PPR2441

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PRIVATE DETENTION BASIN /

STORMWATER QUALITY BEST MANAGEMENT PRACTICE

MAINTENANCE AGREEMENT AND EASEMENT

This PRIVATE DETENTION BASIN / STORMWATER QUALITY BEST MANAGEMENT PRACTICE MAINTENANCE AGREEMENT AND EASEMENT (Agreement) is made by and between EL PASO COUNTY by and through THE BOARD OF COUNTY COMMISSIONERS OF EL PASO COUNTY, COLORADO (Board or County) and Western Waste Real Property Holdings LLC (Developer). The above may occasionally be referred to herein singularly as "Party" and collectively as "Parties."

Recitals

A. WHEREAS, Developer is the owner of certain real estate (the Property) in El Paso County, Colorado, which Property is legally described in Exhibit A attached hereto and incorporated herein by this reference; and

B. WHEREAS, Developer desires to develop on the Property a land use to be known as Apex Waste Solutions; and

C. WHEREAS, the development of this Property will substantially increase the volume of water runoff and will decrease the quality of the stormwater runoff from the Property, and, therefore, it is in the best interest of public health, safety and welfare for the County to condition approval of this land use on Developer's promise to construct adequate drainage, water runoff control facilities, and stormwater quality structural Best Management Practices ("BMPs") for the land use; and

D. WHEREAS, Chapter 8, Section 8.4.5 of the El Paso County Land Development Code, as periodically amended, promulgated pursuant to Section 30-28-133(1), Colorado Revised Statutes (C.R.S.), requires the County to condition approval of all subdivisions on a developer's promise to so construct adequate drainage, water runoff control facilities, and BMPs in subdivisions; and

E. WHEREAS, the Drainage Criteria Manual, Volume 2, as amended by Appendix I of the El Paso County Engineering Criteria Manual (ECM), as each may be periodically amended, promulgated pursuant to the County's Colorado Discharge Permit System General Permit (MS4 Permit) as required by Phase II of the National Pollutant Discharge Elimination System (NPDES), which MS4 Permit requires that the County take measures to protect the quality of stormwater from sediment and other contaminants, requires subdividers, developers, landowners, and owners of facilities located in the County's rights-of-way or easements to provide adequate permanent stormwater quality BMPs with new development or significant redevelopment; and

F. WHEREAS, Section 2.9 of the El Paso County Drainage Criteria Manual provides for a developer's promise to maintain a subdivision's drainage facilities in the event the County does not assume such responsibility; and

G. WHEREAS, developers in El Paso County have historically chosen water runoff detention basins as a means to provide adequate drainage and water runoff control in subdivisions,

which basins, while effective, are less expensive for developers to construct than other methods of providing drainage and water runoff control; and

H. WHEREAS, Developer desires to construct for the land use one Sand Filter Basin/stormwater quality BMP ("Sand Filter Basin/BMP") as the means for providing adequate drainage and stormwater runoff control and to meet requirements of the County's MS4 Permit, and to operate, clean, maintain and repair such Sand Filter Basin/BMP; and

I. WHEREAS, Developer desires to construct the Sand Filter Basin/BMP in the southwest corner of the Property.

J. WHEREAS, Developer shall be charged with the duties of constructing, operating, maintaining and repairing the Sand Filter Basin/BMP on the Property described in Exhibit A; and

K. WHEREAS, it is the County's experience that subdivision developers and property owners historically have not properly cleaned and otherwise not properly maintained and repaired these sand filter basins/BMPs, and that these sand filter basins/BMPs, when not so properly cleaned, maintained, and repaired, threaten the public health, safety and welfare; and

L. WHEREAS, the County, in order to protect the public health, safety and welfare, has historically expended valuable and limited public resources to so properly clean, maintain, and repair these sand filter basins/BMPs when developers and property owners have failed in their responsibilities, and therefore, the County desires the means to recover its costs incurred in the event the burden falls on the County to so clean, maintain and repair the sand filter basin/BMP serving this land use due to the Developer's failure to meet its obligations to do the same; and

M. WHEREAS, the County conditions approval of this land use on the Developer's promise to so construct the sand filter basin/BMP, and conditions approval on the Developers's promise to reimburse the County in the event the burden falls upon the County to so clean, maintain and/or repair the sand filter basin/BMP serving this Property; and

N. WHEREAS, the County could condition land use approval on the Developer's promise to construct a different and more expensive drainage, water runoff control system and BMPs than those proposed herein, which more expensive system would not create the possibility of the burden of cleaning, maintenance and repair expenses falling on the County; however, the County is willing to forego such right upon the performance of Developer's promises contained herein; and

O. WHEREAS, the County, in order to secure performance of the promises contained herein, conditions approval of this land use upon the Developer's grant herein of a perpetual Easement over the Property for the purpose of allowing the County to periodically access, inspect, and, when so necessary, to clean, maintain and/or repair the sand filter basin/BMP.

Agreement

NOW, THEREFORE, in consideration of the mutual Promises contained herein, the sufficiency of which are hereby acknowledged, the Parties agree as follows:

1. Incorporation of Recitals: The Parties incorporate the Recitals above into this Agreement.

2. Covenants Running with the Land: Developer agrees that this entire Agreement and the performance thereof shall become a covenant running with the land, which land is legally described in Exhibit A attached hereto, and that this entire Agreement and the performance thereof shall be binding upon itself, its successors and assigns.

3. Construction: Developer shall construct on the Property described in Exhibit A attached hereto and incorporated herein by this reference, one Sand Filter Basin/BMP. Developer shall not commence construction of the sand filter basin/BMP until the El Paso County Planning and Community Development Department (PCD) has approved in writing the plans and specifications for the sand filter basin/BMP and this Agreement has been signed by all Parties and returned to the PCD. Developer shall complete construction of the sand filter basin/BMP in substantial compliance with the County-approved plans and specifications for the sand filter basin/BMP. Failure to meet these requirements shall be a material breach of this Agreement and shall entitle the County to pursue any remedies available to it at law or in equity to enforce the same. Construction of the sand filter basin/BMP shall be substantially completed within one (1) year (defined as 365 days), which one year period will commence to run on the date the approved plat of this Subdivision is recorded in the records of the El Paso County Clerk and Recorder. In cases where a subdivision is not required, the one-year period will commence to run on the date the Erosion and Stormwater Quality Control Permit (ESQCP) is issued. Rough grading of the sand filter basin/BMP must be completed and inspected by the El Paso County Planning and Community Development Department prior to commencing road construction.

In the event construction is not substantially completed within the one (1) year period, then the County may exercise its discretion to complete the project and shall have the right to seek reimbursement from the Developer/Owner and its successors and assigns, for its actual costs and expenses incurred in the process of completing construction. The term actual costs and expenses shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tool and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the Provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

4. Maintenance: The Developer agrees for itself and its successors and assigns, that it will regularly and routinely inspect, clean and maintain the sand filter basin/BMP, in compliance with the County-reviewed Operation and Maintenance Manual, attached hereto as Exhibit B and incorporated herein by reference, and otherwise keep the same in good repair, all at its own cost and expense. No trees or shrubs that will impair the structural integrity of the sand filter basin/BMP shall be planted or allowed to grow on the sand filter basin/BMP.

5. Creation of Easement: Developer hereby grants the County a non-exclusive perpetual easement upon and across that portion of the Property described in Exhibit A. The purpose of the easement is to allow the County to access, inspect, clean, repair and maintain the sand filter

basin/BMP; however, the creation of the easement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the sand filter basin/BMP.

6. County's Rights and Obligations: Any time the County determines, in the sole exercise of its discretion, that the sand filter basin/BMP is not properly cleaned, maintained and/or otherwise kept in good repair, the County shall give reasonable notice to the Developer and its successors and assigns, that the sand filter basin/BMP needs to be cleaned, maintained and/or otherwise repaired. The notice shall provide a reasonable time to correct the problem(s). Should the responsible parties fail to correct the specified problem(s), the County may enter upon the Property to so correct the specified problem(s). Notice shall be effective to the above by the County's deposit of the same into the regular United States mail, postage pre-paid. Notwithstanding the foregoing, this Agreement does not expressly or implicitly impose on the County a duty to so inspect, clean, repair or maintain the sand filter basin/BMP.

7. Reimbursement of County's Costs / Covenant Running With the Land: The Developer agrees and covenants, for itself, its successors and assigns, that it will reimburse the County for its costs and expenses incurred in the process of completing construction of, cleaning, maintaining, and/or repairing the sand filter basin/BMP pursuant to the provisions of this Agreement.

The term "actual costs and expenses" shall be liberally construed in favor of the County, and shall include, but shall not be limited to, labor costs, tools and equipment costs, supply costs, and engineering and design costs, regardless of whether the County uses its own personnel, tools, equipment and supplies, etc. to correct the matter. In the event the County initiates any litigation or engages the services of legal counsel in order to enforce the provisions arising herein, the County shall be entitled to its damages and costs, including reasonable attorney's fees, regardless of whether the County contracts with outside legal counsel or utilizes in-house legal counsel for the same.

8. Contingencies of Land Use/Land Disturbance Approval: Developer's execution of this Agreement is a condition of land use/land disturbance approval.

The County shall have the right, in the sole exercise of its discretion, to approve or disapprove any documentation submitted to it under the conditions of this Paragraph, including but not limited to, any separate agreement or amendment, if applicable, identifying any specific maintenance responsibilities not addressed herein. The County's rejection of any documentation submitted hereunder shall mean that the appropriate condition of this Agreement has not been fulfilled.

9. Agreement Monitored by El Paso County Planning and Community Development Department and/or El Paso County Department of Public Works: Any and all actions and decisions to be made hereunder by the County shall be made by the Director of the El Paso County Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works. Accordingly, any and all documents, submissions, plan approvals, inspections, etc. shall be submitted to and shall be made by the Director of the Planning and Community Development Department and/or the Director of the El Paso County Department of Public Works.

10. Indemnification and Hold Harmless: To the extent authorized by law, Developer agrees, for itself, its successors and assigns, that it will indemnify, defend, and hold the County harmless from any and all loss, costs, damage, injury, liability, claim, lien, demand, action and causes of action whatsoever, whether at law or in equity, arising from or related to its intentional or negligent acts, errors

or omissions or that of its agents, officers, servants, employees, invitees and licensees in the construction, operation, inspection, cleaning (including analyzing and disposing of any solid or hazardous wastes as defined by State and/or Federal environmental laws and regulations), maintenance, and repair of the sand filter basin/BMP, and such obligation arising under this Paragraph shall be joint and several. Nothing in this Paragraph shall be deemed to waive or otherwise limit the defense available to the County pursuant to the Colorado Governmental Immunity Act, Sections 24-10-101, *et seq.* C.R.S., or as otherwise provided by law.

11. Severability: In the event any Court of competent jurisdiction declares any part of this Agreement to be unenforceable, such declaration shall not affect the enforceability of the remaining parts of this Agreement.

12. Third Parties: This Agreement does not and shall not be deemed to confer upon or grant to any third party any right to claim damages or to bring any lawsuit, action or other proceeding against either the County, the Developer/Owner, or their respective successors and assigns, because of any breach hereof or because of any terms, covenants, agreements or conditions contained herein.

13. Solid Waste or Hazardous Materials: Should any refuse from the sand filter basin/BMP be suspected or identified as solid waste or petroleum products, hazardous substances or hazardous materials (collectively referred to herein as "hazardous materials"), the Developer shall take all necessary and proper steps to characterize the solid waste or hazardous materials and properly dispose of it in accordance with applicable State and/or Federal environmental laws and regulations, including, but not limited to, the following: Solid Wastes Disposal Sites and Facilities Acts, §§ 30-20-100.5 – 30-20- 119, C.R.S., Colorado Regulations Pertaining to Solid Waste Disposal Sites and Facilities, 6 C.C.R. 1007-2, *et seq.*, Solid Waste Disposal Act, 42 U.S.C. §§ 6901-6992k, and Federal Solid Waste Regulations 40 CFR Ch. I. The County shall not be responsible or liable for identifying, characterizing, cleaning up, or disposing of such solid waste or hazardous materials. Notwithstanding the previous sentence, should any refuse cleaned up and disposed of by the County be determined to be solid waste or hazardous materials, the Developer, but not the County, shall be responsible and liable as the owner, generator, and/or transporter of said solid waste or hazardous materials.

14. Applicable Law and Venue: The laws, rules, and regulations of the State of Colorado and El Paso County shall be applicable in the enforcement, interpretation, and execution of this Agreement, except that Federal law may be applicable regarding solid waste or hazardous materials. Venue shall be in the El Paso County District Court.

IN WITNESS WHEREOF, the Parties affix their signatures below.

Executed this 22nd day of December, 2025, by:

Western Waste Real Property Holdings LLC

By: _____

Scott Lukach, CEO/President

The foregoing instrument was acknowledged before me this 22nd day of December, 20 25, by Scott Lukach, CEO/President Western Waste Real Property Holdings LLC.

Witness my hand and official seal.

My commission expires: 07/15/2028

STATE OF COLORADO

Stefanie Keese

Notarized online using audio-video communication

County of Jefferson

Notary Public

Stefanie Keese
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20154046669
MY COMMISSION EXPIRES JULY 15, 2028

Executed this_____day of_____, 20___, by:

BOARD OF COUNTY COMMISSIONERS
OF EL PASO COUNTY, COLORADO

By:_____
Gilbert LaForce, Engineering Manager
Development Services, Department of Public Works
Designee of Joshua Palmer, County Engineer
Authorized signatory pursuant to Resolution No. 24-145

The foregoing instrument was acknowledged before me this_____day of_____, 20___, by_____, Engineering Manager, El Paso County Department of Public Works.

Witness my hand and official seal.

My commission expires: _____

_____
Notary Public

Approved as to Content and Form:

Erika Keech
Assistant County Attorney

Executed this 12 day of February, 2026, by:

BOARD OF COUNTY COMMISSIONERS
OF EL PASO COUNTY, COLORADO

By: _____

Christina Prete, Stormwater Operations & Compliance Manager
Engineering Division, Department of Public Works
Designee of Joshua Palmer, County Engineer
Authorized signatory pursuant to Resolution No. 24-145

The foregoing instrument was acknowledged before me this 18 day of February, 2026, by Christina Prete, Stormwater Operations & Compliance Manager, El Paso County Department of Public Works.

Witness my hand and official seal.

My commission expires: 8/11/2029

_____

Notary Public

TIMOTHY CHAMBERS
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20254030547
MY COMMISSION EXPIRES 08/11/2029

Approved as to Content and Form:

_____

Assistant County Attorney

Exhibit A

Deed Description:

Lots 4 and 5, Hillcrest Acres, County of El Paso, State of Colorado, except that portion thereof described in "Exhibit A" of the Condemnation Rule and Order in Case #94-CV-410 filed in the District Court of El Paso County, Colorado, recorded November 12, 1996 under Reception No. 96142857

Exhibit B: Operations and Maintenance Manual for Sand Filter Basins

Inspection and Maintenance Plan (IM Plan)

For:

Apex Waste Solutions

Located at:

560-570 Air Lane, El Paso County, CO

Prepared for:

Scott Lukach
Apex Waste Solutions
11681 Progress Lane
Parker, CO 80134

Completed By:

Brett Louk, P.E.
Eric Maxwell, I.E.

October 3, 2025

El Paso County Project Number: PPR2441

SMH CONSULTANTS

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Colorado Springs, Colorado 80903
719-465-2145
blouk@smhconsultants.com

Introduction

This plan addresses operation and maintenance of the private full-infiltration sand filter basin constructed as part of the site development plan for Apex Waste Solutions (PCD No. PPR2441). The site is located in El Paso County, CO and was previously platted as Lots 4 and 5 of the Hillcrest Acres Subdivision (Plat No. R01950).

Background

The State of Colorado Department of Public Health and Environment, Water Quality Control Division (CDPHE), has implemented federal regulations within the State of Colorado through permitting, and has included El Paso County as one of numerous Municipal Separate Storm Sewer Systems (MS4s) required to be permitted in compliance with National Pollutant Discharge Elimination System (NPDES) Phase 2 Regulations, as defined within Colorado's Phase 2 Municipal Guidance.

NPDES Phase 2 MS4s stormwater discharges are covered under a general permit under the Colorado Discharge Permit System (CDPS) under Regulation 61, and as a minimum require the MS4's operator (e.g., El Paso County) to develop, implement, and enforce a stormwater management program to reduce the discharge of pollutants to the maximum extent practicable to protect water quality requirements of the Colorado Water Quality Control Act, Colorado Code of Regulations [CCR] 61.8(11)(a)(i)).

Funding for and Organization of Facility Operation and Maintenance

Apex Waste Solutions, Inc. will be responsible for operations and maintenance of the proposed sand filter basin upon acceptance of the facilities.

Site and Facilities Description

1. The site is located in the SE and SW ¼ of Section 8, Township 14 South, Range 65 West in El Paso County, Colorado. The site is currently platted as Lots 4 and 5 of the Hillcrest Acres Subdivision. The sand filter basin will be located in the southwest corner of the property.

2. The site is accessed via the public road Air Lane. All on-site stormwater is conveyed via overland flow towards the southwest corner of the property where it is detained in the proposed sand filter basin. The sand filter basin is a full-infiltration section, and all captured stormwater is directly discharged into the subgrade. A drainage easement is proposed to provide access to the basin from Air Lane.

3. The sand filter basin will have an emergency spillway at the south end of the basin. Overtopping flows will be conveyed south offsite, and will follow historic drainage routes.

4. The basin is proposed as a full infiltration section due to site constraints. There is a lack of available storm sewer to connect to, and the pond is situated at a naturally low point on the site. Because of this no outlet structure besides the emergency spillway is proposed. The

basin will have a layer of filter media across the bottom of the basin, which will allow detained runoff to directly infiltrate into the subgrade.

Sand Filter Basin (SFB) Description
The following sections describe general SFB operations and maintenance.

SFB-1 General SFB Concept

Sand Filter Basins (SFBs) are a common type of stormwater best management practice (BMP) utilized within the Front Range of Colorado. SFBs typically consist of a flat sand filter bed, with an underdrain and overflow structure. Sand filter basins may also be designed as full-infiltration sections, where an underdrain system is not proposed and captured runoff directly infiltrates into the subgrade below. SFBs can be utilized to provide storage of the WQCV or can be designed to detain and release larger events. The sand filter basin proposed for this development is a full-infiltration section with full-spectrum detention capacity. The basin will capture and infiltrate all events up to the 100-year event. As runoff enters the basin it ponds above the sand bed and gradually infiltrates into the underlying sand filter, filling the void spaces of the sand and infiltrating into the subgrade. Any event greater than the 100-year storage of the basin will be discharged by the rip-rap lined emergency overflow channel. SFBs provide for filtering and absorption of pollutants in the stormwater. The popularity of SFBs has grown because they allow the WQCV and detention storage to be provided on a site that has little open area available for stormwater management.

SFB-2 Inspecting Sand Filter Basins (SFBs)

SFB-2.1 Access and Easements

Inspection and maintenance personnel may utilize the figures located in the appendix containing the locations of the access points and potential maintenance easements of the SFBs within this development.

SFB-2.2 Stormwater Best Management Practice (BMP) Locations

Inspection and maintenance personnel may utilize the figures located in the appendix containing the locations of the SFBs within this development.

SFB-2.3 Sand Filter Extended Detention Basin (SFB) Features

SFBs have a number of features that are designed to serve a particular function. Many times, the proper function of one feature depends on another. It is important for maintenance personnel to understand the function of each of these features to prevent damage to any feature during maintenance operations. Below is a list and description of the most common features within a SFB and the corresponding maintenance inspection items that can be anticipated:

Table SFB-1
Inspection and Maintenance Requirements Matrix for Full-Infiltration Sand Filter Basins

	Sediment Removal	Mowing Weed Control	Trash & Debris Removal	Erosion	Overgrown Vegetation Removal	Removal & Replacement	Structure Repair
Filter Media	X	X	X	X	X	X	
Emergency Overflow Channel	X		X				X
Embankment		X	X	X	X		

SBF-2.3.1 Filter Media

The filter media is the main pollutant removal component of the SFB. The filter media consists of 18-inches of washed sand. The filter media removes pollutants through several different processes, including sedimentation, filtration, infiltration and microbial uptake.

Sedimentation is accomplished by the slow release of stormwater runoff through the filter media. This slow release allows for sediment particles to be deposited on the top layer of the filter media where they are easily removed through routine maintenance. Other pollutants are also removed through this process because they are attached to sediment.

Filtration is the main pollutant removal mechanism of SFBs. When the stormwater runoff migrates down through the filter media, many of the particulate pollutants are physically strained out as they pass through the filter bed of sand and are trapped on the surface or among the pores of the filter media.

SFBs that are not lined with an impervious liner allow for infiltration into the native soils. This process also allows for additional pollutant removal.

Microbes that naturally occur in the filter media can assist with pollutant removal by breaking down organic pollutants.

The typical maintenance activities that are required within the filter media areas are as follows:

a. Mowing/woody growth control/weeds present - Noxious weeds and other unwanted vegetation must be treated as needed throughout the SFB. This activity can be performed either through mechanical means (mowing/pulling) or with herbicide. Consultation with a local Weed Inspector is highly recommended prior to the use of herbicide. Herbicides should be utilized sparingly and as a last resort. All herbicide applications should be in accordance with the manufacturer's recommendations.

b. Sediment/Pollutant Removal – Although SFBs should not be utilized in areas where large concentrations of sediment and other pollutants will enter the SFB, it is inevitable that some sediment and other pollutants will enter the SFB. Most sediment will be deposited along the basin embankments, however finer suspended particles will migrate to the filter media. These sediments need to be removed to ensure proper infiltration rates of the stormwater runoff.

c. Filter Replacement - The top layers of the filter media are the most susceptible to pollutant loading and therefore may need to be removed and disposed of properly on a semi-regular basis when infiltration rates slow.

d. Infiltration Rate Test - An infiltration test may be necessary to ensure proper functioning of the filter media. The infiltration test can be conducted by filling the sand filter with water to the elevation of the overflow channel. The sand filter needs to drain completely within 40-hours of the filling. If the drain time for the basin is longer than 40-hours, the filter is in need of maintenance.

SFB-2.3.2 Emergency Overflow

An emergency spillway is typical of all SFBs and designed to serve as the overflow in the event the volume of the pond is exceeded. The emergency spillway is typically armored with riprap (or other hard armor), and is sometimes buried with soil or may be a concrete wall or other structure. The emergency spillway is typically a weir (notch) in the basin embankment. Proper function of the emergency spillway is essential to ensure flooding does not affect adjacent properties.

The typical maintenance activities that are required for the emergency overflow areas are as follows:

a. Riprap Displaced – As mentioned before, the emergency spillway is typically armored with riprap to provide erosion protection. Over the life of an SFB, the riprap may shift or become dislodged due to flow.

b. Erosion Present – Although the spillway is typically armored, stormwater flowing through the spillway can cause erosion damage. Erosion must be repaired to ensure the integrity of the basin embankment, and proper function of the spillway.

c. Mowing/weed/woody growth control – Management of woody vegetation is essential in the proper long-term function of the spillway. Larger trees or dense shrubs can capture larger debris entering the SFB and reduce the capacity of the spillway. These trees and shrubs may also damage the underdrain system of the SFB.

d. Obstruction/Debris – The spillway must be cleared of any obstruction (man-made or natural) to ensure the proper design capacity.

SFB-2.3.3 Embankments

Some SFBs utilize irrigated turf grass embankments to store the WQCV.

The typical maintenance activities that are required for the embankment areas are as follows:

a. Vegetation Sparse – The embankments are one of the most visible parts of the SFB and, therefore, aesthetics is important. Adequate and properly maintained vegetation can greatly increase the overall appearance of the SFB. Also, vegetation can reduce the potential for erosion and subsequent sediment transport to the filter media, thereby reducing the need for more costly maintenance.

b. Erosion – Inadequate vegetative cover may result in erosion of the embankments. Erosion that occurs on the embankments can cause clogging of the filter media.

c. Trash/Debris – Trash and debris can accumulate in the upper area after large events, or from illegal dumping. Over time, this material can clog the SFB filter media and emergency overflow outlet.

d. Mowing/woody growth control/weeds present – The presence of plant material not part of the original landscaping, such as wetland plants or other woody growth, can result in difficulty in performing maintenance activities. These trees and shrubs may also damage the underdrain system of the SFB. This plant material may indicate a clogging of the filter media and may require additional investigation.

SFB-2.3.4 Miscellaneous

There are a variety of inspection/maintenance issues that may not be attributed to a single feature within the SFB. This category on the inspection form is for maintenance items that are commonly found in the SFB, but may not be attributed to an individual feature.

a. Access – Access needs to be maintained.

b. Graffiti/Vandalism – Vandals can cause damage to the SFB infrastructure. If criminal mischief is evident, the inspector should forward this information to the local emergency agency.

c. Public Hazards – Public hazards include items such as vertical drops of greater than 4-feet, containers of unknown/suspicious substances, and exposed metal/jagged concrete on structures. If any hazard is found within the facility area that poses an immediate threat to public safety, contact the local emergency services at 911 immediately.

d. Other – Any miscellaneous inspection/maintenance items not contained on the form should be entered here.

SFB-2.4 Inspection Forms

SFB Inspection forms are located in the appendix. Inspection forms shall be completed by the person(s) conducting the inspection activities. Each form shall be reviewed and submitted by the property owner or property manager to the El Paso County Stormwater Team per the requirements of the Inspection and Maintenance Plan. These inspection forms shall be kept a minimum of 5 years and made available to El Paso County of upon request.

SFB-3 Maintaining Sand Filter Basins (SFBs)

SFB-3.1 Maintenance Personnel

Maintenance personnel should be qualified to properly maintain SFBs. Inadequately trained personnel can cause additional problems resulting in additional maintenance costs.

SFB-3.2 Equipment

It is imperative that the appropriate equipment and tools are taken to the field with the operations crew. The types of equipment/tools will vary depending on the task at hand. Below is a list of tools, equipment, and material(s) that may be necessary to perform maintenance on a SFB:

1.) Mowing Tractors
2.) Trimmers (extra string)
3.) Shovels
4.) Rakes
5.) All Surface Vehicle (ASVs)
6.) Skid Steer
7.) Back Hoe
8.) Track Hoe/Long Reach Excavator
9.) Dump Truck
10.) Jet-Vac Machine
11.) Engineers Level (laser)
12.) Riprap (Minimum - Type M)
13.) Geotextile Fabric
14.) Erosion Control Blanket(s)
15.) Sod
16.) Illicit Discharge Cleanup Kits
17.) Trash Bags
18.) Tools (wrenches, screw drivers, hammers, etc)
19.) Confined Space Entry Equipment
20.) Approved Inspection and Maintenance Plan
21.) ASTM C-33 Sand

Some of the items identified above may not be needed for every maintenance operation.

However, this equipment should be available to the maintenance operations crews should the need arise.

SFB-3.3 Safety

Vertical drops may be encountered in areas located within and around the SFB. Avoid walking on top of retaining walls or other structures that have a significant vertical drop. If a vertical drop is identified that is greater than 48-inches in height, make the appropriate note/comment on the maintenance inspection form.

SFB-3.4 SFB Maintenance Forms

The SFB Maintenance Form provides a record of each maintenance operation performed by maintenance contractors. The SFB Maintenance Form shall be filled out in the field after the completion of the maintenance operation. Each form shall be reviewed and submitted by the property owner or property manager to the El Paso County Stormwater Team per the requirements of the Inspection and Maintenance Plan. The SFB Maintenance form is located in the appendix.

SFB-3.5 SFB Maintenance Categories and Activities

A typical SFB Maintenance Program will consist of three broad categories of work: Routine, Minor and Major. Within each category of work, a variety of maintenance activities can be performed on a SFB. A maintenance activity can be specific to each feature within the SFB, or general to the overall facility. This section of the SOP explains each of the categories and briefly describes the typical maintenance activities for a SFB.

A variety of maintenance activities are typical of SFBs. The maintenance activities range in magnitude from routine trash pickup to the reconstruction of the SFB filter media or underdrain system. Below is a description of each maintenance activity, the objectives, and frequency of actions:

SFB-3.6 Routine Maintenance Activities

The majority of this work consists of scheduled mowings, trash and debris pickups for the SFB during the growing season. It also includes activities such as weed control. These activities normally will be performed numerous times during the year. These items typically do not require any prior correspondence with El Paso County, however, completed inspection and maintenance forms shall be submitted to the El Paso County Stormwater Team for each inspection and maintenance.

The Routine Maintenance Activities are summarized below, and further described in the following sections.

Table SFB-2

Summary of Routine Maintenance Activities

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Mowing	Twice annually	Excessive grass height/aesthetics	2"-4" grass height
Trash/Debris Removal	Twice annually	Trash/debris in SFB	Remove and dispose of trash and debris
Woody growth control/weed removal	Minimum twice annually	Noxious weeds, unwanted vegetation	Treat with herbicide of hand pull, consult a local weed inspector

SFB-3.6.1 Mowing

Routine mowing of the turf grass embankments and turf grass located in the sedimentation chamber is necessary to improve the overall appearance of the SFB and ensure proper performance of the sediment chamber. Turf grass should be mowed to a height of 2 to 4-inches and shall be bagged to prevent potential contamination of the filter media.

Frequency – Routine - Minimum of twice annually or depending on aesthetics.

SFB-3.6.2 Trash/Debris Removal

Trash and debris must be removed from the entire SFB area to minimize outlet clogging and to improve aesthetics. This activity must be performed prior to mowing operations.

Frequency – Routine – Prior to mowing operations and minimum of twice annually.

SFB- 3.6.3 Woody Growth Control/Weed Removal

Noxious weeds and other unwanted vegetation must be treated as needed throughout the SFB. This activity can be performed either through mechanical means (mowing/pulling) or with herbicide. Consultation with a local El Paso County Weed Inspector is highly recommended prior to the use of herbicide. Herbicides should be utilized sparingly and as a last resort. All herbicide applications should be in accordance with the manufacturer's recommendations.

Frequency – Routine – As needed based on inspections.

SFB-3.7 Restoration Maintenance Activities

This work consists of a variety of isolated or small-scale maintenance/operational problems. Most of this work can be completed by a small crew, hand tools, and small

equipment. These items do not require prior approval from El Paso County. Completed inspection and maintenance forms shall be submitted to the El Paso County Stormwater Team for each inspection and maintenance period. In the event that the SFB needs to be dewatered, care should be given to ensure sediment, filter material and other pollutants are not discharged. All dewatering activities shall be appropriately permitted.

Table SFB-3
Summary of Restoration Maintenance Activities

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Sediment & Pollutant Removal	As needed; typically every 1-2 years	Sediment build up in filter media; decrease in infiltration rate	Remove and dispose of sediment
Erosion Repair	As needed, based upon inspection	Rills/gullies on embankments or sedimentation near the filter media	Repair eroded areas and revegetate; address cause

SFB-3.7.1 Sediment Removal/Pollutant Removal

Sediment removal is necessary to ensure proper function of the filter media. The infiltration rate of the SFB needs to be checked in order to ensure proper functioning of the SFB. A SFB should drain completely within 40-hours of a storm event. If drain times exceed the 40-hour drain time than maintenance of the filter media shall be required.

At a minimum, the top 3-inches of filter media should be removed at each removal period. Additional amounts of filter media may need to be removed if deeper sections of the filter media are contaminated. New filter media will need to be placed back into the SFB when the total amount of sand removed reaches 9-inches. This may take multiple maintenance events to accomplish. It is critical that only sand that meets the American Society for Testing and Materials (ASTM) C-33 standard be utilized in the replacement of the filter media.

ASTM C-33 Sand Standard

US Standard Sieve Size (Number)	Total Percent Passing (%)
9.5 mm (3/8 inch)	100
4.75 mm (No. 4)	95-100
2.36 mm (No. 8)	80-100
1.18 mm (No. 16)	50-85
600 mm (No. 30)	25-60
300 mm (No. 50)	10-30
150 mm (No. 100)	2-10

Other types of sand and soil material may lead to clogging of the SFB. The minor sediment removal activities can typically be addressed with shovels, rakes and smaller equipment. Major sediment removal activities will require larger and more specialized equipment. Extreme care should be taken when utilizing motorized or heavy equipment to ensure damage to the underdrain system does not occur. The major sediment removal activities will also require surveying with an engineer's level, and consultation with El Paso County's Engineering staff to ensure design volumes/grades are achieved.

Stormwater sediments removed from SFBs do not meet the regulatory definition of "hazardous waste". However, these sediments can be contaminated with a wide array of organic and inorganic pollutants and handling must be done with care to ensure proper removal and disposal. Sediments should be transported by motor vehicle only after they are dewatered. All sediments must be taken to a licensed landfill for proper disposal. Should a spill occur during transportation, prompt and thorough cleanup and disposal is imperative.

Frequency – Non-routine – As necessary, based upon inspections. Sediment removal in the sedimentation chamber may be necessary as frequently as every 1-2 years.

SFB-3.7.2 Erosion Repair

The repair of eroded areas is necessary to ensure the proper functioning of the SFB, to minimize sediment transport, and to reduce potential impacts to other features. Erosion can vary in magnitude from minor repairs to filter media and embankments, to rills, and gullies in the embankments and inflow points. The repair of eroded areas may require the use of excavators, earthmoving equipment, riprap, concrete, and sod. Extreme care should be taken when utilizing motorized or heavy equipment to ensure damage to the underdrain system does not occur. Major erosion repair to the pond embankments, spillways, and adjacent to structures will require consultation with El Paso County's Engineering staff.

Frequency – Non-routine – As necessary, based upon inspections.

SFB-3.8 Rehabilitation Maintenance Activities

This work consists of larger maintenance/operational problems and failures within the stormwater management facilities. All of this work requires approval from El Paso County's Engineering staff to ensure the proper maintenance is performed. This work requires that Engineering staff review the original design and construction drawings to assess the situation and assign the necessary maintenance activities. This work may also require more specialized maintenance equipment, design/details, surveying, or assistance through private contractors and consultants. In the event that the basin needs to be dewatered, care should be given to ensure sediment, filter material and other pollutants are not discharged. Proper permitting is required prior to any dewatering activity.

Table SFB-4
Summary of Rehabilitation Maintenance Activities

Maintenance Activity	Minimum Frequency	Look for:	Maintenance Action
Major Sediment & Pollutant Removal	As needed; based upon scheduled inspections	Large quantities of sediment build up in filter media; decrease in infiltration rate and capacity	Remove and dispose of sediment. Repair vegetations as needed
Major Erosion Repair	As needed, based upon scheduled inspections	Severe erosion including gullies, excessive soil displacement, areas of settlement, holes	Repair erosion – find cause of problem and address to avoid future erosion
Structural Repair	As needed, based upon scheduled inspections	Deterioration and/or damage to structural components – major damage to emergency overflow channel	Structural repair to restore the structure to its original design
SFB Rebuild	As needed, due to complete failure of SFB	Removal of filter media and emergency overflow channel	Contact El Paso County Engineering

SFB-3.8.1 Major Sediment & Pollutant Removal

In very rare cases the filter media of the SFB may be contaminated so badly that the entire 18-inches of the filter media may need to be removed.

Major sediment/pollutant removal consists of removal of large quantities of sediment/filter media. Extreme care should be taken when utilizing motorized or heavy equipment to ensure damage to the underdrain system does not occur. The sediment/filter media needs to be carefully removed, transported and properly disposed. Vegetated areas need special care to ensure design volumes and grades are preserved or may need to be replaced due to the removal activities. Stormwater sediments removed from SFBs do not meet the regulatory definition of "hazardous waste". However, these sediments can be contaminated with a wide array of organic and inorganic pollutants and handling must be done with care to insure proper removal and disposal. Sediments should be transported by motor vehicle only after they are dewatered. All sediments must be taken to a licensed landfill for proper disposal. Should a spill occur during transportation, prompt and thorough cleanup and disposal is imperative.

Frequency – Non-routine – Repair as needed, based upon inspections.

SFB-3.8.2 Major Erosion Repair

Major erosion repair consists of filling and revegetating areas of severe erosion. Determining the cause of the erosion as well as correcting the condition that caused the erosion should also be part of the erosion repair. Care should be given to ensure design grades and volumes are preserved. Extreme care should be taken when utilizing motorized or heavy equipment to ensure damage to the underdrain system does not occur.

Frequency – Non-routine – Repair as needed, based upon inspections.

SFB-3.8.3 Structural Repair

A SFB generally includes a splitter box or concrete overflow outlet structure that can deteriorate or be damaged during the service life of the facility. These structures are constructed of steel and concrete that can degrade or be damaged and may need to be repaired or re-constructed from time to time. Major repairs to structures may require input from a structural engineer and specialized contractors. Consultation with El Paso County's Engineering staff shall take place prior to all structural repairs.

Frequency – Non-routine – Repair as needed, based upon inspections.

SFB-3.8.4 SFB Rebuild

In very rare cases a SFB may need to be rebuilt. Generally, the need for a complete rebuild is a result of improper construction, improper maintenance resulting in structural damage to the filter media, or extensive contamination of the SFB. Consultation with El Paso County's Engineering staff shall take place prior to any rebuild project.

Frequency – Non-routine – As needed, based upon inspections.

APPENDIX

INSPECTION FORM

SAND FILTER BASIN (SFB)
INSPECTION FORM

Date:_____

Subdivision/Business Name:_____ Inspector:_____

Subdivision/Business Address:_____ _____

Weather: _____

Date of Last Rainfall:_____ Amount:_____Inches

Property Classification: Residential Multi Family Commercial Other:_____
(Circle One)

Reason for Inspection: Routine Complaint After Significant Rainfall Event
(Circle One)

INSPECTION SCORING - For each facility inspection item, insert one of the following scores:
0 = No deficiencies identified
1 = Monitor (potential for future problem)
2 = Routine maintenance required
3 =Immediate repair necessary
N/A = Not applicable

FEATURES

1.) Inflow Points/Splitter Box
____Riprap Displaced
____Sediment Accumulation
____Structural Damage (pipe, end-section, etc.)
____Trash/Debris

2.) Sedimentation Chamber
____Mowing /weed/woody growth control
____Erosion Present
____Trash/Debris
____Sediment Accumulation

3.) Filter Media
____Mowing /weed/woody growth control
____Sediment/Pollutant Removal
____Filter Replacement
____Infiltration Rate Check

4.) Underdrain System
____Evidence of clogged system
(jet-vac cleaning required)

5.) Outlet Works
____Structural Damage (concrete,steel,subgrade)
____Mowing /weed/woody growth control

6.) Embankments
____Vegetation Sparse
____Erosion Present
____Trash/Debris
____Mowing /weed/woody growth control

7.) Emergency Overflow
____Riprap Displaced
____Erosion Present
____Woody Growth/Weeds Present
____Obstruction/Debris

8.) Miscellaneous
____Encroachment in Easement Area
____Graffiti/Vandalism
____Public Hazards
____Other

Inspection Summary / Additional Comments:_____

OVERALL FACILITY RATING (Circle One)
0 = No Deficiencies Identified
1 = Monitor (potential for future problem exists)
2 = Routine Maintenance Required
3 = Immediate Repair Necessary

This inspection form shall be kept a minimum of 5 years and made available to the El Paso County of upon request.

MAINTENANCE FORM

SAND FILTER BASIN (SFB)
MAINTENANCE FORM

Subdivision/Business Name:_____ Completion Date:_____

Subdivision/Business Address:_____ Contact Name:_____

Maintenance Category: (Circle all that apply) Routine Restoration Rehabilitation

MAINTENANCE ACTIVITIES PERFORMED

ROUTINE WORK

____ MOWING
____ TRASH/DEBRIS REMOVAL
____ OUTLET WORKS CLEANING (TRASH RACK/WELL SCREEN)
____ WEED CONTROL (HERBICIDE APPLICATION)

RESTORATION WORK

____ SEDIMENT REMOVAL
____ INFLOW POINT/SPLITTER BOX
____ OUTLET WORKS
____ FILTER MEDIA
____ SEDIMENTATION CHAMBER
____ EMERGENCY OVERFLOW
____ EROSION REPAIR
____ INFLOW POINT/SPLITTER BOX
____ OUTLET WORKS
____ EMBANKMENTS
____ SEDIMENTATION CHAMBER
____ EMERGENCY OVERFLOW
____ FILTER MEDIA
____ REVEGETATION
____ JET-VAC/CLEARING DRAINS
____ INFLOWS
____ OUTLET WORKS
____ UNDERDRAIN

REHABILITATION WORK

____ SEDIMENT REMOVAL (DREDGING)
____ FILTER MEDIA
____ SEDIMENTATION CHAMBER
____ EROSION REPAIR
____ INFLOW POINT/SPLITTER BOX
____ OUTLET WORKS
____ EMBANKMENTS
____ SEDIMENTATION CHAMBER
____ EMERGENCY OVERFLOW
____ FILTER MEDIA
____ STRUCTURAL REPAIR
____ INFLOW POINT/SPLITTER BOX
____ OUTLET WORKS
____ FILTER MEDIA
____ SEDIMENTATION CHAMBER
____ EMERGENCY OVERFLOW

OTHER_____

ESTIMATED TOTAL MANHOURS: _____

COSTS INCURRED (include description of costs): _____

EQUIPMENT/MATERIAL USED (include hours of equipment usage and quantity of material used):

COMMENTS/ADDITIONAL INFO:

This Maintenance Activity Form shall be kept a minimum of 5 years and made available to the El Paso County of upon request.

ANNUAL INSPECTION AND MAINTENANCE SUBMITTAL FORM

Annual Inspection and Maintenance Reporting Form
for
Stormwater BMPs

(This form to be submitted to El Paso County of prior to May 31 of each year)

Date: _____

To: **El Paso County Stormwater Team**
3460 Marksheffel
Colorado Springs, CO 80922

Re: **Certification of Inspection and Maintenance; Submittal of forms**

Property/Subdivision Name: _____

Property Address: _____

Contact Name: _____

Contact Phone #: _____

Contact Email Address: _____

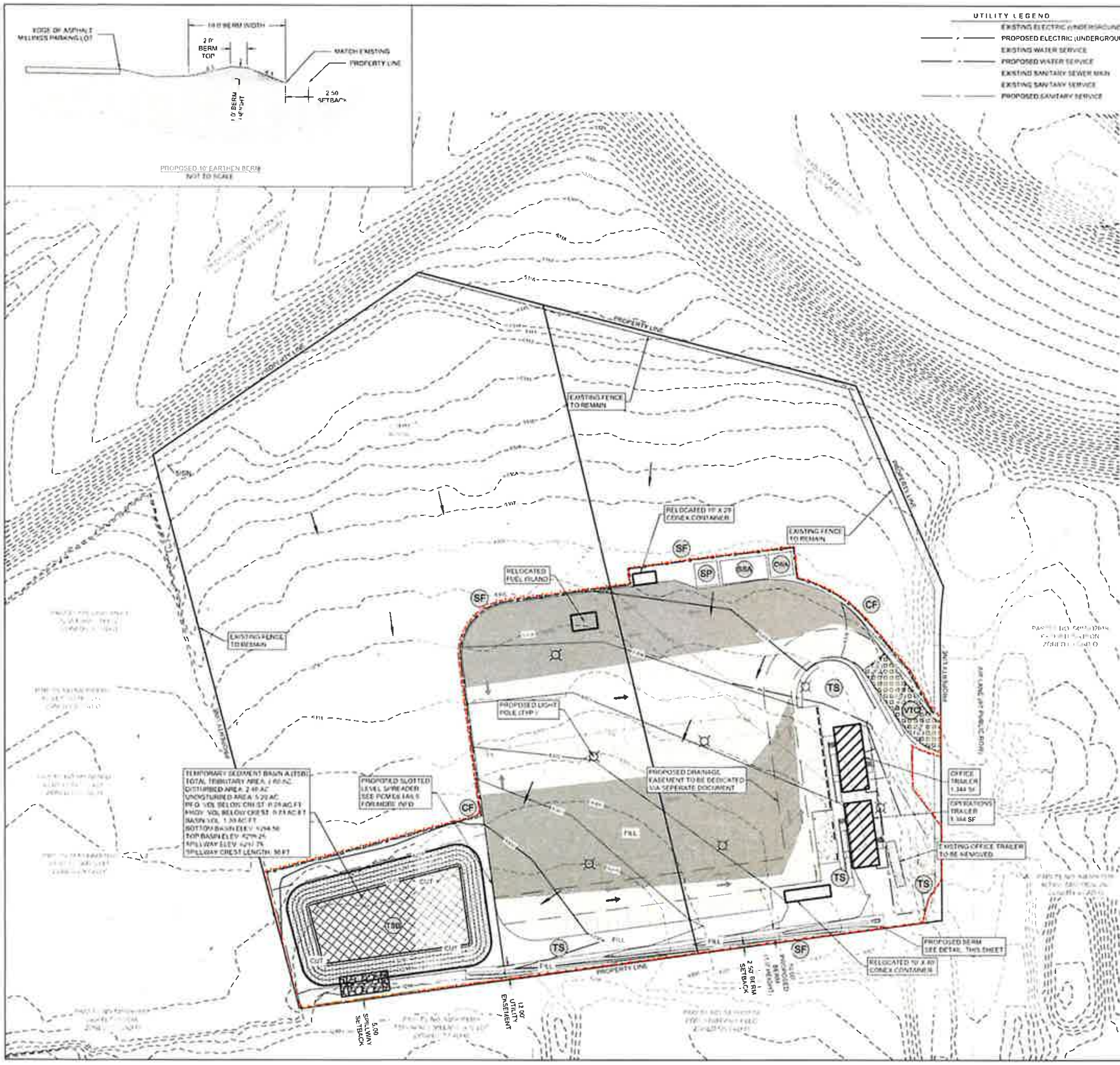
I verify that the required stormwater facility inspections and required maintenance have been completed in accordance with the Stormwater BMP Maintenance Agreement and the Inspection and Maintenance Manual associated with the above referenced property.

The required Stormwater Facility Inspection and Maintenance forms are attached to this form.

_____ _____
Name of Party Responsible for Inspection & Maintenance — Property Owner

_____ _____
Authorized Signature — Signature

GRADING AND EROSION CONTROL PLANS



UTILITY LEGEND

- EXISTING ELECTRIC (UNDERGROUND)
- PROPOSED ELECTRIC (UNDERGROUND)
- EXISTING WATER SERVICE
- PROPOSED WATER SERVICE
- EXISTING SANITARY SEWER MAIN
- EXISTING SANITARY SERVICE
- PROPOSED SANITARY SERVICE

LEGEND

- LIMITS OF CONSTRUCTION DISTURBANCE
- (CF) CONSTRUCTION FENCE (INITIAL/INTERIM)
- EXISTING ASPHALT MILLINGS
- PROPOSED ASPHALT MILLINGS
- PROPOSED CONCRETE PAVEMENT
- PROPOSED OFFICE TRAILER
- EXISTING OFFICE TRAILER TO BE REMOVED
- (VTC) VEHICLE TRACKING CONTROL (INITIAL/INTERIM)
- (TSB) PROPOSED TEMPORARY SEDIMENT BASIN (INITIAL/INTERIM)
- SAND FILTER BASIN FILTER AREA
- PROPOSED RIPRAP
- PROPOSED DRAINAGE EASEMENT
- (TS) TEMPORARY SEEDING AND MULCHING (INITIAL/INTERIM)
- (SF) SILT FENCE (INITIAL/INTERIM)
- (CWA) CONCRETE WASHOUT AREA (INITIAL/INTERIM)
- (SSA) STABILIZED STAGING AREA (INITIAL/INTERIM)
- (SP) STOCKPILE PROTECTION (INITIAL/INTERIM)
- FLOW ARROW
- EXISTING FENCE TO REMAIN
- EXISTING CONTOURS (1' AND 5')
- PROPOSED CONTOURS (1' AND 5')

SYMBOL LEGEND

- ELECTRIC TRANSFORMER (EXISTING)
- ELECTRIC PANEL (EXISTING)
- ELECTRIC SERVICE STUB (EXISTING)
- ELECTRIC LIGHT POLE (PROPOSED)
- T TELEPHONE PEDESTAL (EXISTING)
- GAS PEDESTAL (EXISTING)
- S SANITARY SEWER MANHOLE (EXISTING)
- SANITARY SEWER CLEANOUT (EXISTING)
- O SANITARY SEWER CLEANOUT (PROPOSED)
- FIRE HYDRANT (EXISTING)
- WATER METER (EXISTING)
- WATER VALVE (EXISTING)
- O WATER FITTING (PROPOSED)

GENERAL NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ADJACENT TO THE SITE. THE OMISSION FROM, OR INCLUSION OF, UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
2. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, BUILDINGS, FENCES, AND ROADWAYS FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE ABOVE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
3. GRADING SHALL BE COMPLETED TO A SUBGRADE TOLERANCE OF PLUS OR MINUS 0.2'.
4. CONTRACTOR SHALL OBTAIN COPIES OF THE SOILS REPORT FROM THE GEOTECHNICAL ENGINEER AND THEY SHALL BE KEPT ONSITE DURING ALL EARTHWORK.
5. THE SITE SHALL BE STRIPPED A MINIMUM OF 0.5' BELOW EXISTING GRADE, OR AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ONLY APPLICABLE IN PREVIOUSLY UNDISTURBED AREAS.
6. DUST CONTROL SHALL BE SUPPLIED BY THE GRADING CONTRACTOR THROUGH THE DURATION OF THE PROJECT PER THE COUNTY HEALTH DEPARTMENT SPECIFICATIONS.
7. LOCATION OF STORAGE FOR MAINTENANCE EQUIPMENT AND TEMPORARY DISPOSAL AREAS WILL BE ADDED TO THE GEC/SWMP BY CONTRACTOR.
8. ALL NON STRUCTURAL CONTROL MEASURES SUCH AS STREET SWEEPING, GOOD HOUSEKEEPING, AND ETC. SHALL BE EMPLOYED BY THE CONTRACTOR AS NECESSARY AND OUTLINED IN THE SWMP.
9. MAXIMUM CUT/FILL SLOPES SHALL NOT EXCEED 4:1.
10. ALL FILL MATERIAL SHALL BE APPROVED BY A LICENSED ENGINEER.
11. ALL STRIPPED TOPSOIL SHALL BE STOCKPILED FOR RE-USE IF POSSIBLE.
12. LOCATION OF PORTABLE TOILET, STABILIZED STAGING AREA, AND SITE (CONTACTS AND PERMITS) AND WASHOUT POSTING TO BE ADDED TO THIS PLAN AND SWMP BY CONTRACTOR.
13. CONSTRUCTION DISTURBANCE LIMITS AND SILT FENCE OFFSET FOR CLARITY. CONTRACTOR TO ENSURE CCM'S ARE PLACED DOWNSTREAM OF DISTURBED AREAS TO PREVENT SEDIMENT FROM LEAVING SITE.
14. NO BATCH PLANTS WILL BE UTILIZED ON SITE.
15. ON SITE VEGETATION IS NATIVE GRASSES AND WEEDS. THERE IS NO NOTABLE VEGETATION OTHERWISE.
16. CONTRACTOR SHALL PROTECT ALL AREAS OUTSIDE OF THE CONSTRUCTION LIMITS WITH SILT FENCE OR OTHER METHOD TO PROTECT UNDISTURBED AREAS FROM EROSION.
17. THERE ARE NO SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATERS, INCLUDING AREAS THAT REQUIRE MAINTENANCE OF PRE EXISTING VEGETATION WITHIN 50 FEET OF A RECEIVING WATER FOR THIS PROJECT.
18. ALL ASPHALT MILLINGS BROUGHT TO THE SITE, AND IN SITU, SHALL BE COMPACTED BY ROLLING WITH A ROLLER OR BY MECHANICAL TAMPING. THE ROLLER, WHEN FULLY LOADED, SHALL HAVE A LOAD NO LESS THAN 200 POUNDS PER SQUARE INCH OF CROSS SECTIONAL AREA. ENOUGH MOISTURE SHALL BE PRESENT IN THE ASPHALT MILLINGS TO OBTAIN A DENSITY EQUAL TO OR GREATER THAN 95% OF MAXIMUM DENSITY AS DETERMINED BY THE NUCLEAR GAUGE DENSITY TEST BEFORE PLACING THE NEXT LIFT. EACH LIFT SHALL CONSIST OF 2 INCH LOOSE LIFTS OR LESS PRIOR TO COMPACTION.

PROJECT INFO

SITE AREA: 7.60 ACRES
DISTURBED AREA: 2.40 ACRES
NOTE: SURFACE COVER REMAINS UNCHANGED FOR EXISTING ASPHALT MILLINGS DEPICTED ON PLAN, AND ARE NOT CONSIDERED DISTURBED AREA

CUT VOLUME: 1888 CU. YD.
FILL VOLUME (VRF=1.15): 677 CU. YD.
NET VOLUME: 1209 CU. YD. (CUT)

SMH CONSULTANTS

APEX WASTE SOLUTIONS

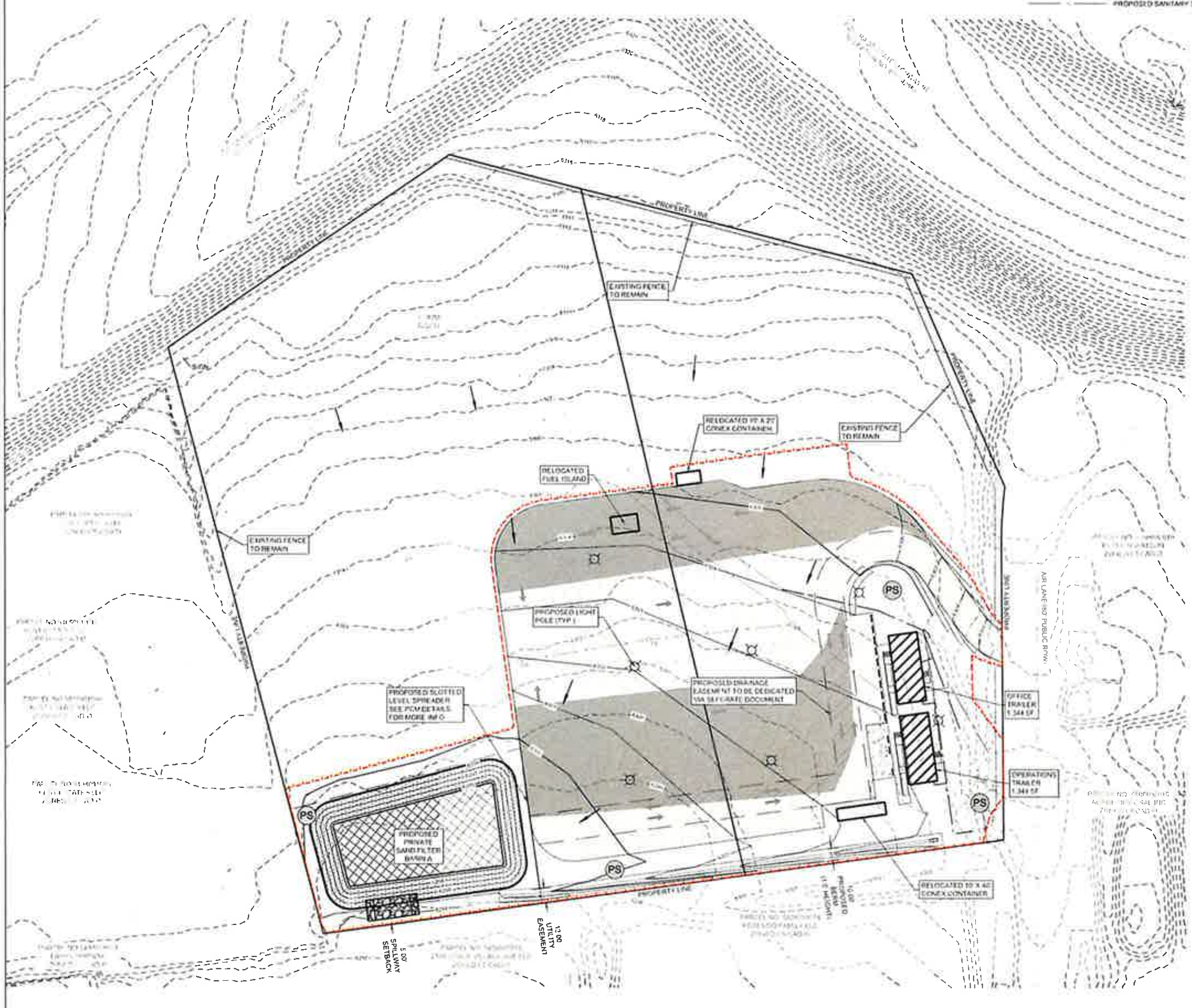
CONSTRUCTION DOCUMENTS

EL PASO COUNTY, CO

INITIAL-INTERIM GRADING & EROSION CONTROL PLAN

REVISION DATE	REVISION DESCRIPTION

DRAWN BY: EDM
DATE: 10/03/2025
SHEET #: G.2



UTILITY LEGEND

- EXISTING ELECTRIC (UNDERGROUND)
- PROPOSED ELECTRIC (UNDERGROUND)
- EXISTING WATER SERVICE
- PROPOSED WATER SERVICE
- EXISTING SANITARY SEWER MAIN
- EXISTING SANITARY SERVICE
- PROPOSED SANITARY SERVICE

LEGEND

- LIMITS OF CONSTRUCTION/DISTURBANCE
- EXISTING ASPHALT MILLINGS
- PROPOSED ASPHALT MILLINGS
- PROPOSED OFFICE TRAILER
- PROPOSED SAND FILTER BASIN (FINAL)
- SAND FILTER BASIN FILTER AREA
- PROPOSED RIPRAP
- PROPOSED DRAINAGE EASEMENT
- PERMANENT SEEDING AND MULCHING (FINAL)
- FLOW ARROW
- EXISTING FENCE TO REMAIN
- EXISTING CONTOURS (1' AND 5')
- PROPOSED CONTOURS (1' AND 5')

SYMBOL LEGEND

- ELECTRIC TRANSFORMER (EXISTING)
- ELECTRIC PANEL (EXISTING)
- ELECTRIC SERVICE STUB (EXISTING)
- ELECTRIC LIGHT POLE (PROPOSED)
- TELEPHONE PEDESTAL (EXISTING)
- GAS PEDESTAL (EXISTING)
- SANITARY SEWER MANHOLE (EXISTING)
- SANITARY SEWER CLEANOUT (EXISTING)
- SANITARY SEWER CLEANOUT (PROPOSED)
- FIRE HYDRANT (EXISTING)
- WATER METER (EXISTING)
- WATER VALVE (EXISTING)
- WATER FITTING (PROPOSED)

GENERAL NOTES:

1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ADJACENT TO THE SITE. THE OMISSION FROM, OR INCLUSION OF, UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NON-EXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES
2. THE CONTRACTOR SHALL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES, BUILDINGS, FENCES, AND ROADWAYS FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE ABOVE WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR
3. GRADING SHALL BE COMPLETED TO A SUBGRADE TOLERANCE OF PLUS OR MINUS 0.2'
4. CONTRACTOR SHALL OBTAIN COPIES OF THE SOILS REPORT FROM THE GEOTECHNICAL ENGINEER AND THEY SHALL BE KEPT ONSITE DURING ALL EARTHWORK
5. THE SITE SHALL BE STRIPPED A MINIMUM OF 0.5' BELOW EXISTING GRADE, OR AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ONLY APPLICABLE IN PREVIOUSLY UNDISTURBED AREAS
6. DUST CONTROL SHALL BE SUPPLIED BY THE GRADING CONTRACTOR THROUGH THE DURATION OF THE PROJECT PER THE COUNTY HEALTH DEPARTMENT SPECIFICATIONS
7. STOCKPILE LOCATION FOR THIS PROJECT TO BE LOCATED BY CONTRACTOR AND ADDED TO THE SWMP/GEC UPON DETERMINATION
8. LOCATION OF STORAGE FOR MAINTENANCE EQUIPMENT AND TEMPORARY DISPOSAL AREAS WILL BE ADDED TO THE GEC/SWMP BY CONTRACTOR
9. ALL NON-STRUCTURAL CONTROL MEASURES SUCH AS STREET SWEEPING, GOOD HOUSEKEEPING, AND ETC. SHALL BE EMPLOYED BY THE CONTRACTOR AS NECESSARY AND OUTLINED IN THE SWMP
10. MAXIMUM CUT/FILL SLOPES SHALL NOT EXCEED 4:1
11. ALL FILL MATERIAL SHALL BE APPROVED BY A LICENSED ENGINEER
12. ALL STRIPPED TOPSOIL SHALL BE STOCKPILED FOR RE-USE IF POSSIBLE
13. LOCATION OF PORTABLE TOILET, STABILIZED STAGING AREA, AND SITE (CONTACTS AND PERMITS) AND WASHOUT POSTING TO BE ADDED TO THIS PLAN AND SWMP BY CONTRACTOR
14. CONSTRUCTION DISTURBANCE LIMITS AND SILT FENCE OFFSET FOR CLARITY. CONTRACTOR TO ENSURE CCM'S ARE PLACED DOWNSTREAM OF DISTURBED AREAS TO PREVENT SEDIMENT FROM LEAVING SITE
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17. CONTRACTOR SHALL PROTECT ALL AREAS OUTSIDE OF THE CONSTRUCTION LIMITS WITH SILT FENCE OR OTHER METHOD TO PROTECT UNDISTURBED AREAS FROM EROSION
18. THERE ARE NO SPRINGS, STREAMS, WETLANDS AND OTHER SURFACE WATERS, INCLUDING AREAS THAT REQUIRE MAINTENANCE OF PRE-EXISTING VEGETATION WITHIN 50 FEET OF A RECEIVING WATER FOR THIS PROJECT
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PROJECT INFO:

SITE AREA: 7.60 ACRES
DISTURBED AREA: 2.40 ACRES
NOTE: SURFACE COVER REMAINS UNCHANGED FOR EXISTING ASPHALT MILLINGS DEPICTED ON PLAN AND ARE NOT CONSIDERED DISTURBED AREA

CUT VOLUME: 1886 CU. YD
FILL VOLUME (VRF=1.15): 677 CU. YD
NET VOLUME: 1209 CU. YD. (CUT)

SMH CONSULTANTS
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Dodge City, KS (620) 255-1952
Kansas City (913) 444-9615
Colorado Springs, CO (719) 465-2145

APEX WASTE SOLUTIONS

CONSTRUCTION DOCUMENTS

EL PASO COUNTY, CO

FINAL GRADING & EROSION CONTROL PLAN

REVISION	DATE	REVISION DESCRIPTION
	10/25	DESIGN FINAL

NORTH

PROJECT #: 2403-0004
CHECKED BY: RMA
DRAWN BY: LBM
DATE: 10.03.2025
SHEET #: G.3
TOTAL SHEETS: 6