a storm water management plan (SWMP). Do not include a copy of the Stormwater Management Plan, unless requested by the Division.

For information or application materials contact:

Colorado Department of Public Health and Environment
Water Quality Control Division
WQCD-P-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530
<https://www.colorado.gov/pacific/cdphe/wq-construction-general-permits>

Electronic Application – CDPHE website:

<https://www.colorado.gov/pacific/cdphe/WQ%20permits%20construction%20electronic%20application>

STORMWATER PLAN OBJECTIVES

The objective of the Stormwater Management Plan (SWMP) is to define controls and measures to maintain water quality by eliminating or reducing pollutants in stormwater discharges during construction activities. A general schedule or phasing of Best Maintenance Practices (CCM) will be determined by construction schedule and ground disturbances necessitating required erosion control methods/CCM. Evaluations of and modifications to this plan may be necessary during the length of the construction project until the site is finally stabilized. This SWMP should be reviewed and modified as a part of the overall process of evaluating and managing stormwater quality issues on a regular basis. A copy of the Stormwater Discharge Permit, SWMP, SWMP Site Map (Figure 2) and inspection logs shall be kept on site by the SWMP Administrator as to be available to federal, state and local agencies for inspection.

A Construction Activities Stormwater Discharge Permit will be applied for on _____ from the Colorado Department of Public Health and Environment and is included in Appendix 1. The general conditions associated with this permit should be followed through the duration of the land disturbing activities at the site. For additional details or more specific information, consult CDPS General Permit No. COR040000 in Appendix 2.

I. SITE DESCRIPTION

A. Nature of the Construction Activity

Peaceful Ridge at Fountain Valley Subdivision is to be developed as a single-family residential subdivision. The site lies within the Southeast ¼, Section 15, Township 15 South, Range 65 West of the 6th Principal Meridian, in El Paso County, Colorado. The property covers approximately 60.14 acres of which 2.34 acres will be dedicated as additional right-of-way along Marksheffel Road. The site is bounded to the north by unplatted land, to the east by Marksheffel Road, to the south by Cottonwood Meadows Filing No. 3 and to the west by unplatted land. A vicinity map showing the location of Peaceful Ridge is presented on Figure 1 on the following page.

The property is currently undeveloped with proposed plans to plat the site into 255 single-family lots and construct several roadways. Access to the development will be provided at Marksheffel Road at the northeast corner of the site with the construction of Peaceful Ridge Drive. A secondary access will be provided with the extension of Sleepy Meadows Drive at the southwest corner of the site.

B. Sequence of Major Activities

Construction activities for the project are expected to begin in the 1st Quarter, 2022. Prior to the commencement of the majority of clearing and grubbing activities, minimal clearing and grubbing may be necessary prior to install the initial erosion control features such as silt fences and vehicle tracking control. Subsequent to the installation of the silt fences and vehicle control, clearing and grubbing will commence, and grading will proceed as shown on the SWMP Site Plan. When the finished grades are attained, building, utility, roadway and stormwater infrastructure will be installed. In general, the SWMP Administrator will identify the precise schedule to be used during the term of this project and include the schedule in this SWMP when available. Temporary erosion control measures are anticipated to be removed in the Winter 2022. Temporary Control Measures (TCMs) shall not be removed until Final Stabilization has been achieved. Final Stabilization is anticipated to occur in the Summer of 2023.

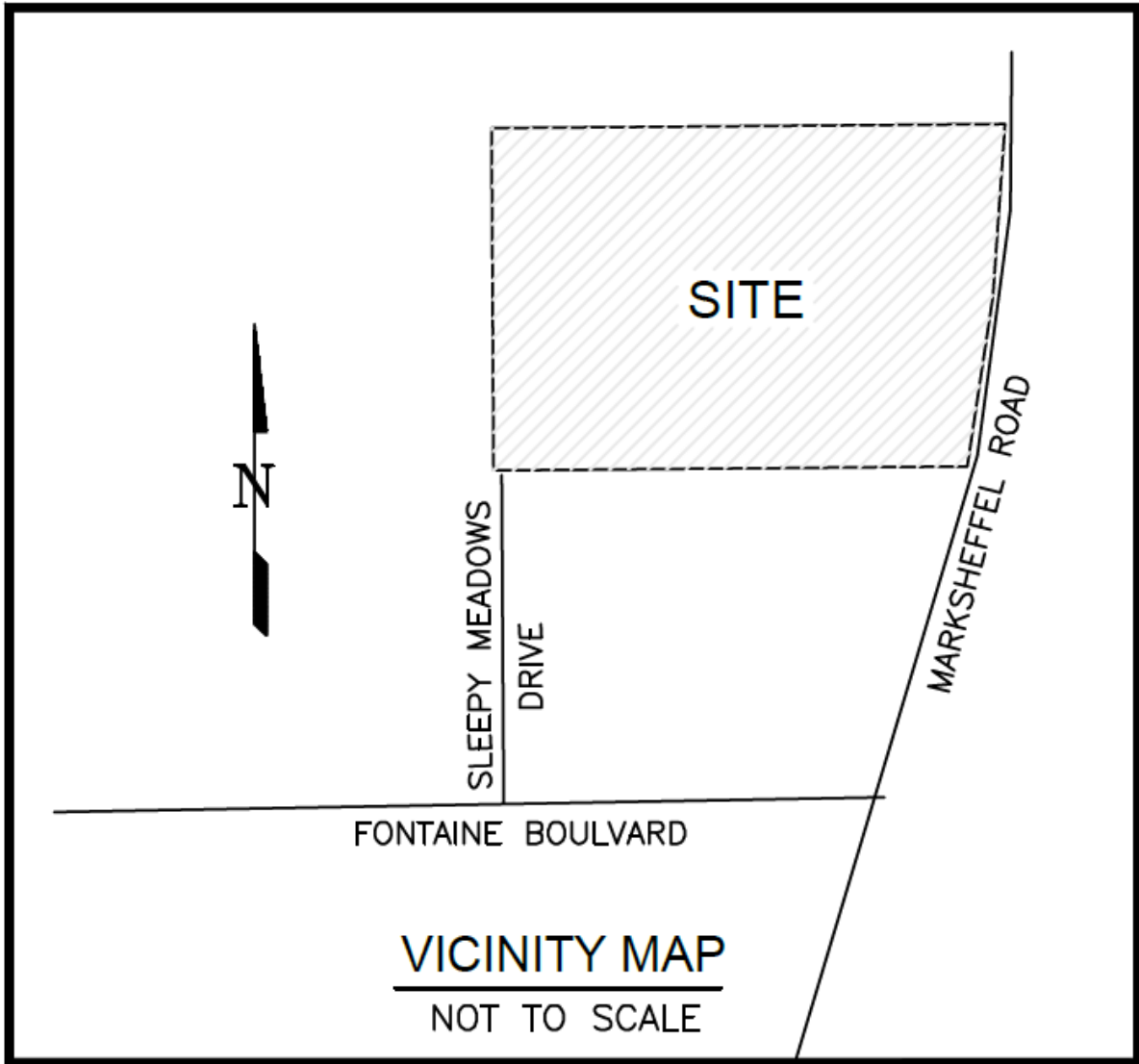


Figure 1

C. Estimate of Area and Volume Disturbed

The project area totals 60.1 acres of which approximately 57.7 acres will be subject to disturbance. The estimated acres of disturbance correspond to that necessary to install the roadways, sidewalks, subsurface utilities, landscaping, stormwater facilities, and an extended detention basin. Locations of disturbed areas are as shown on the SWMP Site Map (Figure 2). All other areas are to remain undisturbed.

Earthwork cut and fill operations are more than 500 cubic yards. Estimated earthwork is: Cut=155,143 cubic yards; Fill=200,670 cubic yards; Net Fill= 45,526 cubic yards

D. Soil Data

Soil within the property is classified within Hydrologic Soils Group B as shown in the *El Paso County Soils Survey*. According to the *Soil Survey for El Paso County, Colorado*, the site's soil consists primarily of Kim Loam (#43), which is classified within Hydrologic Soil Group B. A small portion of the site consists of Nelson-Tassel Fine Sandy Loams (#56), Razor-Midway Complex (#75) and Stoneham Sandy Loam (#86). These soils are classified within Hydrologic Soil Groups C and D. Erosion Potential is medium, and must be actively contained during construction activities.

E. Existing Vegetation and Ground Cover

The total site is approximately 50% vegetated. The site slopes generally to the southeast at approximately 6%. The vegetation consists primarily of native grasses and weeds. The level of vegetative cover at the site was determined through a combination of site visits, photography, and published aerial data.

F. Potential Pollution Sources

The location of all potential pollution sources, including groundbreaking disturbing activities, vehicle fueling, storage of fertilizers or chemicals, concrete or asphalt batch plants, concrete washouts, among numerous other potential pollutants are enumerated in this SWMP. Further descriptions and locations can be found in Section III B 1 thru 13 of this report.

G. Non-stormwater Discharges

At this time, no non-stormwater components of discharge, such as springs, landscape irrigation return flows, construction dewatering or other discharges are known to exist. If any non-stormwater components of discharge are known to exist, these items will be addressed in Section III C 8 of this report. If any non-stormwater discharges become apparent during the term of construction, the occurrence and mitigation shall be addressed in an addendum by the QSM Administrator (Qualified Stormwater Manager).

Receiving Waters

The project area will drain via surface flow and storm sewer facilities to a private full-spectrum detention facility situated at the southeast corner of the site. Runoff collected in the detention basin will be released at or below historic rates via a 36-inch RCP and will discharge to an existing 7'x4' CBC culvert under Marksheffel Road. The offsite runoff to the north along with runoff from the north side of the site will drain to a proposed 48-inch RCP culvert that will convey runoff to the east under Marksheffel Road, ultimately discharging into Jimmy Camp Creek approximately 1,000 feet east of the site.

II. SWMP SITE MAP

The Stormwater Management Plan Site Map (Figure 2) is included in Appendix 4 and identifies the following:

- A. Construction site boundaries;
- B. All areas of ground disturbance;
- C. Areas of cut and fill;
- D. Areas used for storage of building materials, equipment, soil, or waste;
- E. Locations of dedicated asphalt or concrete batch plants;
- F. Locations of all structural CCM;
- G. Locations of non-structural CCM where applicable;
- H. Locations of springs, streams, wetlands, detention basins, irrigation canals, roadside ditches and other surface waters.

The SWMP Site Map must be updated by the SWMP Administrator on a regular basis to reflect current conditions of the site at all times.

III. STORMWATER MANAGEMENT CONTROLS

A. QSM Administrator:

QSM Administrator: _____ Phone: (____)_____. The QSM Administrator will likely be the Contractor or his/her designated representative and is responsible for developing, implementing, maintaining and revising the SWMP. Should the QSM Administrator change for any reason, it shall be noted on this Plan.

B. Identification of Potential Pollutant Sources:

At a minimum, the following activities and sources shall be evaluated for the potential to contribute pollutants to stormwater discharges. The SWMP Administrator shall determine the need for and locations of each of the following potential pollutant sources during the course of the construction project. There are no stream crossings impacting or traversing the property.

The sources of any potential pollutants must be controlled through CCM selection and implementation:

1. All disturbed and stored soils;

2. Vehicle tracking of sediments;
3. Management of contaminated soils;
4. Loading and unloading operations;
5. Outdoor storage activities (building materials, fertilizers, chemicals, etc.);
6. Vehicle and equipment maintenance and fueling;
7. Significant dust or particulate generating processes shall be controlled by sprinkling with water and other appropriate means;
8. Routine maintenance activities involving fertilizers, pesticides, detergents, fuels, solvents, oils, etc.
9. On-site waste management practices such as waste piles, liquid wastes, dumpsters, etc.
10. Concrete truck/equipment washing, including the concrete truck chute and associated fixtures and equipment;
11. Dedicated asphalt and concrete batch plants;
12. Non-industrial waste sources such as worker trash and portable toilets; and
13. Any other areas or procedures where potential spills could occur.

C. Construction Control Measures (CCM) for Pollution Prevention

1. Structural practices for erosion and sediment control implemented on the site to minimize erosion and sediment are shown on Figure 2 and are as follows:

Structural practices to be used on-site are, silt fences, rock socks, inlet/outlet protection, concrete washout area, stabilized staging area, stockpile management, portable toilet, vehicle tracking control and a temporary sediment basin.

Minimal clearing and grubbing may be necessary prior to installing the initial erosion control features such as silt fences and vehicle tracking control. Prior to any construction activities, silt fences around proposed grading areas as shown on attached Figure 2 will be installed. Vehicle tracking control will be installed to manage sedimentation from construction vehicles exiting the site. Inlet protection will be installed to filter stormwater before entering any watercourses. Final stabilization is anticipated to occur during Summer 2023.

2. Non-structural practices for erosion and sediment control to be used to minimize erosion and sediment transport are:

Temporary and permanent vegetation, mulching, geotextiles, sod stabilization, protection of trees and preservation of mature vegetation.

Minimize the amount of existing vegetation to be removed during construction, leaving native vegetation in place when possible. Only the existing vegetation that is specified or requiring removal shall be disturbed or removed. If possible, leave existing ground cover, including asphalt in place or remove just prior to grading to minimize the length of soil exposure.

3. Phased CCM Implementation:

Minimal clearing and grubbing may be necessary prior to installing the initial erosion control features such as silt fences and vehicle tracking control. Prior to any construction activities, silt fences around proposed grading areas as shown on the SWMP Site Plan will be installed. Vehicle tracking control will be installed to manage sediment from construction vehicles exiting the site. Inlet protection and rock socks will be installed to filter stormwater before entering the storm sewer systems.

4. Materials handling and spill prevention:

The site superintendent will inspect daily to ensure proper use and disposal of materials on-site including building materials, paints, solvents, fertilizers, chemicals, waste materials and equipment maintenance or fueling procedures. All materials stored on-site will be stored in a neat and orderly manner in the original containers with the original manufacturer's label, and if possible, under a roof or other enclosure. Before disposing of the container, all of a product will be used up whenever possible and manufacturer's recommendations for proper disposal will be followed according to state and local regulations. Material and equipment necessary for spill cleanup will be kept in the material storage area on-site. Manufacturer's recommendations for spill cleanup will be posted and site personnel will be made aware of the procedures along with the location of the information and cleanup supplies.

Building Material Handling and Staging Areas: Paints, solvents, pesticides, fuels and oils, other hazardous materials or building materials that have the potential to contaminate stormwater should be stored indoors or under cover whenever possible or in areas with secondary containment. Secondary containment measures prevent a spill from spreading across the site and may include dikes, berms, curbing, or other containment methods. Secondary containment techniques should also ensure the protection of groundwater. Designate staging areas for activities such as fueling vehicles, mixing paints, plaster, mortar, and other potential pollutants. Designated staging areas enable easier monitoring of the use of materials and clean up of spills. Training employees and subcontractors is essential to the success of this pollution prevention principle. The following specific materials handling and staging practices should be used:

- a) Train employees and subcontractors in proper handling and storage practices.

- b) Clearly designate site areas for staging and storage with signs and on construction drawings. Staging areas should be located in areas central to the construction site. Segment the staging area into sub-areas designated for vehicles, equipment, or stockpiles. Construction entrances and exits should be clearly marked so that delivery vehicles enter/exit through stabilized areas with vehicle tracking controls (See Vehicle Tracking Control).
- c) Provide storage in accordance with Spill Protection, Control and Countermeasures (SPCC) requirements and plans and provide cover and impermeable perimeter control, as necessary, for hazardous materials and contaminated soils that must be stored on site.
- d) Ensure that storage containers are regularly inspected for leaks, corrosion, support or foundation failure, or other signs of deterioration and tested for soundness.
- e) Reuse and recycle construction materials when possible.

Vehicle Fueling and Maintenance Practices: Create a clearly designated on-site fueling and maintenance area that is clean and dry. The on-site fueling area should have a spill kit, and staff should know how to use it. If possible, conduct vehicle fueling and maintenance activities in a covered area. The following practices to help prevent the discharge of pollutants to stormwater from equipment/vehicle fueling and maintenance should be used:

- a) Train employees and subcontractors in proper fueling procedures (stay with vehicles during fueling, proper use of pumps, emergency shutoff valves, etc.).
- b) Inspect on-site vehicles and equipment regularly for leaks, equipment damage, and other service problems.
- c) Clearly designate vehicle/equipment service areas away from drainage facilities and watercourses to prevent stormwater run-on and runoff.
- d) Use drip pans, drip cloths, or absorbent pads when replacing spent fluids.
- e) Collect all spent fluids, store in appropriate labeled containers in the proper storage areas, and recycle fluids whenever possible.

Spill Prevention and Response: Representative procedures include identifying ways to reduce the chance of spills, stop the source of spills, contain and clean up spills, dispose of materials contaminated by spills, and train personnel responsible for spill prevention

and response. The following material handling procedures and storage requirements should be used to ensure that clear and concise spill cleanup procedures are provided and posted for areas in which spills may potentially occur:

- a) Note the locations of chemical storage areas, storm drains, tributary drainage areas, surface waterbodies on or near the site, and measures to stop spills from leaving the site.
- b) Provide proper handling and safety procedures for each type of waste. Keep Material Safety Data Sheets (MSDSs) for chemical used on site.
- c) Establish an education program for employees and subcontractors on the potential hazards to humans and the environment from spills and leaks.
- d) Specify how to notify appropriate authorities, such as police and fire departments, hospitals, or municipal sewage treatment facilities to request assistance. Emergency procedures and contact numbers should be provided and posted at storage locations.
- e) Use proper procedures, equipment and materials for immediate cleanup of spills and proper disposal.
- f) Identify personnel responsible for implementing the plan in the event of a spill. Update the spill prevention plan and clean up materials as changes occur to the types of chemicals stored and used at the facility.

5. Concrete and asphalt batch plants:

Dedicated concrete or asphalt batch plants are not anticipated to be used.

6. Vehicle tracking control:

Off-site vehicle tracking of sediment shall be minimized and is as shown on the CSWMP Site Map. Streets shall be kept clean and free of mud, soil and construction waste. Street sweeping or other acceptable methods shall be used to prevent sediment from being washed from the project site. Streets shall not be washed down with water. Street cleaning operations shall occur, if necessary or as directed by the County.

7. Waste management and disposal including concrete washout:

A concrete washout area shall be specified in a location near concrete work areas. Concrete wash water shall not be discharged to state waters or to storm sewer systems. The washout area shall be a shallow excavation with a small perimeter berm to isolate concrete truck washout operations. At the end of construction, all concrete shall be removed from the site

and disposed of at an approved waste site. Signs shall be placed at the washout to clearly indicate the concrete washout area to operators of concrete trucks and pump rigs.

All construction site waste both liquid and solid must be contained in approved waste containers and disposed of off-site according to state and local regulations. Locations are unknown at this time but will be shown on the SWMP Site Map when determined. Portable sanitary facilities shall be provided at the site throughout the construction phase.

Portable Toilets (PT) will be located a minimum of 10ft from stormwater inlets and 50ft 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.

Waste Disposal Bins shall be inspected daily and emptied each week at a minimum. Full or overflowing waste bins shall not be left uncovered overnight.

8. Groundwater and stormwater dewatering:

Groundwater and/or stormwater dewatering is not anticipated on this site.

9. Self-Inspections:

The QSM Administrator is required to conduct self-inspections. The purpose of these inspections is to ensure that all Control Measures are installed according to the approved plans, appropriate as to the intended use, operating effectively, and being properly maintained. The GEC Administrator must be qualified according to Chapter 2, Section 5.0 of the Stormwater Construction Manual.

The QSM Administrator shall, at a minimum, make a thorough inspection at least once every 14 calendar days. Also, post-storm event inspections must be conducted within 24 hours following the end of any precipitation or snowmelt event that causes surface erosion. Provided the timing is appropriate, the post-storm inspections may be used to fulfill the 14-day routine inspection requirement. Alternatively, the QSM Administrator may choose to perform self-inspections every 7 calendar days and forego post-storm event inspections. The self-inspection schedule must be identified in the QSM Administrator's most recent self-inspection. A more frequent inspection schedule than the minimum described may be necessary to ensure that Control Measures continue to operate as needed to comply with the GEC Plan. Site conditions such as steep grades and close proximity to a state water are reasons for increasing the frequency of self-inspections.

The QSM Administrator shall submit documentation of the self-inspections by uploading the document to the County's Electronic Permitting Management System. **Completed self-inspection forms must be submitted electronically within 5 business days of the self-**

inspection. The self-inspections must also be available either physically or electronically at the construction site at all times throughout the duration of the project. Inspectors will review self-inspections during compliance inspections. The use of a third-party inspection program does not remove this requirement. Additionally, the use of a third-party inspection program does not relieve the Permittee of the requirement to comply with all compliance inspections.

For sites or portions of sites where construction activities have been completed and final stabilization measures installed but final stabilization has not yet been achieved, the QSM Administrator shall make a thorough inspection of their Control Measures at least once every month. Post-storm event inspections must be conducted within 72 hours following the end of any precipitation or snowmelt event that causes surface erosion. The GEC Plan must be amended to indicate those areas where construction activities have been completed but final stabilization has not yet been achieved that will be inspected once a month.

When site conditions make the schedule required in this section impractical, the permittee may petition the County to grant an alternate inspection schedule. The alternative inspection schedule may not be implemented prior to written approval by the County and incorporation into the SWMP.

The Permittee is responsible to confirm that the frequency of inspections is sufficient to ensure that Control Measures remain in good working condition at all times.

IV. FINAL STABILIZATION AND LONG-TERM STORMWATER MANAGEMENT

Final stabilization is anticipated to occur during Summer 2023. Final stabilization is reached when all soil disturbing activities at the site have been completed and uniform vegetative cover has been established with a density of at least 70 percent of pre-disturbance levels, or equivalent permanent, physical erosion reductions have been employed. For the purposes of the SWMP, establishment of a vegetative cover capable of providing erosion control equivalent to pre-existing conditions at the site can be considered final stabilization. The contractor will be responsible for providing the documentation to make this comparison to the State of Colorado, Water Quality Control Division.

The project site shall be seeded with the seed mix as shown on the SWMP CCM Details (Figure 3), where the application methods and soil preparations are also found. All slopes greater (steeper) than three-to-one will be covered with erosion control blankets.

Management of storm water after completion of construction will be accomplished by utilizing the practices listed below.

- Upon completion of construction, the site shall be inspected to ensure that all equipment, waste materials and debris have been removed.
- The site will be inspected to make certain that all graded surfaces have been paved, landscaped, or seeded with an appropriate ground cover.
- All silt fence, inlet protection, sediment logs, curb socks and all other control practices and measures that are to remain after completion of construction will be inspected to ensure their proper functioning.
- The contractor shall remove erosion control measures that are not required to remain.

After all construction activities are completed on the site, but final stabilization has not been achieved, the contractor shall make a thorough inspection of the stormwater management system at least once every month.

The contractor shall be responsible for maintaining the storm water controls in good working order and shall also be responsible for the costs incurred until such time as final stabilization is reached. Once final stabilization has been achieved the contractor shall be responsible for removal of the erosion control measures.

Should any of the erosion control facilities come into disrepair prior to the establishment of the native or natural erosion control measures, the Contractor is responsible for the cost of such maintenance. The Contractor is also responsible for the clean up of offsite areas affected by any sediment that may leave the site. Control of erosion from areas disturbed by utility or building construction will be the responsibility of the respective contractor. All erosion control measures shown on the plan shall be installed and maintained in accordance with Construction Control Measures.

V. RECOMMENDED INSPECTION AND MAINTENANCE PROCEDURES

A. Self-Inspections

Self-inspections shall be conducted by the qualified QSM Administrator. These inspections are to ensure that all Control Measures are installed according to the approved plans, appropriate as to the intended use, operating effectively, and being properly maintained.

B. Minimum Inspection Schedule

- a) **Frequency.** Contractor should inspect Construction CCM's at the following times and intervals.
- (1) After installation of any Construction CCM;
 - (2) Post storm inspections -- within 24 hours after any runoff event (rainfall or snowmelt) that causes surface erosion;
 - (3) Routine inspections -- at a minimum once every 14 days, but a more frequent inspection schedule may be necessary to ensure that CCM continue to operate as needed to comply with the permit. Post storm inspections may be used to fulfill routine inspections.
 - (4) Alternate inspection schedule -- perform self-inspections every 7 calendar days and forego post-storm event inspections.
 - (5) A more frequent inspection schedule than the minimum described may be necessary to ensure that Control Measures continue to operate as needed to comply with the GEC Plan. Site conditions such as steep grades and close proximity to a state water are reasons for increasing the frequency of self-inspections.
 - (6) Construction activities have been completed and final stabilization measures installed but final stabilization has not yet been achieved -- the GEC Administrator shall make a thorough inspection of their Control Measures at least once every month. Post-storm event inspections must be conducted within 72 hours following the end of any precipitation or snowmelt event that causes surface erosion. The GEC Plan must be amended to indicate those areas where construction activities have been completed but final stabilization has not yet been achieved that will be inspected once a month.
 - (7) When site conditions make the schedule required in this section impractical, the permittee may petition the County to grant an alternate inspection schedule. The alternative inspection schedule may not be implemented prior to written approval by the County and incorporation into the SWMP.
 - (8) The Permittee is responsible to confirm that the frequency of inspections is sufficient to ensure that Control Measures remain in good working condition at all times.
 - (9) Consult Permit No. COR040000 for alternate inspection requirements at temporarily idle sites, at completed sites, or for winter conditions.
- b) **Inspection Log.** The QSM Administrator should record the inspection results on a site-specific standardized inspection log to be maintained and kept on the construction site, for review by agencies. The QSM Administrator shall submit documentation of the self-inspections by uploading the document to the County's Electronic Permitting Management System. Completed self-inspection forms must be submitted electronically within 5 business days of the self-inspection. The self-inspections must also be available either physically or electronically at the construction site at all times throughout the duration of the project. Inspectors will review self-inspections during compliance inspections. The use of a third-party inspection program does not remove this requirement. Additionally, the use of a third-party inspection program does not relieve the Permittee of the requirement to comply with all compliance inspections.

c) A template for the inspection log format is included in Appendix 3. The QSM Administrator should develop site-specific inspection logs that itemize the selected Construction CCM's for their site. At a minimum the following information from each inspection should be recorded on the site-specific log:

- (1) Date of Inspection;
- (2) Name and title and signature of inspector;
- (3) Self-inspection schedule;
- (4) Location(s) of discharges of sediment or other pollutants from the site;
- (5) Location(s) of CCM that need to be maintained;
- (6) Location(s) of CCM that failed to operate as designed or proved inadequate for a particular location;
- (7) Location(s) where additional CCM are needed that were not in place at the time of inspection;
- (8) Deviations from the minimum inspection schedule as provided in the permit;
- (9) Descriptions of corrective actions for any item above, date(s) of corrective actions taken, and measures taken to prevent future violations, including requisite changes to the SWMP, as necessary and
- (10) After corrective action(s) have been taken, or where a report does not identify any incidents requiring corrective actions, the report shall contain a signed statement indicating the site is in compliance with the permit to the best of the signer's knowledge and belief.

C. Correction of Deficiencies

The Permittee and QSM Administrator are responsible to ensure and document that Control Measures are maintained when and where deficiencies have been noted on self-inspections. When Control Measures have failed as determined by the QSM Administrator, they must be addressed as soon as possible, immediately in most cases, to minimize the discharge of pollutants. All issues must ultimately be resolved within 3 calendar days after the noncompliance issue is first identified.

D. CCM Operation and Maintenance.

The QSM Administrator is responsible for operation and maintenance of construction CCM. The QSM Administrator will inspect the site per inspection and monitoring protocol outlined above and make any necessary repairs to construction CCM immediately after a defect or other need for repair is discovered. The project site and the adjacent streets impacted by the construction shall be kept neat, clean, and free of debris. The erosion control measures and facilities will be maintained in good working order until final stabilization. Any items that are not functioning properly or are inadequate will be promptly repaired or upgraded. Records of inspections must be kept and be available for review by the State of Colorado Water Quality Control Division or the County.

The SWMP should be viewed as a 'living document' that is continuously being reviewed and modified as a part of the overall process of evaluating and managing Stormwater issues at the site. The QSM shall amend the SWMP when there is a change in design, construction, or Operating & Maintenance of the site which would require the implementation of new or revised BMPs or if the SWMP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges associated with construction activities, or when BMPs are no longer necessary and could be removed.

This project does not rely on control measures owned or operated by others.

REFERENCES

The following reports and plans were used in the process of preparing this Stormwater Management Plan:

1. *CDPS General Permit: Stormwater Discharges Associated with Construction Activity Permit No. COR040000*. Colorado Department of Public Health and Environment. January 21, 2021.
2. *Final Drainage Report – Peaceful Valley Subdivision Prepared by: Kiowa Engineering Corporation [No. 04092], July 20, 2006*
3. *West Fork Jimmy Camp Creek Drainage Basin Planning Study, prepared by Kiowa Engineering Corporation, dated October 17, 2003.*
4. *City of Colorado Springs and El Paso County Flood Insurance Study, prepared by the Federal Emergency Management Agency, dated March 1997.*
5. *El Paso County Drainage Criteria Manual (Volumes 1 and 2) and Engineering Criteria Manual, current editions.*
6. *Soil Survey of El Paso County Area, Colorado, prepared by United States Department of Agriculture Soil Conservation Service, dated June 1981.*
7. *Final Drainage Report Marksheffel Road South - Link Road to US-24, El Paso County, CO, HDR Engineering, August 2015.*
8. *Final Drainage Report for Cottonwood Meadows, Filing No. 1, prepared by HMS Group, LLC, approved November 4, 1999.*
9. *Final Drainage Report for Cottonwood Meadows, Filings No. 2 and 3, prepared by HMS Group, LLC, approved May 31, 2000.*

APPENDIX 1
SWMP Application

APPENDIX 2

Construction Activity Stormwater Permit



STATE OF COLORADO

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Division

CDPS GENERAL PERMIT STORMWATER DISCHARGES ASSOCIATED WITH
CONSTRUCTION ACTIVITY AUTHORIZATION TO DISCHARGE UNDER THE COLORADO DISCHARGE PERMIT SYSTEM (CDPS)
COR400000

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act"), this permit authorizes the discharge of stormwater associated with construction activities (and specific allowable non-stormwater discharges in accordance with Part I.A.1. of the permit) certified under this permit, from those locations specified throughout the State of Colorado to specified waters of the State.

Such discharges shall be in accordance with the conditions of this permit. This permit specifically authorizes the facility listed on the certification to discharge in accordance with permit requirements and conditions set forth in Parts I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

This permit becomes effective on April 1, 2019, and shall expire at midnight March 31, 2024.

Issued and signed this 28th day of January, 2021.

Meg Parish

Meg Parish, Permits Section Manager Water Quality Control Division

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Permit History

Minor Modification Issued January 28, 2021 Effective February 1, 2021

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Part I

Note: At the first mention of terminology that has a specific connotation for the purposes of this permit, the terminology is electronically linked to the definitions section of the permit in Part I.E.

A. COVERAGE UNDER THIS PERMIT

1. Authorized Discharges

This general permit authorizes permittee(s) to discharge the following to state waters: stormwater associated with construction activity and specified non-stormwater associated with construction activity. The following types of stormwater and non-stormwater discharges are authorized under this permit:

a. Allowable Stormwater Discharges

- i. Stormwater discharges associated with construction activity.
- ii. Stormwater discharges associated with producing earthen materials, such as soils, sand, and gravel dedicated to providing material to a single contiguous site, or within ¼ mile of a construction site (e.g. borrow or fill areas).
- iii. Stormwater discharges associated with [dedicated asphalt](#), [concrete batch plants](#) and [masonry mixing stations](#) (Coverage under this permit is not required if alternative coverage has been obtained.)

b. Allowable Non-Stormwater Discharges

The following non-stormwater discharges are allowable under this permit if the discharges are identified in the stormwater management plan in accordance with [Part I.C](#) and if they have appropriate [control measures](#) in accordance with [Part I.B.1](#).

- i. Discharges from uncontaminated springs that do not originate from an area of land disturbance.
- ii. Discharges to the ground of concrete washout water associated with the washing of concrete tools and concrete mixer chutes. Discharges of concrete washout water must not leave the site as surface runoff or reach [receiving waters](#) as defined by this permit. Concrete on-site waste disposal is not authorized by this permit except in accordance with [Part I.B.1.a.ii\(b\)](#).
- iii. Discharges of landscape irrigation return flow.
- iv. Discharges from [diversions](#) of state waters within the permitted site.

c. Emergency Fire Fighting

Discharges resulting from emergency firefighting activities during the active emergency response are authorized by this permit.

2. Limitations on Coverage

Discharges not authorized by this permit include, but are not limited to, the discharges and activities listed below. Permittees may seek individual or alternate general permit coverage for the discharges, as appropriate and available.

a. Discharges of Non-Stormwater

Discharges of non-stormwater, except the authorized non-stormwater discharges listed in Part

I.A.1.b., are not eligible for coverage under this permit.

- b. Discharges Currently Covered by another Individual or General Permit
- c. Discharges Currently Covered by a Water Quality Control Division (division) Low Risk Guidance Document

3. Permit Certification and Submittal Procedures

a. Duty to Apply

The following activities shall apply for coverage under this permit:

- i. Construction activity that will disturb one acre or more; or
- ii. Construction activity that is part of a [common plan of development or sale](#); or
- iii. Stormwater discharges that are designated by the division as needing a stormwater permit because the discharge:
 - (a) Contributes to a violation of a water quality standard; or
 - (b) Is a significant contributor of [pollutants](#) to state waters.

b. Application Requirements

To obtain authorization to discharge under this permit, applicants applying for coverage following the effective date of the renewal permit shall meet the following requirements:

- i. Owners and operators submitting an application for permit coverage will be co-permittees subject to the same benefits, duties, and obligations under this permit.
- ii. Signature requirements: Both the [owner](#) and [operator](#) (permittee) of the construction site, as defined in Part I.E., must agree to the terms and conditions of the permit and submit a completed application that includes the signature of both the owner and the operator. In cases where the duties of the owner and operator are managed by the owner, both application signatures may be completed by the owner. Both the owner and operator are responsible for ensuring compliance with all terms and conditions of the permit, including implementation of the stormwater management plan.
- iii. The applicant(s) must develop a stormwater management plan (SWMP) in accordance with the requirements of Part I.C. The applicant(s) must also certify that the SWMP is complete, or will be complete, prior to commencement of any construction activity.
- iv. In order to apply for certification under this general permit, the applicant(s) must submit a complete, accurate, and signed permit application form as provided by the division by electronic delivery at least 10 days prior to the commencement of construction activity, except those construction activities that are in response to a [public emergency related site](#); [public emergency related sites](#) shall apply for coverage no later than 14 days after the commencement of construction activities. The provisions of this part in no way remove a violation of the Colorado Water Quality Control Act if a [point source](#) discharge occurs prior to the issuance of a CDPS permit.
- v. The application in its entirety must be submitted via the division's online permitting system unless a waiver is granted by the division. If a waiver is granted, the application in its entirety, including signatures by both the owner and operator, must be submitted to:

Colorado Department of Public Health and Environment
Water Quality Control Division
Permits Section, WQCD-PS-B2
4300 Cherry Creek Drive South
Denver, CO 80246

- vi. The applicant(s) must receive written notification that the division granted permit coverage prior to conducting construction activities except for construction activities that are in response to a public emergency related site.

c. Division Review of Permit Application

Within 10 days of receipt of the application, and following review of the application, the division may:

- i. Issue a certification of coverage;
- ii. Request additional information necessary to evaluate the discharge;
- iii. Delay the authorization to discharge pending further review;
- iv. Notify the applicant that additional terms and conditions are necessary; or
- v. Deny the authorization to discharge under this general permit.

d. Alternative Permit Coverage

i. Division Required Alternative Permit Coverage:

The division may require an applicant or permittee to apply for an individual permit or an alternative general permit if it determines the discharge does not fall under the scope of this general permit, including if any additional terms and conditions are necessary in order to ensure that discharges authorized by this permit shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality. In this case, the division will notify the applicant or permittee that an individual permit application is required.

ii. Permittee Request for Alternative Permit Coverage:

A permittee authorized to discharge stormwater under this permit may request to be excluded from coverage under this general permit by applying for an individual permit. In this case, the permittee must submit an individual application, with reasons supporting the request, to the division at least 180 days prior to any discharge. When an individual permit is issued, the permittee's authorization to discharge under this permit is terminated on the effective date of the individual permit.

e. Submittal Signature Requirements

Documents required for submittal to the division in accordance with this permit, including applications for permit coverage and other documents as requested by the division, must include signatures by **both** the owner and the operator, except for instances where the duties of the owner and operator are managed by the owner.

Signatures on all documents submitted to the division as required by this permit must meet the Standard Signatory Requirements in [Part II.K](#) of this permit in accordance with 40 C.F.R. 122.41(k).

i. Signature Certification

Any person(s) signing documents required for submittal to the division must make the following

certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

f. Compliance Document Signature Requirements

Documents which are required for compliance with the permit, but for which submittal to the division is not required unless specifically requested by the division, must be signed by the individual(s) designated as the [Qualified Stormwater Manager](#), as defined in Part I.E.

- i. Any person(s) signing inspection documents required for compliance with the permit per [Part I.D.5.c.xiii](#) must make the following statement and provide the date of the statement:

“I verify that, to the best of my knowledge and belief, that if any corrective action items were identified during the inspection, those corrective actions are complete, and the site is currently in compliance with the permit.”

g. Field Wide Permit Coverage for Oil and Gas Construction

At the discretion of the division, a single permit certification may be issued to a single oil and gas permittee to cover construction activity related discharges from an oil and gas field at multiple locations that are not necessarily contiguous.

h. Permit Coverage without Application

Qualifying Local Program: When a small construction site is within the jurisdiction of a qualifying local program, the owner and operator of the construction activity are authorized to discharge stormwater associated with **small construction activity** under this general permit without the submittal of an application to the division. Sites covered by a qualifying local program are exempt from the following sections of this general permit: Part I.A.3.a.; Part I.A.3.b.; Part I.A.3.c.; Part I.A.3.d.; Part I.A.3.g.; Part I.A.3.i.; Part I.A.3.j.; Part I.A.3.k.

Sites covered by a qualifying local program are subject to the following requirements:

- i. **Local Agency Authority:** This permit does not pre-empt or supersede the authority of local agencies to prohibit, restrict, or control discharges of stormwater to storm drain systems or other water courses within their jurisdiction.
- ii. **Permit Coverage Termination:** When a site under a Qualifying Local Program is finally stabilized, coverage under this permit is automatically terminated.
- iii. **Compliance with Qualifying Local Program:** Qualifying Local Program requirements that are equivalent to the requirements of this permit are incorporated by reference. Permittees authorized to discharge under this permit, must comply with the equivalent requirements of the Qualifying Local Program that has jurisdiction over the site as a condition of this permit.
- iv. **Compliance with Remaining Permit Conditions.** Requirements of this permit that are in addition to or more stringent than the requirements of the Qualifying Local Program apply in addition to the requirements of the Qualifying Local Program.
- v. **Written Authorization of Coverage:** The division or local municipality may require any permittee within the jurisdiction of a Qualifying Local Program covered under this permit to

apply for, and obtain written authorization of coverage under this permit. The permittee must be notified in writing that an application for written authorization of coverage is required.

i. Permittee Initiated Permit Actions

Permittee initiated permit actions, including but not limited to modifications, contact changes, transfers, and terminations, shall be conducted following [Part II.L](#), division guidance and using appropriate division-provided forms.

j. Sale of Residence to Homeowner

Residential construction sites only: The permittee may remove residential lots from permit coverage once the lot meets the following criteria:

- i. The residential lot has been sold to the homeowner(s) for private residential use;
- ii. A certificate of occupancy, or equivalent, is maintained on-site and is available during division inspections;
- iii. The lot is less than one acre of disturbance;
- iv. All construction activity conducted on the lot by the permittee is complete;
- v. The permittee is not responsible for final stabilization of the lot; and
- vi. The SWMP was modified to indicate the lot is no longer part of the construction activity.

If the residential lot meets the criteria listed above then activities occurring on the lot are no longer considered to be construction activities with a duty to apply and maintain permit coverage. Therefore, the permittee is not required to meet the final stabilization requirements and may terminate permit coverage for the lot.

k. Permit Expiration and Continuation of Permit Coverage

Authorization to discharge under this general permit shall expire at midnight on March 31, 2024. While Regulation 61.4 requires a permittee to submit an application for continuing permit coverage 180 days before the permit expires, the division is requiring that permittees desiring continued coverage under this general permit must reapply at least 90 days in advance of this permit expiration. The division will determine if the permittee may continue to discharge stormwater under the terms of the general permit. An individual permit may be required for any facility not reauthorized to discharge under the reissued general permit.

If this permit is not reissued or replaced prior to the expiration date, it will be administratively continued and remain in force and effect. For permittees that have applied for continued permit coverage, discharges authorized under this permit prior to the expiration date will automatically remain covered by this permit until the earliest of:

- i. An authorization to discharge under a reissued permit, or a replacement of this permit, following the timely and appropriate submittal of a complete application requesting authorization to discharge under the new permit and compliance with the requirements of the new permit; or
- ii. The issuance and effect of a termination issued by the division; or
- iii. The issuance or denial of an individual permit for the facility's discharges; or
- iv. A formal permit decision by the division not to reissue this general permit, at which time the division will identify a reasonable time period for covered dischargers to seek coverage under

an alternative general permit or an individual permit. Coverage under this permit will cease when coverage under another permit is granted/authorized; or

- v. The division has informed the permittee that discharges previously authorized under this permit are no longer covered under this permit.

B. EFFLUENT LIMITATIONS

1. Requirements for Control Measures Used to Meet Effluent Limitations

The permittee must implement control measures to [minimize](#) the discharge of pollutants from all potential pollutant sources at the site. Control measures must be installed prior to commencement of construction activities. Control measures must be selected, designed, installed and maintained in accordance with [good engineering, hydrologic and pollution control practices](#). Control measures implemented at the site must be designed to prevent pollution or degradation of state waters.

a. Stormwater Pollution Prevention

The permittee must implement structural and/or nonstructural control measures that effectively minimize erosion, sediment transport, and the release of other pollutants related to construction activity.

i. Control Measures for Erosion and Sediment Control

Control measures for erosion and sediment control may include, but are not limited to, wattles/sediment control logs, silt fences, earthen dikes, drainage swales, sediment traps, subsurface drains, pipe slope drains, inlet protection, outlet protection, gabions, sediment basins, temporary vegetation, permanent vegetation, mulching, geotextiles, sod stabilization, slope roughening, maintaining existing vegetation, protection of trees, and preservation of mature vegetation.

Specific control measures must meet the requirements listed below.

- (a) Structural and nonstructural vehicle tracking controls shall be implemented to minimize vehicle tracking of sediment from disturbed areas and may include tracking pads, minimizing site access, wash racks, graveled parking areas, maintaining vehicle traffic to paved areas, street sweeping and sediment control measures.
- (b) Stormwater runoff from all disturbed areas and soil storage areas must utilize or flow to one or more control measures to minimize erosion or sediment in the discharge. The control measure(s) must be selected, designed, installed and adequately sized in accordance with good engineering, hydrologic and pollution control practices for the intended application. The control measure(s) must contain or filter flows in order to prevent the [bypass](#) of flows without treatment and must be appropriate for stormwater runoff from disturbed areas and for the expected flow rate, duration, and flow conditions (e.g. sheet or concentrated flow).
- (c) Selection of control measures should prioritize the use of structural and nonstructural control measures that minimize the potential for erosion (i.e. covering materials). Selection should also prioritize phasing construction activities to minimize the amount of soil disturbance at any point in time throughout the duration of construction.
- (d) Outlets that withdraw water from or near the surface shall be installed when discharging from basins and impoundments, unless [infeasible](#).
- (e) Maintain pre-existing vegetation or equivalent control measures for areas within 50 horizontal feet of receiving waters as defined by this permit, unless infeasible.

- (f) Soil compaction must be minimized for areas where infiltration control measures will occur or where [final stabilization](#) will be achieved through vegetative cover.
 - (g) Unless infeasible, topsoil shall be preserved for those areas of a site that will utilize vegetative final stabilization.
 - (h) Minimize the amount of soil exposed during construction activity, including the disturbance of [steep slopes](#).
 - (i) Diversion control measures must minimize soil transport and erosion within the entire diversion, minimize erosion during discharge, and minimize run-on into the diversion. The permittee must minimize the discharge of pollutants throughout the installation, implementation and removal of the diversion. Diversions must meet one or more of the following conditions:
 - (1) Lined or piped structures that result in no erosion in all flow conditions.
 - (2) Diversion channels, berms, and coffer dams must be lined or composed of a material that minimizes potential for soil loss in the entire wetted perimeter during anticipated flow conditions (e.g. vegetated swale, non-erosive soil substrate). The entire length of the diversion channel must be designed with all of the following considerations: maximum flow velocity for the type of material(s) exposed to the anticipated flows to ensure that the calculated maximum shear stress of flows in the channel is not expected to result in physical damage to the channel or liner and result in discharge of pollutants. Additionally, the conditions relied on to minimize soil loss must be maintained for the projected life of the diversion (i.e. a vegetated swale must be limited to a period of time that ensures vegetative growth, minimizes erosion and maintains stable conditions).
 - (3) An alternative diversion criteria, approved by the division prior to implementation. The diversion method must be designed to minimize the discharge of pollutants and to prevent the potential for pollution or degradation to state waters as a result of the diverted flow through the diversion structure. In addition, the alternative diversion method must minimize the discharge of pollutants throughout the installation, implementation and removal of the diversion.
- ii. Practices for Other Common Pollutants
- (a) Bulk storage, individual containers of 55 gallons or greater, for petroleum products and other liquid chemicals must have secondary containment, or equivalent protection, in order to contain [spills](#) and to prevent spilled material from entering state waters.
 - (b) Control measures designed for concrete washout waste must be implemented. This includes washout waste discharged to the ground as authorized under this permit and washout waste from concrete trucks and masonry operations contained on site. The permittee must ensure the washing activities do not contribute pollutants to stormwater runoff, or receiving waters in accordance [Part I.A.1.b.ii](#). Discharges that may reach groundwater must flow through soil that has buffering capacity prior to reaching groundwater, as necessary to meet the effluent limits in this permit, including [Part I.B.3.a](#). The concrete washout location must not be located in an area where shallow groundwater may be present and would result in buffering capacity not being adequate, such as near natural drainages, springs, or wetlands. This permit authorizes discharges to the ground of concrete washout waste, but does not authorize on-site waste disposal per [Part I.B.3.d](#).
 - (c) In the event that water remains onsite and contains pollutants either from the

firefighting activities or picked up from the site (i.e. in a gutter, sediment basin, etc.) after active emergency response is complete, the permittee must ensure the remaining water containing pollutants is properly removed and disposed of in order to minimize pollutants from discharging from the site, unless infeasible.

iii. Stabilization Requirements

The following requirements must be implemented for each site.

- (a) Temporary stabilization must be implemented for earth disturbing activities on any portion of the site where ground disturbing construction activity has permanently ceased, or temporarily ceased for more than 14 calendar days. Temporary stabilization methods may include, but are not limited to, tarps, soil tackifier, and hydroseed. The permittee may exceed the 14-day schedule when either the function of the specific area of the site requires it to remain disturbed or physical characteristics of the terrain and climate prevent stabilization. The SWMP must document the constraints necessitating the alternative schedule, provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map. Minimum inspection frequency and scope, as directed in Part I.D., must be followed for temporarily stabilized areas.
- (b) Final stabilization must be implemented for all construction sites covered under this permit. Final stabilization is reached when (1), (2), and (3) below are complete:
 - (1) All construction activities are complete.
 - (2) Permanent stabilization methods are complete. Permanent stabilization methods include, but are not limited to, permanent pavement or concrete, hardscape, xeriscape, stabilized driving surfaces, vegetative cover, or equivalent permanent alternative stabilization methods. The division may approve alternative final stabilization criteria for specific operations. Vegetative cover must meet the following criteria:
 - a. Evenly distributed perennial vegetation, and
 - b. Coverage, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site, and
 - (3) The permittee must ensure all temporary control measures are removed from the construction site once final stabilization is achieved, except when the control measure specifications allow the control measure to be left in place (i.e. bio-degradable control measures).
- (c) Final stabilization must be designed and installed as a permanent feature. Final stabilization measures for obtaining a vegetative cover or alternative stabilization methods include, but are not limited to, the following as appropriate:
 - (1) Seed mix selection and application methods;
 - (2) Soil preparation and amendments;
 - (3) Soil stabilization methods to provide adequate protection to minimize erosion (e.g. crimped straw, hydro mulch or rolled erosion control products);
 - (4) Appropriate sediment control measures as needed until final stabilization is achieved;

(5) Permanent pavement, hardscape, xeriscape, stabilized driving surfaces;

(d) Other alternative stabilization practices as applicable.

b. Maintenance

The permittee must ensure that all control measures remain in effective operating condition and are protected from activities that would reduce their effectiveness. Control measures must be maintained in accordance with good engineering, hydrologic and pollution control practices. Observations leading to the required maintenance of control measures can be made during a site inspection, or during general observations of site conditions. The necessary repairs or modifications to a [control measure requiring routine maintenance](#), as defined in Part I.E., must be conducted to maintain an effective operating condition. This section is not subject to the requirements in [Part I.B.1.c](#) below.

c. Corrective Actions

The permittee must assess the adequacy of control measures at the site, and the need for changes to those control measures, to ensure continued effective performance.

When an [inadequate control measure](#), as defined in Part I.E., is identified (i.e., new or replacement control measures become necessary), the following corrective action requirements apply. The permittee is in noncompliance with the permit until the inadequate control measure is replaced or corrected and returned to effective operating condition in compliance with [Part I.B.1](#) and the general requirements in [Part I.B.3](#). If the inadequate control measure results in noncompliance that meets the conditions of Part II.L., the permittee must also meet the requirements of that section.

i. The permittee must take all necessary steps to minimize or prevent the discharge of pollutants from the permitted area and manage any stormwater run-on onto the site until a control measure is implemented and made operational and/or an inadequate control measure is replaced or corrected and returned to effective operating condition. If it is infeasible to install or repair the control measure immediately after discovering the deficiency, the following must be documented in the SWMP in [Part I.D.5.c](#) and kept on record in accordance with the recordkeeping requirements in Part II.

(a) Describe why it is infeasible to initiate the installation or repair immediately; and

(b) Provide a schedule for installing or repairing the control measure and returning it to an effective operating condition as soon as possible.

ii. If applicable, the permittee must remove and properly dispose of any unauthorized release or discharge within and from the permitted area (e.g., discharge of non-stormwater, untreated stormwater containing pollutants, spill, or leak not authorized by this permit.) The permittee must also clean up any contaminated surfaces, if feasible, to minimize discharges of the material in subsequent storm events, including water remaining from the response that contains pollutants after active emergency firefighting response is complete.

2. Discharges to an Impaired Waterbody

a. [Total Maximum Daily Load](#) (TMDL)

If the discharge from the site of permit coverage flows to or could reasonably be expected to flow to any water body for which a TMDL has been approved, and stormwater discharges associated with construction activity were assigned a pollutant-specific Wasteload Allocation (WLA) under the TMDL, the division may:

i. Ensure the WLA is implemented properly through alternative local requirements, such as by a

municipal stormwater permit; or

- ii. Notify the permittee of the WLA and amend the permittee's certification to add specific effluent limits and other requirements, as appropriate. The permittee may be required to do the following:
 - (a) Under the permittee's SWMP, implement specific control measures based on requirements of the WLA, and evaluate whether the requirements are met through implementation of existing stormwater control measures or if additional control measures are necessary. Document the calculations or other evidence demonstrating that the requirements are expected to be met; and
 - (b) If the evaluation shows that additional or modified control measures are necessary, describe the type and schedule for the control measure additions or modifications.
- iii. Discharge monitoring may also be required. The permittee may maintain coverage under the general permit provided they comply with the applicable requirements outlined above. The division reserves the right to require individual or alternate general permit coverage.

3. General Requirements

- a. Discharges authorized by this permit shall not cause, have the reasonable potential to cause, or measurably contribute to an exceedance of any applicable water quality standard, including narrative standards for water quality.
- b. The division may require sampling and testing, on a case-by-case basis, in the event that there is reason to suspect that the SWMP is not adequately minimizing pollutants in stormwater or in order to measure the effectiveness of the control measures in removing pollutants in the effluent. Such monitoring may include Whole Effluent Toxicity testing.
- c. The permittee must comply with the lawful requirements of federal agencies, municipalities, counties, drainage districts and other local agencies including applicable requirements in [Municipal Stormwater Management Programs](#) developed to comply with CDPS permits. The permittee must comply with local stormwater management requirements, policies and guidelines including those for erosion and sediment control.
- d. All construction site wastes must be properly managed to prevent potential pollution of state waters. This permit does not authorize on-site waste disposal.
- e. This permit does not relieve the permittee of the reporting requirements in 40 CFR 110, 40 CFR 117 or 40 CFR 302. Any discharge of hazardous material must be handled in accordance with the division's Noncompliance Notification Requirements (see [Part II.L](#) of the permit).

C. STORMWATER MANAGEMENT PLAN (SWMP) REQUIREMENTS

1. SWMP General Requirements

- a. A SWMP shall be developed for each construction site listed under [Part I.A.3.a](#), including but not limited to, construction activity that will disturb one acre or more and/or are part of a common plan of development or sale covered by this permit. The SWMP must be prepared in accordance with good engineering, hydrologic and pollution control practices.
 - i. For public emergency related sites, a SWMP shall be created no later than 14 days after the commencement of construction activities.
- b. The permittee must implement the provisions of the SWMP as written and updated, from commencement of construction activity until final stabilization is complete. The division may review the SWMP.

- c. A copy of the SWMP must be retained onsite or be onsite when construction activities are occurring at the site unless the permittee specifies another location and obtains approval from the division.

2. SWMP Content

- a. The SWMP, at a minimum, must include the following elements.
 - i. Qualified Stormwater Manager. The SWMP must list individual(s) by title and name who are designated as responsible for implementing the SWMP in its entirety and meet the definition of a Qualified Stormwater Manager. This role may be filled by more than one individual.
 - ii. Spill Prevention and Response Plan. The SWMP must have a spill prevention and response plan. The plan may incorporate by reference any part of a Spill Prevention Control and Countermeasure (SPCC) plan under section 311 of the Clean Water Act (CWA) or a Spill Prevention Plan required by a separate CDPS permit. The relevant sections of any referenced plans must be available as part of the SWMP consistent with Part I.C.4.
 - iii. Other CDPS Permits. The SWMP must list the applicable CDPS permits associated with the permitted site and the activities occurring on the permitted site (e.g. a CDPS Dewatering Permit).
 - iv. Materials Handling. The SWMP must describe handling procedures of all control measures implemented at the site to minimize impacts from handling significant materials that could contribute pollutants to runoff. These handling procedures can include control measures for pollutants and activities such as, exposed storage of building materials, paints and solvents, landscape materials, fertilizers or chemicals, sanitary waste material, trash and equipment maintenance or fueling procedures.
 - v. Potential Sources of Pollution. The SWMP must list all potential sources of pollution which may reasonably be expected to affect the quality of stormwater discharges associated with construction activity from the site. This may include, but is not limited to, the following pollutant sources:
 - (a) Disturbed and stored soils;
 - (b) Vehicle tracking of sediments;
 - (c) Management of contaminated soils, if known to be present, or if contaminated soils are found during construction;
 - (d) Loading and unloading operations;
 - (e) Outdoor storage activities (erodible building materials, fertilizers, chemicals, etc.);
 - (f) Vehicle and equipment maintenance and fueling;
 - (g) Significant dust or particulate generating processes (e.g., saw cutting material, including dust);
 - (h) Routine maintenance activities involving fertilizers, pesticides, herbicides, detergents, fuels, solvents, oils, etc.;
 - (i) On-site waste management practices (waste piles, liquid wastes, dumpsters);
 - (j) Concrete truck/equipment washing, including washing of the concrete truck chute and associated fixtures and equipment;
 - (k) Dedicated asphalt, concrete batch plants and masonry mixing stations;

(l) Non-industrial waste sources such as worker trash and portable toilets.

- vi. Implementation of Control Measures. The SWMP must include design specifications that contain information on the implementation of all the structural and nonstructural control measures in use on the site in accordance with good engineering, hydrologic and pollution control practices; including, as applicable, drawings, dimensions, installation information, materials, implementation processes, control measure-specific inspection expectations, and maintenance requirements.

The SWMP must include a documented use agreement between the permittee and the owner or operator of any control measures located outside of the permitted area, that are utilized by the permittee's construction site for compliance with this permit, but not under the direct control of the permittee. The permittee is responsible for ensuring that all control measures located outside of their permitted area, that are being utilized by the permittee's construction site, are properly maintained and in compliance with all terms and conditions of the permit. The SWMP must include all information required of and relevant to any such control measures located outside the permitted area, including location, installation specifications, design specifications and maintenance requirements.

- vii. Site Description. The SWMP must include a site description which includes, at a minimum, the following:
- (a) The nature of the construction activity at the site;
 - (b) The proposed schedule for the sequence for major construction activities and the planned implementation of control measures for each phase. (e.g. clearing, grading, utilities, vertical, etc.);
 - (c) Estimates of the total acreage of the site, and the acreage expected to be disturbed by clearing, excavation, grading, or any other construction activities;
 - (d) A summary of any existing data and sources used in the development of the construction site plans or SWMP that describe the soil types found in the permitted area and the erodibility of the identified soil types;
 - (e) A description of the percent cover of native vegetation on the site if the site is undisturbed, or the percent cover of native vegetation in a similar, local undisturbed area or adequate reference area if the site is disturbed. Include the source or methodology for determining the percentage. If a percent cover is not appropriate for the site location (i.e. arid), describe the technique and justification for the identified cover of native vegetation;
 - (f) A description of any allowable non-stormwater discharges at the site, including those being discharged under a separate CDPS permit or a division low risk discharge guidance policy, and applicable control measures installed;
 - (g) A description of the drainage patterns from the site, including a description of the immediate source receiving the discharge and the receiving water(s) of the discharge, if different than the immediate source. If the stormwater discharge is to a [municipal separate storm sewer system](#), include the name of the entity owning that system, the location(s) of the stormwater discharge, and the receiving water(s);
 - (h) A description of all stream crossings located within the construction site boundary; and
 - (i) A description of the alternate temporary stabilization schedule, if applicable ([Part I.B.1.a.iii\(a\)](#)).

- (j) A description of the alternative diversion criteria as approved by the division, if applicable ([Part I.B.1.a.i\(i\)\(3\)](#)).

viii. Site Map. The SWMP must include a site map which includes, at a minimum, the following:

- (a) Construction site boundaries;
- (b) Flow arrows that depict stormwater flow directions on-site and runoff direction;
- (c) All areas of ground disturbance including areas of borrow and fill;
- (d) Areas used for storage of soil;
- (e) Locations of all waste accumulation areas, including areas for liquid, concrete, masonry, and asphalt;
- (f) Locations of dedicated asphalt, concrete batch plants and masonry mixing stations;
- (g) Locations of all structural control measures;
- (h) Locations of all non-structural control measures (e.g. temporary stabilization);
- (i) Locations of springs, streams, wetlands, diversions and other state waters, including areas that require pre-existing vegetation be maintained within 50 feet of a receiving water, where determined feasible in accordance with [Part I.B.1.a.i\(e\)](#);
- (j) Locations of all stream crossings located within the construction site boundary; and
- (k) Locations where alternative temporary stabilization schedules apply.

ix. Temporary Stabilization, Final Stabilization and Long Term Stormwater Management.

- (a) The SWMP must document the constraints necessitating an alternative temporary stabilization schedule, as referenced in [Part I.B.1.a.iii\(a\)](#), provide the alternate stabilization schedule, and identify all locations where the alternative schedule is applicable on the site map.
- (b) The SWMP must describe and locate the methods used to achieve final stabilization of all disturbed areas at the site, as listed in [Part I.B.1.a.iii\(b\)](#).
- (c) The SWMP must describe the measures used to establish final stabilization through vegetative cover or alternative stabilization method, as referenced in [Part I.B.1.a.iii\(c\)](#), and describe and locate any temporary control measures in place during the process of final stabilization.
- (d) The SWMP must describe and locate any planned permanent control measures to control pollutants in stormwater discharges that will occur after construction operations are completed, including but not limited to, detention/retention ponds, rain gardens, stormwater vaults, etc.

x. Inspection Reports. The SWMP must include documented inspection reports in accordance with [Part I.D.5.c](#).

3. SWMP Review and Revisions

Permittees must keep a record of SWMP changes made that includes the date and identification of the changes. The SWMP must be amended when the following occurs:

- a. A change in design, construction, operation, or maintenance of the site requiring implementation

of new or revised control measures;

- b. The SWMP proves ineffective in controlling pollutants in stormwater runoff in compliance with the permit conditions;
- c. Control measures identified in the SWMP are no longer necessary and are removed; and
- d. Corrective actions are taken onsite that result in a change to the SWMP.
- e. The site or areas of the site qualifying for reduced frequency inspections under [Part I.D.4](#).

For SWMP revisions made prior to or following a change(s) onsite, including revisions to sections addressing site conditions and control measures, a notation must be included in the SWMP that identifies the date of the site change, the control measure removed, or modified, the location(s) of those control measures, and any changes to the control measure(s). The permittee must ensure the site changes are reflected in the SWMP. The permittee is noncompliant with the permit until the SWMP revisions have been made.

4. SWMP Availability

A copy of the SWMP must be provided upon request to the division, EPA, and any local agency with authority for approving sediment and erosion plans, grading plans or stormwater management plans within the time frame specified in the request. If the SWMP is required to be submitted to any of these entities, the submission must include a signed certification in accordance with [Part I.A.3.e](#), certifying that the SWMP is complete and compliant with all terms and conditions of the permit.

All SWMPs required under this permit are considered reports that must be available to the public under Section 308(b) of the CWA and Section 61.5(4) of the CDPS regulations. The permittee must make plans available to members of the public upon request. However, the permittee may claim any portion of a SWMP as confidential in accordance with 40 CFR Part 2.

D. SITE INSPECTIONS

Site inspections must be conducted in accordance with the following requirements. The required inspection schedules are a minimum frequency and do not affect the permittee's responsibility to implement control measures in effective operating condition as prescribed in the SWMP, [Part I.C.2.a.vi](#), as proper maintenance of control measures may require more frequent inspections. Site inspections shall start within 7 calendar days of the commencement of construction activities on site.

1. Person Responsible for Conducting Inspections

The person(s) inspecting the site may be on the permittee's staff or a third party hired to conduct stormwater inspections under the direction of the permittee(s). The permittee is responsible for ensuring that the inspector meets the definition of a Qualified Stormwater Manager. The inspector may be different than the individual(s) listed in [Part I.C.2.a.i](#).

2. Inspection Frequency

Permittees must conduct site inspections in accordance with on the following minimum frequencies, unless the site meets the requirements of [Part I.D.3](#). All inspections must be recorded per [Part I.D.5.c](#).

- a. At least one inspection every 7 calendar days; or
- b. At least one inspection every 14 calendar days, if post-storm event inspections are conducted within 24 hours after the end of any precipitation or snowmelt event that causes surface erosion. Post-storm inspections may be used to fulfill the 14-day routine inspection requirement.
- c. When site conditions make the schedule required in this section impractical, the permittee may

petition the division to grant an alternate inspection schedule. The alternative inspection schedule must not be implemented prior to written approval by the division and incorporation into the SWMP.

3. Inspection Frequency for Discharges to Outstanding Waters

Permittees must conduct site inspections at least once every 7 calendar days for sites that discharge to a water body designated as an Outstanding Water by the Water Quality Control Commission.

4. Reduced Inspection Frequency

The permittee may perform site inspections at the following reduced frequencies when one of the following conditions exists:

a. Post-Storm Inspections at Temporarily Idle Sites

For permittees choosing an inspection frequency pursuant to [Part I.D.2.b](#) and if no construction activities will occur following a storm event, post-storm event inspections must be conducted prior to re-commencing construction activities, and no later than 72 hours following the storm event. If the post-storm event inspection qualifies under this section, the inspection delay must be documented in the inspection record per [Part I.D.5.c](#). Routine inspections must still be conducted at least every 14 calendar days.

b. Inspections at Completed Sites/Areas

When the site, or portions of a site, are awaiting establishment of a vegetative ground cover and final stabilization, the permittee must conduct a thorough inspection of the stormwater management system at least once every 30 days. Post-storm event inspections are not required under this schedule. This reduced inspection schedule is allowed if all of the following criteria are met:

- i. All construction activities resulting in ground disturbance are complete;
- ii. All activities required for final stabilization, in accordance with [Part I.B.1.a.iii\(b\) & \(c\)](#) and with the SWMP, have been completed, with the exception of the application of seed that has not occurred due to seasonal conditions or the necessity for additional seed application to augment previous efforts; and
- iii. The SWMP has been amended to locate those areas to be inspected in accordance with the reduced schedule allowed for in this paragraph.

c. Winter Conditions Inspections Exclusion

Inspections are not required for sites that meet all of the following conditions: construction activities are temporarily halted, snow cover exists over the entire site for an extended period, and melting conditions posing a risk of surface erosion do not exist. This inspection exception is applicable only during the period where melting conditions do not exist, and applies to the routine 7-day, 14-day and monthly inspections, as well as the post-storm-event inspections. When this inspection exclusion is implemented, the following information must be documented in accordance with the requirements in [Part I.C.3](#) and [Part I.D.5.c](#):

- i. Dates when snow cover existed;
- ii. Date when construction activities ceased; and
- iii. Date melting conditions began.

5. Inspection Scope

a. Areas to Be Inspected

When conducting a site inspection the following areas, if applicable, must be inspected for evidence of, or the potential for, pollutants leaving the construction site boundaries, entering the stormwater drainage system or discharging to state waters:

- i. Construction site perimeter;
- ii. All disturbed areas;
- iii. Locations of installed control measures;
- iv. Designated haul routes;
- v. Material and waste storage areas exposed to precipitation;
- vi. Locations where stormwater has the potential to discharge offsite; and
- vii. Locations where vehicles exit the site.

b. Inspection Requirements

- i. Visually verify whether all implemented control measures are in effective operational condition and are working as designed in their specifications to minimize pollutant discharges.
- ii. Determine if there are new potential sources of pollutants.
- iii. Assess the adequacy of control measures at the site to identify areas requiring new or modified control measures to minimize pollutant discharges.
- iv. Identify all areas of non-compliance with the permit requirements and, if necessary, implement corrective action(s) in accordance with [Part I.B.1.c](#).

c. Inspection Reports

The permittee must keep a record of all inspections conducted for each permitted site. Inspection reports must identify any incidents of noncompliance with the terms and conditions of this permit. All inspection reports must be signed and dated in accordance with [Part I.A.3.f](#). Inspection records must be retained in accordance with [Part II.O](#). At a minimum, the inspection report must include:

- i. The inspection date;
- ii. Name(s) and title(s) of personnel conducting the inspection;
- iii. Weather conditions at the time of inspection;
- iv. Phase of construction at the time of inspection;
- v. Estimated acreage of disturbance at the time of inspection;
- vi. Location(s) and identification of control measures requiring routine maintenance;
- vii. Location(s) and identification of discharges of sediment or other pollutants from the site;
- viii. Location(s) and identification of inadequate control measures;
- ix. Location(s) and identification of additional control measures needed that were not in place at the time of inspection;

- x. Description of corrective action(s) for items vii, viii, ix, above, dates corrective action(s) were completed, including requisite changes to the SWMP, as necessary;
- xi. Description of the minimum inspection frequency (either in accordance with [Part I.D.2](#), [Part I.D.3](#) or [Part I.D.4.](#)) utilized when conducting each inspection.
- xii. Deviations from the minimum inspection schedule as required in [Part I.D.2](#). This would include documentation of division approval for an alternate inspection schedule outlined in [Part I.D.2.c](#);
- xiii. After adequate corrective action(s) have been taken, or where a report does not identify any incidents requiring corrective action, the report shall contain a statement as required in [Part I.A.3.f](#).

E. DEFINITIONS

For the purposes of this permit:

- (1) Bypass the intentional diversion of waste streams from any portion of a treatment facility in accordance with 40 CFR 122.41(m)(1)(i) and Regulation 61.2(12).
- (2) Common Plan of Development or Sale - A contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related. The division has determined that “contiguous” means construction activities located in close proximity to each other (within ¼ mile). Construction activities are considered to be “related” if they share the same development plan, builder or contractor, equipment, storage areas, etc. “Common plan of development or sale” includes construction activities that are associated with the construction of field wide oil and gas permits for facilities that are related.
- (3) Construction Activity - Ground surface disturbing and associated activities (land disturbance), which include, but are not limited to, clearing, grading, excavation, demolition, installation of new or improved haul roads and access roads, staging areas, stockpiling of fill materials, and borrow areas. Construction does not include routine maintenance to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. Activities to conduct repairs that are not part of routine maintenance or for replacement are construction activities and are not routine maintenance. Repaving activities where underlying and/or surrounding soil is exposed as part of the repaving operation are considered construction activities. Construction activity is from initial ground breaking to final stabilization regardless of ownership of the construction activities.
- (4) Control Measure - Any best management practice or other method used to prevent or reduce the discharge of pollutants to state waters. Control measures include, but are not limited to, best management practices. Control measures can include other methods such as the installation, operation, and maintenance of structural controls and treatment devices.
- (5) Control Measure Requiring Routine Maintenance - Any control measure that is still operating in accordance with its design and the requirements of this permit, but requires maintenance to prevent a breach of the control measure. See also inadequate control measure.
- (6) Dedicated Asphalt, Concrete Batch Plants and Masonry Mixing Stations - Are batch plants or mixing stations located on, or within ¼ mile of, a construction site and that provide materials only to that specific construction site.
- (7) Diversion - Discharges of state waters that are temporarily routed through channels or structures (e.g. in-stream, uncontaminated springs, non-pumped groundwater, temporary rerouting of surface waters).
- (8) Final Stabilization - The condition reached when construction activities at the site have been

- completed, permanent stabilization methods are complete, and temporary control measures are removed. Areas being stabilized with a vegetative cover must have evenly distributed perennial vegetation. The vegetation coverage must be, at a minimum, equal to 70 percent of what would have been provided by native vegetation in a local, undisturbed area or adequate reference site.
- (9) Good Engineering, Hydrologic and Pollution Control Practices: are methods, procedures, and practices that:
- a. Are based on basic scientific fact(s).
 - b. Reflect best industry practices and standards.
 - c. Are appropriate for the conditions and pollutant sources.
 - d. Provide appropriate solutions to meet the associated permit requirements, including practice based effluent limits.
- (10) Inadequate Control Measure - Any control measure that is not designed or implemented in accordance with the requirements of the permit and/or any control measure that is not implemented to operate in accordance with its design. See also Control Measure Requiring Routine Maintenance.
- (11) Infeasible - Not technologically possible, or not economically practicable and achievable in light of best industry practices.
- (12) Minimize - reduce or eliminate to the extent achievable using control measures that are technologically available and economically practicable and achievable in light of best industry practice.
- (13) Municipality - A city, town, county, district, association, or other public body created by, or under, State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or a designated and approved management agency under section 208 of CWA (1987).
- (14) Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):
- a. Owned or operated by a State, city, town, county, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or a designated and approved management agency under section 208 of the CWA that discharges to state waters;
 - i. Designed or used for collecting or conveying stormwater;
 - ii. Are not a combined sewer; and
 - iii. Are not part of a Publicly Owned Treatment Works (POTW). See 5 CCR 1002-61.2(62).
- (15) Municipal Stormwater Management Program - A stormwater program operated by a municipality, typically to meet the requirements of the municipalities MS4 discharge certification.
- (16) Operator - The party that has operational control over day-to-day activities at a project site which are necessary to ensure compliance with the permit. This party is authorized to direct individuals at a site to carry out activities required by the permit (i.e. the general contractor).

- (17) Outstanding Waters - Waters designated as outstanding waters pursuant to Regulation 31, Section 31.8(2)(a). The highest level of water quality protection applies to certain waters that constitute an outstanding state or national resource.
- (18) Owner - The party that has overall control of the activities and that has funded the implementation of the construction plans and specifications. This is the party that may have ownership of, a long term lease of, or easements on the property on which the construction activity is occurring (e.g. the developer).
- (19) Permittee(s) - The owner and operator named in the discharge certification issued under this permit for the construction site specified in the certification.
- (20) Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. Point source does not include irrigation return flow. See 5 CCR 102-61.2(75).
- (21) Pollutant - Dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal or agricultural waste. See 5 CCR 1002-61.2(76).
- (22) Presentation of credentials - a government issued form of identification, if in person; or (ii) providing name, position and purpose of inspection if request to enter is made via telephone, email or other form of electronic communication. A Permittee's non-response to a request to enter upon presentation of credentials constitutes a denial to such request, and may result in violation of the Permit.
- (23) Process Water - Any water which, during manufacturing or processing, comes into contact with or results from the production of any raw material, intermediate product, finished product, by product or waste product.
- (24) Public Emergency Related Site - a project initiated in response to an unanticipated emergency (e.g., mud slides, earthquake, extreme flooding conditions, disruption in essential public services), for which the related work requires immediate authorization to avoid imminent endangerment to human health or the environment, or to reestablish essential public services.
- (25) Qualified Stormwater Manager - An individual knowledgeable in the principles and practices of erosion and sediment control and pollution prevention, and with the skills to assess conditions at construction sites that could impact stormwater quality and to assess the effectiveness of stormwater controls implemented to meet the requirements of this permit.
- (26) Qualifying Local Program - A municipal program for stormwater discharges associated with small construction activity that was formally approved by the division as a qualifying local program.
- (27) Receiving Water - Any classified or unclassified surface water segment (including tributaries) in the State of Colorado into which stormwater associated with construction activities discharges. This definition includes all water courses, even if they are usually dry, such as borrow ditches, arroyos, and other unnamed waterways.
- (28) Severe Property Damage - substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. See 40 CFR 122.41(m)(1)(ii).
- (29) Significant Materials - Include, but not limited to, raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in

- food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the permittee is required to report under section 313 of Title III of the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.
- (30) Small Construction Activity - The discharge of stormwater from construction activities that result in land disturbance of equal to, or greater than, one acre and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale, if the larger common plan ultimately disturbs equal to, or greater than, one acre and less than five acres.
 - (31) Spill - An unintentional release of solid or liquid material which may pollute state waters.
 - (32) State Waters - means any and all surface and subsurface waters which are contained in or flow in or through this state, but does not include waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.
 - (33) Steep Slopes: where a local government, or industry technical manual (e.g. stormwater BMP manual) has defined what is to be considered a “steep slope”, this permit’s definition automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 3:1 or greater.
 - (34) Stormwater - Precipitation runoff, snow melt runoff, and surface runoff and drainage. See 5 CCR 1002-61.2(103).
 - (35) Total Maximum Daily Loads (TMDLs) -The sum of the individual wasteload allocations (WLA) for point sources and load allocations (LA) for nonpoint sources and natural background. For the purposes of this permit, a TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards, and an allocation of that amount to the pollutant’s sources. A TMDL includes WLAs, LAs, and must include a margin of safety (MOS), and account for seasonal variations. See section 303(d) of the CWA and 40 C.F.R. 130.2 and 130.7.
 - (36) Upset - an exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation in accordance with 40 CFR 122.41(n) and Regulation 61.2(114).

F. MONITORING

The division may require sampling and testing, on a case-by-case basis. If the division requires sampling and testing, the division will send a notification to the permittee. Reporting procedures for any monitoring data collected will be included in the notification.

If monitoring is required, the following applies:

1. The thirty (30) day average must be determined by the arithmetic mean of all samples collected during a thirty (30) consecutive-day period; and
2. A grab sample, for monitoring requirements, is a single “dip and take” sample.

G. OIL AND GAS CONSTRUCTION

Stormwater discharges associated with construction activities directly related to oil and gas exploration, production, processing, and treatment operations or transmission facilities are regulated under the Colorado Discharge Permit System Regulations (5 CCR 1002-61), and require coverage under this permit in accordance with that regulation. However, references in this permit to specific authority under the CWA do not apply to

stormwater discharges associated with these oil and gas related construction activities, to the extent that the references are limited by the federal Energy Policy Act of 2005.

Part II: Standard Permit Conditions

A. DUTY TO COMPLY

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Water Quality Control Act and is grounds for:

1. Enforcement action;
2. Permit termination, revocation and reissuance, or modification; or
3. Denial of a permit renewal application.

B. DUTY TO REAPPLY

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain authorization as required by Part I.A.3.k. of the permit.

C. NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. DUTY TO MITIGATE

A permittee must take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. PROPER OPERATION AND MAINTENANCE

A permittee must at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by the permittee only when the operation is necessary to achieve compliance with the conditions of this permit. This requirement can be met by meeting the requirements for Part I.B., I.C., and I.D. above. See also 40 C.F.R. § 122.41(e).

F. PERMIT ACTIONS

This permit may be modified, revoked and reissued, or terminated for cause. The permittee request for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. Any request for modification, revocation, reissuance, or termination under this permit must comply with all terms and conditions of Regulation 61.8(8).

G. PROPERTY RIGHTS

In accordance with 40 CFR 122.41(g) and 5 CCR 1002-61, 61.8(9):

1. The issuance of a permit does not convey any property or water rights in either real or personal property, or stream flows or any exclusive privilege.
2. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.
3. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301,

302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 61.8(8) of the Colorado Discharge Permit System Regulations.

H. DUTY TO PROVIDE INFORMATION

The permittee shall furnish to the division, within a reasonable time, any information which the division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the division, upon request, copies of records required to be kept by this permit in accordance with 40 CFR 122.41(h) and/or Regulation 61.8(3)(q).

I. INSPECTION AND ENTRY

The permittee shall allow the division and the authorized representative, upon the [presentation of credentials](#) as required by law, to allow for inspections to be conducted in accordance with 40 CFR 122.41(i), Regulation 61.8(3), and Regulation 61.8(4):

1. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;
2. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit;
3. At reasonable times, inspect any monitoring equipment or monitoring method required in the permit; and
4. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect or investigate, any actual, suspected, or potential source of water pollution, or any violation of the Colorado Water Quality Control Act. The investigation may include: sampling of any discharges, stormwater or [process water](#), taking of photographs, interviewing site staff on alleged violations and other matters related to the permit, and assessing any and all facilities or areas within the site that may affect discharges, the permit, or an alleged violation.

The permittee shall provide access to the division or other authorized representatives upon presentation of proper credentials. A permittee's non-response to a request to enter upon presentation of credentials constitutes a denial of such request, and may result in a violation of the permit.

J. MONITORING AND RECORDS

1. Samples and measurements taken for the purpose of monitoring must be representative of the volume and nature of the monitored activity.
2. The permittee must retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three years from the date the permit expires or the date the permittee's authorization is terminated. This period may be extended by request of the division at any time.
3. Records of monitoring information must include:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed

- d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
4. Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in the permit.

K. SIGNATORY REQUIREMENTS

1. Authorization to Sign:

All documents required to be submitted to the division by the permit must be signed in accordance with the following criteria:

- a. For a corporation: by a responsible corporate officer. For the purpose of this subsection, a responsible corporate officer means:
 - i. A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or
 - ii. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
- b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
- c. For a [municipality](#), state, federal, or other public agency: By either a principal executive officer or ranking elected official. For purposes of this subsection, a principal executive officer of a federal agency includes
 - i. The chief executive officer of the agency, or
 - ii. A senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency. (e.g. Regional Administrator of EPA)

2. Electronic Signatures

For persons signing applications for coverage under this permit electronically, in addition to meeting other applicable requirements stated above, such signatures must meet the same signature, authentication, and identity-proofing standards set forth at 40 CFR § 3.2000(b) for electronic reports (including robust second-factor authentication). Compliance with this requirement can be achieved by submitting the application using the Colorado Environmental Online Service (CEOS) system.

3. Change in Authorization to Sign

If an authorization is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization must be submitted to the division, prior to the re-authorization, or together with any reports, information, or applications to be signed by an authorized representative.

L. REPORTING REQUIREMENTS

1. Planned Changes

The permittee shall give advance notice to the division, in writing, of any planned physical alterations or additions to the permitted facility in accordance with 40 CFR 122.41(l) and Regulation 61.8(5)(a). Notice is required only when:

- a. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
- b. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.41(a)(1).

2. Anticipated Non-Compliance

The permittee shall give advance notice to the division, in writing, of any planned changes in the permitted facility or activity that may result in noncompliance with permit requirements. The timing of notification requirements differs based on the type of non-compliance as described in subparagraphs 5, 6, 7, and 8 below.

3. Transfer of Ownership or Control

The permittee shall notify the division, in writing, ten (10) calendar days in advance of a proposed transfer of the permit. This permit is not transferable to any person except after notice is given to the division.

- a. Where a facility wants to change the name of the permittee, the original permittee (the first owner or operators) must submit a Notice of Termination.
- b. The new owner or operator must submit an application. See also signature requirements in Part II.K, above.
- c. A permit may be automatically transferred to a new permittee if:
 - i. The current permittee notifies the division in writing 30 calendar days in advance of the proposed transfer date; and
 - ii. The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and
 - iii. The division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.
 - iv. Fee requirements of the Colorado Discharge Permit System Regulations, Section 61.15, have been met.

4. Monitoring reports

Monitoring results must be reported at the intervals specified in this permit per the requirements of 40 CFR 122.41(l)(4).

5. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit, shall be submitted on the date listed

in the compliance schedule section. The fourteen (14) calendar day provision in Regulation 61.8(4)(n)(i) has been incorporated into the due date.

6. Twenty-four Hour Reporting

In addition to the reports required elsewhere in this permit, the permittee shall report the following circumstances orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances, and shall mail to the division a written report containing the information requested within five (5) working days after becoming aware of the following circumstances:

- a. Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;
- b. Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;
- c. Circumstances leading to any upset which causes an exceedance of any effluent limitation in the permit;
- d. Daily maximum violations for any of the pollutants limited by Part I of this permit. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.
- e. The division may waive the written report required under subparagraph 6 of this section if the oral report has been received within 24 hours.

7. Other Non-Compliance

A permittee must report all instances of noncompliance at the time monitoring reports are due. If no monitoring reports are required, these reports are due at least annually in accordance with Regulation 61.8(4)(p). The annual report must contain all instances of non-compliance required under either subparagraph 5 or subparagraph 6 of this subsection.

8. Other Information

Where a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Permitting Authority, it has a duty to promptly submit such facts or information.

M. BYPASS

1. Bypass Not Exceeding Limitations

The permittees may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of Part II.M.2 of this permit. See 40 CFR 122.41(m)(2).

2. Notice of Bypass

- a. Anticipated bypass. If the permittee knows in advance of the need for a bypass, the permittee must submit prior notice, if possible at least ten days before the date of the bypass. See 40 CFR §122.41(m)(3)(i) and/or Regulation 61.9(5)(c).
- b. Unanticipated bypass. The permittee must submit notice of an unanticipated bypass in accordance with Part II.L.6. See 40 CFR §122.41(m)(3)(ii).

3. Prohibition of Bypass

Bypasses are prohibited and the division may take enforcement action against the permittee for bypass, unless:

- a. The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c. Proper notices were submitted to the division.

N. UPSET

1. Effect of an upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of Part II.N.2. of this permit are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review in accordance with Regulation 61.8(3)(j).

2. Conditions Necessary for Demonstration of an Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

- a. An upset occurred and the permittee can identify the specific cause(s) of the upset;
- b. The permitted facility was at the time being properly operated and maintained; and
- c. The permittee submitted proper notice of the upset as required in Part II.L.6. (24- hour notice); and
- d. The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

3. Burden of Proof

In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

O. RETENTION OF RECORDS

1. Post-Expiration or Termination Retention

Copies of documentation required by this permit, including records of all data used to complete the application for permit coverage to be covered by this permit, must be retained for at least three years from the date that permit coverage expires or is terminated. This period may be extended by request of EPA at any time.

2. On-site Retention

The permittee must retain an electronic version or hardcopy of the SWMP at the construction site from

the date of the initiation of construction activities to the date of expiration or inactivation of permit coverage; unless another location, specified by the permittee, is approved by the division.

P. REOPENER CLAUSE

1. Procedures for Modification or Revocation

Permit modification or revocation of this permit or coverage under this permit will be conducted according to Regulation 61.8(8).

2. Water Quality Protection

If there is evidence indicating that the stormwater discharges authorized by this permit cause, have the reasonable potential to cause or contribute to an excursion above any applicable water quality standard, the permittee may be required to obtain an individual permit, or the permit may be modified to include different limitations and/or requirements.

Q. SEVERABILITY

The provisions of this permit are severable. If any provisions or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

R. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements, excluding information submitted using the CEOS portal, shall be directed as follows:

- a. Oral Notifications, during normal business hours shall be to:
Clean Water Compliance Section
Water Quality Control Division
Telephone: (303) 692-3500
- b. Written notification shall be to:
Clean Water Compliance Section
Water Quality Control Division
Colorado Department of Public Health and Environment
WQCD-WQP-B2
4300 Cherry Creek Drive South
Denver, CO 80246-1530

S. RESPONSIBILITIES

1. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

T. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the CWA.

U. EMERGENCY POWERS

Nothing in this permit shall be construed to prevent or limit application of any emergency power of the division.

V. CONFIDENTIALITY

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Water Quality Control Commission or the division, but shall be kept confidential. Any person seeking to invoke the protection of this section shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

W. FEES

The permittee is required to submit payment of an annual fee as set forth in the 2016 amendments to the Water Quality Control Act. Section 25-8-502 (1.1) (b), and the Colorado Discharge Permit System Regulations 5 CCR 1002-61, Section 61.15 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S.1973 as amended.

X. DURATION OF PERMIT

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least ninety (90) calendar days before this permit expires. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications. If the permittee anticipates there will be no discharge after the expiration date of this permit, the division should be promptly notified so that it can terminate the permit in accordance with Part I.A.3.i.

Y. SECTION 307 TOXICS

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition

APPENDIX 3

Exhibit A - Erosion and Sediment Control Field Inspection Report

Exhibit B - Corrective Action Report

**Exhibit A
Erosion and Sediment Control Field Inspection Report**

Project Name:	Date of Inspection:
Project Address/Location:	Time of Inspection:
Contractor:	Name of Inspector:

Reason for Inspection:

BMP for Erosion Control	Practice Used		Maintenance or Sediment Removal Required		Explain Required Action
	Yes	No	Yes	No	
Check Dams					
Concrete Washout Area					
Construction Fence					
Diversion Ditch/Swales/Berms					
Erosion Control Blankets					
Inlet Protection					
Reinforced Rock Berms					
Reinforced Rock Berms - Culvert					
Sediment Basin					
Sediment Control Log					
Seed & Mulch (Temp. or Permanent)					
Silt Fence					
Sodding					
Stabilized Staging Area					
Straw Bale Barrier					
Surface Roughening					
Vehicle Tracking Control Pad					

Contractor's Comments:

Inspector's Comments:

I certify this Erosion and Sediment Control Field Inspection Report is complete and accurate, to my knowledge and belief.

Inspector Signature and Date:	Reviewed By:
-------------------------------	--------------

Exhibit B
Corrective Action Report

Site: _____

Inspector: _____

Date: _____

.....
Erosion Control Measure/Facility Requiring Attention:

Recommended Corrective Action:

Scheduled Completion Date: _____ Date Completed: _____

.....

Erosion Control Measure/Facility Requiring Attention:

Recommended Corrective Action:

Scheduled Completion Date: _____ Date Completed: _____

.....

Erosion Control Measure/Facility Requiring Attention:

Recommended Corrective Action:

Scheduled Completion Date: _____ Date Completed: _____

APPENDIX 4

SWMP Site Plan - Early Grading Plan Sizing Calculations

SWMP Site Plan - Early Grading Initial Condition - Exhibit EGP-1

SWMP Site Plan - Early Grading Interim/Final Condition - Exhibit EGP-2

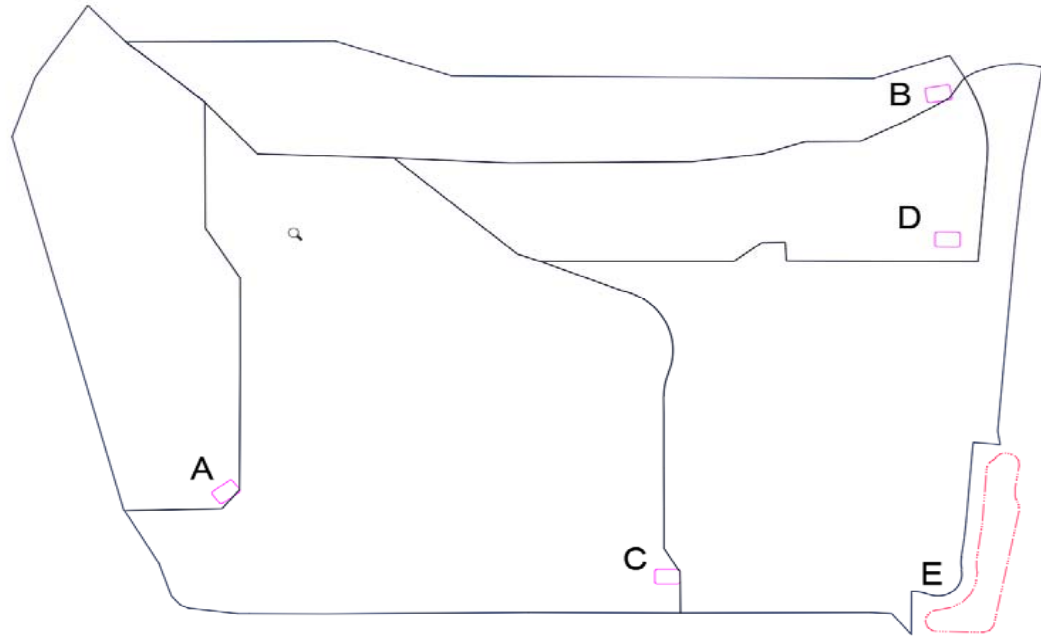
Details of Construction CCMs - Exhibit EGP-3 & EGP-4

Project: Peaceful Ridge Subdivision

Basin ID: All Tributary Areas to Planned Detention Basin in Early Graded Condition

All Temporary Sediment Basins (A thru E) Designated and Sized

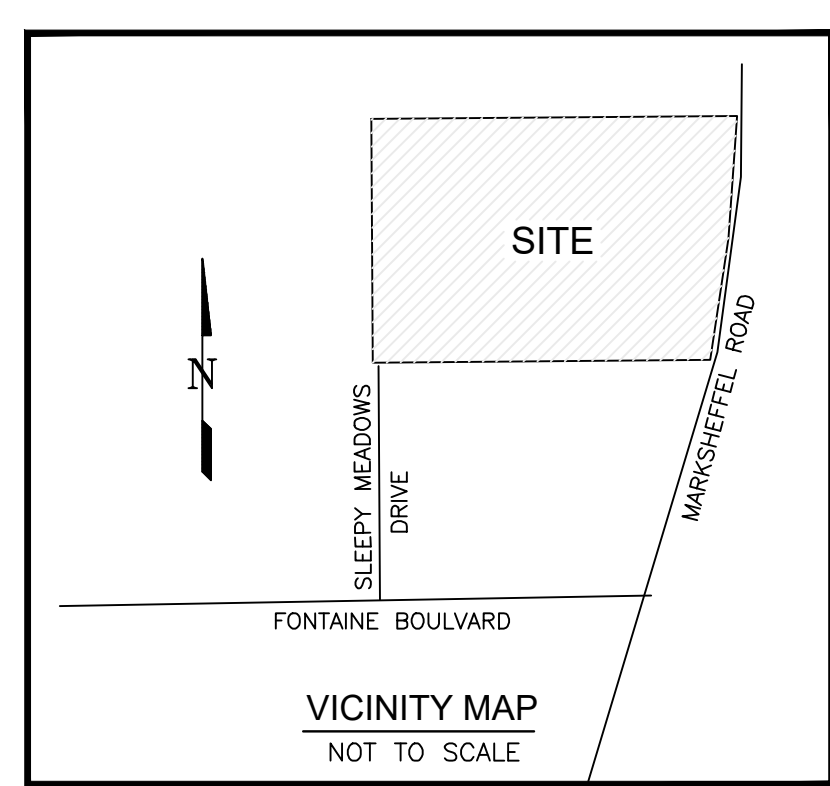
TSB Desig.	Trib. Ac.	Cu. Ft. Unit/Ac	Req'd. Cu. Ft	Req'd. Ac/Ft
A	7.71	1,800.00	13,878.00	0.319
B	6.66	1,800.00	11,988.00	0.275
C	18.93	1,800.00	34,074.00	0.782
D	6.05	1,800.00	10,890.00	0.250
E	12.7	1,800.00	22,860.00	0.525
Sum:	52.05	1,800.00	93,690.00	2.151 Required
			Basin 'E':	2.341 Provided



PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

- Stormwater discharges from construction sites shall not cause or threaten to cause pollution, contamination, or degradation of State Waters. All work and earth disturbance shall be done in a manner that minimizes pollution of any on-site or off-site waters, including wetlands, streams, or other water bodies.
- Notwithstanding anything depicted in these plans in words or graphic representation, all design and construction related to roads, storm drainage and erosion control shall conform to the standards and requirements of the most recent version of the relevant adopted El Paso County standards, including the Land Development Code, the Engineering Criteria Manual, the Drainage Criteria Manual, and the Drainage Criteria Manual Volume 2. Any deviations from regulations and standards must be requested, and approved, in writing.
- A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Plan (ESQCP) issued prior to commencing construction. Management of the SWMP during construction is the responsibility of the designated Qualified Stormwater Manager or Certified Erosion Control Inspector. The SWMP shall be located on site at all times during construction and shall be kept up to date with work progress and changes in the field.
- Once the ESQCP is approved and a "Notice to Proceed" has been issued, the contractor may install the initial stage erosion and sediment control measures as indicated on the approved GEC. A Preconstruction Meeting between the contractor, engineer, and El Paso County will be held prior to any construction. It is the responsibility of the applicant to coordinate the meeting time and place with County staff.
- Control measures must be installed prior to commencement of activities that could contribute pollutants to stormwater. Control measures for all slopes, channels, ditches, and disturbed land areas shall be installed immediately upon completion of the disturbance.
- All temporary sediment and erosion control measures shall be maintained and remain in effective operating condition until permanent soil erosion control measures are implemented and final stabilization is established. All persons engaged in land disturbance activities shall assess the adequacy of control measures at the site and identify if changes to those control measures are needed to ensure the continued effective performance of the control measures. All changes to temporary sediment and erosion control measures must be incorporated into the Stormwater Management Plan.
- Temporary stabilization shall be implemented on disturbed areas and stockpiles where ground disturbing construction activity has permanently ceased or temporarily ceased for longer than 14 days.

- Final stabilization must be implemented at all applicable construction sites. Final stabilization is achieved when all ground disturbing activities are complete and all disturbed areas either have a uniform vegetative cover with individual plant density of 70 percent of pre-disturbance levels established or equivalent permanent alternative stabilization method is implemented. All temporary sediment and erosion control measures shall be removed upon final stabilization and before permit closure.
- All permanent stormwater management facilities shall be installed as designed in the approved plans. Any proposed changes that affect the design or function of permanent stormwater management structures must be approved by the ECM Administrator prior to implementation.
- Earth disturbances shall be conducted in such a manner so as to effectively minimize accelerated soil erosion and resulting sedimentation. All disturbances shall be designed, constructed, and completed so that the exposed area of any disturbed land shall be limited to the shortest practical period of time. Pre-existing vegetation shall be protected and maintained within 50 horizontal feet of a water of the state unless shown to be infeasible and specifically requested and approved.
- Compaction of soil must be prevented in areas designated for infiltration control measures or where final stabilization will be achieved by vegetative cover. Areas designated for infiltration control measures shall also be protected from sedimentation during construction until final stabilization is achieved. If compaction prevention is not feasible due to site constraints, all areas designated for infiltration and vegetation control measures must be loosened prior to installation of the control measure(s).
- Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be a stabilized conveyance designed to minimize erosion and the discharge of sediment off site.
- Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to enter State Waters, including any surface or subsurface storm drainage system or other facilities.
- During dewatering operations of uncontaminated ground water may be discharged on site, but shall not leave the site in the form of surface runoff unless an approved State dewatering permit is in place.
- Erosion control blanketing or other protective covering shall be used on slopes steeper than 3:1.
- Contractor shall be responsible for the removal of all wastes from the construction site for disposal in accordance with local and State regulatory requirements. No construction debris, tree slash, building material wastes or unused building materials shall be buried, dumped, or discharged at the site.
- Waste materials shall not be temporarily placed or stored in the street, alley, or other public way, unless in accordance with an approved Traffic Control Plan. Control measures may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
- Tracking of soils and construction debris off-site shall be minimized. Materials tracked off-site shall be cleaned up and properly disposed of immediately.
- The owner/developer shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, soil, and sand that may accumulate at roads, storm drains and other drainage conveyance systems and stormwater appurtenances as a result of site development.
- The quantity of materials stored on the project site shall be limited, as much as practical, to that quantity required to perform the work in an orderly sequence. All materials stored on-site shall be stored in a neat, orderly manner, in their original containers, with original manufacturer's labels.
- No chemical(s) having the potential to be released in stormwater are to be stored or used onsite unless permission for the use of such chemical(s) is granted in writing by the ECM Administrator. In granting approval for the use of such chemical(s), special conditions and monitoring may be required.
- Bulk storage of allowed petroleum products or other allowed liquid chemicals in excess of 55 gallons shall require adequate secondary containment protection to contain all spills onsite and to prevent any spilled materials from entering State Waters, any surface or subsurface storm drainage system or other facilities.
- No person shall cause the impediment of stormwater flow in the curb and gutter or ditch except with approved sediment control measures.
- Owner/developer and their agents shall comply with the "Colorado Water Quality Control Act" (Title 25, Article 8, CRS) and the "Clean Water Act" (33 USC 1344), in addition to the requirements of the Land Development Code, DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the contractor prior to construction (1041, NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and other laws, rules, or regulations of other Federal, State, local, or County agencies, the most restrictive laws, rules, or regulations shall apply.
- All construction traffic must enter/exit the site only at approved construction access points.
- Prior to construction the permittee shall verify the location of existing utilities.
- A water source shall be available on site during earthwork operations and shall be utilized as required to minimize dust from earthwork equipment and wind.
- The soils report for this site has been prepared by Vivid Engineering Group (Dated: April 24, 2020) and shall be implemented in accordance with a proposed Traffic Control Plan.
- At least ten (10) days prior to the anticipated start of construction, for projects that will disturb one (1) acre or more, the owner or operator of construction activity shall submit a permit application for stormwater discharge to the Colorado Department of Public Health and Environment, Water Quality Division. The application contains certification of completion of a stormwater management plan (SWMP), of which this Grading and Erosion Control Plan may be a part. For information or application materials contact: Colorado Department of Public Health and Environment Water Quality Control Division WQCD - Permits 4300 Cherry Creek Drive South Denver, CO 80246-1530 Attn: Permits Unit
- Base mapping was provided by Pinnacle Land Surveying. The date of the last survey update was March 2005.
- Proposed Construction Schedule: Begin Construction: Spring 2022 End Construction: Autumn 2022 Total Site Area = 60.1 Acres
- Area to be disturbed = 57.7 Acres
- Existing 100-year runoff coefficient = 0.35 Proposed 100-year runoff coefficient = 0.61 Existing Hydrologic Soil Groups: B, C & D (B-Nelson-Tassel fine sandy loams; B-Stoneham sandy loam; C-Razor-Midway Complex)
- Site is currently undeveloped and covered with native grasses on moderate to steep slopes (3%-18%).
- Site is located in the West Fork Jimmy Camp Creek Drainage Basin.
- No Asphalt Batch Plants will be utilized at the site.



El Paso County (standalone GEC Plan): County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document. Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manuals Volumes 1 and 2, and Engineering Criteria Manual, as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.

County Engineer/ECM Administrator: JENNIFER IRVINE, P.E. Date: _____

Engineer of Record Signature: ANDREW W. McCORD, P.E. 25057 Date: _____

Owner's Statement: I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan. Date: _____

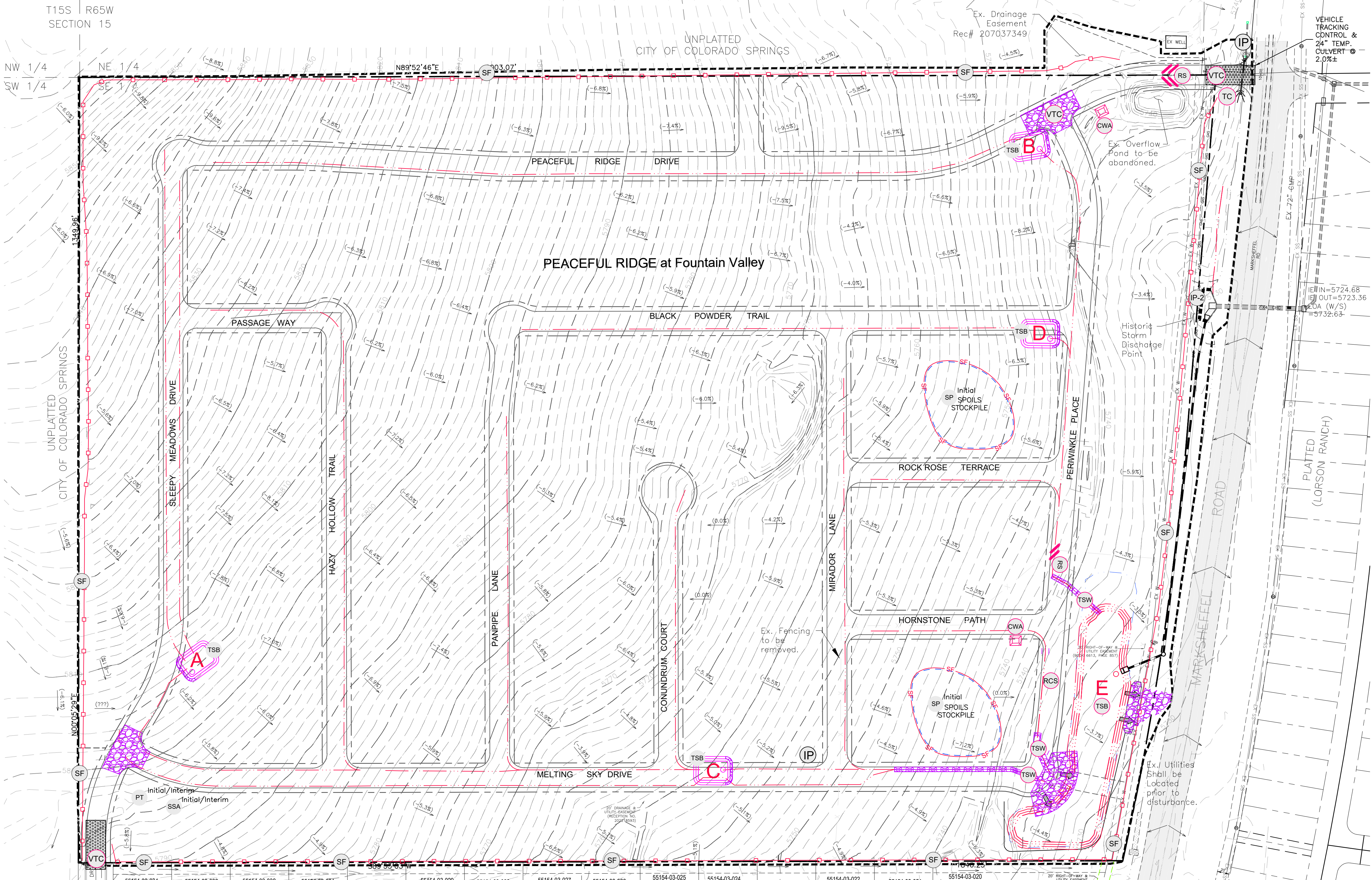
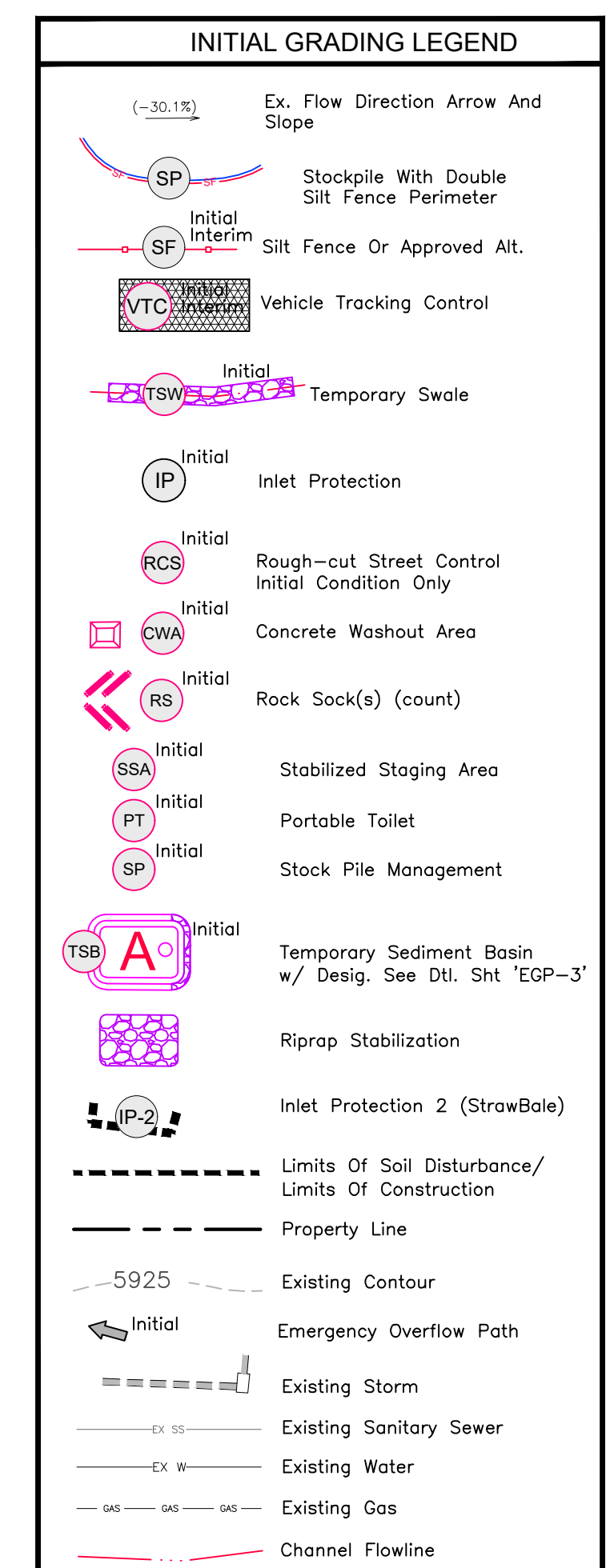
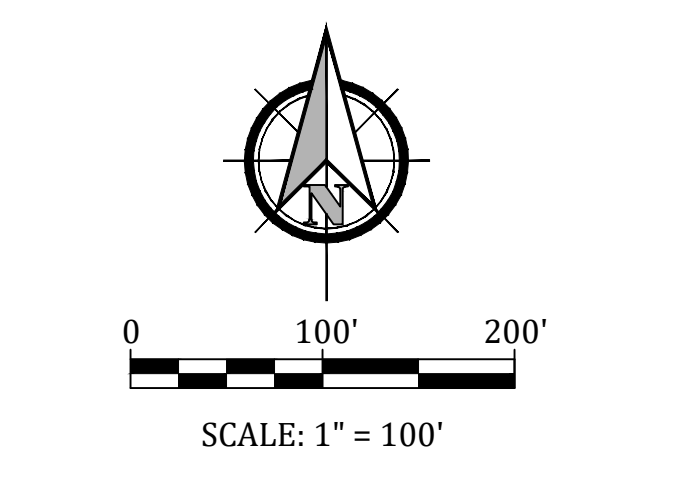
Owner Signature: Glen Development Company, 3 WIDEFIELD BOULEVARD, COLORADO SPRINGS, COLORADO 80911

EROSION CONTROL INSPECTION AND MAINTENANCE

A Thorough inspection of the Erosion Control Plan/Stormwater Management System shall be performed every 14 days as well as after any rain or snowmelt event that causes Surface Erosion:

- When Silt Fences are up to half their height, the silt shall be removed, final grade re-established and slopes re-seeded, if necessary. Any silt fence that has shifted or decayed shall be replaced.
- Any Accumulated Trash or debris shall be removed from outlets.

An inspection and maintenance log shall be kept.



55154-03-034 Larry Lacy & Janis K. Plut 9328 Bur Oak Ln	55154-03-033 Billy R. & Sharon Anthony 9328 Bur Oak Ln	55154-03-032 James B. & Catherine E. Ivey 9356 Bur Oak Ln	55154-03-031 Danny & Dee Lynch 9370 Bur Oak Ln	55154-03-030 Tanner Dowdell 9384 Bur Oak Ln	55154-03-029 Matthew J. McCarriston & Elizabeth L. Tacka 9388 Bur Oak Ln	55154-03-028 Troy L. & Rosaly L. Otsuka 9426 Bur Oak Ln	55154-03-027 Ronny A. & Doretha A. Huffman 9440 Bur Oak Ln	55154-03-026 Vincent A. & Kathryn E. Trevino 9454 Bur Oak Ln	55154-03-025 Philip M. & Mary Ann Pump 9466 Bur Oak Ln	55154-03-024 Steven P. & Dina M. Rainsch 9490 Bur Oak Ln	55154-03-023 John T. Bennett 9510 Bur Oak Ln	55154-03-022 George L. & Freda E. Mitchell 9524 Bur Oak Ln	55154-03-021 Drew R. & Stacie I. Tutton 9538 Bur Oak Ln	55154-03-020 Heather K. Sykes Living Trust Heather K. Sykes Trustee 9552 Bur Oak Ln
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KIOWA
Engineering Corporation

1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

W
WIDEFIELD
Investment Group

PEACEFUL RIDGE AT FOUNTAIN VALLEY
EARLY GRADING PLAN
INITIAL GRADING AND EROSION CONTROL PLAN
EL PASO COUNTY, COLORADO

FOUNTAIN VALLEY INVESTMENT PARTNERS, LLC

Project No.: 04092/21031
Date: Feb 10, 2022
Design: MJK
Drawn: MJK
Check: AWMC
Revisions:
No. "EGP-213"

SHEET
EGP-1
1 OF 7 SHEETS

OPINION OF COST FOR EROSION CONTROL REQUIREMENTS				
ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
VEHICLE TRACKING CONTROL	2	EA	\$2,453.00	\$4,906.00
SILT FENCE	16,532	LF	\$2.60	\$42,983.00
INLET PROTECTION	13	EA	\$173.00	\$2,249.00
CONCRETE WASH OUT	2	EA	\$932.00	\$1,864.00
EROSION CONTROL BLANKET	17,875	SY	\$6.20	\$110,825.00
TEMPORARY SEDIMENT BASIN	1	EA	\$1,824.00	\$1,824.00
TEMPORARY SEEDING AND MULCH	45.2	AC	\$1,605.00	\$72,546.00
MAINTENANCE (25% OF EROSION CONTROL)	1	LS	\$14,879.00	\$59,299.00
			TOTAL	\$296,496.00

SEED MIX			
AREAS DISTURBED BY THE EARTHWORK ACTIVITIES AND NOT RECEIVING OTHER TREATMENT SHALL BE PERMANENTLY REVEGETATED WITH THE FOLLOWING SEED MIX.			
SPECIES	VARIETY	Rate	lbs/acre
SIDCOATS GRAMA	El Reno	3.0	
WESTERN WHEAT GRASS	Barton	2.5	
SLENDER WHEAT GRASS	Native	2.0	
LITTLE BLUESTEM	Pastura	2.0	
SAND DROPSSEED	Native	0.5	
SWITCH GRASS	Nebraska 28	3.0	
WEEPING LOVE GRASS	Morpha	1.0	
14.0 lbs			
SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL. IN AREAS UNACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL. MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.			

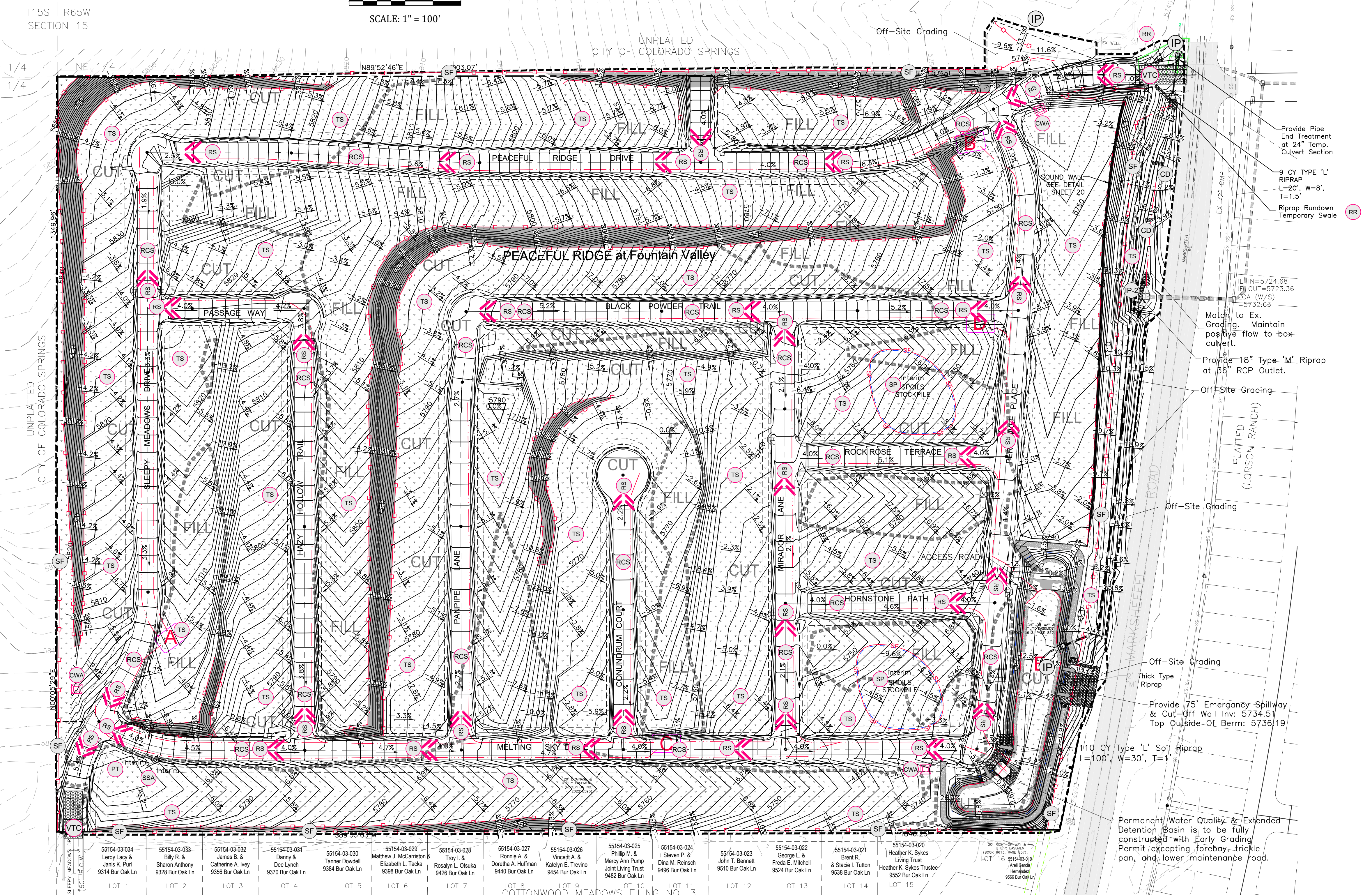
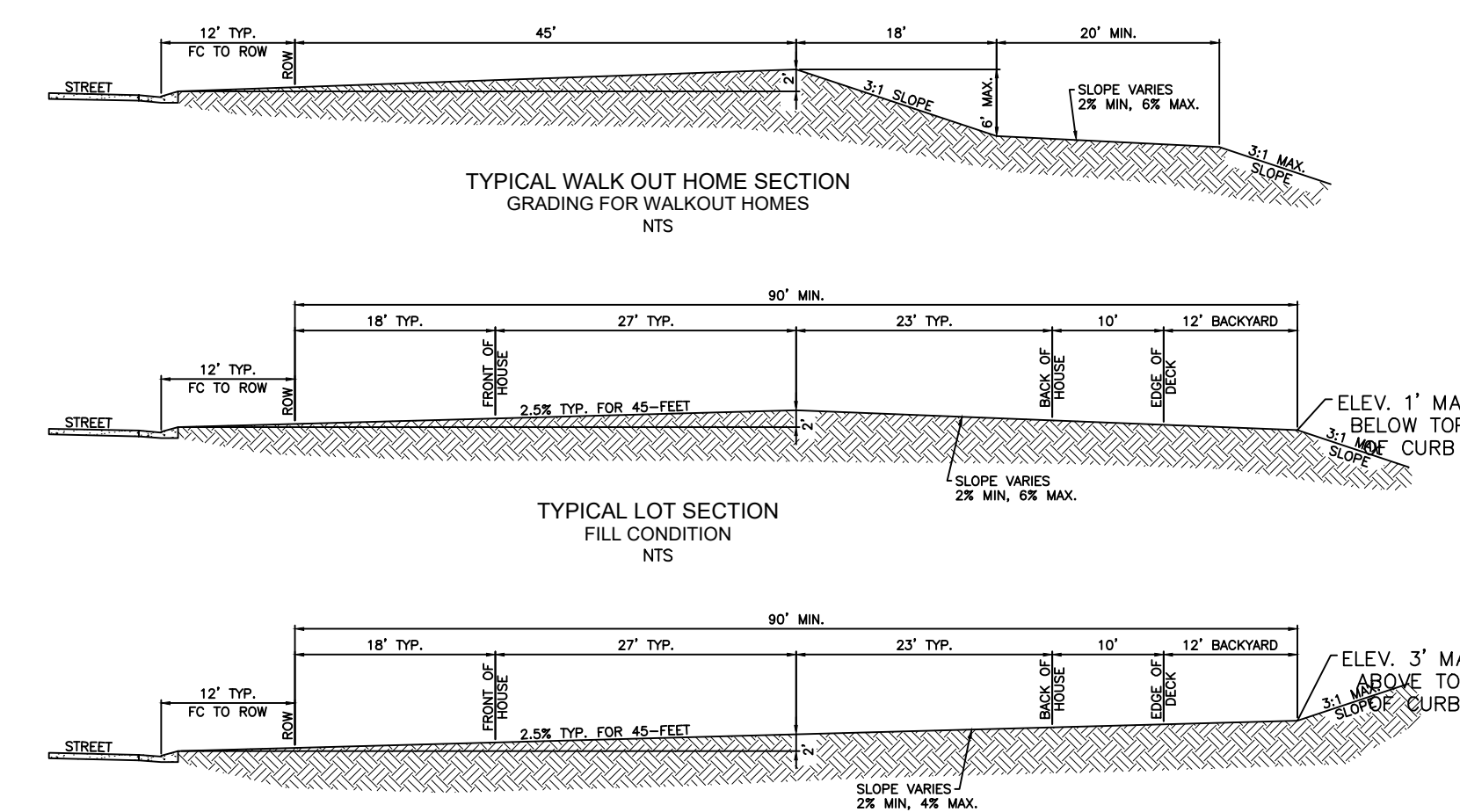
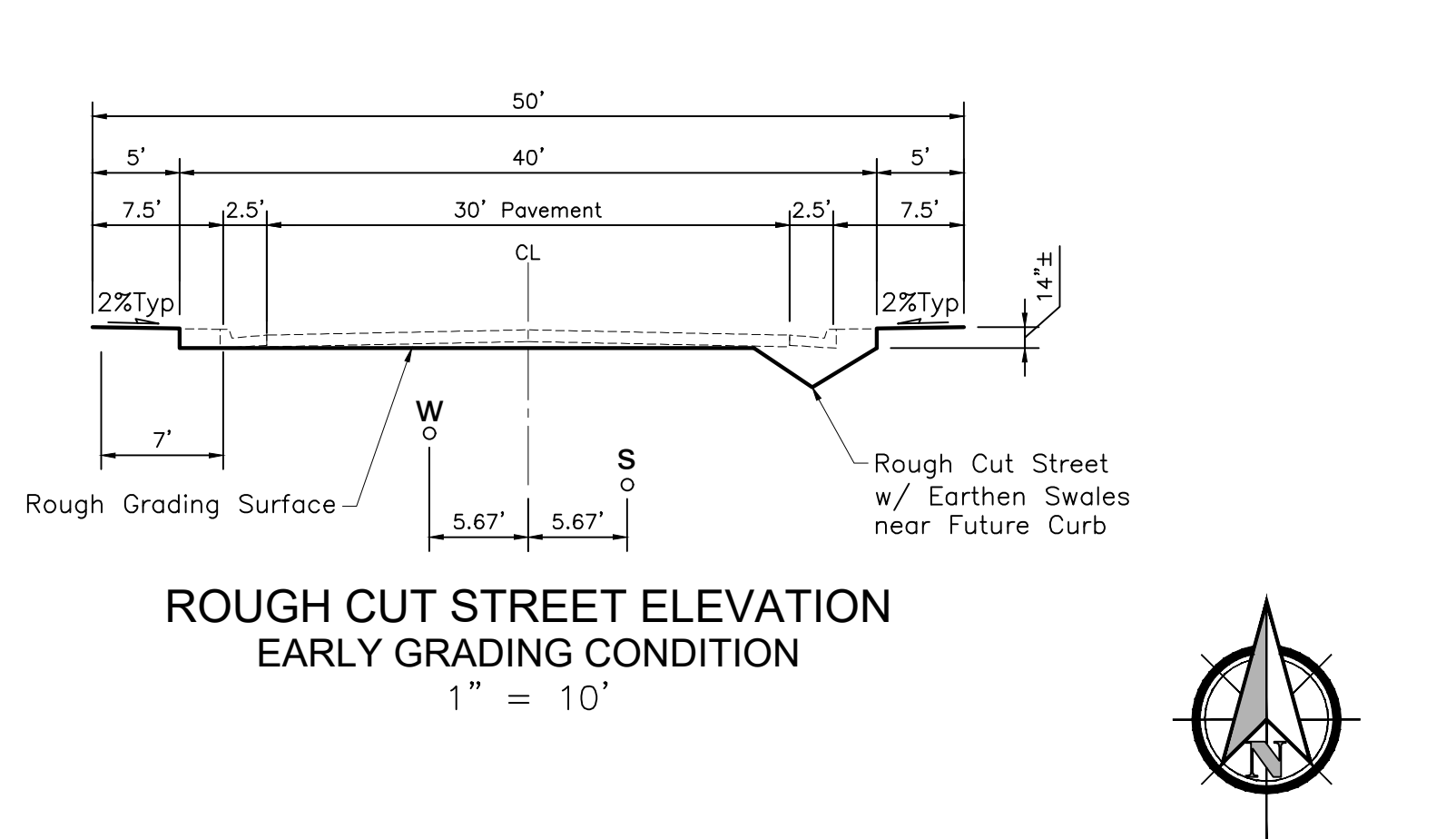
EROSION CONTROL INSPECTION AND MAINTENANCE

A Thorough inspection of the Erosion Control Plan/Stormwater Management System shall be performed every 14 days as well as after any rain or snowmelt event that causes Surface Erosion:
 * When Silt Fences have silted up to half their height, the silt shall be removed, final grade re-established and slopes re-seeded, if necessary. Any silt fence that has shifted or decayed shall be repaired or replaced.
 * Any Accumulated Trash or debris shall be removed from outlets.
 An inspection and maintenance log shall be kept.

LEGEND

- (-30.1%) Ex. Flow Direction Arrow And Slope
- 2.0% New Flow Direction Arrow And Slope
- CUT FILL Cut/Fill Delineation
- SP Stockpile With Double Silt Fence Perimeter
- SF Initial Interim Silt Fence Or Approved Alt.
- VTC Vehicle Tracking Control
- IP Initial Interim Inlet Protection (Existing Only)
- ECB Final Erosion Control Blanket*
- RCS Initial Rough-cut Street Control Initial Condition Only
- CWA Interim Concrete Washout Area
- RS Interim Rock Sock(s) (count)
- SSA Interim Stabilized Staging Area
- PT Interim Portable Toilet
- SP Interim Stock Pile Management
- TS Interim Temporary Seeding And Mulching
- CD Interim Rock Check Dam
- Limits Of Soil Disturbance/ Limits Of Construction
- Property Line
- 5925 Existing Contour
- 5925 Proposed Contour
- Interim/Final Emergency Overflow Path
- Existing Storm
- EX SS Existing Sanitary Sewer
- EX W Existing Water
- Proposed Water
- Existing Gas
- Channel Flowline

*Shaded area denotes permanent erosion blanket. Curlex heavy duty erosion control blanket by american excelsior or equal shall be used.



El Paso County (standalone GEC Plan): County plan review is provided only for general conformance with County Design Criteria. The County is not responsible for the accuracy and adequacy of the design, dimensions, and/or elevations which shall be confirmed at the job site. The County through the approval of this document assumes no responsibility for completeness and/or accuracy of this document. Filed in accordance with the requirements of the El Paso County Land Development Code, Drainage Criteria Manuals Volumes 1 and 2, and Engineering Criteria Manual, as amended.

In accordance with ECM Section 1.12, these construction documents will be valid for construction for a period of 2 years from the date signed by the El Paso County Engineer. If construction has not started within those 2 years, the plans will need to be resubmitted for approval, including payment of review fees at the Planning and Community Development Director's discretion.

County Engineer/ECM Administrator _____ Date _____
 JENNIFER IRVINE, P.E.

Engineer's Statement: This grading and erosion control 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 for grading and erosion control plans. I accept responsibility for any liability caused by any misprints, errors or omissions on my part in preparing this plan.

 Engineer of Record Signature
 ANDREW W. McCORD P.E. 25057
 2/14/22 Date

Owner's Statement: I, the owner/developer have read and will comply with the requirements of the Grading and Erosion Control Plan.

 Owner Signature
 GLEN DEVELOPMENT COMPANY
 ADDRESS: 3 WIDEFIELD BOULEVARD
 COLORADO SPRINGS, COLORADO 80911

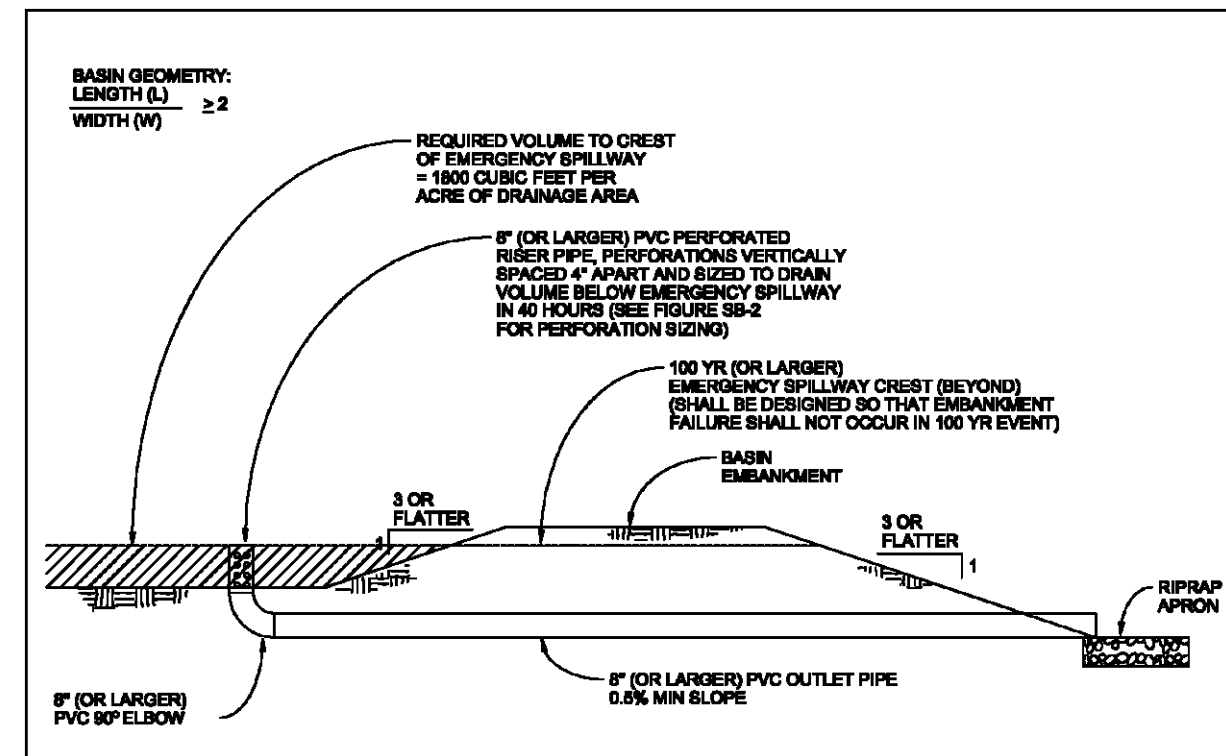
Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7342

W
 WIDEFIELD
 Investment Group

PEACEFUL RIDGE AT FOUNTAIN VALLEY
EARLY GRADING PLAN
INTERIM / FINAL GRADING AND EROSION CONTROL PLAN
 EL PASO COUNTY, COLORADO

FOUNTAIN VALLEY INVESTMENT PARTNERS, L.L.C.

Project No.: 04092/21031
Date: Feb 10, 2022
Design: MJK
Drawn: MJK
Check: AWMc
Revisions:
No. "EGP-213"
SHEET
EGP-2
2 OF 7 SHEETS



SEDIMENT BASIN NOTES

INSTALLATION REQUIREMENTS

- SEDIMENT BASIN SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
- THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
- THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
- THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. CHANNELS MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
- EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITH 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
- WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

- CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
- SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.
- SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality
Figure SB-1 Sediment Basin Construction Detail and Maintenance Requirements
3-22

Required Area per Row (ft²)

Depth at Outlet (ft)	Depth at Outlet (ft)								
	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0
1	7.52	5.96	5.25	4.81	4.48	4.21	4.01	3.87	3.77
2	14.04	11.11	9.81	9.07	8.48	8.01	7.71	7.52	7.37
3	21.06	16.67	14.72	13.61	12.72	12.01	11.57	11.27	11.07
4	28.08	22.15	19.63	18.15	17.04	16.21	15.67	15.27	14.97
5	35.10	27.63	24.51	22.58	21.24	20.21	19.57	19.07	18.67
6	42.12	33.11	29.39	27.05	25.41	24.21	23.57	23.07	22.67
7	49.14	38.59	34.27	31.51	29.57	28.21	27.57	27.07	26.67
8	56.16	44.07	39.15	35.95	33.72	32.21	31.57	31.07	30.67
9	63.18	49.55	44.03	40.43	37.89	36.21	35.57	35.07	34.67
10	70.20	55.03	48.91	44.93	42.05	40.21	39.57	39.07	38.67

TABLE SB-2

Circular Perforation Sizing

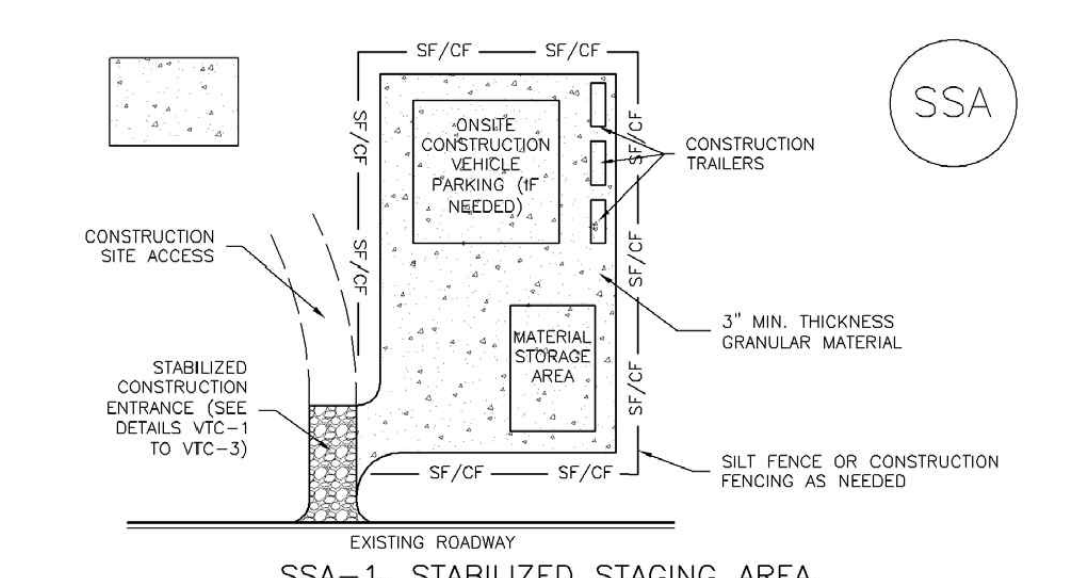
Hole Diameter (in)	Hole Diameter (in)	Area per Row (ft ²)		
		n=1	n=2	n=3
1/4	0.250	0.05	0.10	0.15
5/16	0.313	0.08	0.15	0.23
3/8	0.375	0.11	0.22	0.33
7/16	0.438	0.15	0.30	0.45
1/2	0.500	0.20	0.40	0.60
9/16	0.563	0.28	0.56	0.84
5/8	0.625	0.31	0.61	0.92
11/16	0.688	0.37	0.74	1.11
3/4	0.750	0.44	0.88	1.33
7/8	0.875	0.60	1.20	1.80
1	1.000	0.79	1.57	2.36
1 1/8	1.125	0.99	1.99	2.98
1 1/4	1.250	1.23	2.45	3.68
1 3/8	1.375	1.48	2.97	4.45
1 1/2	1.500	1.77	3.53	5.30
1 5/8	1.625	2.07	4.13	6.22
1 3/4	1.750	2.41	4.81	7.22
1 7/8	1.875	2.79	5.52	8.28
2	2.000	3.14	6.28	9.42

n = Number of columns of perforations

Minimum steel plate thickness: 1/4" n=1, 5/16" n=2, 3/8" n=3

City of Colorado Springs Stormwater Quality
Figure SB-2 Outlet Sizing Application Techniques and Maintenance Requirements
3-33

Stabilized Staging Area (SSA) SM-6



SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES

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

STABILIZED STAGING AREA MAINTENANCE NOTES

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SSA-3

SM-6 Stabilized Staging Area (SSA)

STABILIZED STAGING AREA MAINTENANCE NOTES

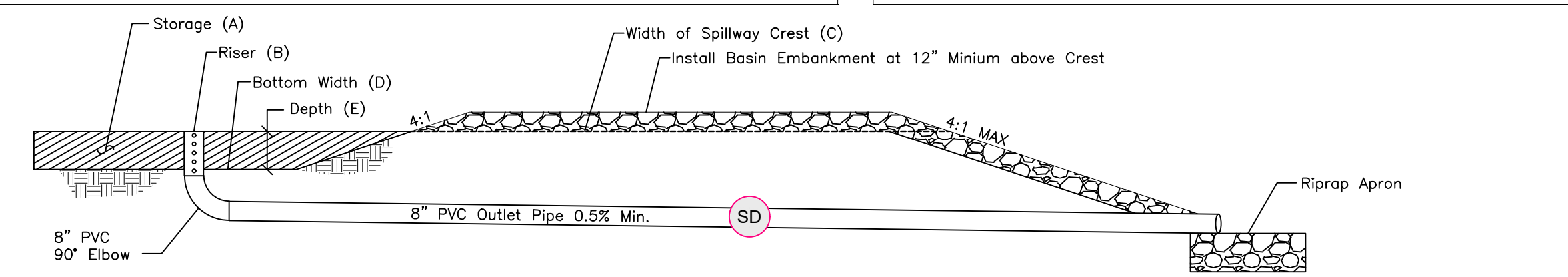
- STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.
- THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEED, AND MULCH 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 USDC STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

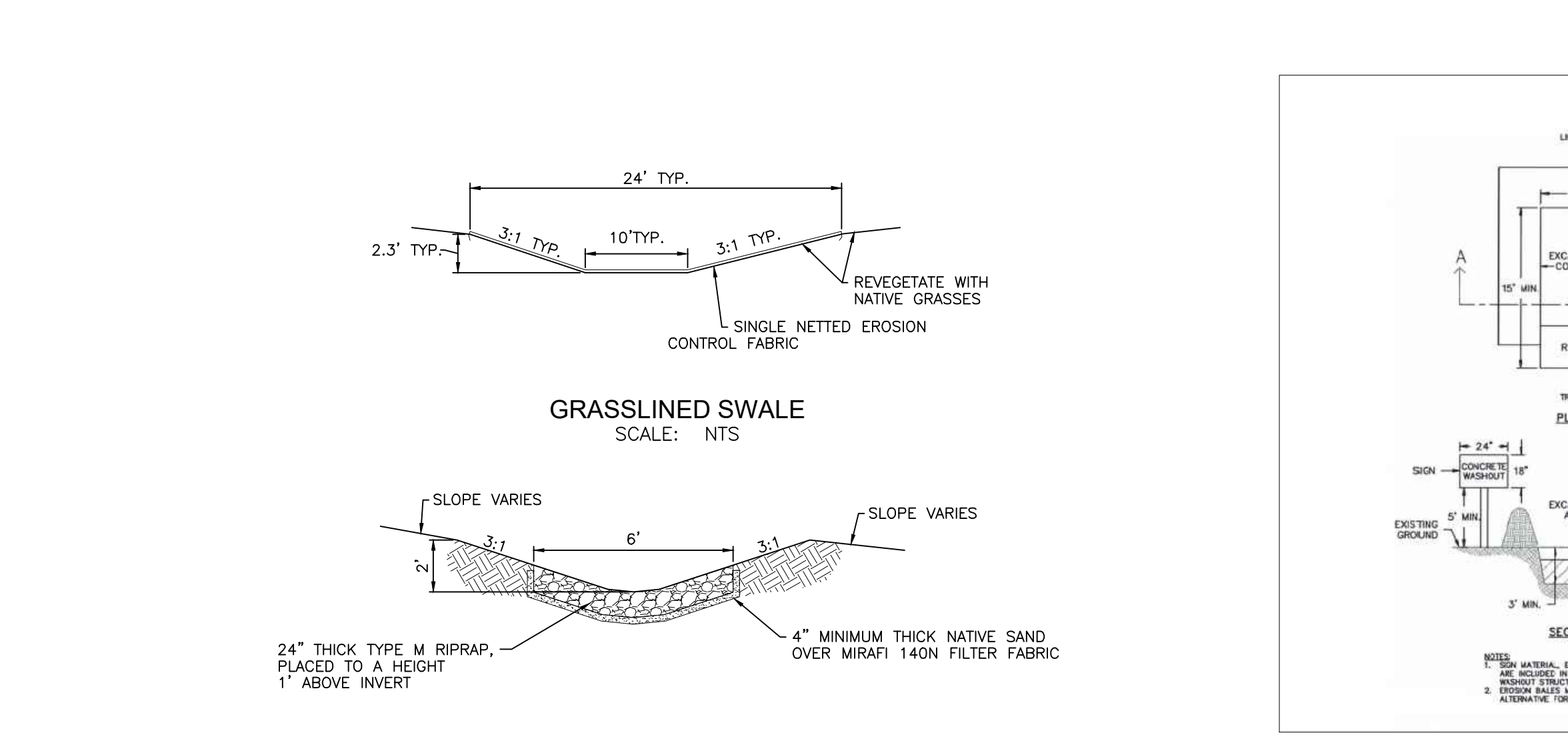
(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

November 2010 Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3 SSA-4



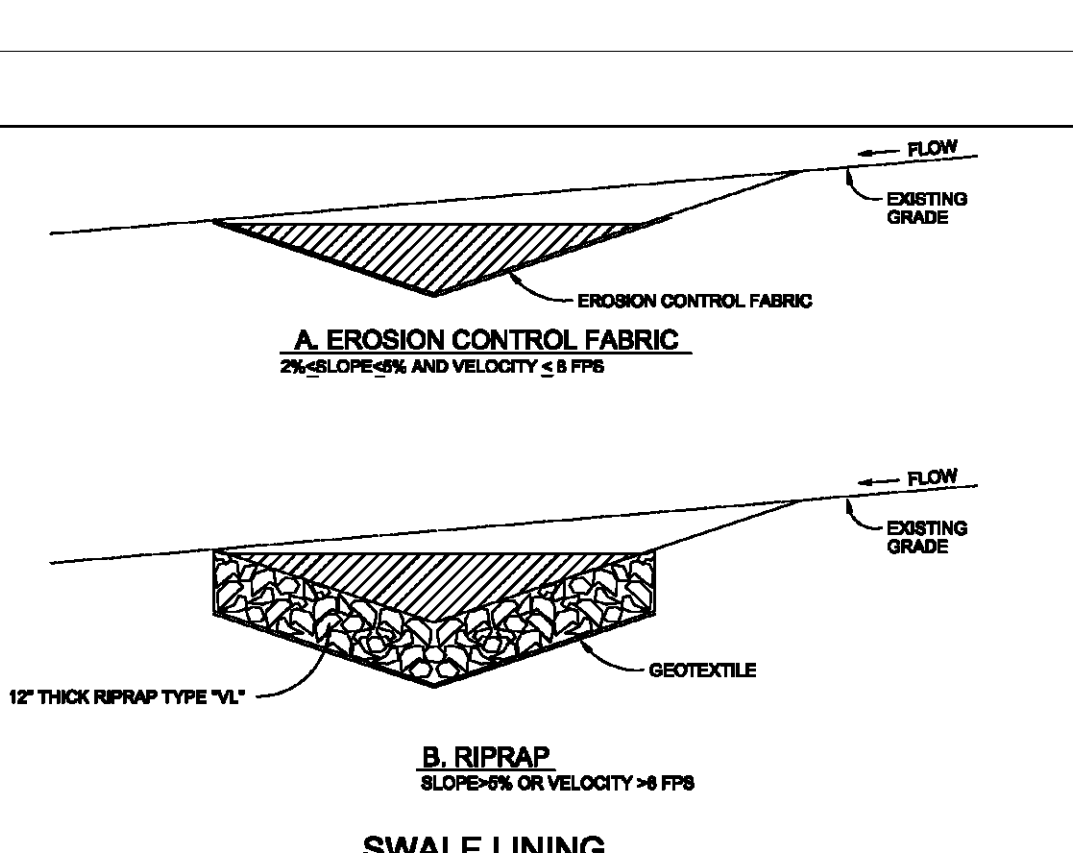
- TEMPORARY SEDIMENT BASIN "A"**
- 0.32 ac-ft Required to Spillway Crest
 - Use 8" PVC Perforated Riser Pipe: Perforations Vertically Spaced 4" Apart, 1 Column of 5 5/16" ϕ Holes.
 - 12' Long Spillway: 1' Depth, Lined With 12" Thick Type 'L' Riprap to toe of slope.
 - Basin Bottom Width = 51'
 - Depth = 2.0'
- TEMPORARY SEDIMENT BASIN "B"**
- 0.28 ac-ft Required to Spillway Crest
 - Use 8" PVC Perforated Riser Pipe: Perforations Vertically Spaced 4" Apart, 1 Column of 5 5/16" ϕ Holes.
 - 11' Long Spillway: 1' Depth, Lined With 12" Thick Type 'L' Riprap to toe of slope.
 - Basin Bottom Width = 47.25'
 - Depth = 2.0'
- TEMPORARY SEDIMENT BASIN "C"**
- 0.78 ac-ft Required to Spillway Crest
 - Use 8" PVC Perforated Riser Pipe: Perforations Vertically Spaced 4" Apart, 1 Column of 5 3/4" ϕ Holes.
 - 22' Long Spillway: 1' Depth, Lined With 12" Thick Type 'L' Riprap to toe of slope.
 - Basin Bottom Width = 75'
 - Depth = 3.0'
- TEMPORARY SEDIMENT BASIN "D"**
- 0.53 ac-ft Required to Spillway Crest
 - Use 8" PVC Perforated Riser Pipe: Perforations Vertically Spaced 4" Apart, 1 Column of 5 9/16" ϕ Holes.
 - 9' Long Spillway: 1' Depth, Lined With 12" Thick Type 'L' Riprap to toe of slope.
 - Basin Bottom Width = 43'
 - Depth = 2.5'

TEMPORARY SEDIMENT BASIN (TSB) NTS



City of Colorado Springs Stormwater Quality
Figure TSW-3 Swale Lining Construction Detail and Maintenance
3-31

STABILIZED STAGING AREA (SSA)



SLOPE DRAIN NOTES

INSTALLATION REQUIREMENTS

- THE SLOPE DRAIN IS TO BE DESIGNED TO CONVEY THE PEAK RUNOFF FOR THE 5-YEAR STORM.
- PIPE MATERIAL MAY INCLUDE CORRUGATED METAL, OR RIGID OR FLEXIBLE PLASTIC.
- EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
- EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITH 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
- SLOPE DRAIN SECTIONS ARE TO BE SECURELY PARTIED TOGETHER AND HAVE WATER-TIGHT FITTINGS.
- THE OUTLET IS TO BE STABILIZED AND, UNLESS THE DRAIN DISCHARGES DIRECTLY TO A SEDIMENT BASIN, A TEMPORARY SURFACE IS TO BE PROVIDED TO CONVEY FLOWS DOWN STREAM.
- IMMEDIATELY STABILIZE ALL AREAS DISTURBED BY INSTALLATION OR REMOVAL OF THE PIPE SLOPE DRAIN.

MAINTENANCE REQUIREMENTS

- INLET AND OUTLET POINTS ARE TO BE CHECKED REGULARLY AND AFTER HEAVY STORMS FOR CLOGGING AND OVERCHARGING. ANY BREAKS IN THE PIPE ARE TO BE PROMPTLY REPAIRED, AND CLOSURE REMOVED AS NECESSARY.
- WATER IS NOT TO BYPASS OR UNDERCUT THE INLET OR PIPE. IF THESE PROBLEMS DO EXIST, THE HEADWALL NEEDS TO BE REINFORCED WITH COMPACTED EARTH OR SANDFILLS.
- THE OUTLET POINT IS TO BE FREE OF EROSION, AND, IF NECESSARY, ADDITIONAL OUTLET PROTECTION SHOULD BE INSTALLED.
- CONSTRUCTION TRAFFIC IS NOT TO CROSS THE SLOPE DRAIN AND MATERIALS ARE NOT TO BE PLACED ON IT.
- THE SLOPE DRAIN IS TO REMAIN IN PLACE UNTIL THE SLOPE HAS BEEN COMPLETELY STABILIZED OR UP TO 30 DAYS AFTER PERMANENT SLOPE STABILIZATION.

City of Colorado Springs Stormwater Quality
Figure SD-1 Slope Drain Construction Detail and Maintenance Requirements
3-38

GRASSLINED SWALE (RR) SCALE: NTS



City of Colorado Springs Stormwater Quality
Figure RR Riprap Rundown Detail
3-32

CONCRETE WASHOUT AREA (CWA) NTS

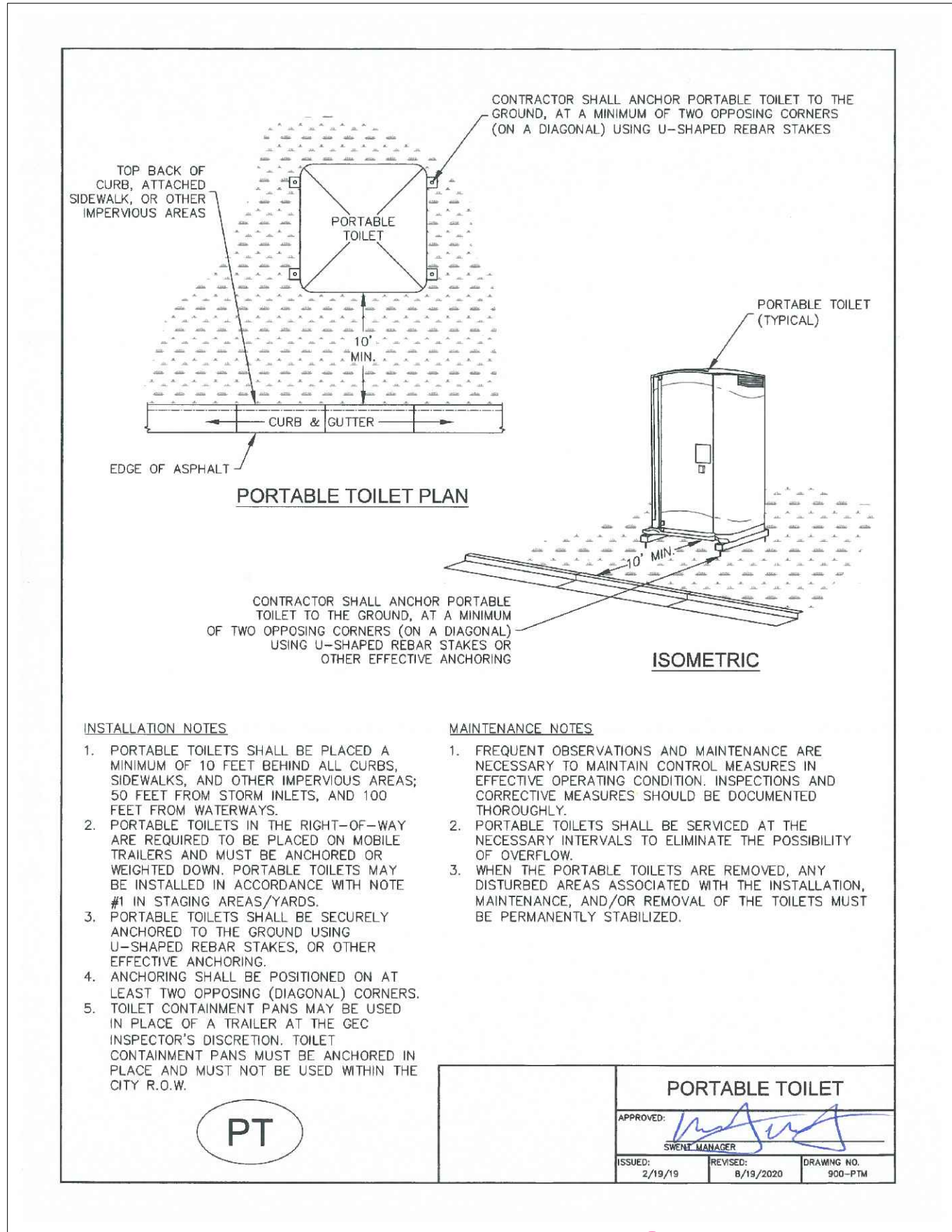


City of Colorado Springs Stormwater Quality
Figure CWA Concrete Washout Area
3-34

PEACEFUL RIDGE AT FOUNTAIN VALLEY
EARLY GRADING PLAN
GRADING AND EROSION CONTROL DETAILS
EL PASO COUNTY, COLORADO
FOUNTAIN VALLEY INVESTMENT PARTNERS, LLC

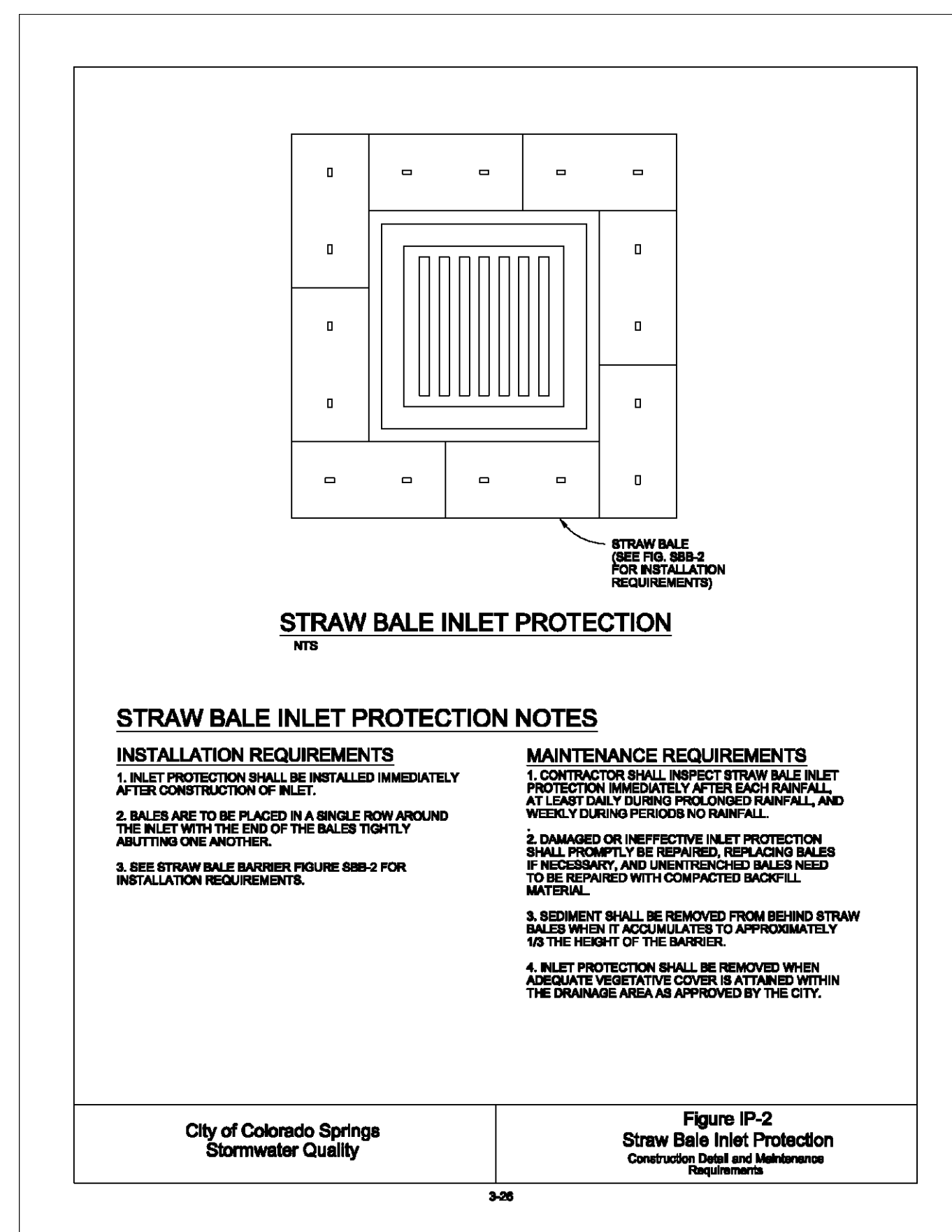
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Check: AWMc
Revisions:
No. "EGP-213"

SHEET
EGP-3



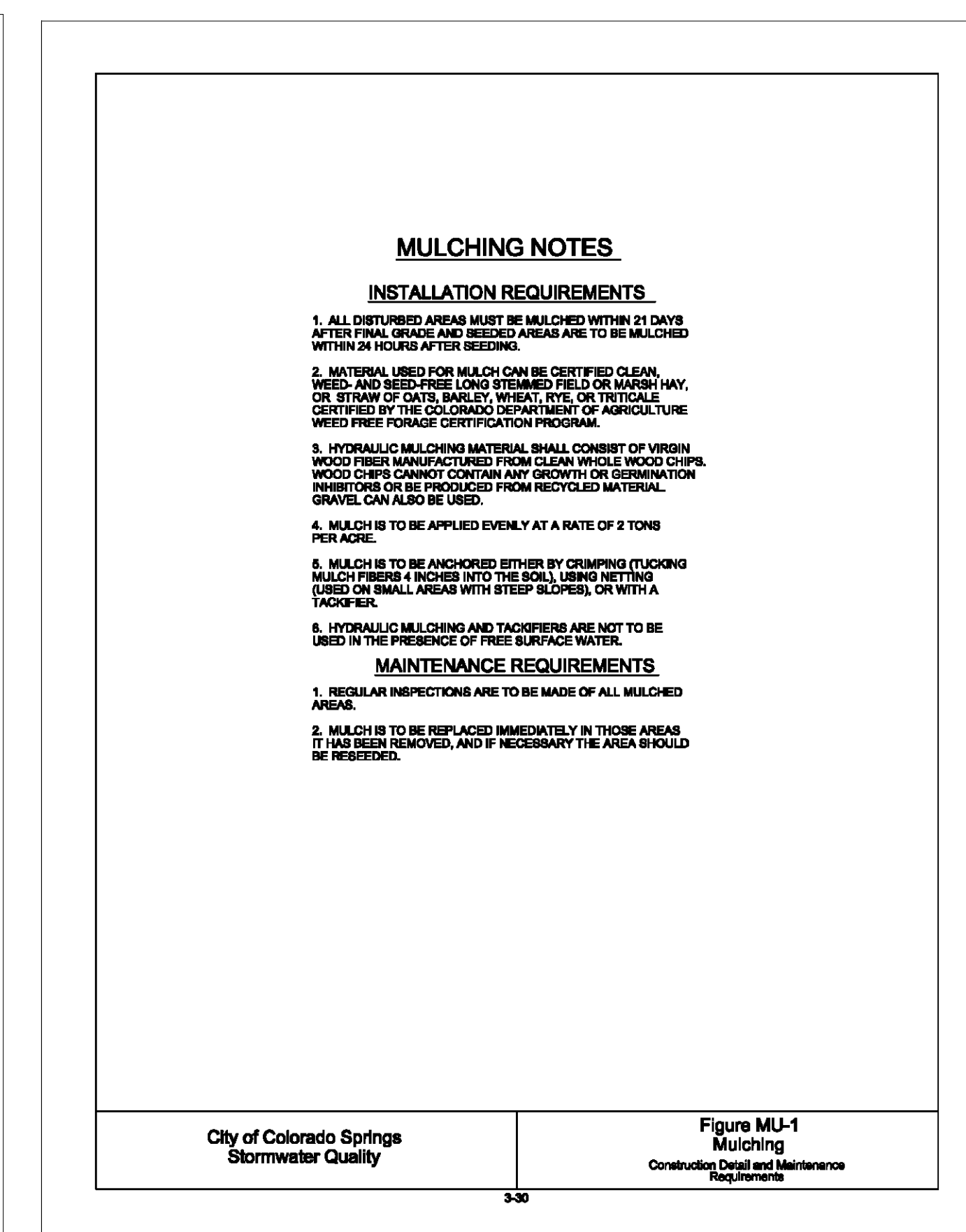
PORTABLE TOILET
NTS

PT



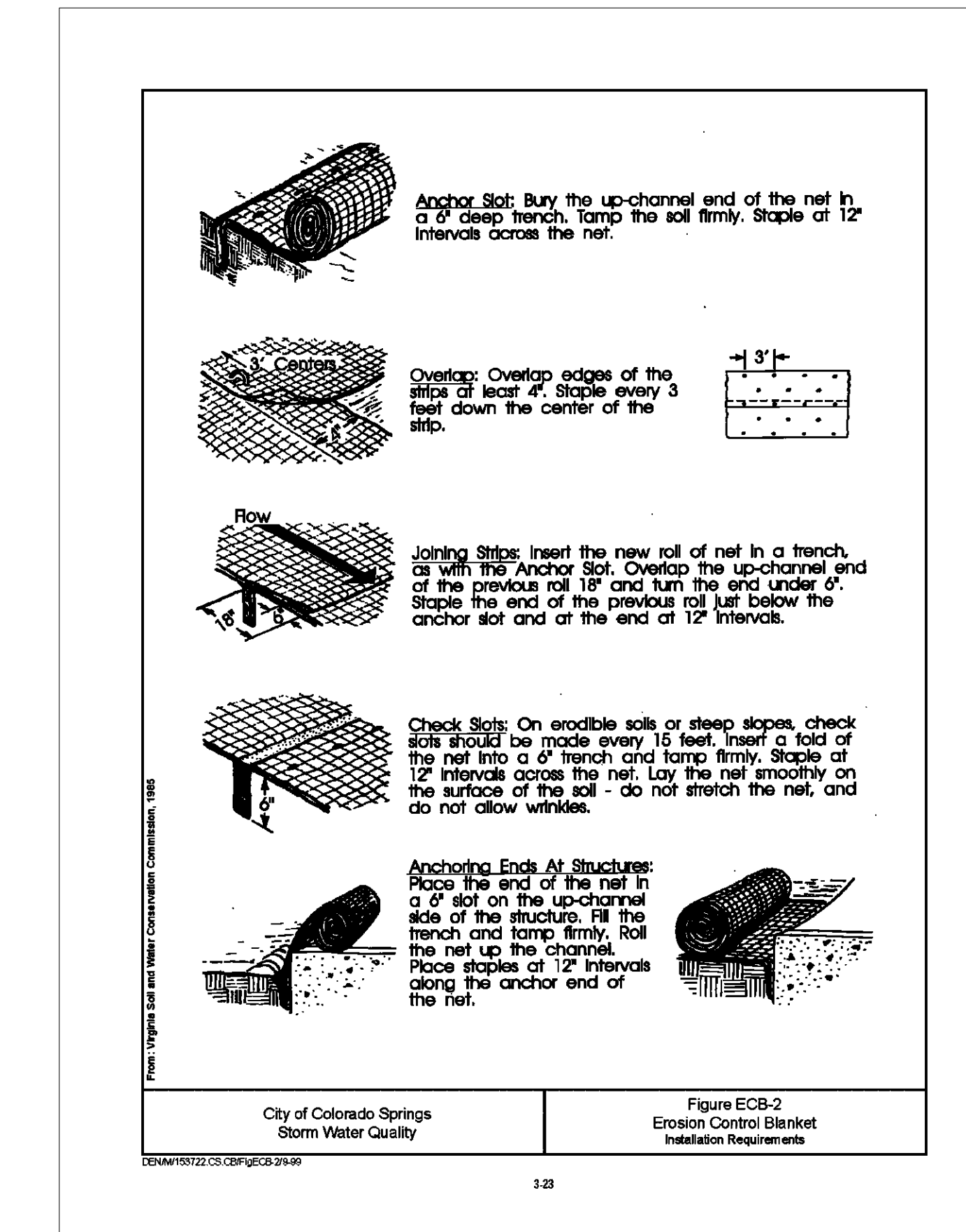
INLET PROTECTION -2
NTS

IP-2



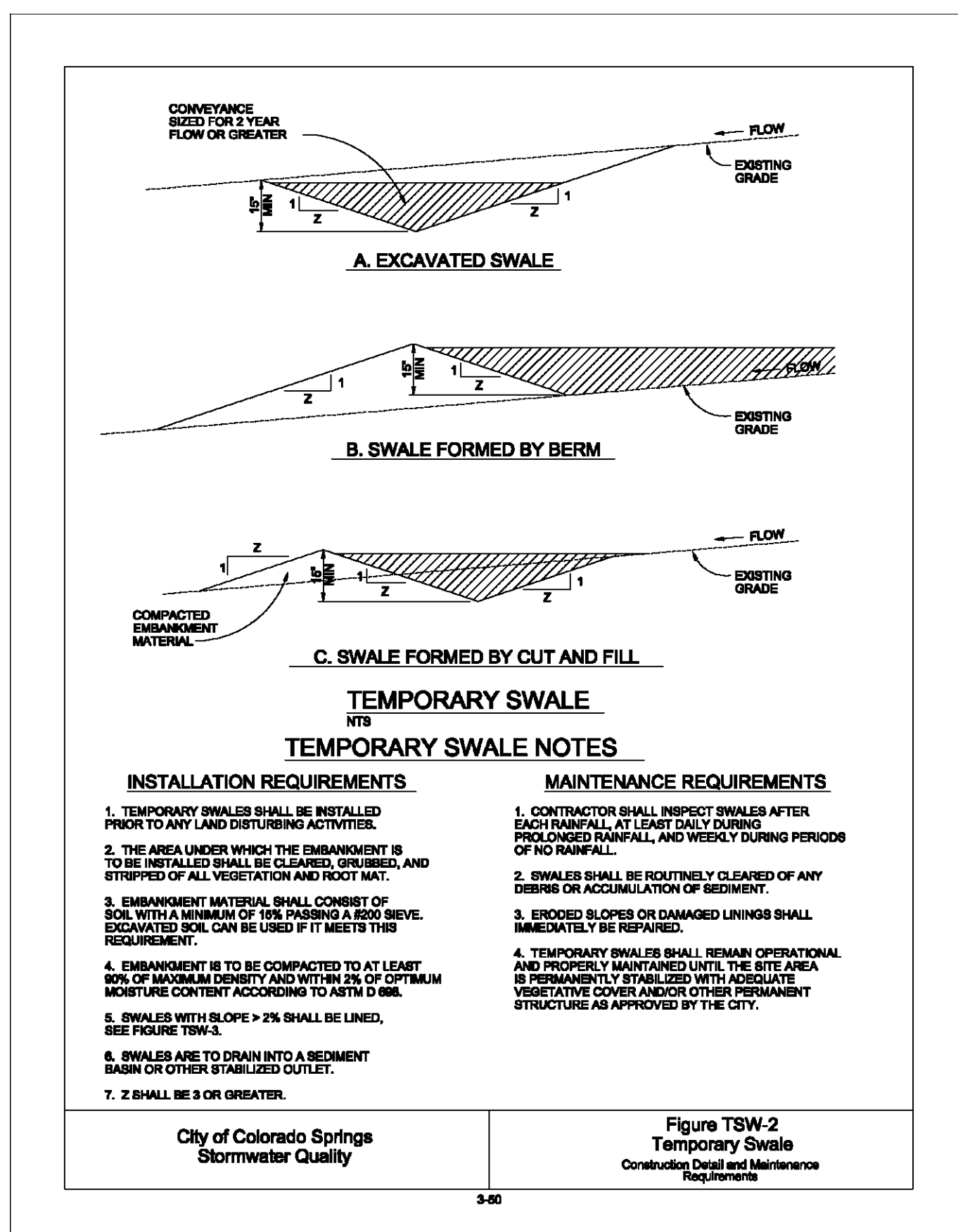
MULCHING
NTS

MU



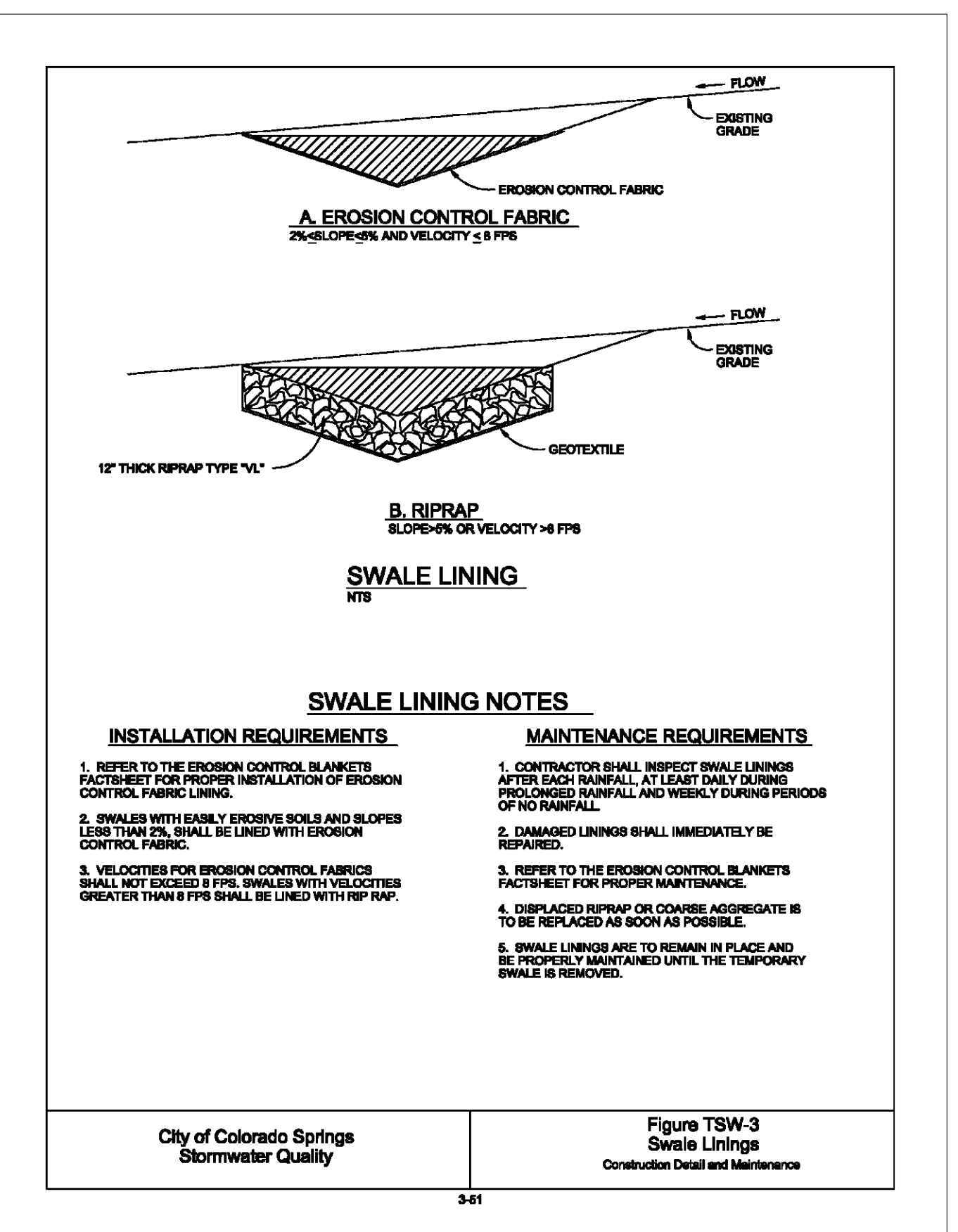
EROSION CONTROL BLANKET
NTS

ECB



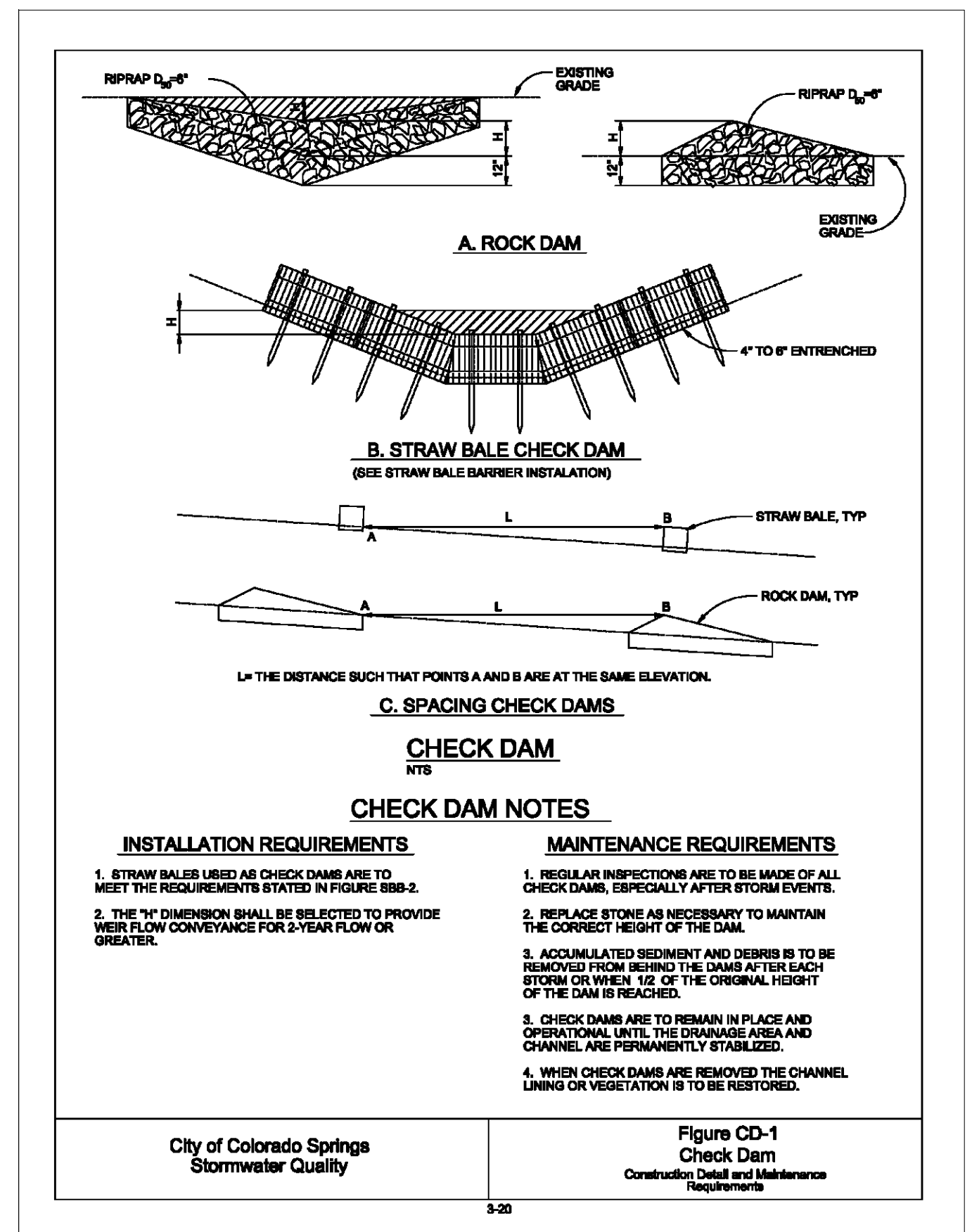
TEMPORARY SWALES
NTS

TSW



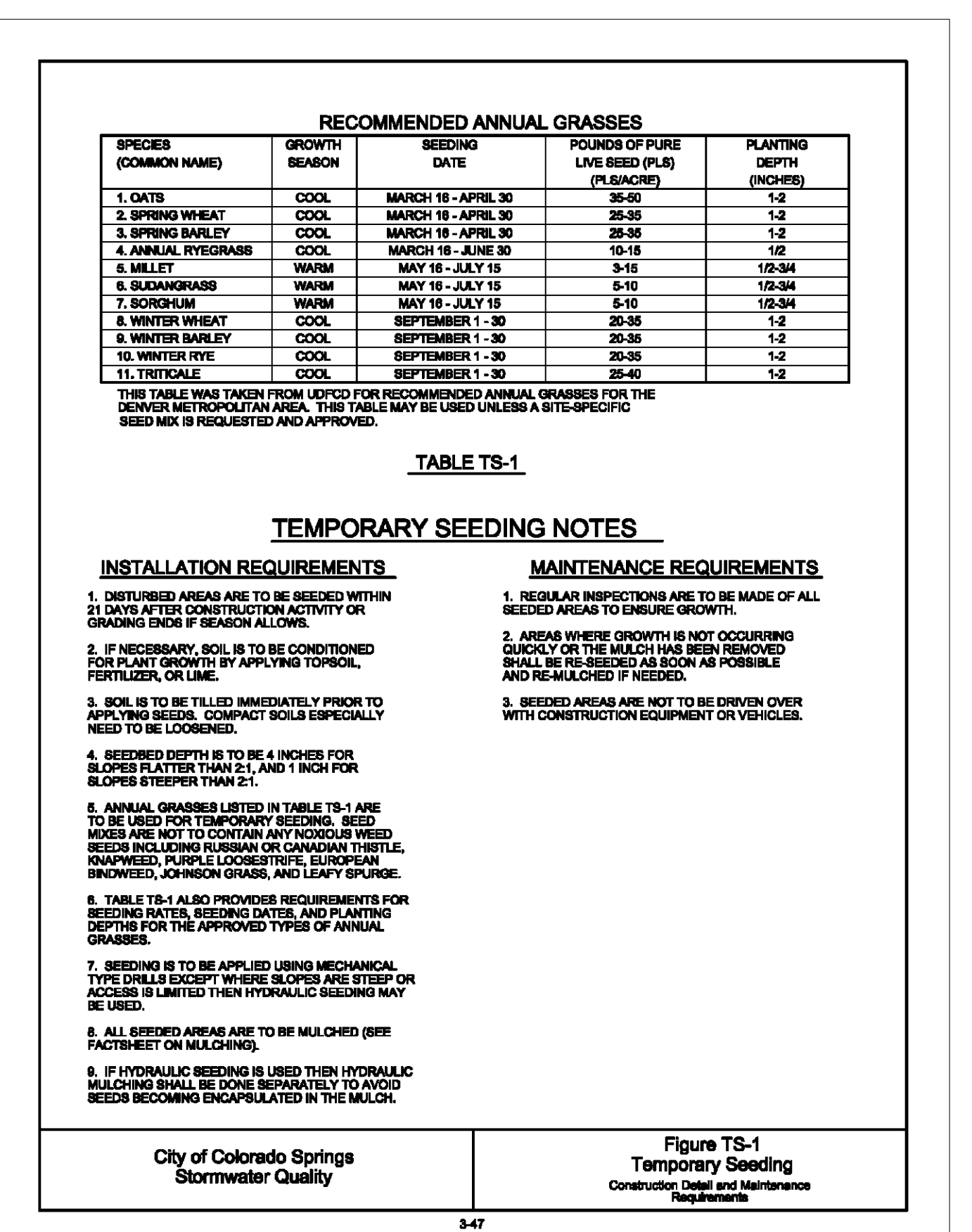
SWALE LINING
NTS

TSW-3



CHECK DAM
NTS

CD



TEMPORARY SEEDING
NTS

TS

EC-9 Rough Cut Street Control (RCS)

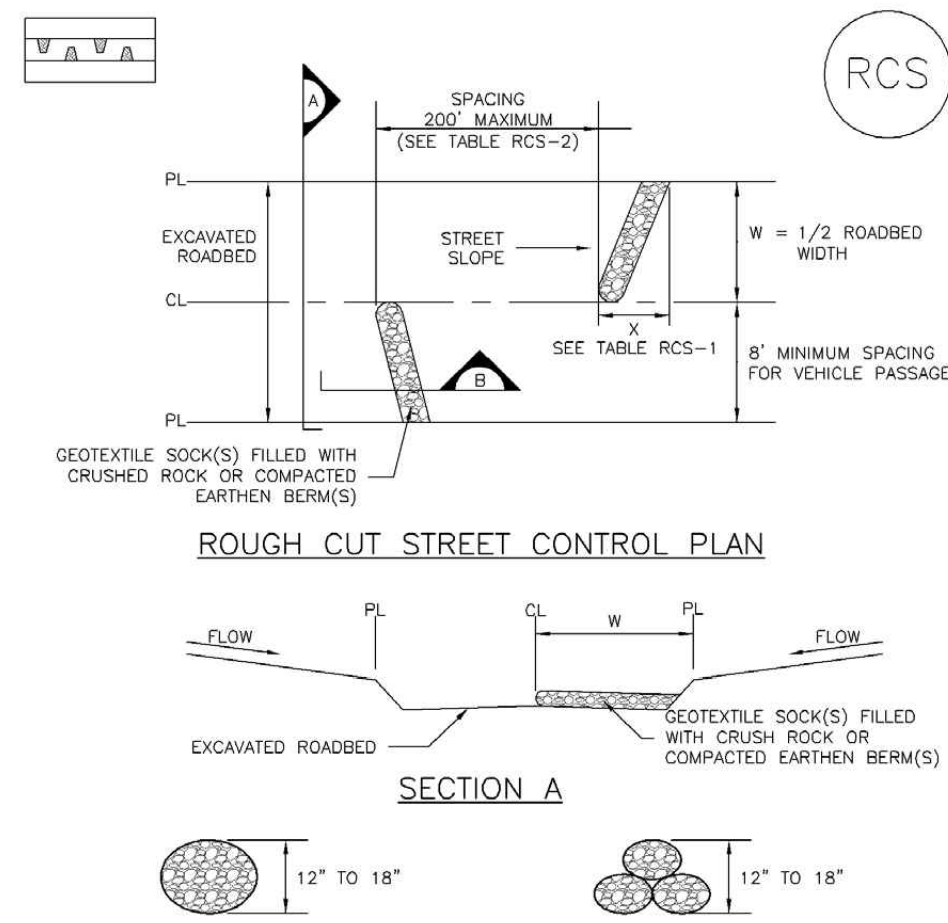


TABLE RCS-1		TABLE RCS-2	
W (FT)	X (FT)	LONGITUDINAL STREET SLOPE (%)	SPACING (FT)
20-30	5	<2	NOT TYPICALLY NEEDED
31-40	7	3	200
41-50	9	4	150
51-60	10.5	5	100
61-70	12	6	50
		7	25
		8	25

RCS-1. ROUGH CUT STREET CONTROL

RCS-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

ROUGH-CUT STREET CONTROL (RCS) NTS

Rough Cut Street Control (RCS) EC-9

ROUGH CUT STREET CONTROL INSTALLATION NOTES

- SEE PLAN VIEW FOR LOCATION OF ROUGH CUT STREET CONTROL MEASURES.
- ROUGH CUT STREET CONTROL SHALL BE INSTALLED AFTER A ROAD HAS BEEN CUT IN, AND WILL NOT BE PAID FOR MORE THAN 14 DAYS OR FOR TEMPORARY CONSTRUCTION ROADS THAT HAVE NOT RECEIVED ROAD BASE.

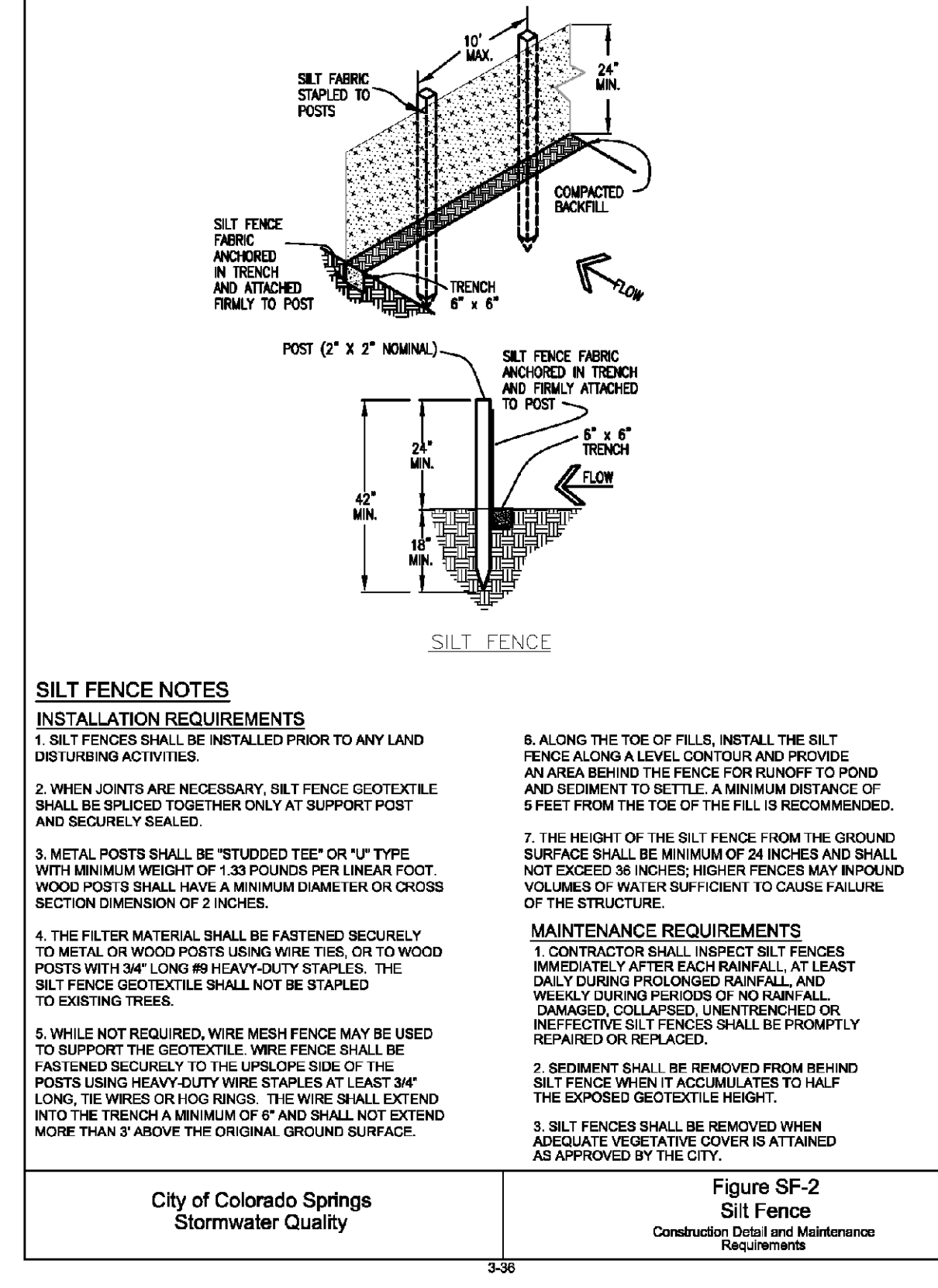
ROUGH CUT STREET CONTROL INSPECTION AND MAINTENANCE NOTES

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RCS-3



SILT FENCE NOTES

INSTALLATION REQUIREMENTS

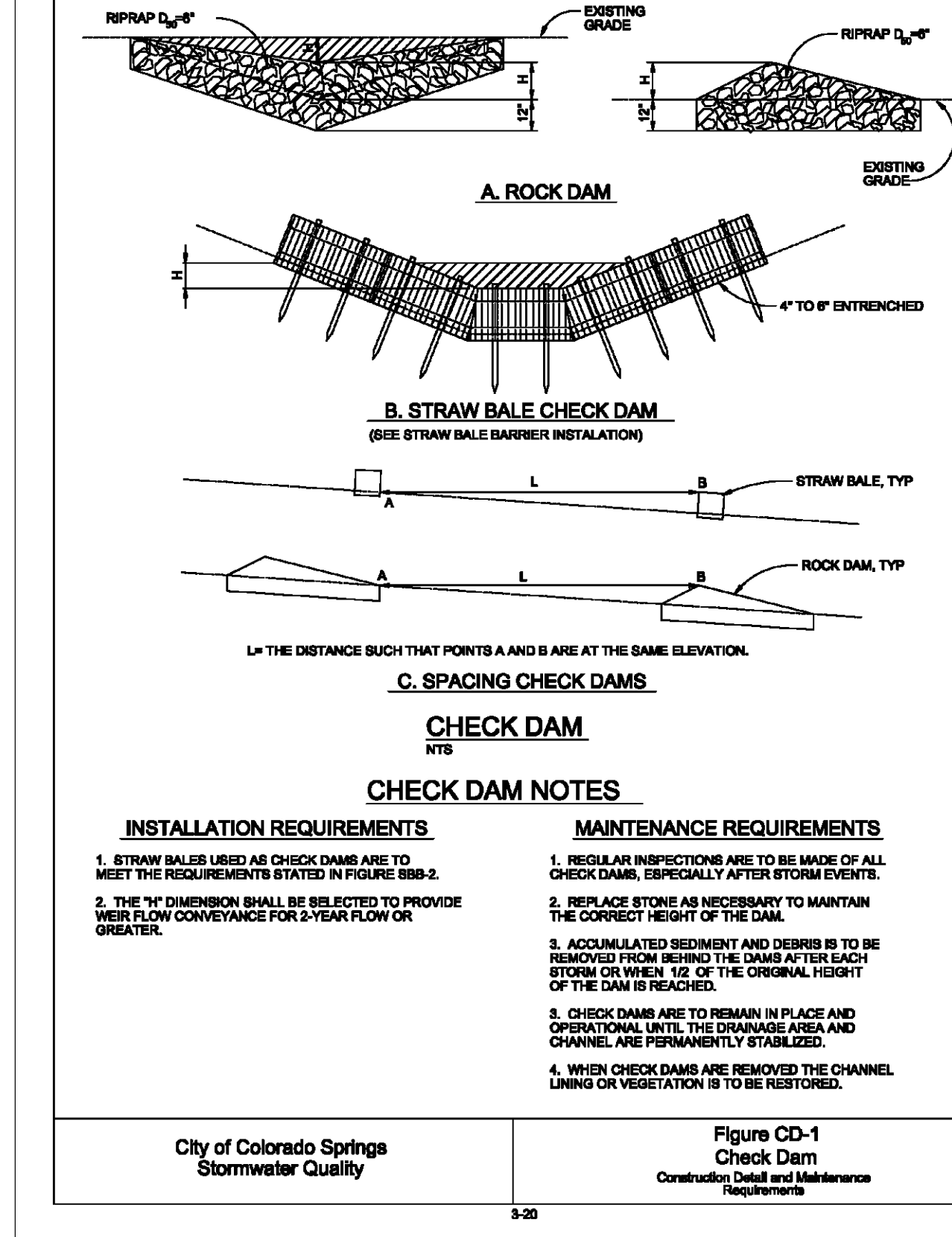
- SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPICED TOGETHER ONLY AT SUPPORT POSTS AND SECURELY SEALED.
- THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES. HIGHER FENCES MAY BYPASS VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.
- THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #8 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
- WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSIDE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3/4" LONG. THE WIRES OR LOG RINGS, THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.
- ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
- THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES. HIGHER FENCES MAY BYPASS VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.

MAINTENANCE REQUIREMENTS

- CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL AND WEEKLY DURING PERIODS OF NO RAIN-FALL. DAMAGED, COLLAPSED, UNINTENDED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
- SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE SPOOLED GEOTEXTILE HEIGHT.
- SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.

City of Colorado Springs Stormwater Quality Figure SF-2 Silt Fence Construction Detail and Maintenance Requirements

SILT FENCE (SF) NTS



INSTALLATION REQUIREMENTS

- STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN FIGURE 888-2.
- THE "W" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 5-YEAR FLOW OR GREATER.

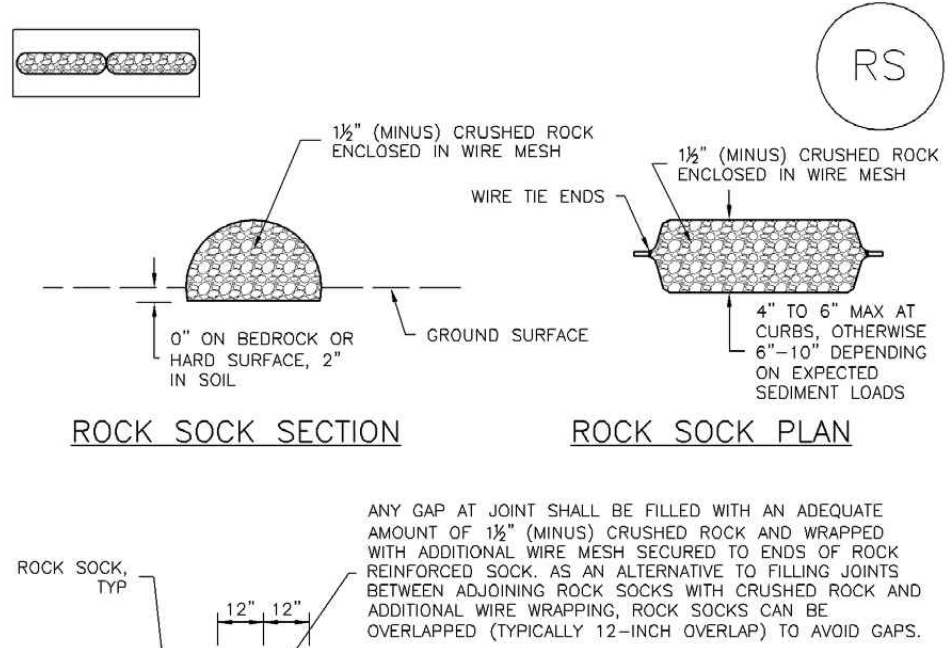
MAINTENANCE REQUIREMENTS

- REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
- REPLACE STONES AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
- 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.
- CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
- WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.

City of Colorado Springs Stormwater Quality Figure CD-1 Check Dam Construction Detail and Maintenance Requirements

CHECK DAM (CD) NTS

SC-5 Rock Sock (RS)



GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
NO. 4	
2"	100
1 1/2"	50 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

- ROCK SOCK INSTALLATION NOTES**
- SEE PLAN VIEW FOR LOCATION(S) OF ROCK SOCKS.
 - CRUSHED ROCK SHALL BE 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2"; RECOMMENDED MINIMUM ROLL WIDTH OF 48".
 - WIRE MESH SHALL BE SECURED USING "HOC RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
 - SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS-1. ROCK SOCK PERIMETER CONTROL

RS-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

ROCK SOCK (RS) NTS

Rock Sock (RS) SC-5

ROCK SOCK MAINTENANCE NOTES

- 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.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENT IS APPROXIMATELY 1/3 OF THE HEIGHT OF THE ROCK SOCK.
- ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. USFCO NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RS-3

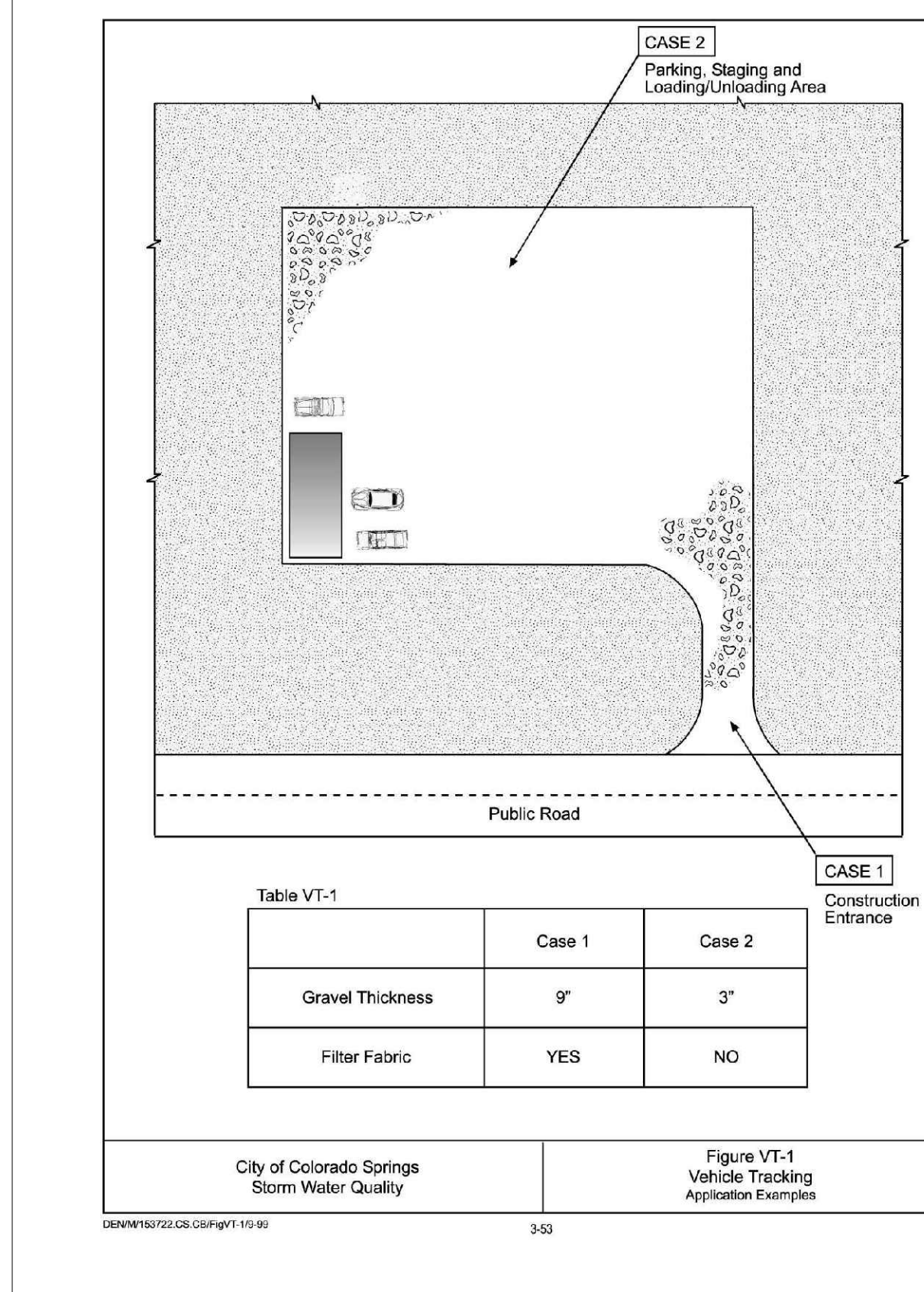
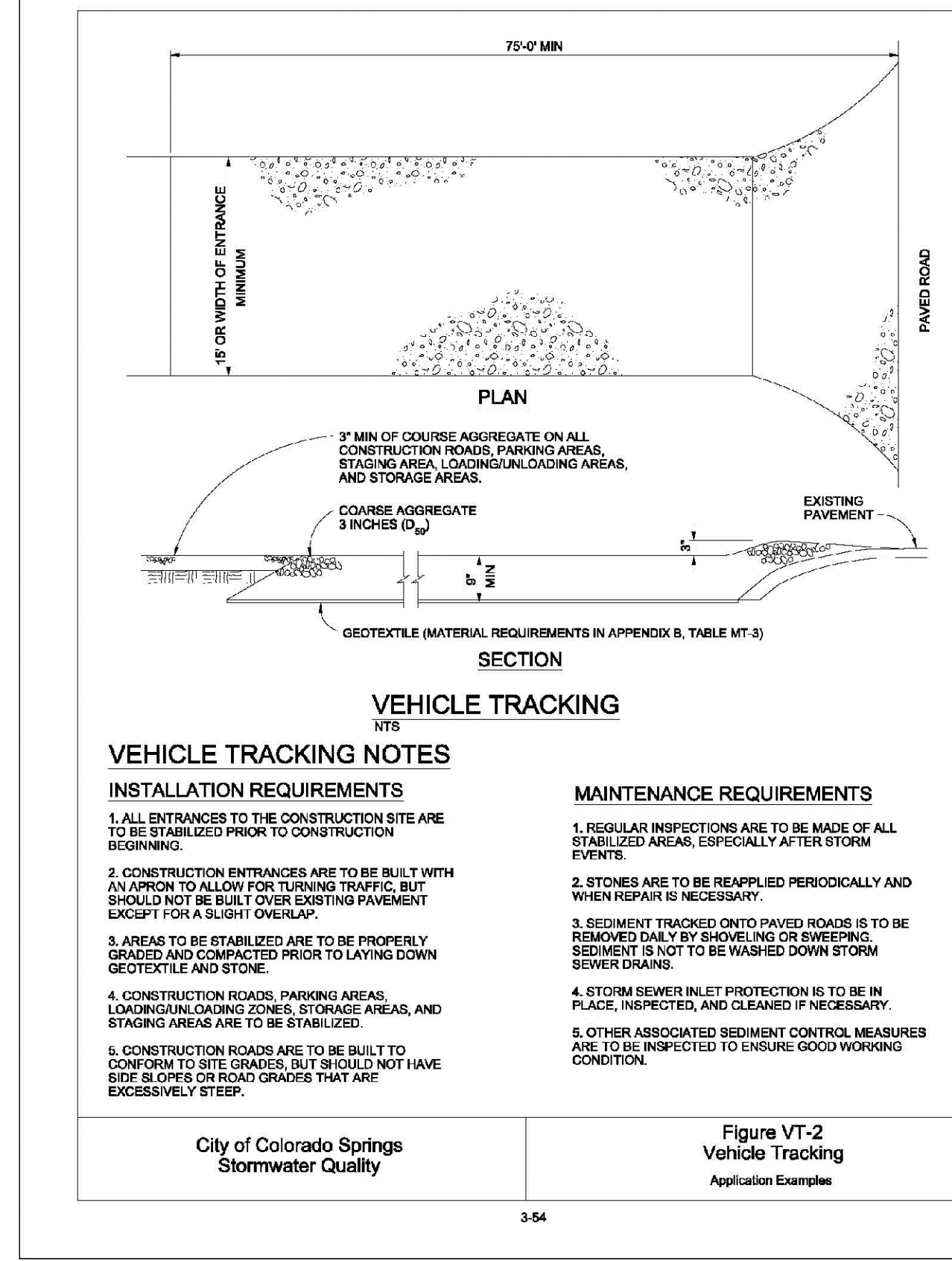


Table VT-1		
	Case 1	Case 2
Gravel Thickness	9"	3"
Filter Fabric	YES	NO

City of Colorado Springs Storm Water Quality Figure VT-1 Vehicle Tracking Application Examples

VEHICLE TRACKING CONTROL (VTC) NTS



VEHICLE TRACKING NOTES

INSTALLATION REQUIREMENTS

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

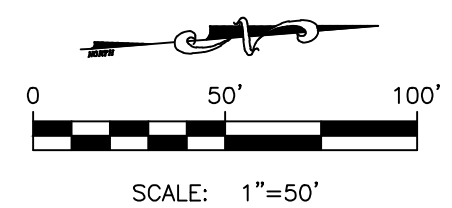
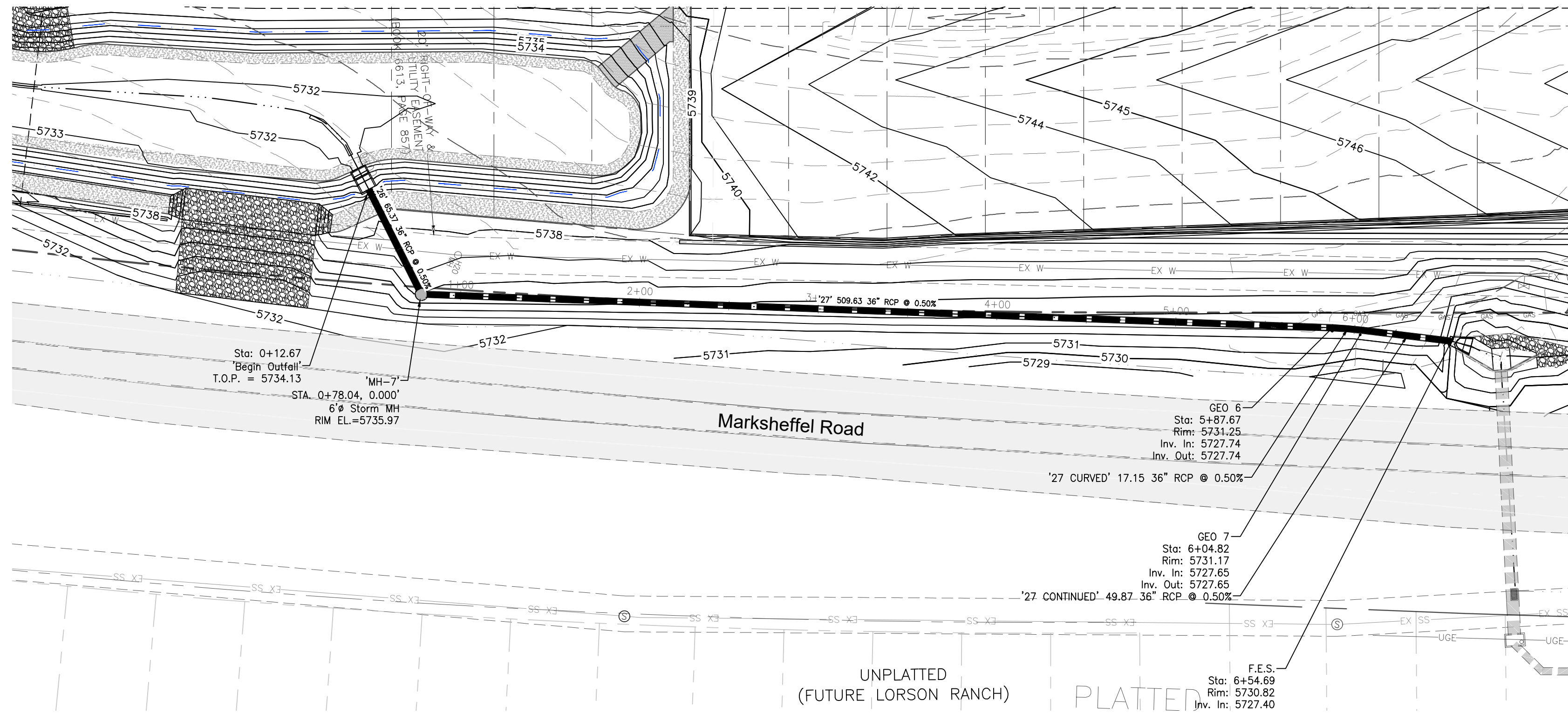
MAINTENANCE REQUIREMENTS

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

City of Colorado Springs Stormwater Quality Figure VT-2 Vehicle Tracking Application Example

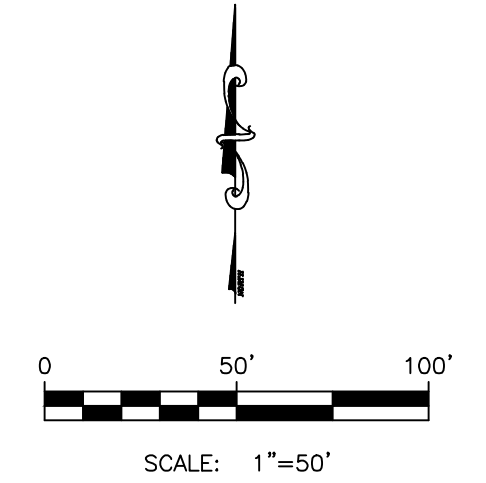
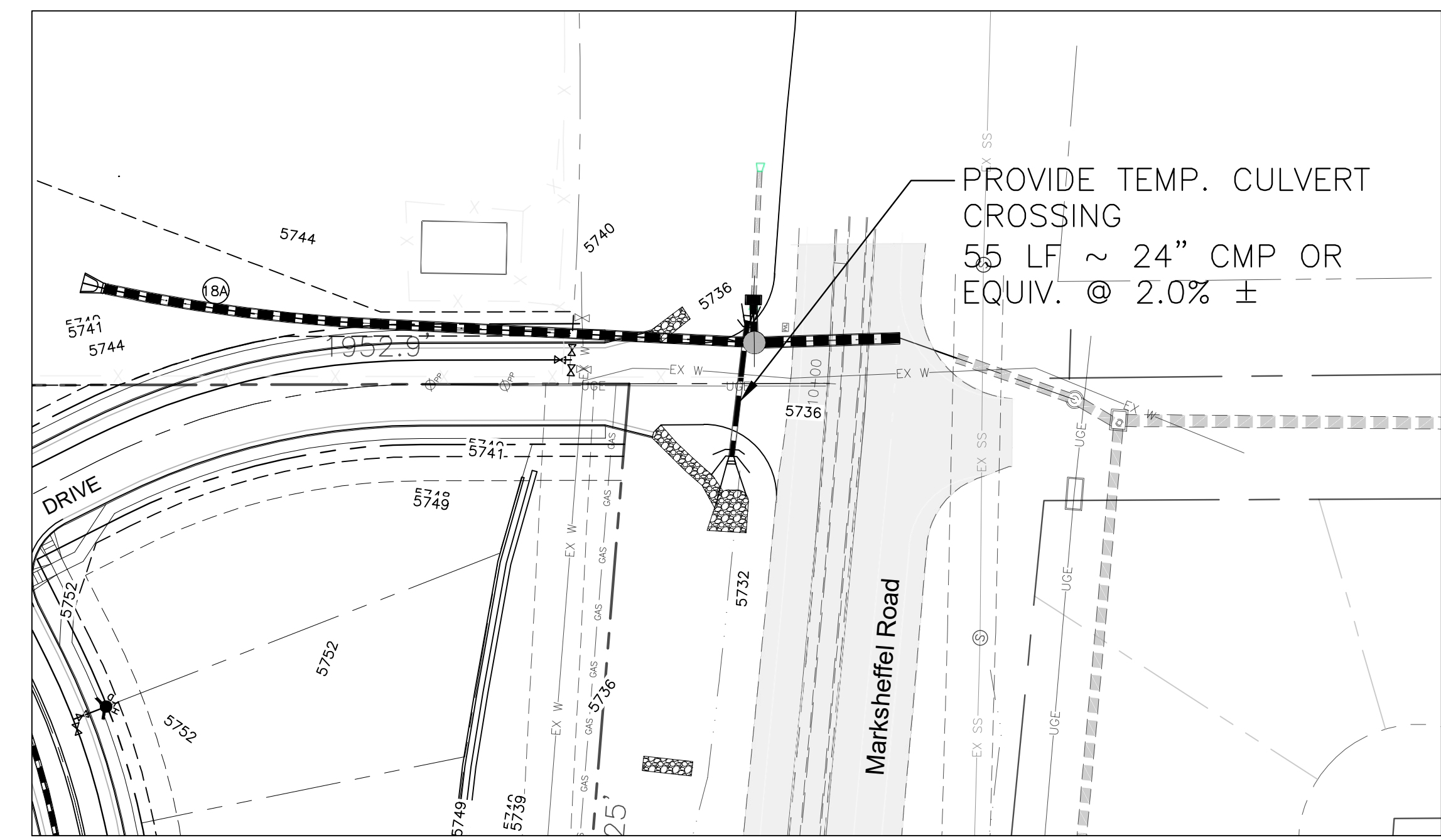
VEHICLE TRACKING (VTC) NTS

STORM SEWER C (OUTFALL) PLAN VIEW



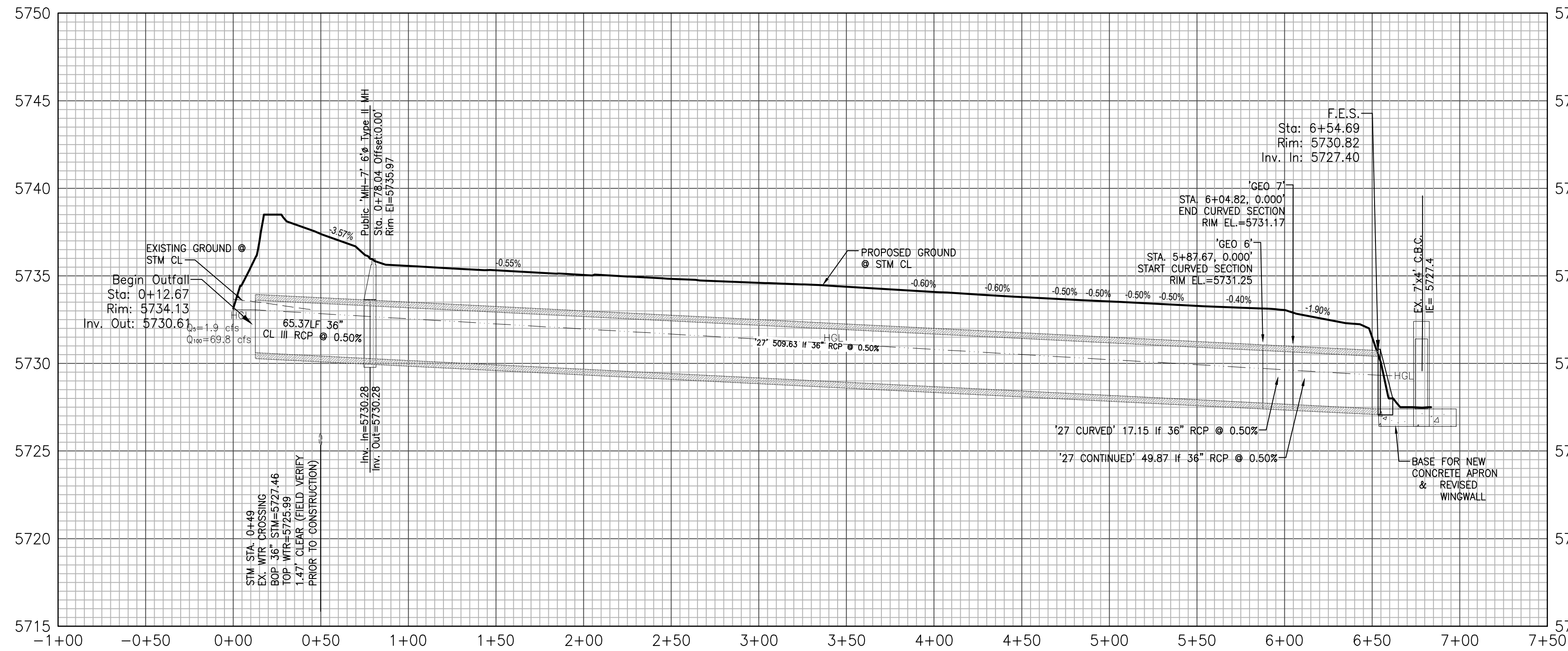
STORM SEWER CURVE DATA	
8A	Δ=13°22'18"
	R=500.00'
	L=116.69'

STORM SEWER E PLAN VIEW

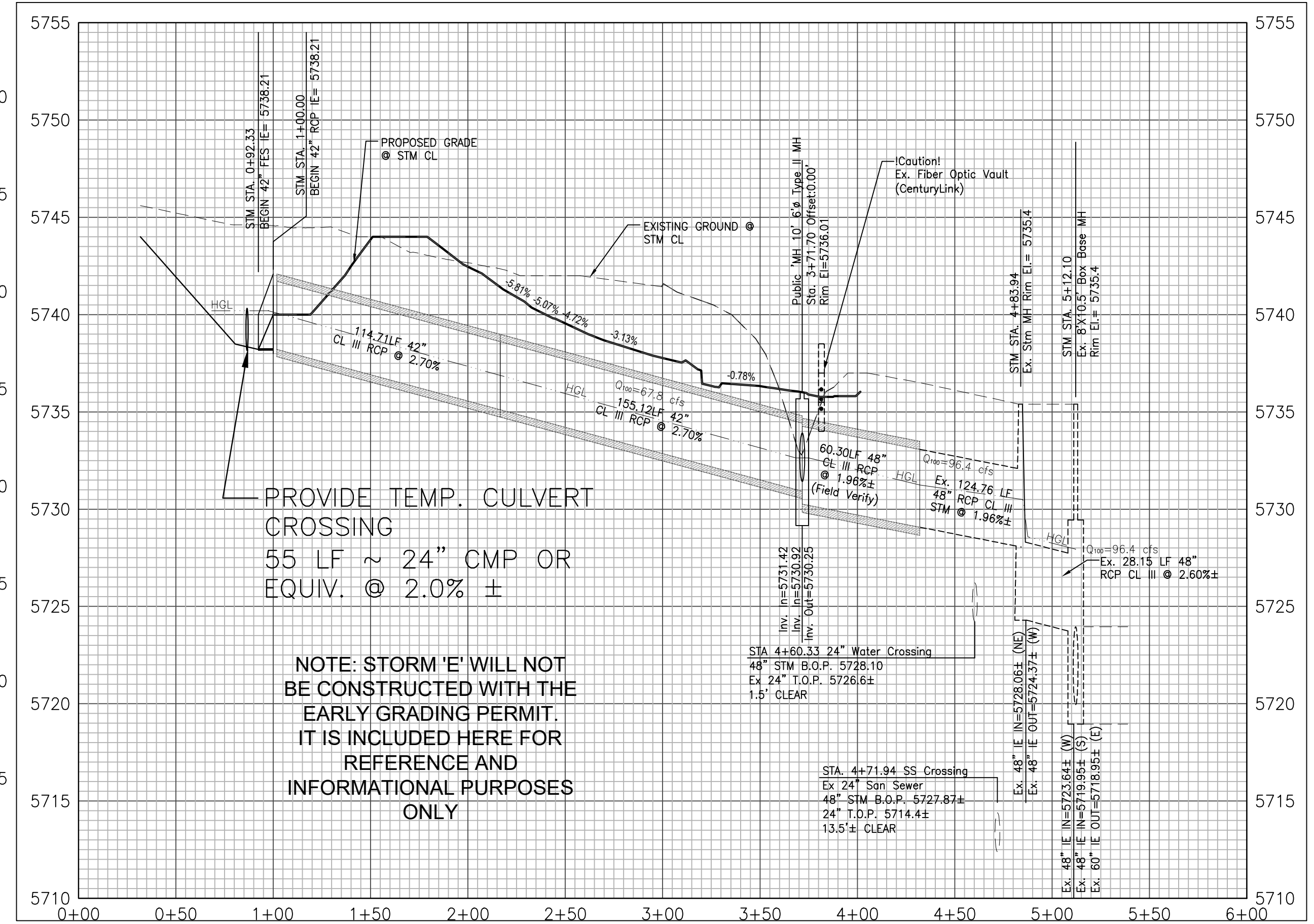


NOTE: STORM 'E' WILL NOT BE CONSTRUCTED WITH THE EARLY GRADING PERMIT. IT IS INCLUDED HERE FOR REFERENCE AND INFORMATIONAL PURPOSES ONLY

STORM SEWER C (OUTFALL) PROFILE VIEW

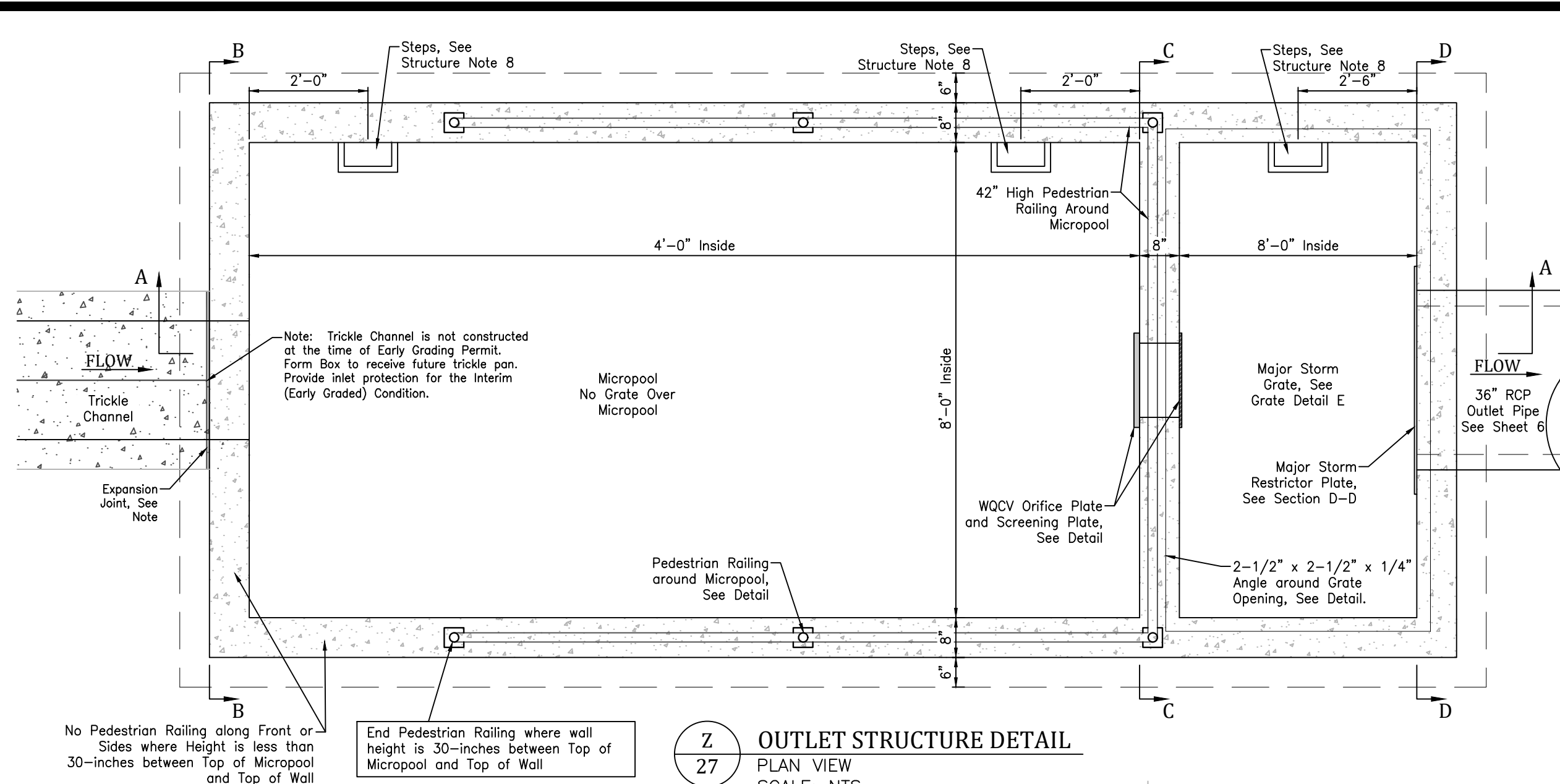


STORM SEWER E PROFILE VIEW



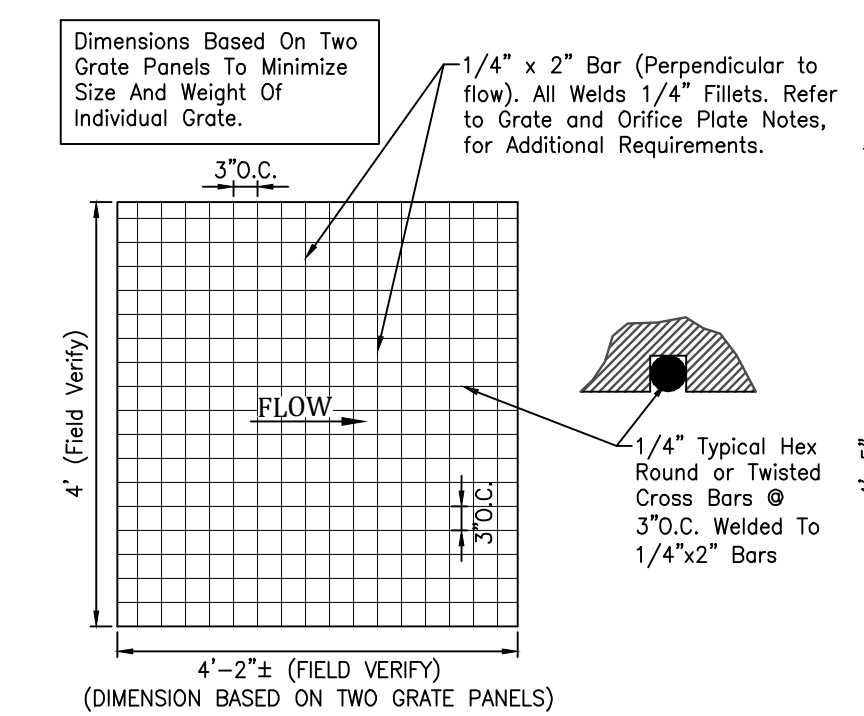
PROVIDE TEMP. CULVERT CROSSING
55 LF ~ 24" CMP OR EQUIV. @ 2.0% ±

NOTE: STORM 'E' WILL NOT BE CONSTRUCTED WITH THE EARLY GRADING PERMIT. IT IS INCLUDED HERE FOR REFERENCE AND INFORMATIONAL PURPOSES ONLY



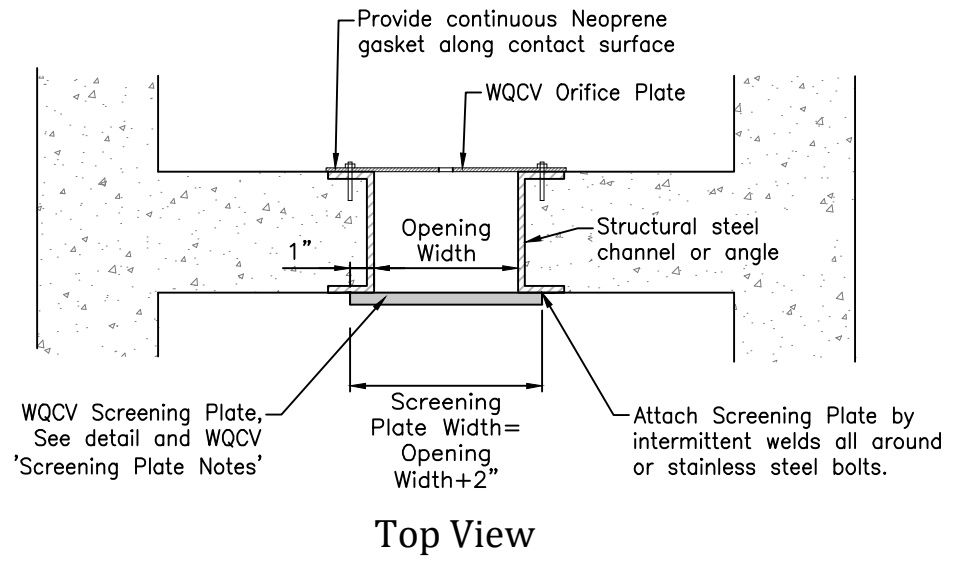
Z OUTLET STRUCTURE DETAIL
27 PLAN VIEW
SCALE: NTS

- Structure Notes:**
1. Prior to Construction, Contractor to provide shop drawings for all components of the outlet structure.
 2. Grade 60 Reinforcing Steel required. See Table for the minimum lap splice length for reinforcing bars. All Reinforcing Steel shall have 2-inch Minimum Clearance from Edge of Concrete and 3-inch Min Clearance to Edge Of Concrete placed against soil, unless otherwise noted.
 3. Concrete for the outlet structure and forebay shall be CDDT Class D Concrete.
 4. Expansion Joint Material shall meet AASHTO Specification M-213. Expansion Joint Material shall be 1/2" thick, shall extend the full depth of contact surface and the joint shall be sealed. Refer to Details.
 5. All Exposed Concrete Corners shall have a 3/4-inch chamfer unless otherwise noted.
 6. Backfilling against walls shall not commence until concrete has obtained its full seven-day strength.
 7. Subgrade to be 12" Thk clean fill compacted to 95% Standard Proctor Density per ASTM M698 under structures.
 8. Outlet Structure steps shall conform to AASHTO M199.
 9. Forebay construction joints shall be installed at 10' O.C. Maximum. The Joints shall be sealed with Joint Sealant.

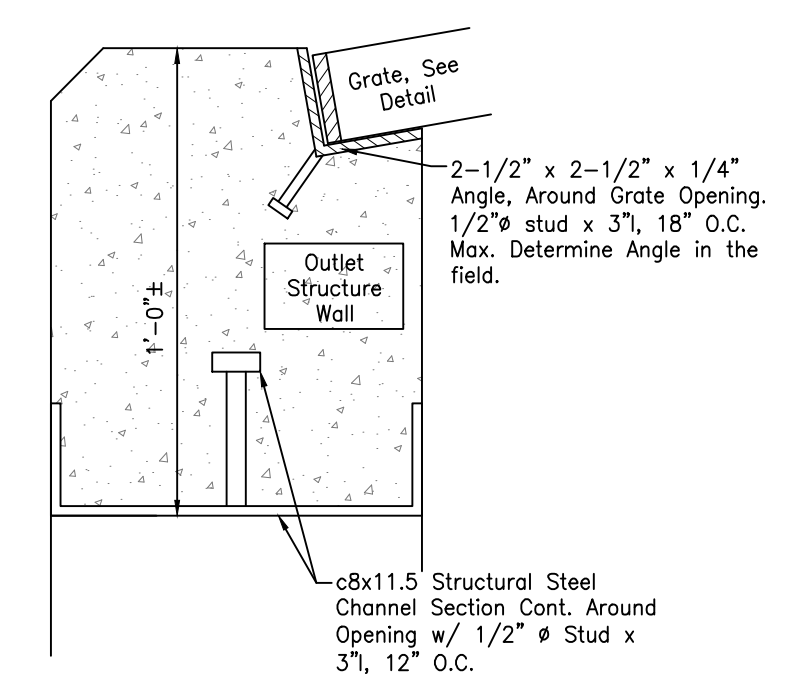


E MAJOR STORM GRATE DETAIL
27 SCALE: NTS

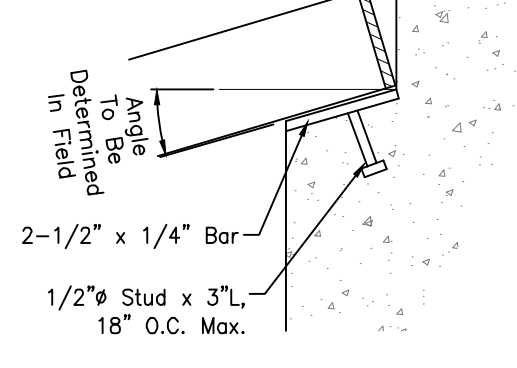
- Screening Plate Notes:**
1. Orifice plates shall be mounted using stainless steel hardware.
 2. Screen Grate shall be hot-dipped galvanized steel.
 3. Field verify screen dimension prior to fabrication.



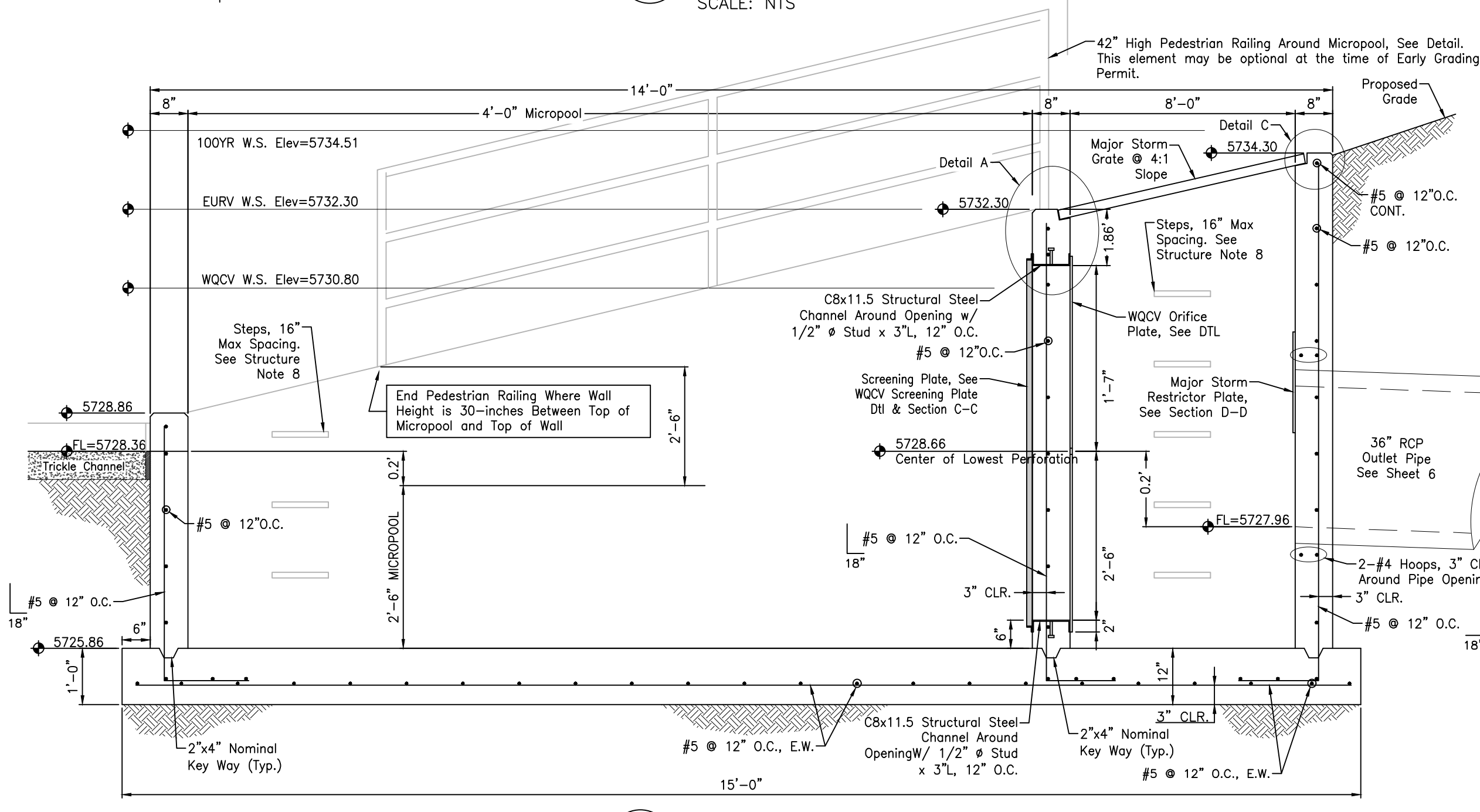
G WQCV ORIFICE PLATE AND SCREENING PLATE
27 Scale: NTS



H DETAIL A
27 SCALE: NTS

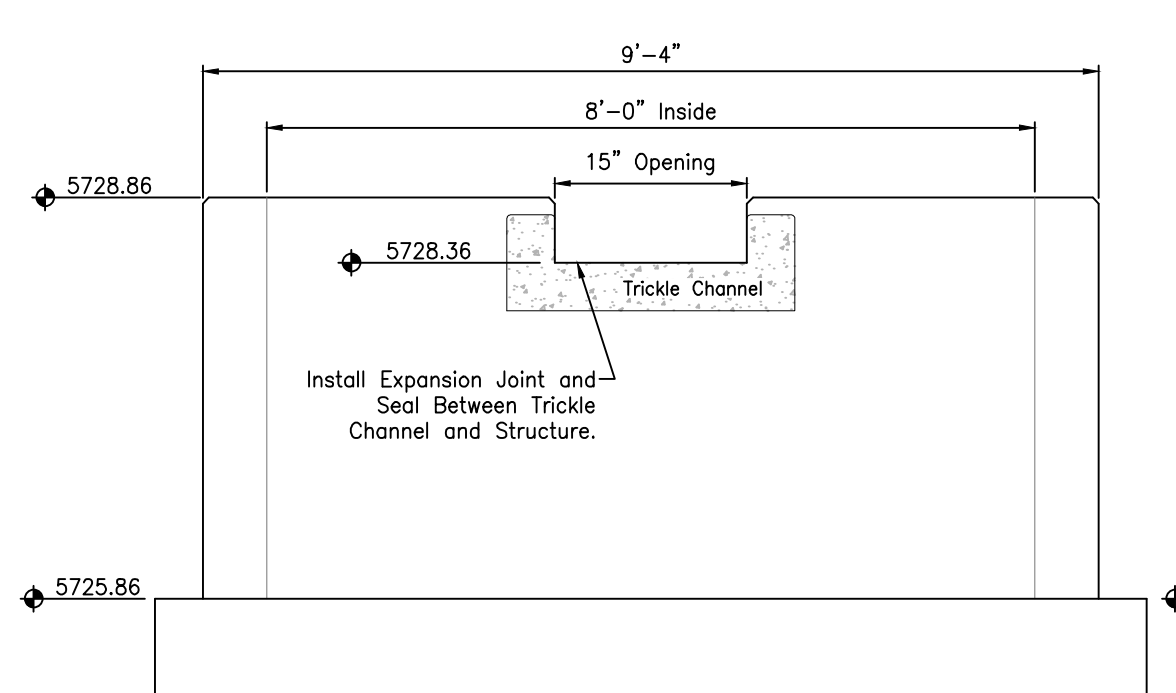


I DETAIL C
27 SCALE: NTS

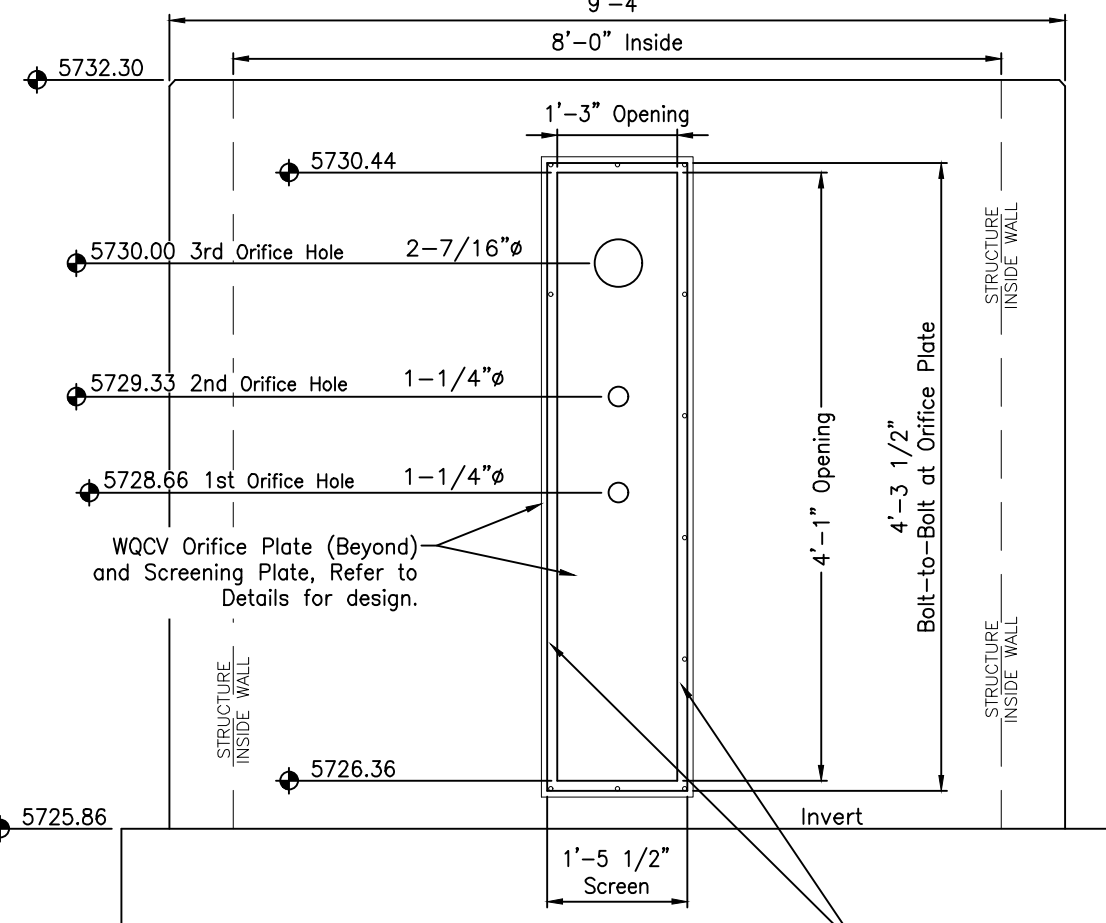


A SECTION A-A
27 SCALE: NTS

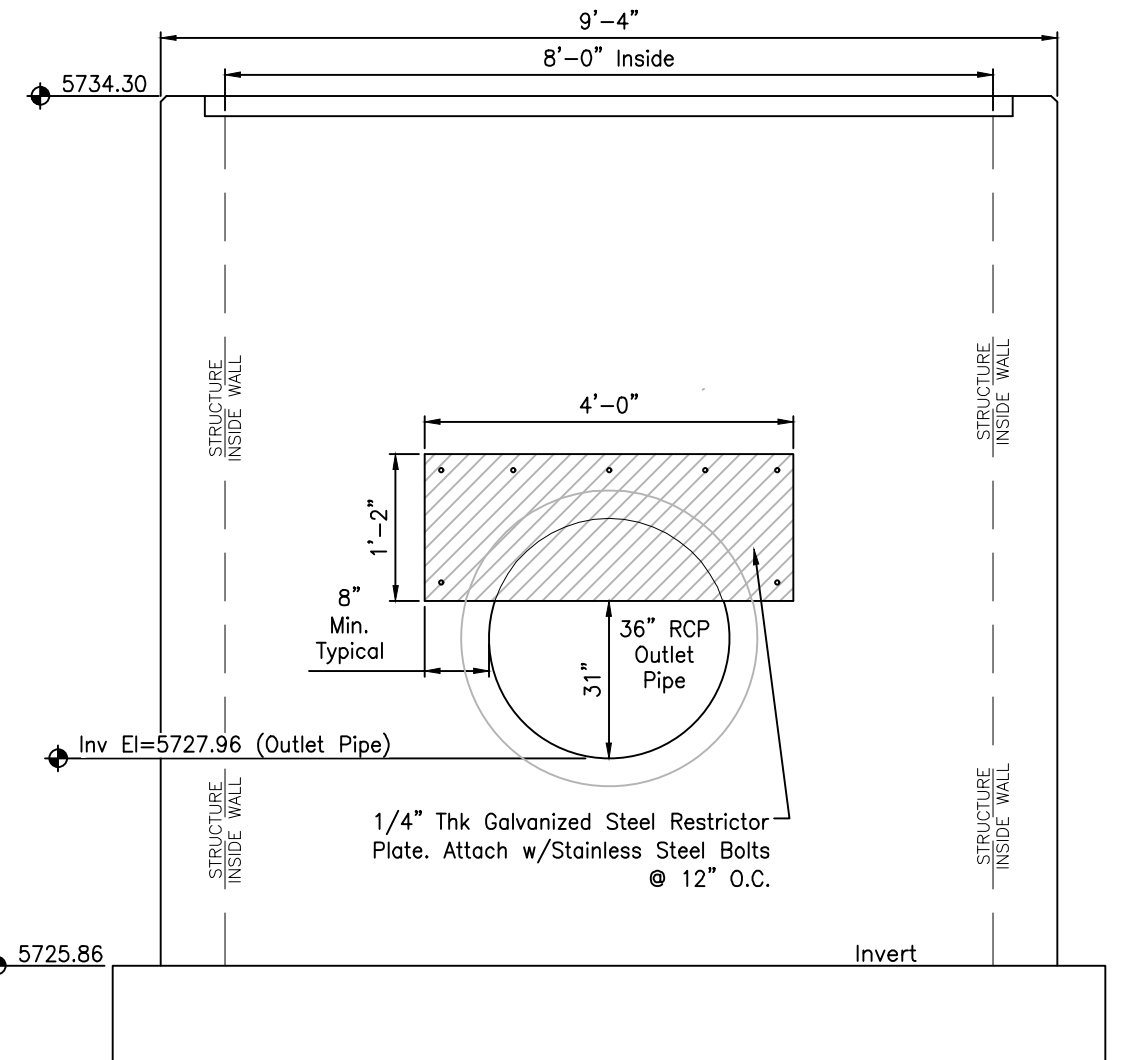
- Grate and Orifice Plate Notes:**
1. Grates and Orifice Plates shall be mounted using stainless steel hardware. Grates to be bolted down to Outlet Structure 18" O.C.
 2. Grates and Orifice Plates shall be Stainless Steel, Aluminum or Steel. Steel Trash Racks shall be Hot Dip Galvanized and Hot Powder Painted after Galvanized.
 3. Field Verify Grate Dimension prior to fabrication.



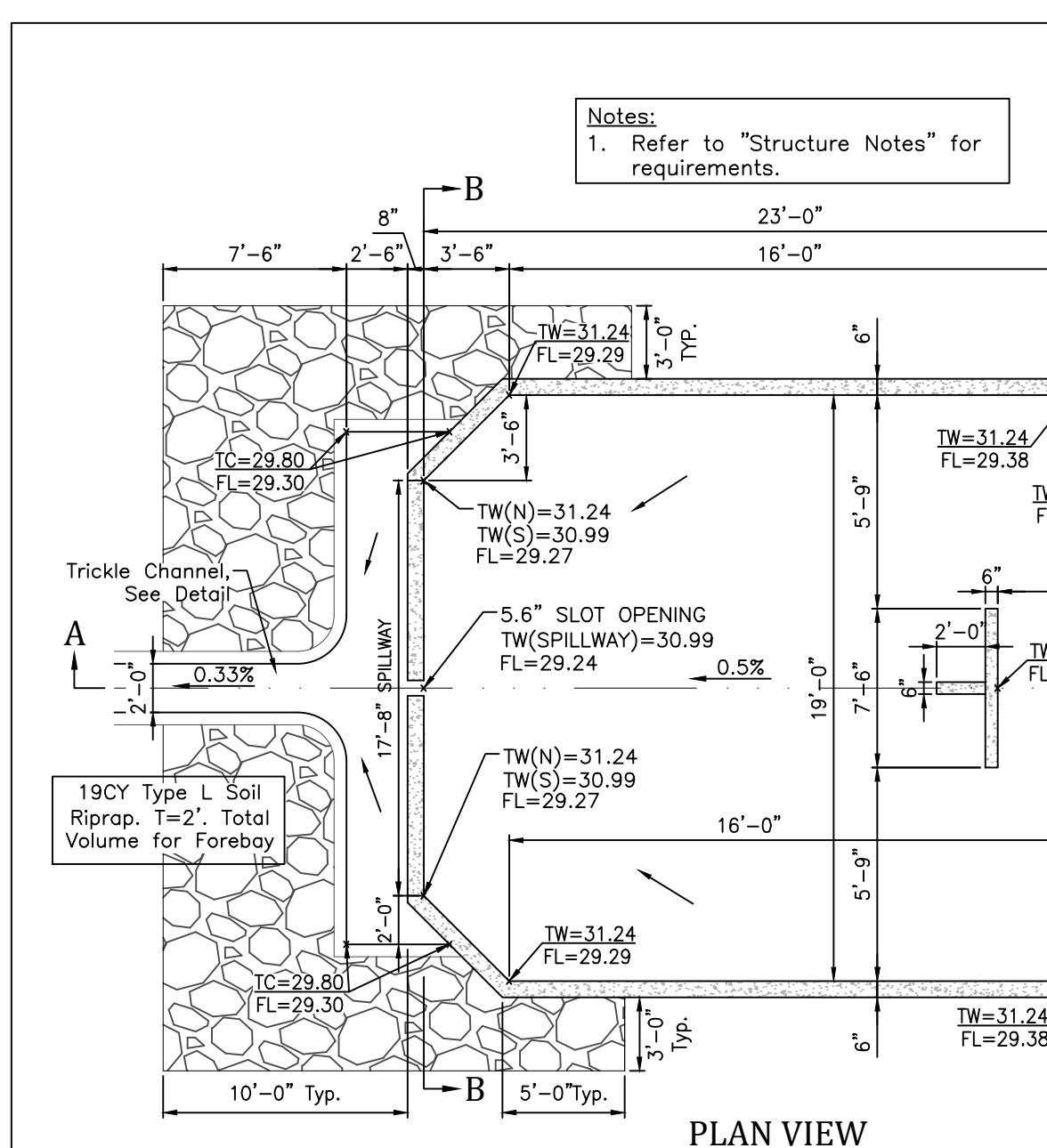
B SECTION B-B
27 SCALE: NTS



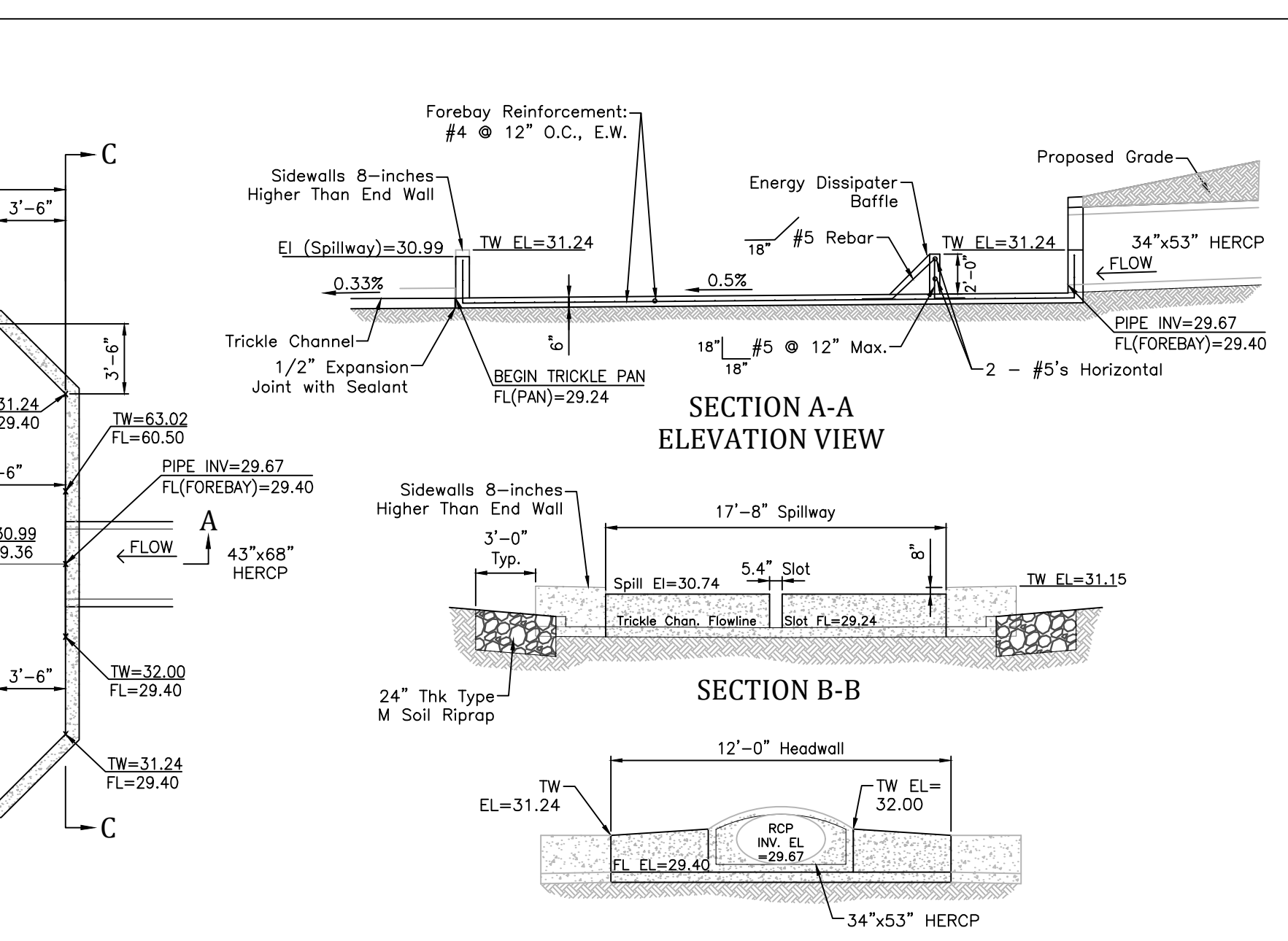
C SECTION C-C
27 SCALE: NTS



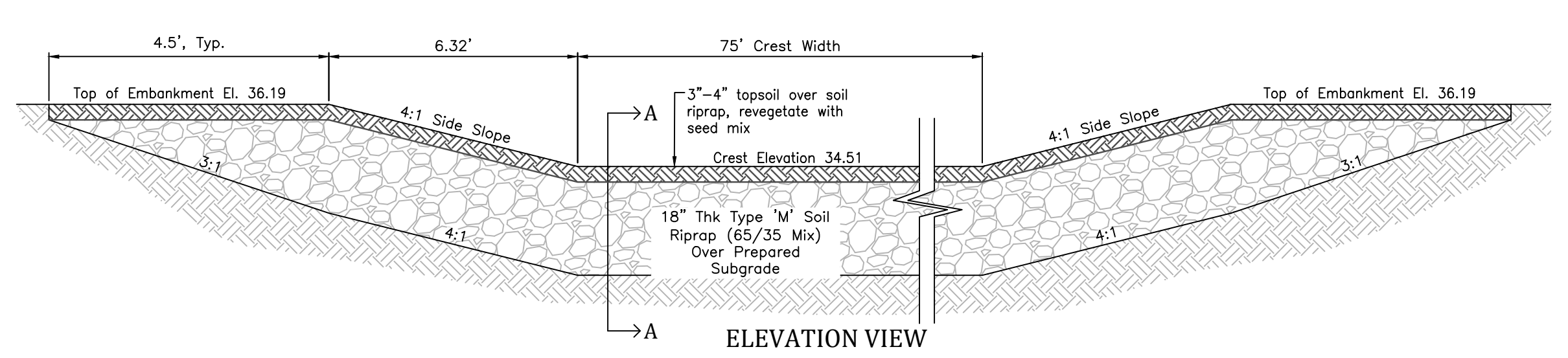
D SECTION D-D
27 SCALE: NTS



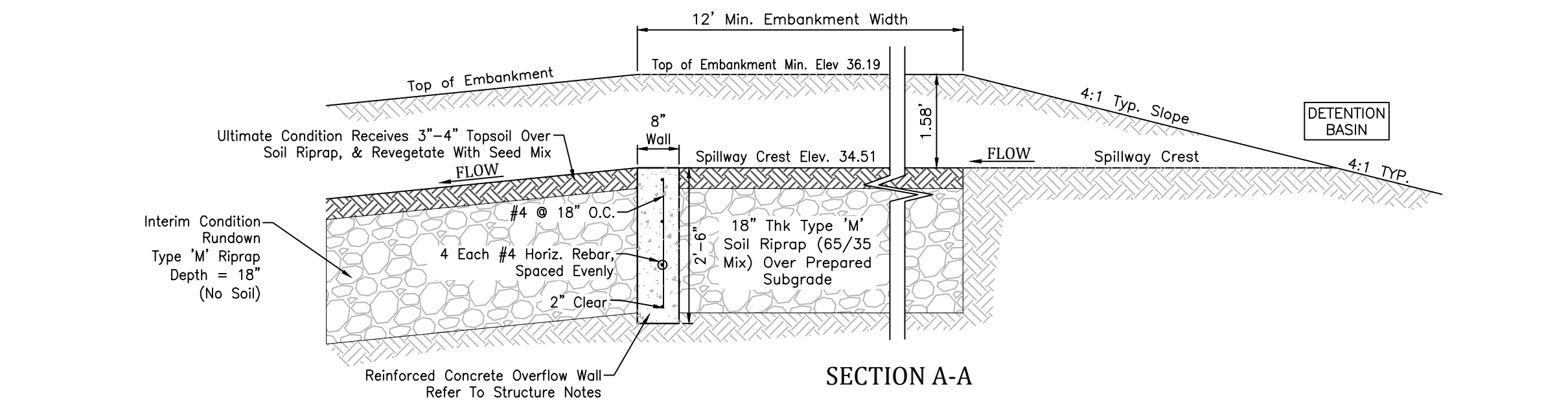
K PRESEDIMENTATION FOREBAY
27 SCALE: NTS



NOTE: FOREBAY WILL NOT BE CONSTRUCTED WITH THE EARLY GRADING PERMIT. IT IS INCLUDED HERE FOR REFERENCE AND INFORMATIONAL PURPOSES ONLY.



L EMERGENCY SPILLWAY
27 SCALE: NTS



SECTION A-A

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

W
WIDEFIELD
Investment Group

PEACEFUL RIDGE AT FOUNTAIN VALLEY
DETENTION BASIN
OUTLET STRUCTURE & SPILLWAY DETAILS
EL PASO COUNTY, COLORADO

FOUNTAIN VALLEY INVESTMENT PARTNERS, LLC

Project No.: 21031
Date: Feb. 10, 2022
Design: MJK
Drawn: MJK
Check: AWMc
Revisions:

SHEET
EGP-7
7 OF 7 SHEETS

Description

A sediment basin is a temporary pond built on a construction site to capture eroded or disturbed soil transported in storm runoff prior to discharge from the site. Sediment basins are designed to capture site runoff and slowly release it to allow time for settling of sediment prior to discharge. Sediment basins are often constructed in locations that will later be modified to serve as post-construction stormwater basins.



Photograph SB-1. Sediment basin at the toe of a slope. Photo courtesy of WWE.

Appropriate Uses

Most large construction sites (typically greater than 2 acres) will require one or more sediment basins for effective management of construction site runoff. On linear construction projects, sediment basins may be impractical; instead, sediment traps or other combinations of BMPs may be more appropriate.

Sediment basins should not be used as stand-alone sediment controls. Erosion and other sediment controls should also be implemented upstream.

When feasible, the sediment basin should be installed in the same location where a permanent post-construction detention pond will be located.

Design and Installation

The design procedure for a sediment basin includes these steps:

- **Basin Storage Volume:** Provide a storage volume of at least 3,600 cubic feet per acre of drainage area. To the extent practical, undisturbed and/or off-site areas should be diverted around sediment basins to prevent “clean” runoff from mixing with runoff from disturbed areas. For undisturbed areas (both on-site and off-site) that cannot be diverted around the sediment basin, provide a minimum of 500 ft³/acre of storage for undeveloped (but stable) off-site areas in addition to the 3,600 ft³/acre for disturbed areas. For stable, developed areas that cannot be diverted around the sediment basin, storage volume requirements are summarized in Table SB-1.
- **Basin Geometry:** Design basin with a minimum length-to-width ratio of 2:1 (L:W). If this cannot be achieved because of site space constraints, baffling may be required to extend the effective distance between the inflow point(s) and the outlet to minimize short-circuiting.
- **Dam Embankment:** It is recommended that embankment slopes be 4:1 (H:V) or flatter and no steeper than 3:1 (H:V) in any location.

Sediment Basins	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No

- **Inflow Structure:** For concentrated flow entering the basin, provide energy dissipation at the point of inflow.

Table SB-1. Additional Volume Requirements for Undisturbed and Developed Tributary Areas Draining through Sediment Basins

Imperviousness (%)	Additional Storage Volume (ft ³) Per Acre of Tributary Area
Undeveloped	500
10	800
20	1230
30	1600
40	2030
50	2470
60	2980
70	3560
80	4360
90	5300
100	6460

- **Outlet Works:** The outlet pipe shall extend through the embankment at a minimum slope of 0.5 percent. Outlet works can be designed using one of the following approaches:
 - **Riser Pipe (Simplified Detail):** Detail SB-1 provides a simplified design for basins treating no more than 15 acres.
 - **Orifice Plate or Riser Pipe:** Follow the design criteria for Full Spectrum Detention outlets in the EDB Fact Sheet provided in Chapter 4 of this manual for sizing of outlet perforations with an emptying time of approximately 72 hours. In lieu of the trash rack, pack uniformly sized 1½ - to 2-inch gravel in front of the plate or surrounding the riser pipe. This gravel will need to be cleaned out frequently during the construction period as sediment accumulates within it. The gravel pack will need to be removed and disposed of following construction to reclaim the basin for use as a permanent detention facility. If the basin will be used as a permanent extended detention basin for the site, a trash rack will need to be installed once contributing drainage areas have been stabilized and the gravel pack and accumulated sediment have been removed.
 - **Floating Skimmer:** If a floating skimmer is used, install it using manufacturer’s recommendations. Illustration SB-1 provides an illustration of a Faircloth Skimmer Floating Outlet™, one of the more commonly used floating skimmer outlets. A skimmer should be designed to release the design volume in no less than 48 hours. The use of a floating skimmer outlet can increase the sediment capture efficiency of a basin significantly. A floating outlet continually decants cleanest water off the surface of the pond and releases cleaner water than would discharge from a perforated riser pipe or plate.

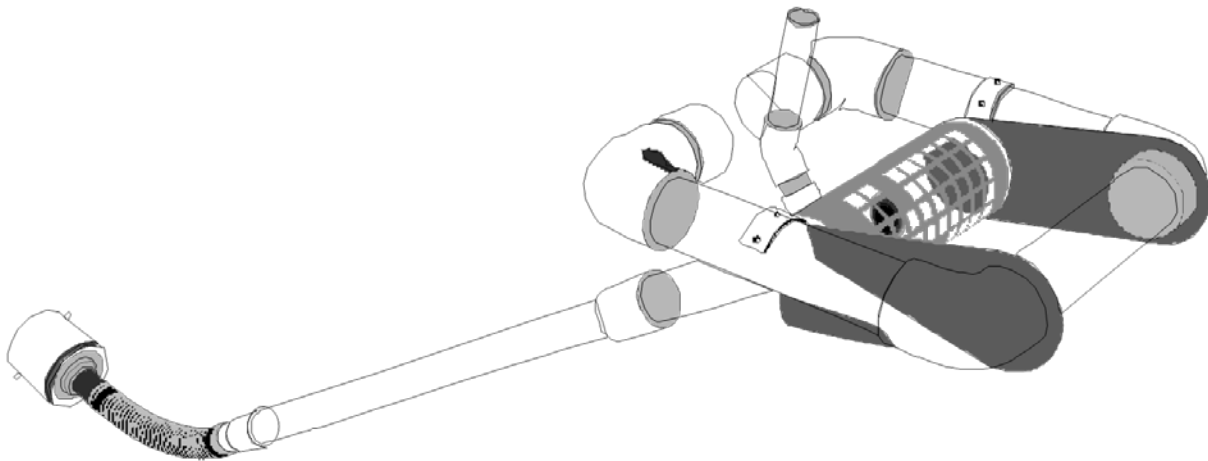


Illustration SB-1. Outlet structure for a temporary sediment basin - Faircloth Skimmer Floating Outlet. Illustration courtesy of J. W. Faircloth & Sons, Inc., FairclothSkimmer.com.

- **Outlet Protection and Spillway:** Consider all flow paths for runoff leaving the basin, including protection at the typical point of discharge as well as overtopping.
 - **Outlet Protection:** Outlet protection should be provided where the velocity of flow will exceed the maximum permissible velocity of the material of the waterway into which discharge occurs. This may require the use of a riprap apron at the outlet location and/or other measures to keep the waterway from eroding.
 - **Emergency Spillway:** Provide a stabilized emergency overflow spillway for rainstorms that exceed the capacity of the sediment basin volume and its outlet. Protect basin embankments from erosion and overtopping. If the sediment basin will be converted to a permanent detention basin, design and construct the emergency spillway(s) as required for the permanent facility. If the sediment basin will not become a permanent detention basin, it may be possible to substitute a heavy polyvinyl membrane or properly bedded rock cover to line the spillway and downstream embankment, depending on the height, slope, and width of the embankments.

Maintenance and Removal

Maintenance activities include the following:

- Dredge sediment from the basin, as needed to maintain BMP effectiveness, typically when the design storage volume is no more than one-third filled with sediment.
- Inspect the sediment basin embankments for stability and seepage.
- Inspect the inlet and outlet of the basin, repair damage, and remove debris. Remove, clean and replace the gravel around the outlet on a regular basis to remove the accumulated sediment within it and keep the outlet functioning.
- Be aware that removal of a sediment basin may require dewatering and associated permit requirements.
- Do not remove a sediment basin until the upstream area has been stabilized with vegetation.

Final disposition of the sediment basin depends on whether the basin will be converted to a permanent post-construction stormwater basin or whether the basin area will be returned to grade. For basins being converted to permanent detention basins, remove accumulated sediment and reconfigure the basin and outlet to meet the requirements of the final design for the detention facility. If the sediment basin is not to be used as a permanent detention facility, fill the excavated area with soil and stabilize with vegetation.

Description

Sediment traps are formed by excavating an area or by placing an earthen embankment across a low area or drainage swale. Sediment traps are designed to capture drainage from disturbed areas less than one acre and allow settling of sediment.



Photograph ST-1. Sediment traps are used to collect sediment-laden runoff from disturbed area. Photo courtesy of EPA Menu of BMPs.

Appropriate Uses

Sediment traps can be used in combination with other layers of erosion and sediment controls to trap sediment from small drainage areas (less than one acre) or areas with localized high sediment loading. For example, sediment traps are often provided in conjunction with vehicle tracking controls and wheel wash facilities.

Design and Installation

A sediment trap consists of a small excavated basin with an earthen berm and a riprap outlet. The berm of the sediment trap may be constructed from the excavated material and must be compacted to 95 percent of the maximum density in accordance with ASTM D698. An overflow outlet must be provided at an elevation at least 6 inches below the top of the berm. See Detail ST-1 for additional design and installation information.

Maintenance and Removal

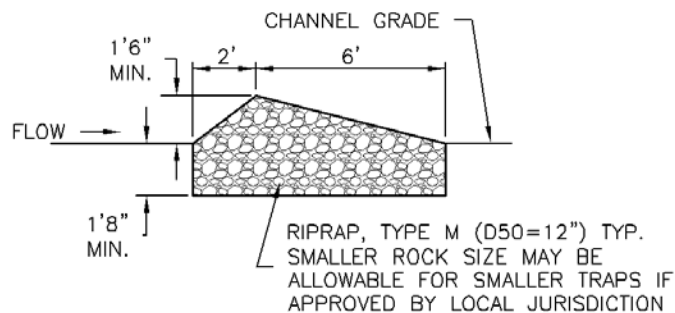
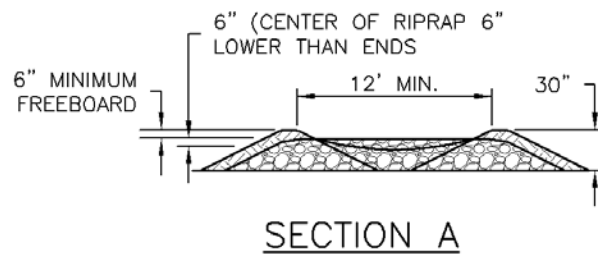
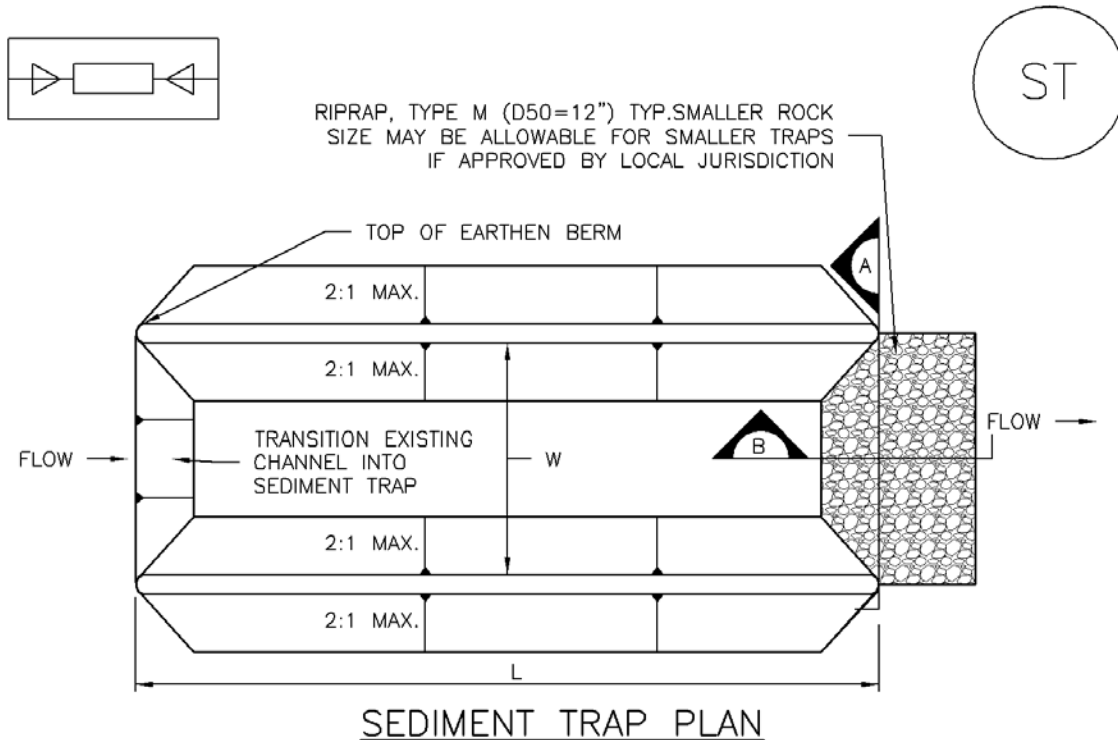
Inspect the sediment trap embankments for stability and seepage.

Remove accumulated sediment as needed to maintain the effectiveness of the sediment trap, typically when the sediment depth is approximately one-half the height of the outflow embankment.

Inspect the outlet for debris and damage. Repair damage to the outlet, and remove all obstructions.

A sediment trap should not be removed until the upstream area is sufficiently stabilized. Upon removal of the trap, the disturbed area should be covered with topsoil and stabilized.

Sediment Trap	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No



SECTION B
ST-1. SEDIMENT TRAP

SEDIMENT TRAP INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
-LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
2. ONLY USE FOR DRAINAGE AREAS LESS THAN 1 ACRE.
3. SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADIENT LAND-DISTURBING ACTIVITIES.
4. SEDIMENT TRAP BERM SHALL BE CONSTRUCTED FROM MATERIAL FROM EXCAVATION. THE BERM SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.
5. SEDIMENT TRAP OUTLET TO BE CONSTRUCTED OF RIPRAP, TYPE M (D50=12") TYP. SMALLER ROCK SIZE MAY BE ALLOWABLE FOR SMALLER TRAPS IF APPROVED BY LOCAL JURISDICTION.
6. THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE RIPRAP OUTLET STRUCTURE.
7. THE ENDS OF THE RIPRAP OUTLET STRUCTURE SHALL BE A MINIMUM OF 6" HIGHER THAN THE CENTER OF THE OUTLET STRUCTURE.

SEDIMENT TRAP 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. REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN THE SEDIMENT DEPTH REACHES $\frac{1}{2}$ THE HEIGHT OF THE RIPRAP OUTLET.
5. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
6. WHEN SEDIMENT TRAPS ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.

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

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.