

# Grading, Erosion and Sediment Control Report

FOR

**Kum & Go Gas & C-Store  
304 Main Street.**

**Original Submittal: March 31, 2023**

Owner/Developer/Applicant:

**Kum & Go L.C.**  
1459 Grand Avenue  
Des Moines, IA 50309  
Contact: Dan Garneau  
(515) 457-6392  
Dan.garneau@kumandgo.com

Prepared By:

**Entitlement & Engineering Solutions, Inc.**  
3801 E. Florida Ave, Suite 425  
Denver, Colorado 80210  
(303) 572-7997

E.E.S. Job No. KUM014.01

## QUALIFIED STORMWATER MANAGER

Name: Larry Lee  
Company: Raw Land Detailing, Inc.  
Address: 10475 Accipiter Dr.  
Peyton, CO 80831

## CONTRACTOR

Name: Lee Hollatz  
Company: The Hansen Company, Inc.  
Address: 5665 Greendale Road, Suite A  
Johnston, IA 50131



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Krysta M. Houtchens, P.E.  
Registered Professional Engineer  
State of Colorado No. 49550

**Applicant:**

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.



\_\_\_\_\_  
Engineer of Record and/or  
Qualified Stormwater Manager Signature

\_\_\_\_\_  
Date

**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

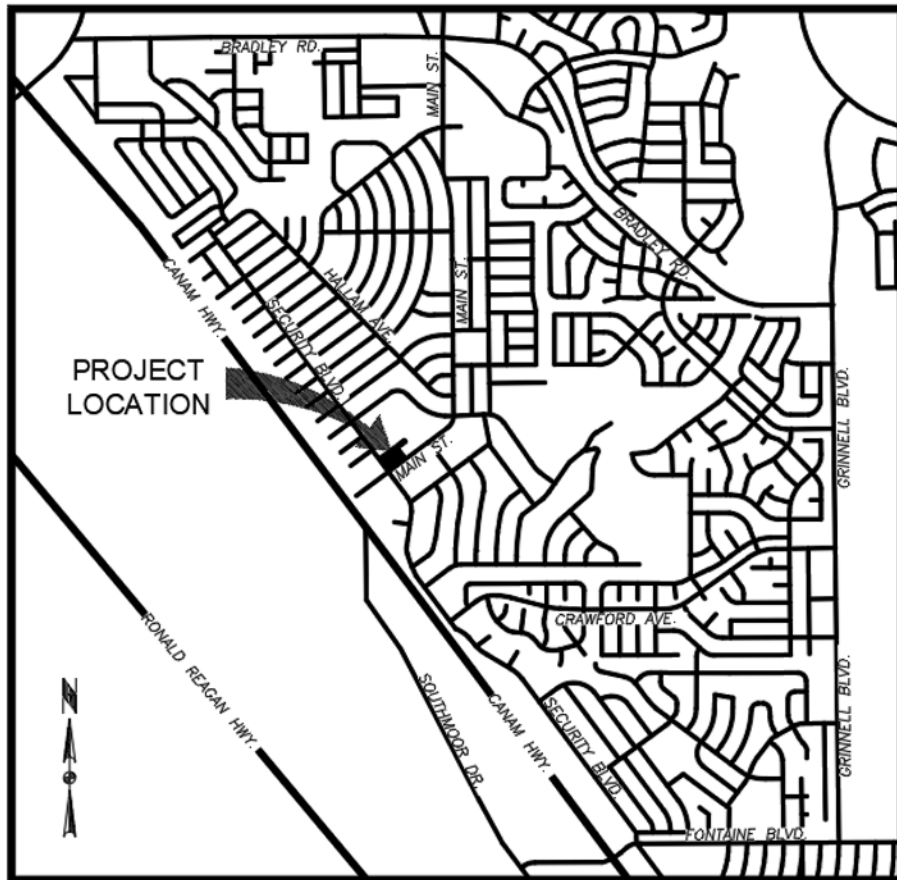
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## I. Project Description

The proposed Kum & Go Gas and C-Store project is located in Lot 2 of the Pedrick-Eckerd Filing No. 3. The site is located in part of the Southeast Quarter of Section 11, Township 15 South, Range 66 West of the 6<sup>th</sup> Principal Meridian, County of El Paso, State of Colorado. The site is bordered on the northwest by an existing parking lot for Ross Dress for Less, on the northeast by a curb island for Sonic Drive-In, on the southeast by Main Street (80-ft ROW), on the southwest by Security Boulevard (80' ROW).



VICINITY MAP

SCALE: 1" = 2000'

Proposed construction will consist of a one-story, 3,962 GSF convenience store (c-store) building and 6-MPD fueling canopy located on a 1.29 acres parcel within the Pedrick-Eckerd Filing No. 3. The area disturbed will be 1.20 acres with the remaining north flag portion of the lot remaining undisturbed. In addition to the c-store and fueling canopy, drive aisles, parking, landscaping, and utility services will also be constructed.

The project site currently consists of an existing parking lot with a coffee stand. The proposed improvements will require approximately 1.1 acres of impervious surfaces to be demolished including the coffee stand structure with utilities, parking lot, curb and gutter and sidewalk.

## **II. Existing Site Conditions**

The project site is currently mostly covered with mostly asphalt pavement and consists of an existing coffee stand with drive-thru. The site is primarily existing asphalt with small patches of native grasses and weeds. The site sheet drains to the south where there is an existing inlet along the curb line at the Northwest corner of the Security Boulevard and Main Street intersection. The site is located within the Little Johnson/ Security Drainage Basin as outlined in the Little Johnson/ Security Drainage Basin Planning Study (1988) and ultimately discharges to Crews Gulch (Widefield Creek) to the southeast. No wetlands, streams, irrigation canals or ditches have been identified onsite.

## **III. Adjacent Areas**

The site is bordered on the northwest by an existing parking lot for Ross Dress for Less, on the northeast by a curb island for Sonic Drive-In, on the southeast by Main Street (80-ft ROW), on the southwest by Security Boulevard (80' ROW). There are no ponds, lakes, or streams directly adjacent to the site. The parcel is in FEMA identified floodplain, Flood Zone AE, and is also located within a Special Flood Hazard Area with Base Flood Elevation of the Flood Plain, as designated on the Flood Insurance Rate Map (FIRM) exported 3/22/2022, map last revised October 2020. The Base Flood elevation is 5731.7. There are no known nearby irrigation facilities.

## **IV. Soils**

A geotechnical investigation was performed by Olsson on December 7th, 2021. Ten (10) borings were completed as part of the investigation for depth varying 10-30'. Free water was not encountered in any of the ten borings, but very moist soils were encountered near the surface in many of the borings. Based on the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) soil survey data, the project site is mapped in the Blendon sandy loam (0 to 3 percent slopes) soil complex. The Blendon sandy loam is described as alluvial fan terraces of sandy alluvium derived from the arkose with bedrock materials located at greater depths. The Blendon soil unit is categorized into hydrologic group B and the depth to the water table is reported to be greater than 80 inches. Soil erosion potential and impacts on discharge are not anticipated to be an issue for the subject project.

## **V. Areas and Volumes**

The project will disturb approximately 1.20 acres and will require approximately 4,085 cubic yards of fill material for construction of the site. The site generates 1,870 cubic yards of unadjusted cut material after the excavation and installation of fuel tank and underground stormwater facility resulting resulting in an unadjusted fill import quantity to 2,271 cubic yards.

## **VI. Erosion and Sediment Control Measures**

Numerous BMPs will be used as erosion and sediment control measures for the site. These BMPs used are outlined in the El Paso County Engineering and drainage Criteria Manual Volumes 1 and 2 Grading, Erosion and Sediment Control Section. There are ten elements of an effective GESC plan which are:

1. Preserve and Stabilize Drainageways by utilizing the following:

Not applicable, there are not drainageways existing or proposed for the project site.

2. Avoid the Clearing and Grading of Sensitive Areas by utilizing the following:

Construction Fence (CF): A construction fence consists of orange plastic fencing or other county-accepted material and is used to identify the limits of construction as well as control access to the site.

3. Balance Earthwork on Site- Site is a Fill site and fill material will be imported to the site as required.

4. Limit the Size of Grading Phase to Reduce Soil Exposure

5. Stabilize Exposed Soils in a Timely Manner by utilizing the following:

Surface Roughening (SR): Consists of creating a series of grooves or furrows on the contour in all disturbed, graded areas to trap rainfall and reduce the formation of rill and gully erosion.

Seeding and Mulching (SM): Seeding and mulching consists of drill seeding disturbed areas with the approved seed mix per the El Paso County Design Criteria Manual Volume 2 and crimping in straw mulch to provide immediate protection against raindrop and wind erosion and, as the grass cover becomes established, to provide long-term stabilization of exposed soils. No soils are to be exposed for a period greater than 30 days.

6. Implement Effective Perimeter Controls by utilizing the following:

Silt Fence (SF): Silt fence is a temporary sediment barrier constructed of woven fabric stretched across supporting posts. The bottom edge of the fabric is placed in an anchor trench that is backfilled with compacted soil.

Rock Socks (RS): Consists of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter. Rock socks are typically used either as a perimeter control or as part of inlet protection. When placed at angles in the curb line, rock socks are typically referred to as curb socks. Rock socks are intended to trap sediment from stormwater runoff that flows onto roadways as a result of construction activities.

7. Use Sediment Basins for Areas Exceeding 1.0 Acre

Sediment Trap (ST): Sediment Trap is a temporary sediment collector that consists of a riprap berm with a small upstream basin that acts to trap coarse sediment particles. Sediment traps shall remain in place until the upstream disturbed area is stabilized and grass coverage is approved.

Diversion Ditch (DD): A diversion ditch is a small earth channel used to divert and convey runoff, generally to a sediment basin, check dam, or reinforced rock berm. Diversion ditch is utilized to direct runoff and sediment to Sediment Trap (ST).

8. Protect Inlets, Storm Sewer Outfalls, and Culverts by utilizing the following:

Inlet Protection (IP): Inlet protection consists of a small reinforced rock berm and cinder block frame placed in front of (but not blocking) a curb inlet or around an area inlet to reduce sediment in runoff entering the storm sewer.

9. Provide Access and General Construction Controls by utilizing the following:

Limits of Disturbance (LOD): Clearly identifies the limits of where construction activities will occur.

Vehicle Tracking Control (VTC): Vehicle tracking control consists of a 3 to 6 inch crushed rock pad 12 inches thick at all entrance/exit points for a site, that is intended to help strip mud from tires prior to vehicles leaving the construction site. Access to the site may only be taken at a permitted access point, as approved in the GESC Plans.

Concrete Washout Area (CWA): A concrete washout area is a shallow excavation with a small perimeter berm to isolate concrete truck washout operations.

Stabilized Staging Area (SSA): A stabilized staging area consists of stripping topsoil and spreading a layer of 3-inch minimum granular material, gravel or recycled concrete in the area to be used for a trailer, parking, storage, unloading and loading. A stabilized staging area reduces the likelihood that the vehicles most frequently entering a site are going to come in contact with mud. Construction parking would be accommodated within this area.

Street Sweeping shall be done during the day and at the end of the day during grading activities. Cleaning asphalt and concrete "tailings" from sawcut operations entailing Street Sweeping (SS) operations shall utilize a vacuum-type street sweeper, a brush style street sweeper, or manually using shovels and brooms. Pavement shall not be washed with water at any time unless all water is contained and collected and is not allowed to drain into existing storm conveyances, on or offsite.

Trucks transporting materials cannot exceed their weight limit.

10. Material Handling:

Port-o-lets/Sanitary Facilities: Sanitary facilities shall be provided for construction workers. Sanitary facilities shall be located in the stabilized staging area (SSA) away from drainageways. Sanitary facilities shall never be placed near storm sewer inlets. Port-o-lets shall be staked down to prevent tipping.

Spill Prevention: To the greatest extent possible, vehicle fueling and maintenance shall be completed off-site.

Storage, Handling, and Disposal of Construction Products, Materials and Wastes: Storage, handling and waste shall be located in the stabilized staging area. In storage areas either a cover to prevent these products from coming into contact with rainwater, or a similar effective designed to prevent the discharge of pollutants from these areas is required.

Trash/Debris Removal: For construction and domestic waste, waste containers of sufficient size and number to contain construction and domestic waste will be provided. On work day, waste will be cleaned up and disposed of in designated waste containers and cleaned up immediately if containers overflow.

It is not anticipated for this project to utilize on-site concrete batch plants.

## **VII. Timing/Phasing Schedule**

Construction is currently planned to begin in April of 2023 and be completed in November of 2023. The Phasing Schedule will be:

BMP Installation	04/15/23 to 04/16/23
Site Demo	04/17/23 to 11/20/23
Site Grading	04/21/23 to 06/09/23
Building Pad Construction	05/10/23 to 06/26/23
Site Utility Installation	05/26/23 to 09/12/23
Building Construction	05/12/23 to 10/01/23
Final Grading	05/01/23 to 09/01/23
Curb and Gutter Installation	06/01/23 to 09/01/23
Concrete Paving	09/01/23 to 10/15/23
Landscaping	09/01/23 to 11/01/23
BMP Removal	11/01/23 to 11/10/23

## **VIII. Permanent Stabilization**

Permanent stabilization of disturbed land must be accomplished as described in the approved GESC plan. Areas not being immediately developed shall be stabilized upon completion of overlot grading and no longer than 30 days exposed. Application of the approved seed mix will be performed by the approved methods in the El Paso County Drainage Criteria Manual Volumes 1 and 2. All seeded areas shall be mulched after seeding on the same day. Erosion Control Blankets shall be placed on all slopes greater than 4:1 and on all drainage channels. Temporary stabilization will remain in-place until the approved landscaping is installed on the disturbed areas. Final landscaping for the site will also occur in phases, with each specific phase being required to complete its landscaping independently of future phases. Total landscape area for the development is 17 percent of the 1.29 acre parcel. The surface drainage for the site will enter the underground water quality and detention facility and exit the site being released at a controlled flow per each storm water event. The specification that final vegetative cover density to be 70% of pre-disturbed levels is N/A for this project's site as the existing conditions for the site consists of mostly asphalt.

## **IX. Stormwater Management Considerations**

During construction, stormwater management will be handled by mimicking the existing site conditions while trying to keep sediment runoff to a minimum. BMPs used to control runoff and improve stormwater quality during construction include diversion ditches that route runoff to sediment basins along with silt fences, seeding and mulching, and inlet protection. Runoff on site during the interim will be captured by the existing storm sewer system in the adjacent street and parcels after passing through a number of BMPs. Upon completion of the site grading, runoff will be slowed by Surface Roughening (SR) and will be captured by the site's proposed storm sewer improvements.

## **X. Maintenance**

The project site and the adjacent streets impacted by the construction shall be kept neat, clean and free of debris. The control measures and facilities will be maintained in good working order. Any items that are not functioning properly or are inadequate will be promptly repaired or upgraded. The site will be inspected by responsible personnel who are familiar with the site. Inspection and monitoring will follow the procedures outlined in the GESC Plan Standard Notes and Details and outlined below. This project does not rely on control measures owned or operated



by another entity.

Self-Monitoring Inspections: The Qualified Stormwater Manager will be sufficiently qualified for the required duties per the ECM Appendix 1.5.2.A.

## **XI. Record Keeping**

This SWMP Plan will be implemented prior to the start of construction activities. The SWMP Plan will be kept accurate and up-to-date, and will reflect the onsite conditions. If this SWMP Report and the Erosion Control Plans are ineffective in controlling pollutants in stormwater discharge it will be revised. A copy of this SWMP Report will be retained at the contractor's construction office and copies will be kept onsite where active construction is taking place along the Project.

A copy of this SWMP Report will be provided upon request to local agency in charge of approving sediment and erosion plans, grading plans or stormwater management plans, and within a timely manner. If the GESC Plan is required to be submitted to any of these entities, it must include a signed certification in accordance with the General Permit, certifying that the GESC Plan is complete and meets all permit requirements.

Self-Monitoring Inspections: The Qualified Stormwater Manager will be sufficiently qualified for the required duties per the ECM Appendix 1.5.2.A.

A signature by the Qualified Stormwater Manager is required on each of the inspection logs.

### ***Required Inspections and Maintenance***

- ❖ Inspections shall be scheduled after installation of any construction BMP, after any runoff event that causes erosion, and/or at least once a week.
- ❖ Seeded and mulched areas shall be inspected monthly by the Permittee(s) for a period of two years following initial seeding. Repairs and reseeded and mulching shall be undertaken at least twice per year or as requested by the GESC Inspector for any areas failing to meet the required coverage
- ❖ Rill and gully erosion shall be filled with topsoil prior to reseeded. Approved reseeded methods included in the El Paso County Drainage Criteria Manual Volumes 1 and 2.
- ❖ Noxious weeds shall be controlled in a manner acceptable to El Paso County.
- ❖ Street sweeping shall be done during construction activities on all paved areas surrounding the site on an as-needed basis until completion of construction.
- ❖ Portable sanitary facilities shall be staked down to assist in preventing vandalism and being blown over.
- ❖ All trash materials, construction debris, and personal trash shall be contained and disposed of properly.
- ❖ No work, storage of equipment, stockpiling, or parking of vehicle shall be allowed outside of the approved limits of constructions as illustrated on the GESC plan.
- ❖ El Paso County encourages compliance by requiring self-monitoring inspections by the owner. The self-monitoring inspections require the owner to identify areas of noncompliance and take corrective actions. In addition, the City's inspection priority system provides for the rewarding of complying parties with less frequent inspections.

# Appendix A – Soils



United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

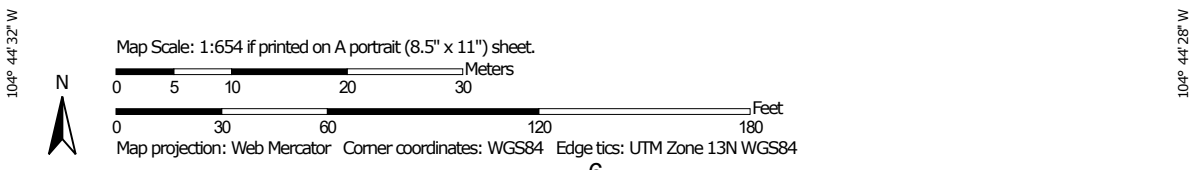
A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for El Paso County Area, Colorado

## NRCS Soil Survey



# Custom Soil Resource Report Soil Map



### MAP LEGEND

**Area of Interest (AOI)**

 Area of Interest (AOI)

**Soils**

 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

**Special Point Features**






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


**Water Features**

 Streams and Canals

**Transportation**

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

**Background**

 Aerial Photography

### MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado  
 Survey Area Data: Version 19, Aug 31, 2021

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

Date(s) aerial images were photographed: Aug 14, 2018—Sep 23, 2018

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

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
10	Blendon sandy loam, 0 to 3 percent slopes	0.9	100.0%
<b>Totals for Area of Interest</b>		<b>0.9</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

## Custom Soil Resource Report

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

## El Paso County Area, Colorado

### 10—Blendon sandy loam, 0 to 3 percent slopes

#### Map Unit Setting

*National map unit symbol:* 3671  
*Elevation:* 6,000 to 6,800 feet  
*Mean annual precipitation:* 14 to 16 inches  
*Mean annual air temperature:* 46 to 48 degrees F  
*Frost-free period:* 125 to 145 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Blendon and similar soils:* 98 percent  
*Minor components:* 2 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Blendon

##### Setting

*Landform:* Terraces, alluvial fans  
*Down-slope shape:* Linear  
*Across-slope shape:* Linear  
*Parent material:* Sandy alluvium derived from arkose

##### Typical profile

*A - 0 to 10 inches:* sandy loam  
*Bw - 10 to 36 inches:* sandy loam  
*C - 36 to 60 inches:* gravelly sandy loam

##### Properties and qualities

*Slope:* 0 to 3 percent  
*Depth to restrictive feature:* More than 80 inches  
*Drainage class:* Well drained  
*Runoff class:* Low  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately high to high  
(0.60 to 2.00 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Calcium carbonate, maximum content:* 2 percent  
*Available water supply, 0 to 60 inches:* Moderate (about 6.2 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* B  
*Ecological site:* R049XB210CO - Sandy Foothill  
*Hydric soil rating:* No

#### Minor Components

##### Other soils

*Percent of map unit:* 1 percent  
*Hydric soil rating:* No



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### **Pleasant**

*Percent of map unit:* 1 percent

*Landform:* Depressions

*Hydric soil rating:* Yes

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United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. [http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2\\_053624](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624)

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. [http://www.nrcs.usda.gov/Internet/FSE\\_DOCUMENTS/nrcs142p2\\_052290.pdf](http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf)

## **Appendix B – GESC Drawing**

**GRADING NOTES:**

- NO WORK IS TO BEGIN UNTIL ALL PERMITS HAVE BEEN OBTAINED.
- FINAL GRADES ARE SUBJECT TO MINOR CHANGE BY CONTRACTOR. NO GRADE CHANGES IN EXCESS OF 0.05' WITHOUT ENGINEER APPROVAL.
- ANY FILL MATERIAL REQUIRED TO BRING THE SITE TO GRADE SHALL BE CLEAN FILL APPROVED BY GEOTECHNICAL ENGINEER. SEE "SOIL PREPARATION NOTE" THIS SHEET.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR MINIMIZING DEPOSITION OF ONSITE SEDIMENTS ONTO SURROUNDING PUBLIC STREETS DURING CONSTRUCTION.
- SEE THE SITE SURVEY FOR SURVEY INFORMATION.
- GRADES SHOWN ARE FLOWLINE UNLESS OTHERWISE NOTED.
- GUTTER GRADES SHALL BE A MINIMUM 0.50%.
- CONTRACTOR TO ENSURE SMOOTH TRANSITION BETWEEN PRIVATE DRIVE AND TRASH ENCLOSURE.
- RETAINING WALL HEIGHTS AND GRADES SHOWN ARE FROM FINISHED GRADE AT TOP OF WALL TO FINISHED GRADE AT BOTTOM OF WALL AND DO NOT INCORPORATE FOOTING DEPTH OR WALL HEIGHT ABOVE FINISHED GRADE. REFER TO STRUCTURAL PLANS UNDER SEPARATE COVER.

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN

**STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS**

- ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
  - EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  - CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  - COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION
  - CDOT M & S STANDARDS
- 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. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (PCD) - INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DOT AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.]
- CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DOT, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.

**BENCHMARK:**

ELEVATIONS ARE BASED UPON COLORADO SPRINGS UTILITIES FIMS CONTROL MONUMENT SE09, BEING A 2-INCH DIAMETER ALUMINUM CAP STAMPED "CSU FIMS CONTROL SE09" ON THE EAST CORNER OF THE CONCRETE BASE OF A TELEPHONE RELAY BOX AT THE EAST CORNER OF 226 MAIN STREET, ABOUT 3 FEET NORTHWEST OF THE NORTHWEST CURB OF MAIN STREET, AND ABOUT 205 FEET SOUTHWEST OF THE SOUTHWEST CURB LINE OF SECURITY BOULEVARD. CITY ELEVATION: 5726.76 (NGVD 29)

**SOIL PREPARATION NOTE:**

SOIL PREPARATION SHALL BE PER RECOMMENDATIONS FROM A GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THIS SITE AS FOLLOWS

GEOTECHNICAL ENGINEER: OLSSON  
REPORT NO. 021-05598

THE CONTRACTOR MUST FULLY REVIEW THIS REPORT PRIOR TO CONSTRUCTION INFORMATION IN THE GEOTECHNICAL REPORT SUPERSEDES ANY CONFLICTING INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.

**GRADING QUANTITIES**

CUT*	77 CY
FILL*	4,035 CY
NET*	4,035 CY (FILL)

\*QUANTITIES ARE RAW VALUES FROM EXISTING GRADE TO FINISHED GRADE AND DO NOT ACCOMMODATE ANY PAVEMENT SECTIONS, OVEREXCAVATION OR UTILITY TRENCHING.

**GRADING PLAN LEGEND**

— G — G — G — G — G — G —	EXISTING GAS	— · · · · · —	PROPOSED SURFACE FLOW LINE
— SS — SS — SS — SS — SS —	EXISTING SANITARY SEWER	— — — — —	PROPOSED ADA ROUTE
— OET — OET — OET — OET — OET —	EXISTING OVERHEAD ELECTRICAL AND TELECOMMUNICATIONS	— — — — —	PROPOSED RETAINING WALL
— UC — UC — UC — UC — UC —	EXISTING UNDERGROUND TELECOMMUNICATIONS	— — — — —	PROPOSED STORM SEWER
— W — W — W — W — W — W —	EXISTING WATER	⊙ ⊙	EXISTING STORM SEWER MANHOLE/INLET
— — — — —	CONSTRUCTION / DISTURBANCE LIMITS	⊙ ⊙	PROPOSED STORM SEWER MANHOLE/INLET
— — — — —	PROPERTY BOUNDARY	☀	EXISTING STREET LIGHTING
— — — — —	EXISTING EASEMENT	⊕	EXISTING FIRE HYDRANT
— — — — —	EXISTING FLOODPLAIN	⊕	EXISTING SIGNAGE
— — — — —	EXISTING CURB & GUTTER	— — — — —	PROPOSED SITE LIGHTING
— — — — —	EXISTING MAJOR CONTOUR	→ 2.7%	PROPOSED SURFACE FLOW DIRECTION ARROW
— — — — —	EXISTING MINOR CONTOUR	4727.21 →	PROPOSED ELEVATION AT FLOW LINE
— — — — —	PROPOSED MAJOR CONTOUR	4727.21 SW →	PROPOSED EXTERIOR GRADE AT FOUNDATION
— — — — —	PROPOSED MINOR CONTOUR	4727.21 ME →	PROPOSED SIDEWALK ELEVATION
— — — — —	PROPOSED INTEGRAL CURB	4727.21 FG →	PROPOSED GRADE TO MATCH EXISTING
— — — — —	PROPOSED CURB & GUTTER	4727.21 TW →	PROPOSED FINISHED GRADE
— — — — —	PROPOSED BUILDING	4727.21 BW →	PROPOSED TOP OF WALL GRADE
			PROPOSED FINISHED GRADE AT BOTTOM OF WALL

**NOTE:**

A WORK-IN-ROW PERMIT IS REQUIRED FOR WORK BEING PERFORMED WITHIN MAIN STREET AND SECURITY BOULEVARD RIGHT-OF-WAY. 5 BUSINESS DAYS REQUIRED FOR EL PASO COUNTY PUBLIC WORKS PROCESSING.

**STORM SEWER NOTE:**

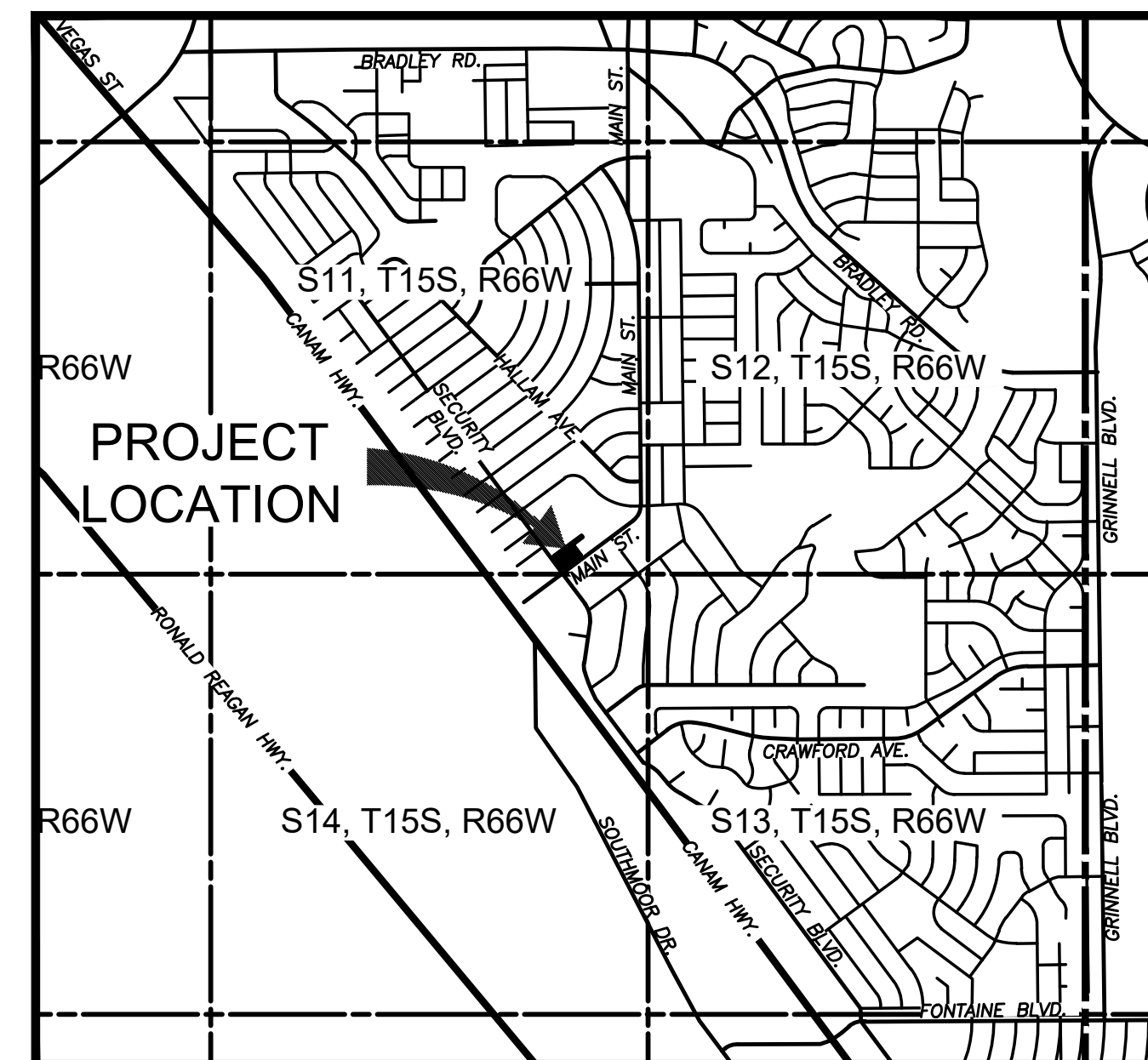
SEE SHEET C4.1 FOR ALL STORM SEWER PIPING AND STRUCTURE DESIGN INFORMATION.

**VEGETATION NOTE:**

NO NOTABLE VEGETATION ON-SITE. SITE CONSISTS OF MOSTLY ASPHALT, CONCRETE, CURB & GUTTER AND DIRT AREAS.

**811** Know what's below. Call before you dig.

CALL 811 SEVENTY-TWO HOURS PRIOR TO DIGGING, GRADING OR EXCAVATING FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



VICINITY MAP  
SCALE: 1" = 2000'

**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 AN NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

*Krista Houtchens*  
ENGINEER OF RECORD SIGNATURE DATE 04/04/2023

**OWNER'S STATEMENT:**

I, THE OWNER / DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

*Raul F...*  
OWNER SIGNATURE DATE 3/8/23

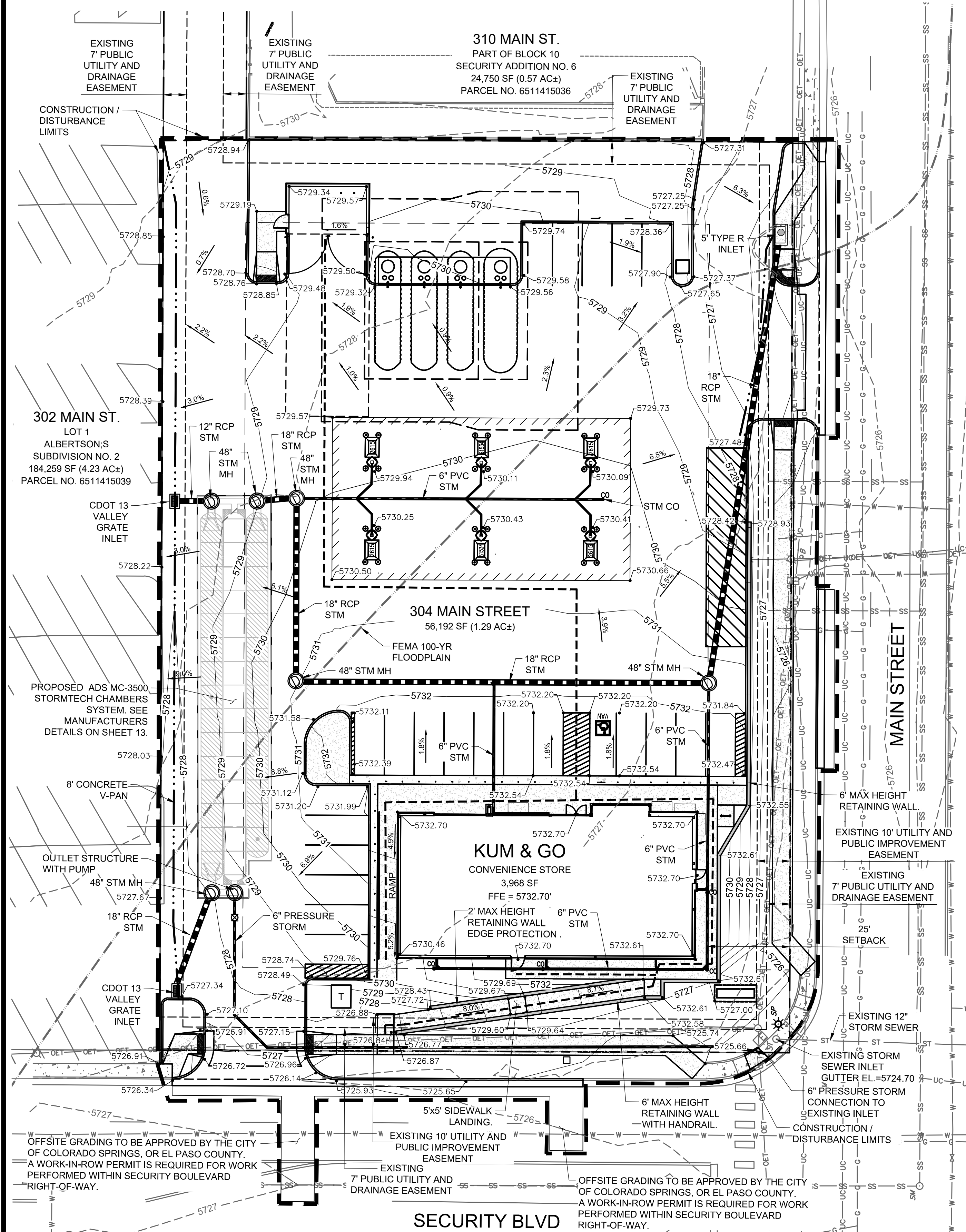
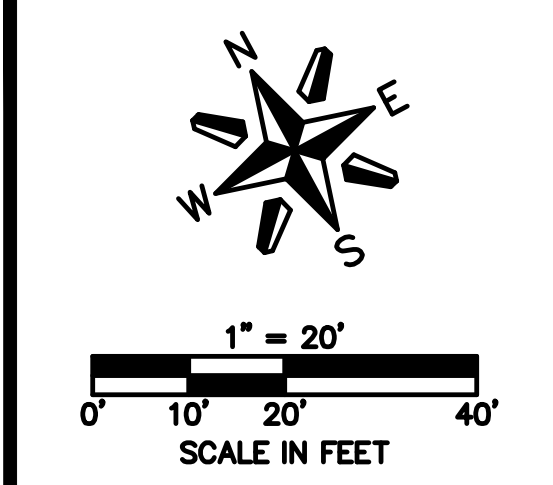
**EL PASO COUNTY:**

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 MANUAL 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.

JOSHUA PALMER, P.E. DATE  
INTERIM COUNTY ENGINEER



**EES**  
ENGINEERING AND  
ENVIRONMENTAL  
SOLUTIONS, INC.  
3901 E. Florida Avenue, Suite 425  
Denver, CO 80210  
303-572-1997 www.ees.us.com

COLORADO LICENSE  
Professional Engineer  
No. 49550  
4/4/23  
Professional Engineer

**Kum & Go**

1459 Grand Ave  
Des Moines, IA 50309  
P: 888-458-6646

2232 - EL PASO, COLORADO  
SECURITY BLVD. AND MAIN ST.  
GRADING PLAN

KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISION DESCRIPTION	DATE
1ST REVIEW COMMENTS	08/19/22
2ND REVIEW COMMENTS	01/06/23
3RD REVIEW COMMENTS	04/05/23

DATE: 03-31-2023  
SHEET NUMBER: C2.1 OF 42

PCD FILE NO. PPR-2225

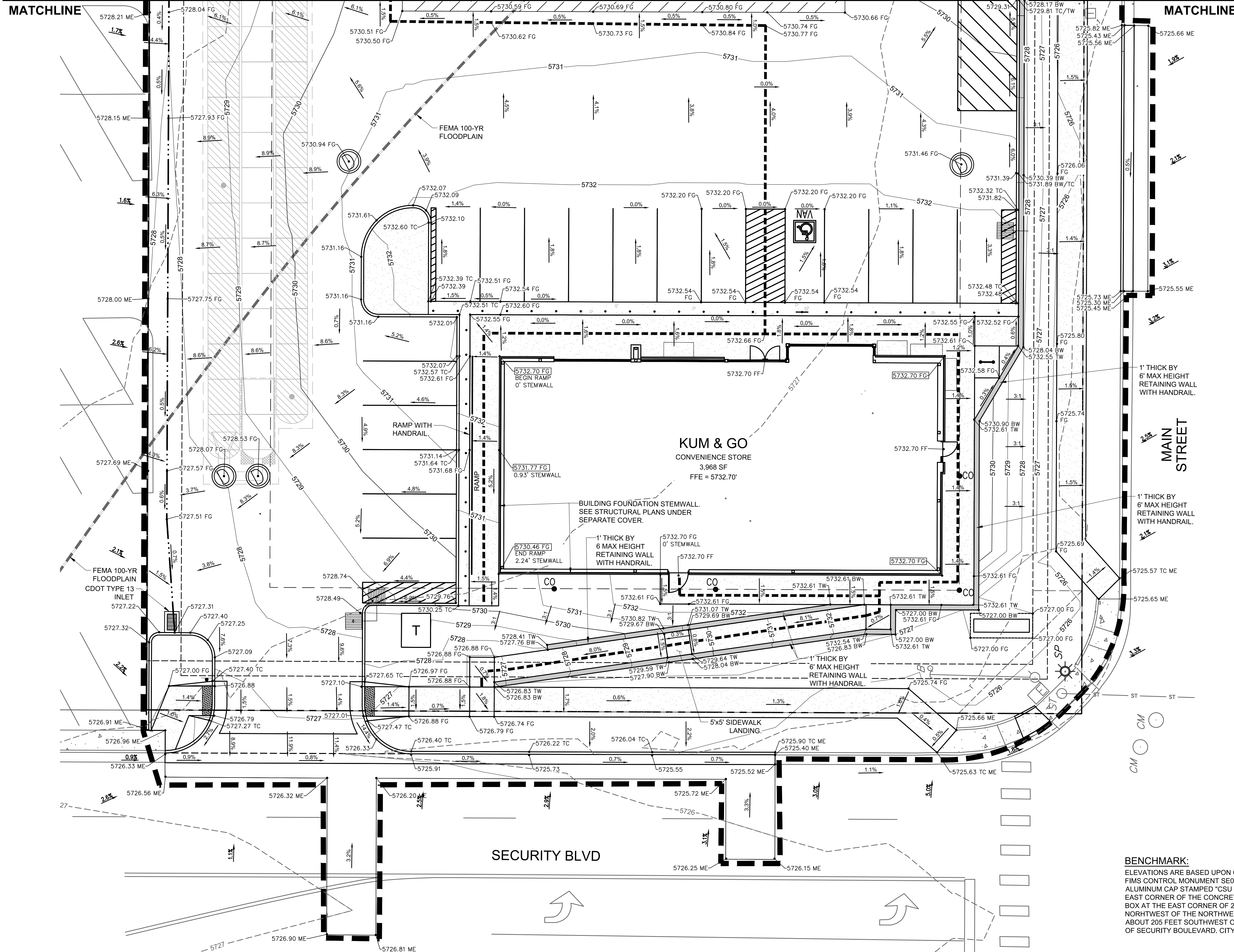
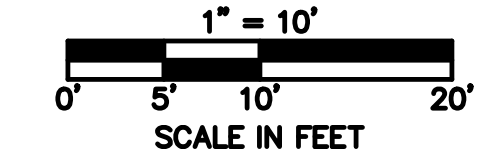
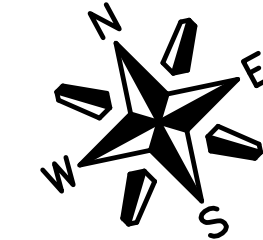
# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN

SEE SHEET 8

SEE SHEET 8



### GRADING PLAN LEGEND

	PROPOSED PROPERTY BOUNDARY
	PROPOSED EASEMENT
	CONSTRUCTION / DISTURBANCE LIMITS
	EXISTING FLOODPLAIN
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED BUILDING OUTLINE
	PROPOSED INTEGRAL CURB
	PROPOSED CURB AND GUTTER
	PROPOSED RETAINING WALL
	PROPOSED ACCESSIBLE ROUTE
	PROPOSED SURFACE FLOW LINE
	PROPOSED / EXISTING STORM MANHOLE
	PROPOSED / EXISTING STORM INLET
	EXISTING STREET LIGHTING
	EXISTING FIRE HYDRANT
	EXISTING SIGNAGE
	PROPOSED SITE LIGHTING
	PROPOSED FLOWLINE ELEVATION
	PROPOSED EXTERIOR GRADE AT FOUNDATION
	PROPOSED SIDEWALK ELEVATION
	PROPOSED GRADE TO MATCH EXISTING
	PROPOSED FINISHED GRADE
	PROPOSED HIGHPOINT ELEVATION
	PROPOSED TOP OF WALL
	PROPOSED BOTTOM OF WALL
	PROPOSED TOP OF CURB
	PROPOSED TOP OF CURB
	FLOW ARROW AND GRADE

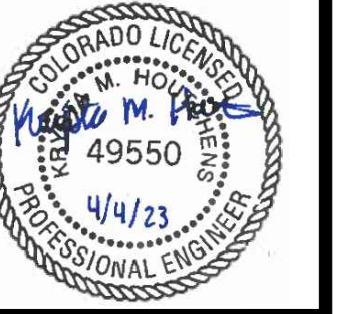
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CALL 811 SEVENTY-TWO HOURS PRIOR TO DIGGING, GRADING OR EXCAVATING FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES.



1459 Grand Ave  
Des Moines, IA 50309  
P: 888-458-6646

2232 - EL PASO, COLORADO  
SECURITY BLVD. AND MAIN ST.  
DETAILED GRADING PLAN - SOUTH

KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISION	DATE	DESCRIPTION
1	08/19/22	1ST REVIEW COMMENTS
2	01/06/23	2ND REVIEW COMMENTS
3	04/05/23	3RD REVIEW COMMENTS

DATE: 03-31-2023

SHEET NUMBER: C2.2

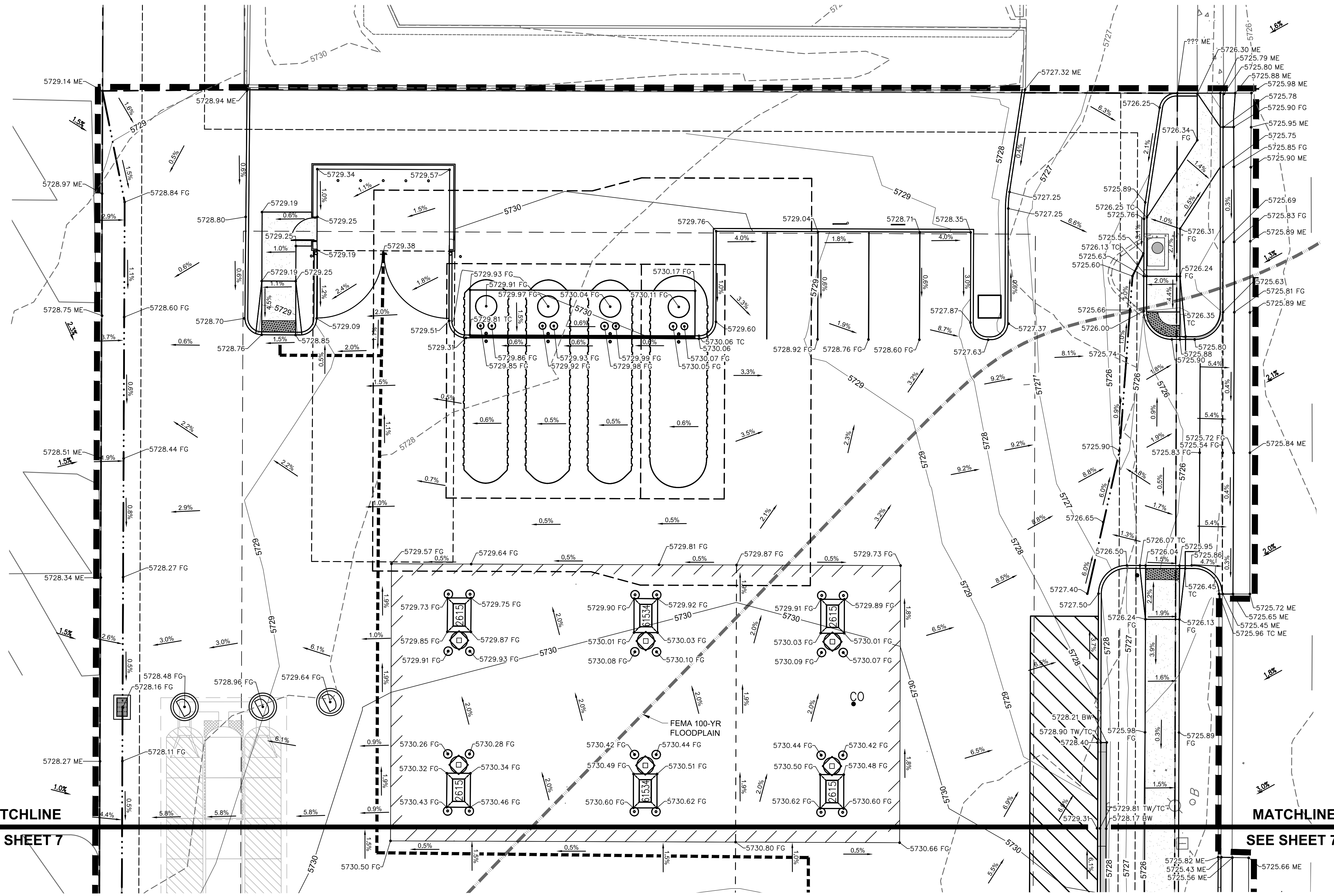
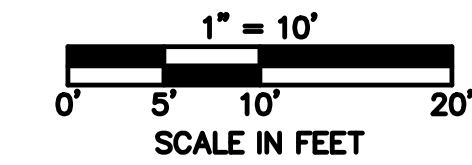
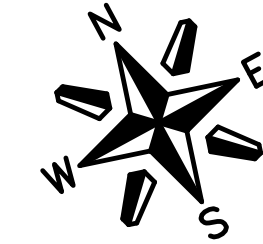
7 OF 42

PKUM & GO CO., EL PASO COUNTY, 2232 MAIN AND SECURITY 08 CADGESC0222 - 07 - GRADING 10SC-SOUTH.DWG

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN



### GRADING PLAN LEGEND

	PROPOSED PROPERTY BOUNDARY
	PROPOSED EASEMENT
	CONSTRUCTION / DISTURBANCE LIMITS
	EXISTING FLOODPLAIN
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED BUILDING OUTLINE
	PROPOSED INTEGRAL CURB
	PROPOSED CURB AND GUTTER
	PROPOSED RETAINING WALL
	PROPOSED ACCESSIBLE ROUTE
	PROPOSED SURFACE FLOW LINE
	PROPOSED / EXISTING STORM MANHOLE
	PROPOSED / EXISTING STORM INLET
	EXISTING STREET LIGHTING
	EXISTING FIRE HYDRANT
	EXISTING SIGNAGE
	PROPOSED SITE LIGHTING
	PROPOSED FLOWLINE ELEVATION
	PROPOSED EXTERIOR GRADE AT FOUNDATION
	PROPOSED SIDEWALK ELEVATION
	PROPOSED GRADE TO MATCH EXISTING
	PROPOSED FINISHED GRADE
	PROPOSED HIGHPOINT ELEVATION
	PROPOSED TOP OF WALL
	PROPOSED BOTTOM OF WALL
	PROPOSED TOP OF CURB
	FLOW ARROW AND GRADE

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3801 E. Florida Avenue, Suite 425  
Denver, CO 80210  
303-572-1997 www.ees.us.com



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P: 888-458-6646

2232 - EL PASO, COLORADO  
SECURITY BLVD. AND MAIN ST.  
DETAILED GRADING PLAN - NORTH

KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISION DESCRIPTION	DATE
1ST REVIEW COMMENTS	08/19/22
2ND REVIEW COMMENTS	01/06/23
3RD REVIEW COMMENTS	04/05/23

DATE: 03-31-2023

SHEET NUMBER:

C2.3  
8 OF 42

PCD FILE NO. PPR-2225

P:\KUM & GO\CO. EL PASO COUNTY - 2232 MAIN AND SECURITY\08 CAD\GEO\2232 - 08 - GRADING 10SC-NORTH.DWG

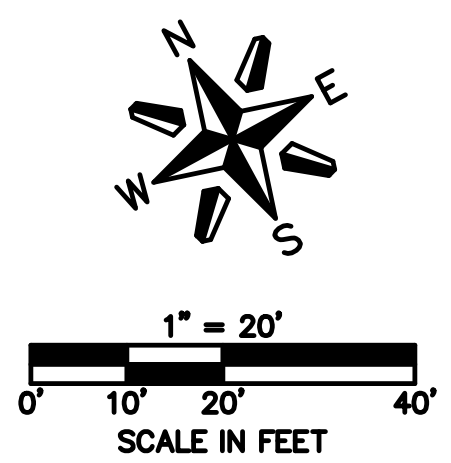
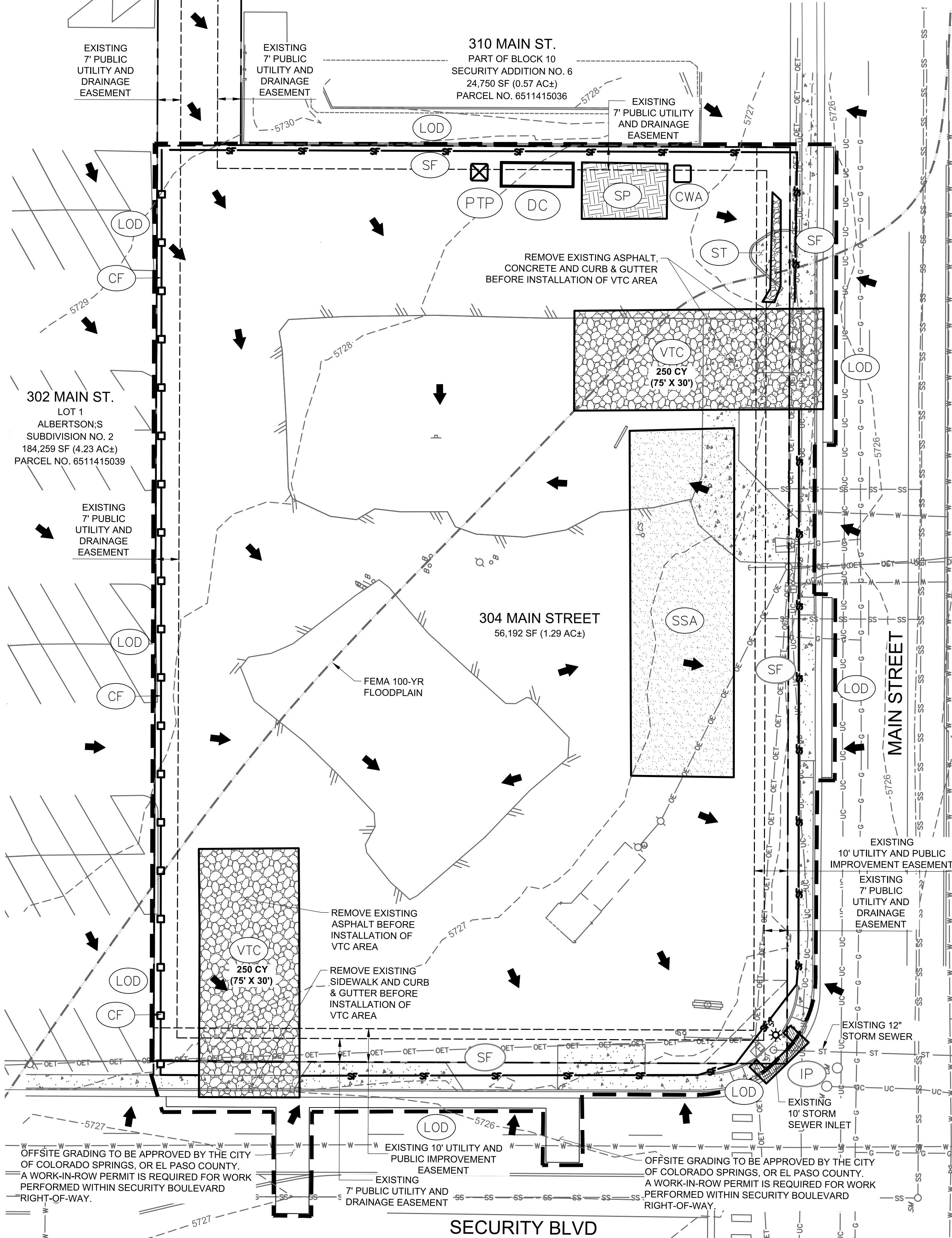
MATCHLINE SEE PLAN RIGHT

MATCHLINE SEE PLAN LEFT

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN



### EROSION AND STORMWATER CONTROL PLAN LEGEND

	EXISTING GAS
	EXISTING SANITARY SEWER
	EXISTING OVERHEAD ELECTRICAL AND TELECOMMUNICATIONS
	EXISTING UNDERGROUND TELECOMMUNICATIONS
	EXISTING WATER
	PROPERTY BOUNDARY
	EXISTING EASEMENT
	CONSTRUCTION / DISTURBANCE LIMITS
	EXISTING FLOODPLAIN
	EXISTING CURB & GUTTER
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	EXISTING STORM SEWER MANHOLE/INLET
	EXISTING STREET LIGHTING
	EXISTING FIRE HYDRANT
	EXISTING SIGNAGE
	EXISTING SURFACE FLOW DIRECTION ARROW

**NOTE:**  
A WORK-IN-ROW PERMIT IS REQUIRED FOR WORK BEING PERFORMED WITHIN SECURITY BOULEVARD RIGHT-OF-WAY. 5 BUSINESS DAYS REQUIRED FOR EL PASO COUNTY PUBLIC WORKS PROCESSING.

**VEGETATION NOTE:**  
NO NOTABLE VEGETATION ON-SITE. SITE CONSISTS OF MOSTLY ASPHALT, CONCRETE, CURB & GUTTER AND DIRT AREAS.

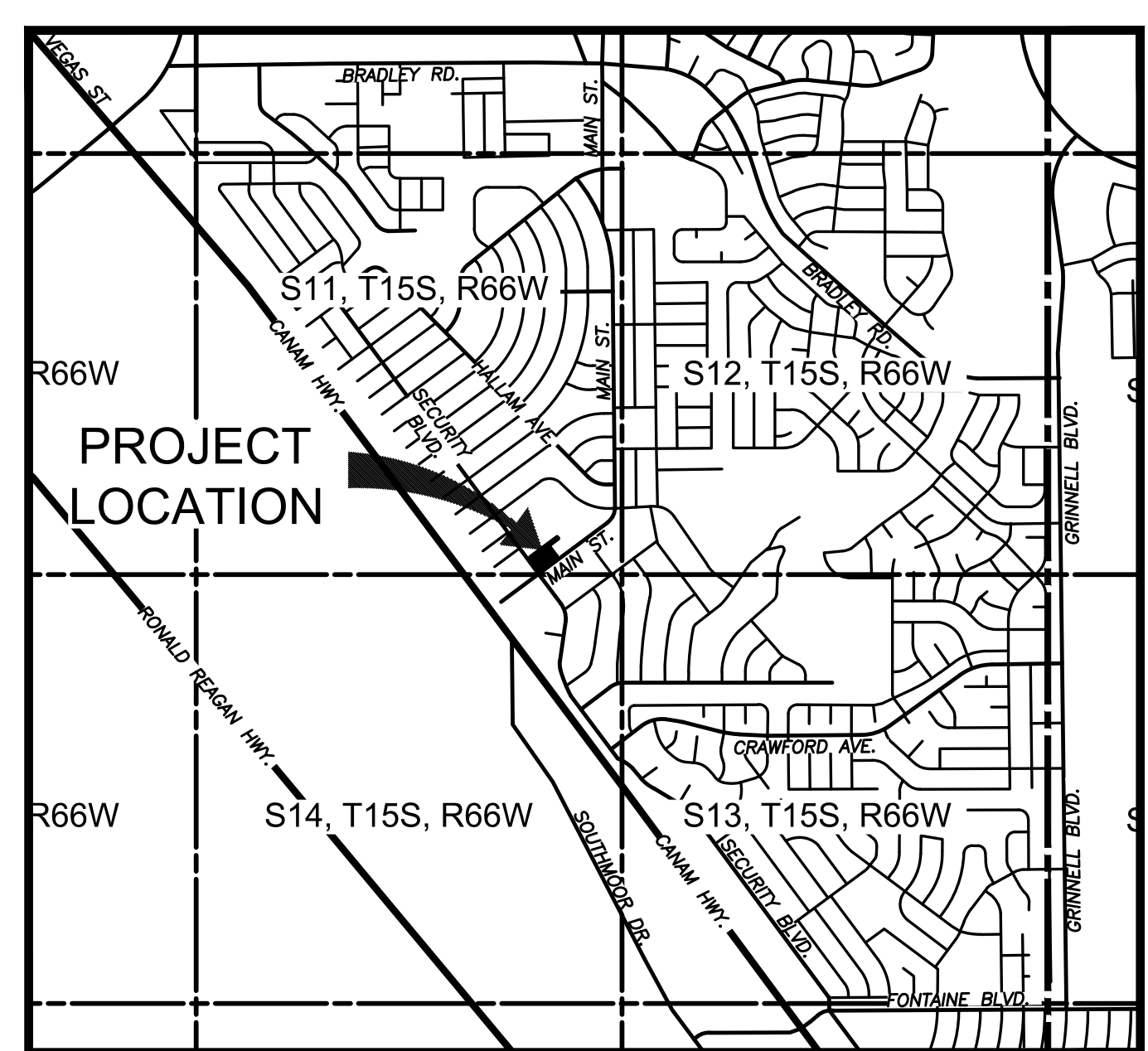
**SOIL PREPARATION NOTE:**  
SOIL PREPARATION SHALL BE PER RECOMMENDATIONS FROM A GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THIS SITE AS FOLLOWS

GEOTECHNICAL ENGINEER: OLSSON  
REPORT NO. 021-05598

THE CONTRACTOR MUST FULLY REVIEW THIS REPORT PRIOR TO CONSTRUCTION INFORMATION IN THE GEOTECHNICAL REPORT SUPERSEDES ANY CONFLICTING INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.

### BENCHMARK:

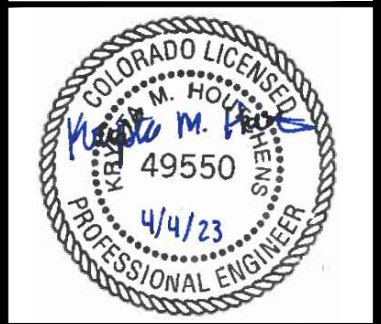
ELEVATIONS ARE BASED UPON COLORADO SPRINGS UTILITIES FIMS CONTROL MONUMENT SE09, BEING A 2-INCH DIAMETER ALUMINUM CAP STAMPED "CSU FIMS CONTROL SE09" ON THE EAST CORNER OF THE CONCRETE BASE OF A TELEPHONE RELAY BOX AT THE EAST CORNER OF THE NORTHWEST CURB OF MAIN STREET, AND ABOUT 3 FEET NORTHWEST OF THE NORTHWEST CORNER OF THE SOUTHWEST CURB LINE OF SECURITY BOULEVARD. CITY ELEVATION: 5726.76 (NGVD 29)



VICINITY MAP  
SCALE: 1" = 2000'

### BMP LEGEND

	CWA	CONCRETE WASHOUT AREA
	CF	CONSTRUCTION FENCE
	IP	INLET PROTECTION
	SCL	SEDIMENT CONTROL LOG
	SM	SEEDING AND MULCHING
	SF	SILT FENCE
	SP	STOCKPILE AREA
	SSA	STABILIZED STAGING AREA
	VTC	VEHICLE TRACKING CONTROL
	LOD	LIMITS OF CONSTRUCTION / DISTURBANCE
	CS	CURB SOCK
	ST	SEDIMENT TRAP
	SS	STREET SWEEPING



1459 Grand Ave  
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P: 888-458-6646

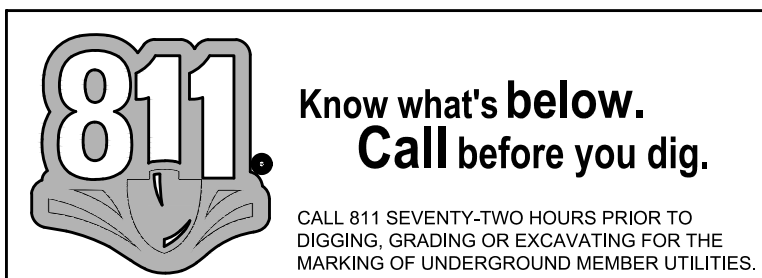
2232 - EL PASO, COLORADO  
SECURITY BLVD. AND MAIN ST.  
EROSION AND STORMWATER CONTROL PLAN - INITIAL

KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISIONS	REVISION DESCRIPTION	DATE
1	1ST REVIEW COMMENTS	08/19/22
2	2ND REVIEW COMMENTS	01/06/23
3	3RD REVIEW COMMENTS	04/05/23

DATE: 03-31-2023  
SHEET NUMBER: C3.1 OF 42

PCD FILE NO. PPR-2225



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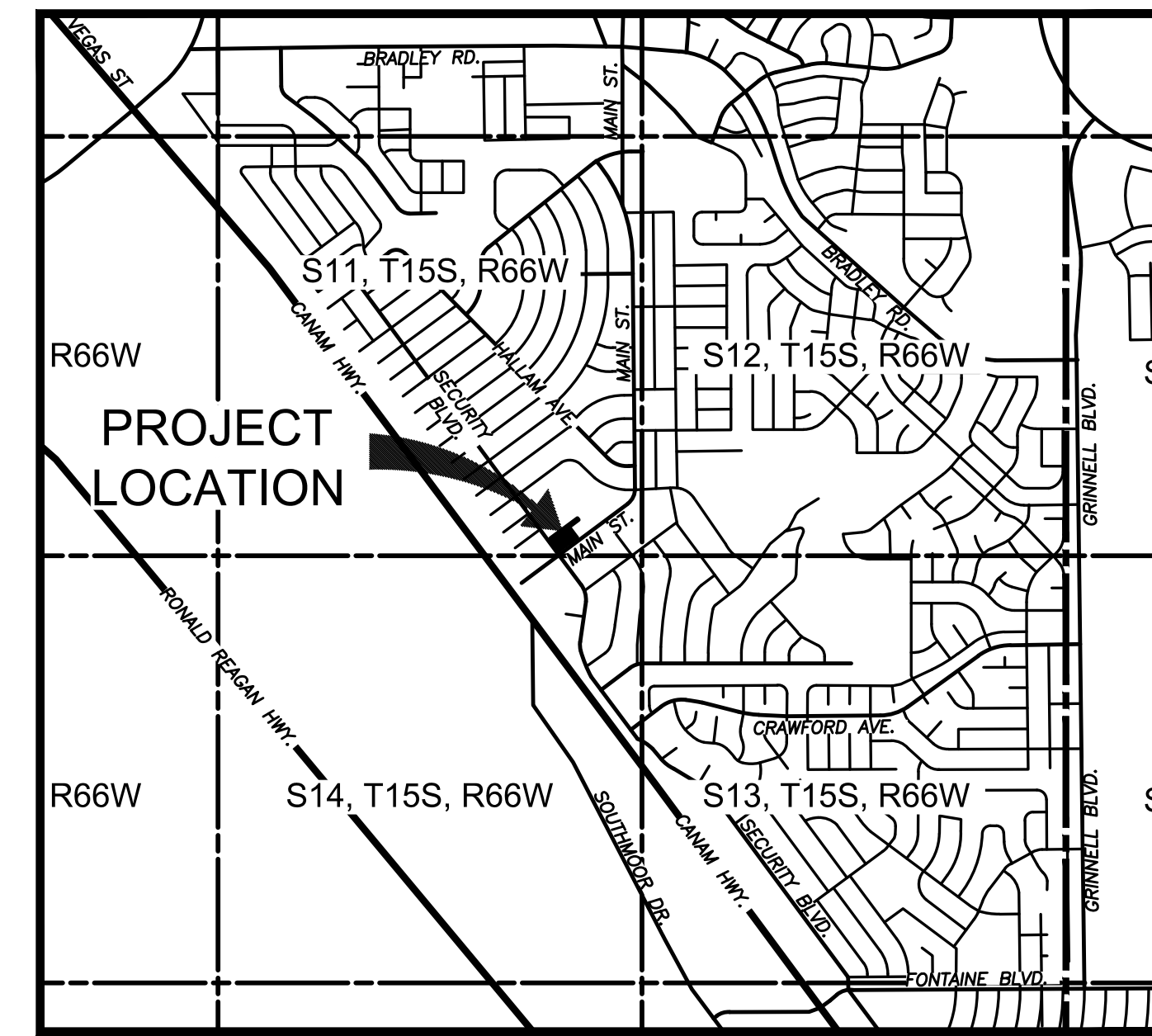


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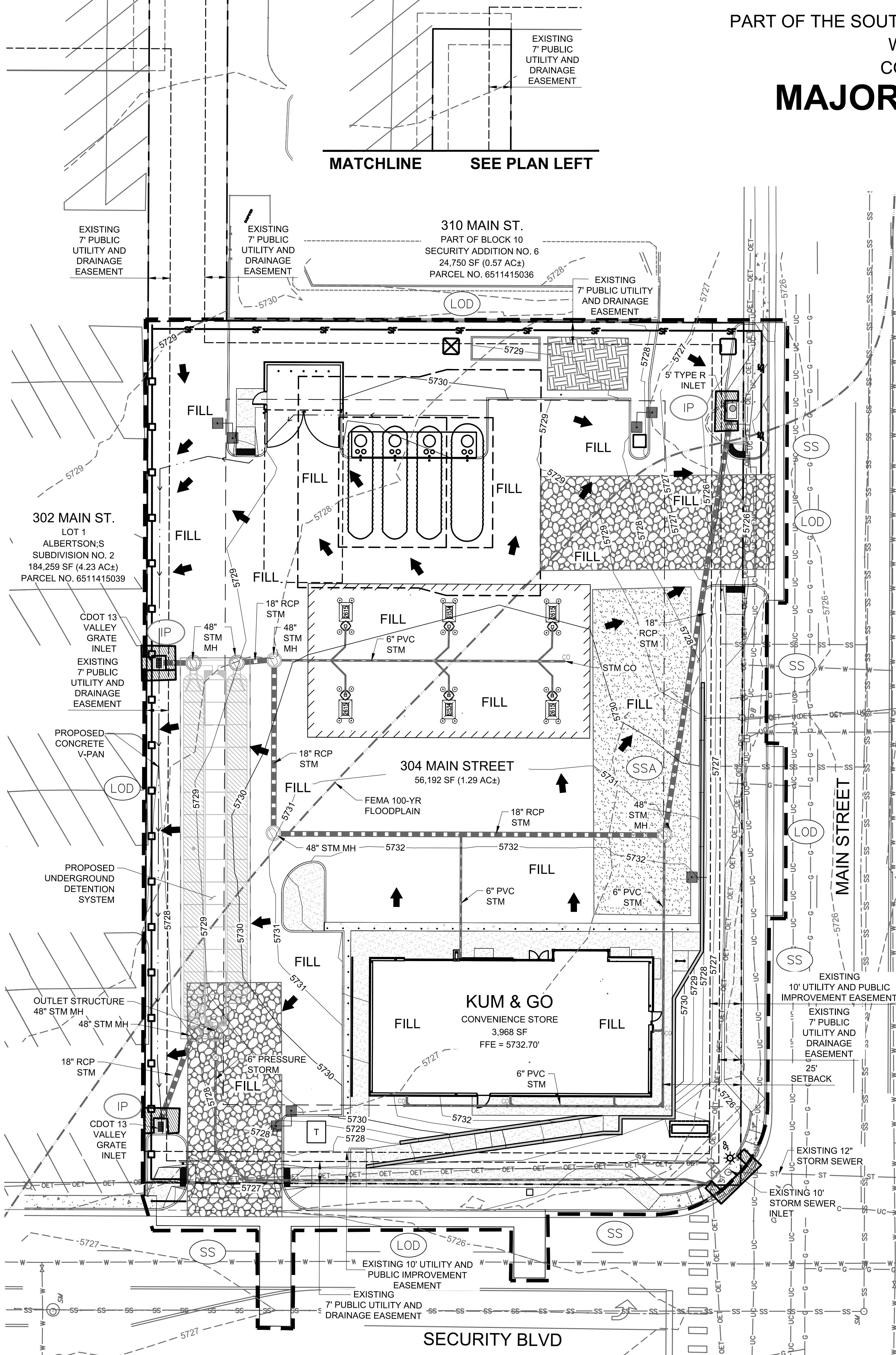
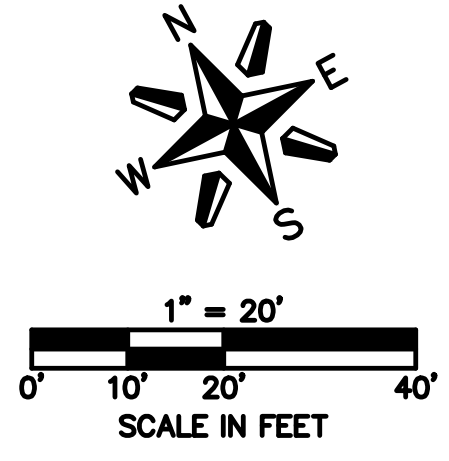
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# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO  
**MAJOR SITE DEVELOPMENT PLAN**



VICINITY MAP  
SCALE: 1" = 2000'



	EXISTING GAS
	EXISTING SANITARY SEWER
	EXISTING OVERHEAD ELECTRICAL AND TELECOMMUNICATIONS
	EXISTING UNDERGROUND TELECOMMUNICATIONS
	EXISTING WATER
	PROPERTY BOUNDARY
	EXISTING EASEMENT
	CONSTRUCTION / DISTURBANCE LIMITS
	EXISTING FLOODPLAIN
	EXISTING CURB & GUTTER
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	PROPOSED CURB & GUTTER
	PROPOSED BUILDING
	PROPOSED RETAINING WALL
	PROPOSED STORM SEWER
	EXISTING STORM SEWER MANHOLE/INLET
	PROPOSED STORM SEWER MANHOLE/INLET
	EXISTING STREET LIGHTING
	EXISTING FIRE HYDRANT
	EXISTING SIGNAGE
	PROPOSED SURFACE FLOW DIRECTION ARROW
	PROPOSED SITE LIGHTING

**BMP LEGEND**

	CWA	CONCRETE WASHOUT AREA
	CF	CONSTRUCTION FENCE
	IP	INLET PROTECTION
	SCL	SEDIMENT CONTROL LOG
	SM	SEEDING AND MULCHING
	SF	SILT FENCE
	SP	STOCKPILE AREA
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	LOD	LIMITS OF CONSTRUCTION / DISTURBANCE
	CS	CURB SOCK
	ST	SEDIMENT TRAP
	SS	STREET SWEEPING

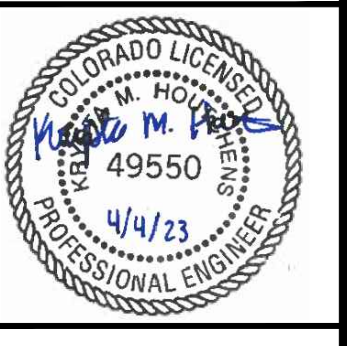
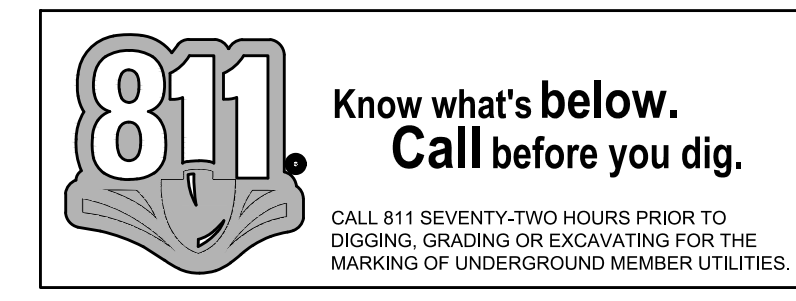
**NOTE:**  
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**STORM SEWER NOTE:**  
SEE SHEET 12 FOR ALL STORM SEWER PIPING AND STRUCTURE DESIGN INFORMATION.

**VEGETATION NOTE:**  
NO NOTABLE VEGETATION ON-SITE. SITE CONSISTS OF MOSTLY ASPHALT, CONCRETE, CURB & GUTTER AND DIRT AREAS.

**SOIL PREPARATION NOTE:**  
SOIL PREPARATION SHALL BE PER RECOMMENDATIONS FROM A GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THIS SITE AS FOLLOWS  
GEOTECHNICAL ENGINEER: OLSSON  
REPORT NO. 021-05598  
THE CONTRACTOR MUST FULLY REVIEW THIS REPORT PRIOR TO CONSTRUCTION INFORMATION IN THE GEOTECHNICAL REPORT SUPERSEDES ANY CONFLICTING INFORMATION CONTAINED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS.

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P: 888-458-6646

2232 - EL PASO, COLORADO  
SECURITY BLVD. AND MAIN ST.  
EROSION AND STORMWATER CONTROL PLAN - INTERIM

KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISIONS	REVISION DESCRIPTION	DATE
1	1ST REVIEW COMMENTS	08/19/22
2	2ND REVIEW COMMENTS	01/06/23
3	3RD REVIEW COMMENTS	04/05/23

DATE: 03-31-2023  
SHEET NUMBER: C3.2  
10 OF 42

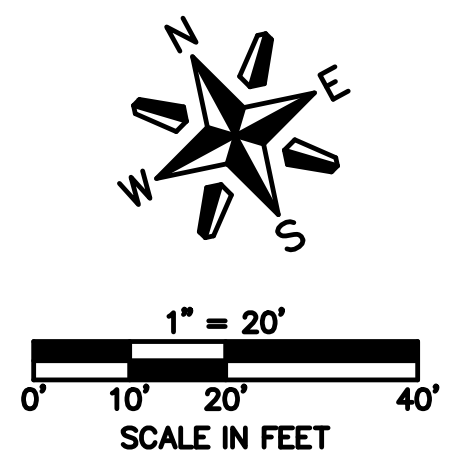
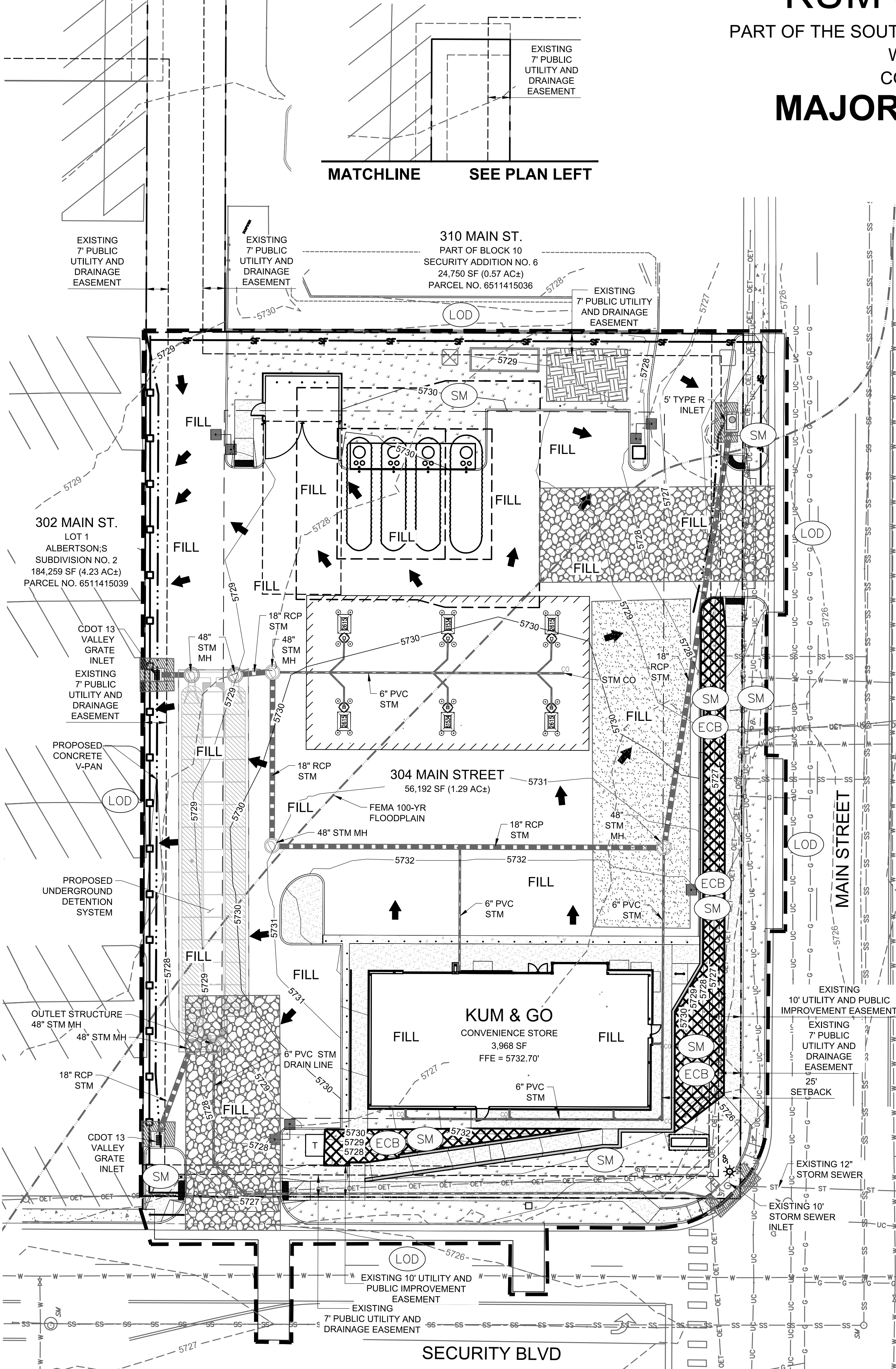
PCD FILE NO. PPR-2225

MATCHLINE SEE PLAN RIGHT

MATCHLINE SEE PLAN LEFT

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
 WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
 COUNTY OF EL PASO, STATE OF COLORADO  
**MAJOR SITE DEVELOPMENT PLAN**



- EXISTING GAS
- EXISTING SANITARY SEWER
- EXISTING OVERHEAD ELECTRICAL AND TELECOMMUNICATIONS
- EXISTING UNDERGROUND TELECOMMUNICATIONS
- EXISTING WATER
- PROPERTY BOUNDARY
- EXISTING EASEMENT
- CONSTRUCTION / DISTURBANCE LIMITS
- EXISTING FLOODPLAIN
- EXISTING CURB & GUTTER
- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED CURB & GUTTER
- PROPOSED BUILDING
- PROPOSED RETAINING WALL
- PROPOSED SURFACE FLOW LINE
- PROPOSED STORM SEWER
- EXISTING STORM SEWER MANHOLE/INLET
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- EXISTING FIRE HYDRANT
- EXISTING SIGNAGE
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- PROPOSED SITE LIGHTING

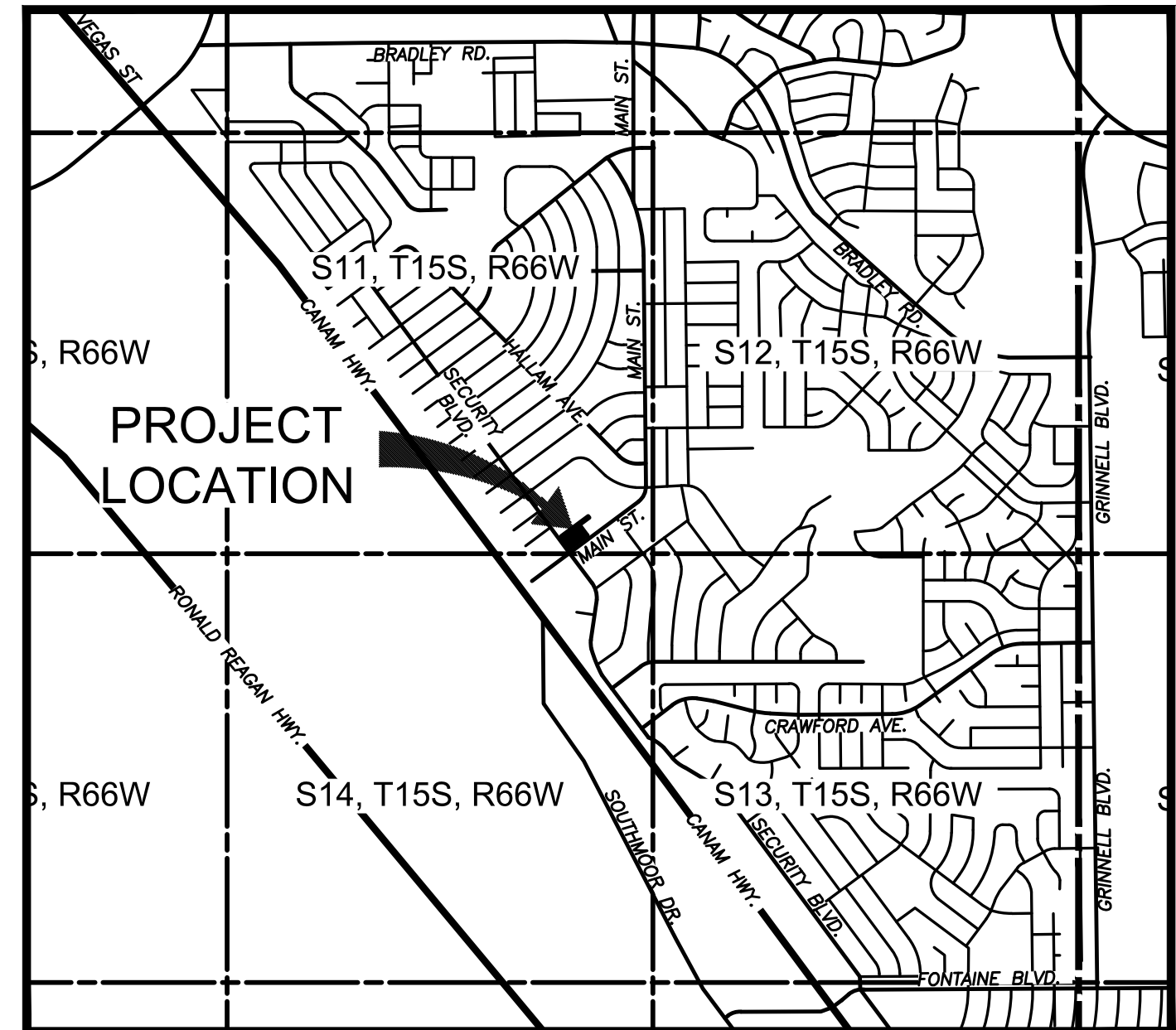
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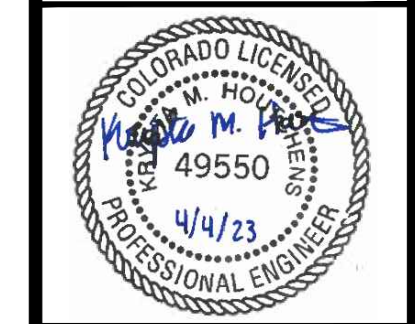
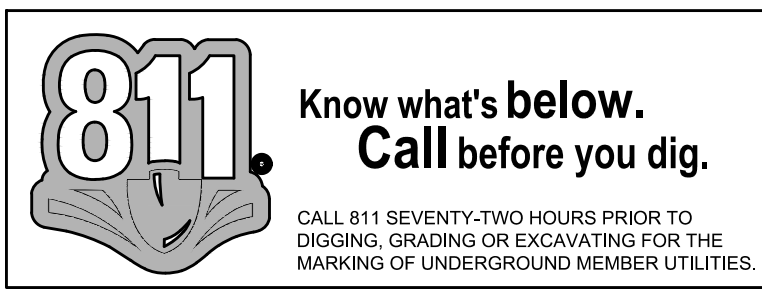
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VICINITY MAP  
 SCALE: 1" = 2000'

- BMP LEGEND**
- CONCRETE WASHOUT AREA
  - CONSTRUCTION FENCE
  - INLET PROTECTION
  - SEDIMENT CONTROL LOG
  - SEEDING AND MULCHING
  - SILT FENCE
  - STOCKPILE AREA
  - STABILIZED STAGING AREA
  - VEHICLE TRACKING CONTROL
  - LIMITS OF CONSTRUCTION / DISTURBANCE
  - CURB SOCK
  - SEDIMENT TRAP
  - STREET SWEEPING
  - EROSION CONTROL BLANKET



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2232 - EL PASO, COLORADO  
 SECURITY BLVD. AND MAIN ST.  
 EROSION AND STORMWATER CONTROL PLAN - FINAL

KG PROJECT TEAM:  
 RDM:  
 SDM:  
 CPM:

REVISIONS	REVISION DESCRIPTION	DATE
1	1ST REVIEW COMMENTS	08/18/22
2	2ND REVIEW COMMENTS	01/06/23
3	3RD REVIEW COMMENTS	04/05/23

DATE: 03-31-2023

SHEET NUMBER:  
**C3.3**  
 11 OF 42

PCD FILE NO. PPR-2225

## **Appendix C – BMP Details**

**GENERAL NOTES:**

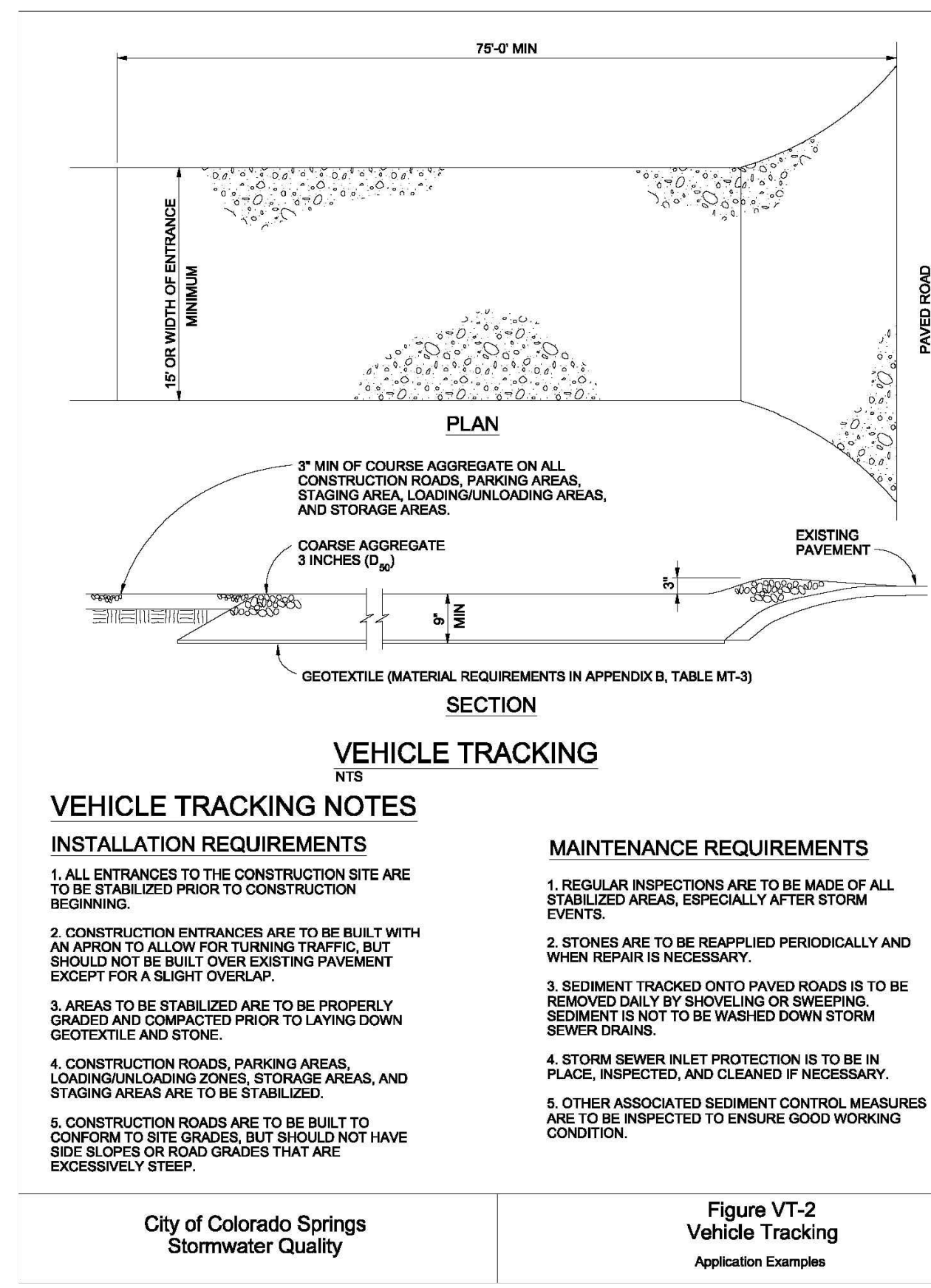
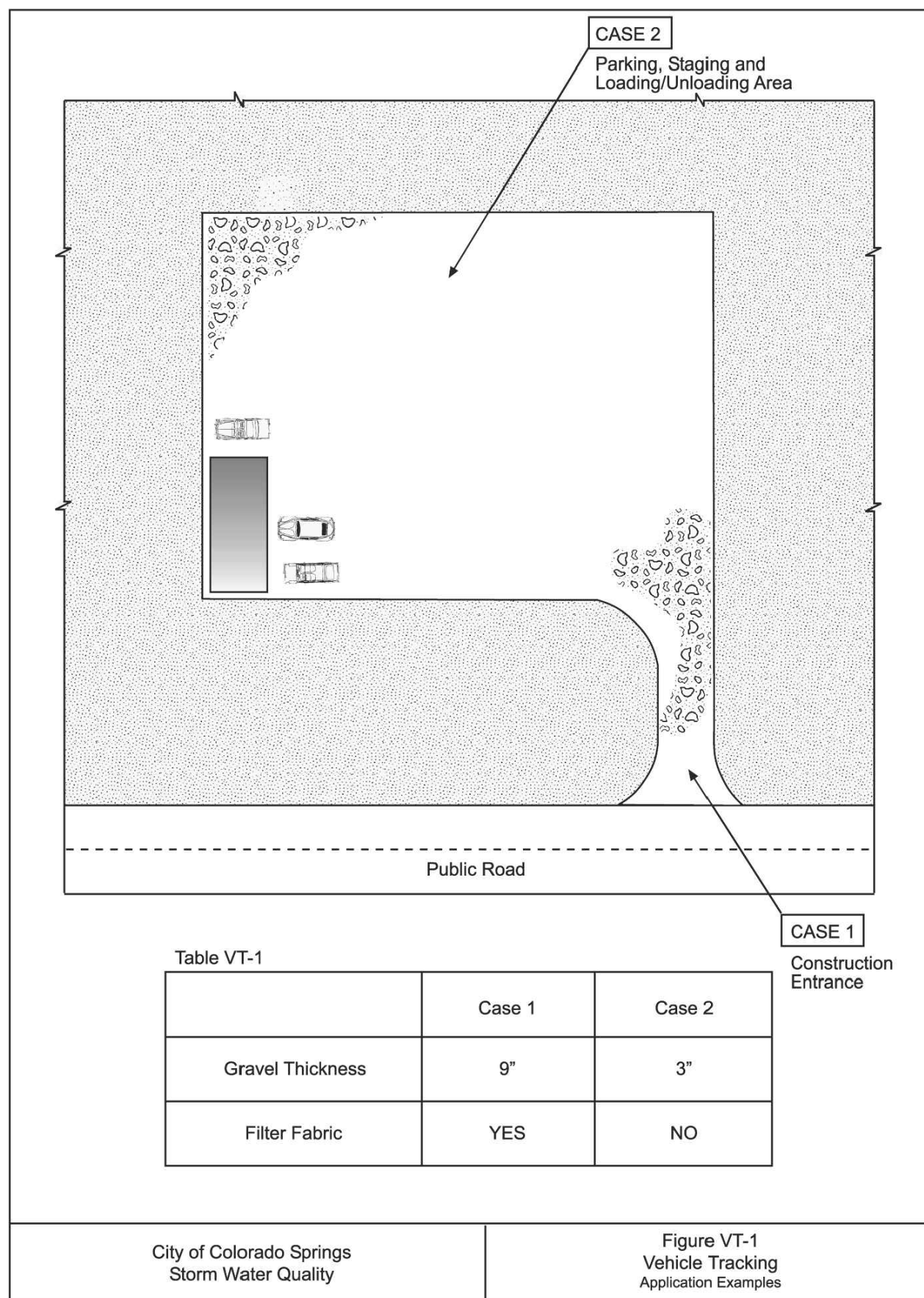
- STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
- NOTWITHSTANDING ANYTHING 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 (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SMWP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SMWP 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 WATERS 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 LOOSENEED 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 SMWP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- DURING DEWATERING OPERATIONS, UNCONTAMINATED GROUNDWATER 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 IN 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 ON-SITE 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 ON-SITE 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, RULE, 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 OLSSON ON DECEMBER 21ST, 2021 AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST (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 (SMWP), 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

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
 WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
 COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN



### EC-4 Mulching (MU)

- Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may have to be weighted to afford proper soil penetration.
- Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided above).
- On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch.
- Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydrosedding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation should be avoided.
- Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead of mulch. (See the ECM/TRM BMP for more information.)
- Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP for more information on general types of tackifiers.)
- Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

### Maintenance and Removal

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as needed, to cover bare areas.

### SM-4 Vehicle Tracking Control (VTC)

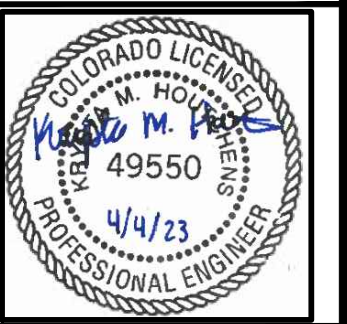
#### STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

- SEE PLAN VIEW FOR
  - LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).
  - TYPE OF CONSTRUCTION ENTRANCE(S)/EXIT(S) (WITH/WITHOUT WHEEL WASH, CONSTRUCTION MAT OR TRM).
- CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH) WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.
- A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.
- STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.
- UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

#### STABILIZED CONSTRUCTION ENTRANCE/EXIT 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 TO THE STABILIZED ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.
  - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND AT THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED DOWN STORM SEWER DRAINS.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)



1459 Grand Ave  
 Des Moines, IA 50309  
 P: 888-458-6646

2232 - EL PASO, COLORADO  
 SECURITY BLVD. AND MAIN ST.  
 EROSION AND STORMWATER CONTROL DETAILS

KG PROJECT TEAM:  
 RDM:  
 SDM:  
 CPM:

REVISION DESCRIPTION	DATE
1ST REVIEW COMMENTS	08/19/22
2ND REVIEW COMMENTS	01/06/23
3RD REVIEW COMMENTS	04/05/23

DATE: 03-31-2023

SHEET NUMBER: C3.4  
 12 OF 42

PCD FILE NO. PPR-2225

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO  
**MAJOR SITE DEVELOPMENT PLAN**



1459 Grand Ave  
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**2232 - EL PASO, COLORADO**  
**SECURITY BLVD. AND MAIN ST.**  
EROSION AND STORMWATER CONTROL DETAILS

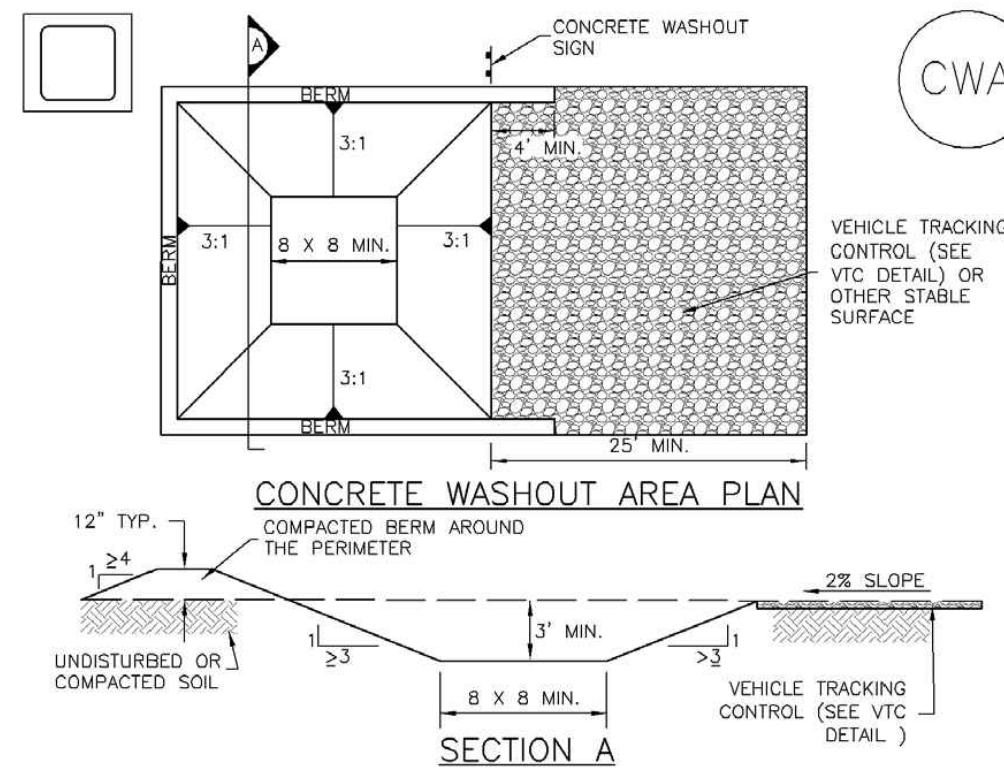
KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISION	DATE	REVISION DESCRIPTION
1	08/19/22	1ST REVIEW COMMENTS
2	01/06/23	2ND REVIEW COMMENTS
3	04/05/23	3RD REVIEW COMMENTS

DATE: 03-31-2023

SHEET NUMBER:  
**C3.5**  
13 OF 42

**Concrete Washout Area (CWA) MM-1**



- CWA-1. CONCRETE WASHOUT AREA**
- CWA INSTALLATION NOTES**
- SEE PLAN VIEW FOR CWA INSTALLATION LOCATION.
  - DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (15 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.
  - THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
  - CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8' SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
  - BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.
  - VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
  - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
  - USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

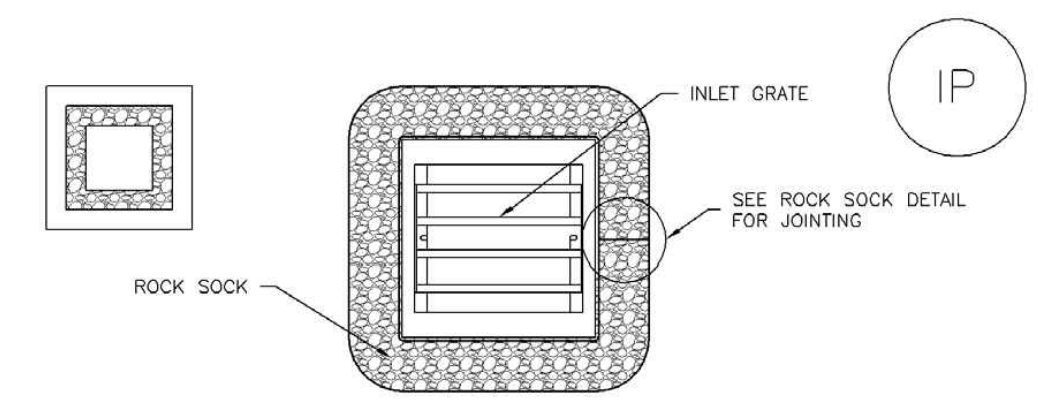
November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 CWA-3

**Concrete Washout Area (CWA) MM-1**

- CWA MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROMPTIVE, 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.
  - THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT, SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
  - CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
  - THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
  - WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION. (DETAIL ADAPTED FROM TOWN OF DENVER, COLORADO AND THE CITY OF PARKER, 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.

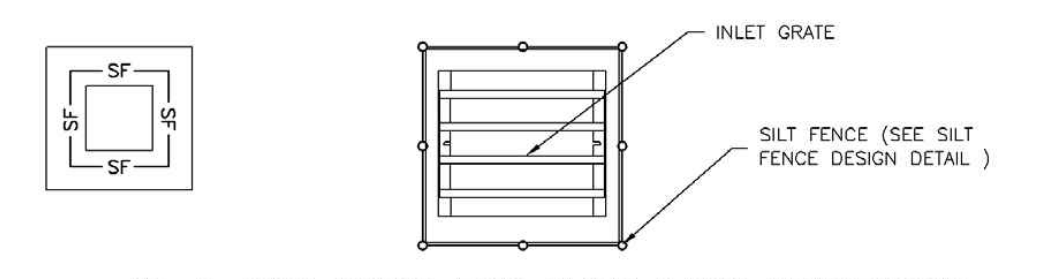
CWA-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

**Inlet Protection (IP) SC-6**



**IP-3. ROCK SOCK SUMP/AREA INLET PROTECTION**

- ROCK SOCK SUMP/AREA INLET PROTECTION INSTALLATION NOTES**
- SEE ROCK SOCK DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF ROCK SOCKS FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.



**IP-4. SILT FENCE FOR SUMP INLET PROTECTION**

- SILT FENCE INLET PROTECTION INSTALLATION NOTES**
- SEE SILT FENCE DESIGN DETAIL FOR INSTALLATION REQUIREMENTS.
  - POSTS SHALL BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
  - STRAW WATTLES/SEDIMENT CONTROL LOGS MAY BE USED IN PLACE OF SILT FENCE FOR INLETS IN PERVIOUS AREAS. INSTALL PER SEDIMENT CONTROL LOG DETAIL.

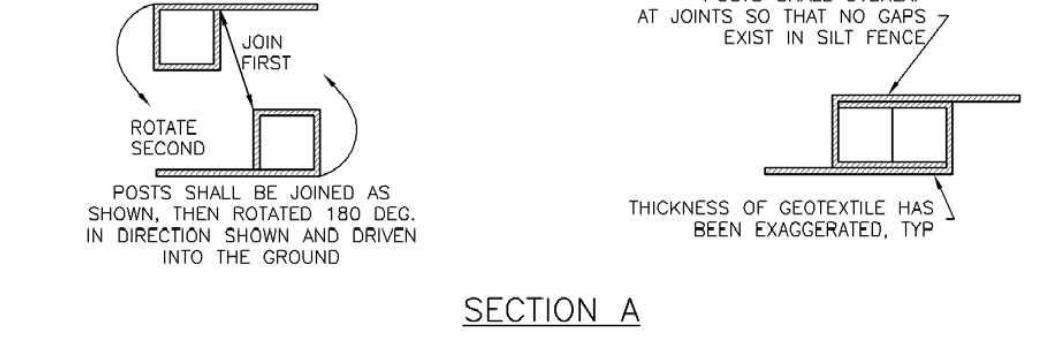
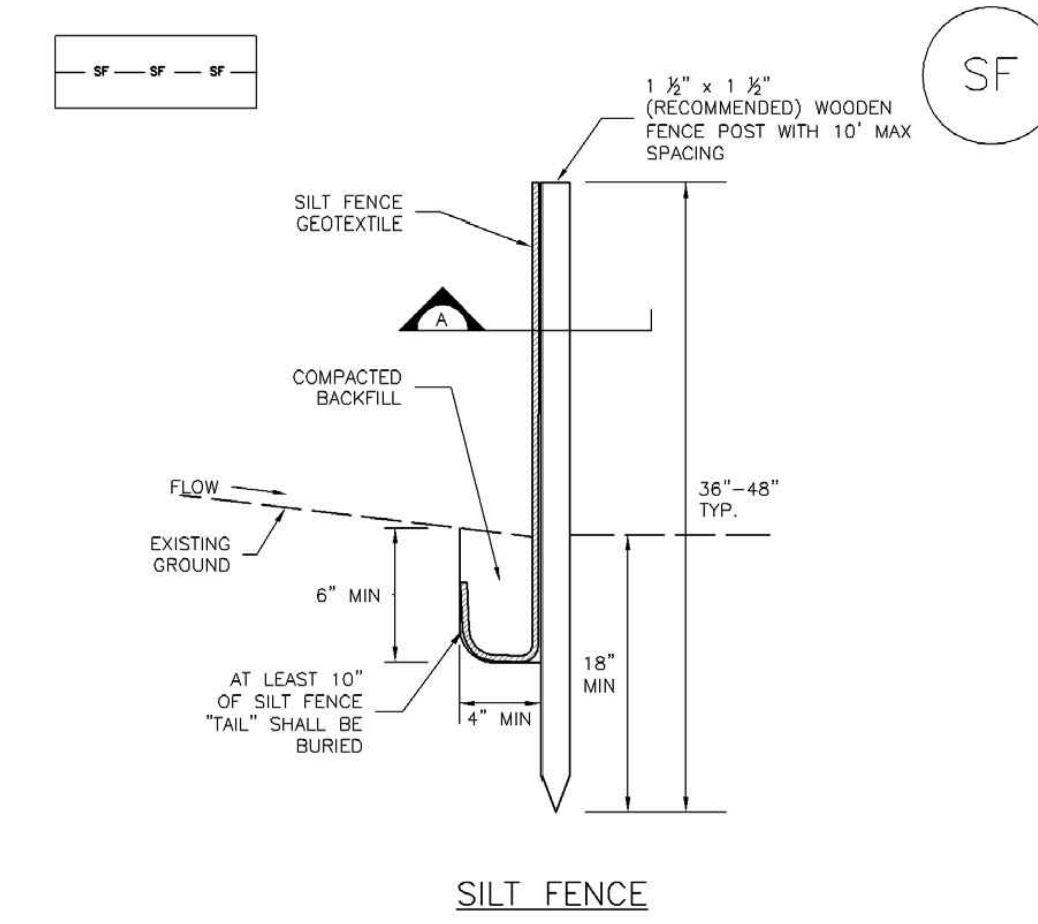
August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-5

**Inlet Protection (IP) SC-6**

- GENERAL INLET PROTECTION INSTALLATION NOTES**
- SEE PLAN VIEW FOR LOCATION OF INLET PROTECTION. -TYPE OF INLET PROTECTION (IP-1, IP-2, IP-3, IP-4, IP-5, IP-6)
  - INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST, INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.
  - 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.
- INLET PROTECTION MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROMPTIVE, 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.
  - SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR STRAW BALES.
  - INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.
  - WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, 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.
- NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY PROPRIETARY INLET PROTECTION METHODS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; 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.
- NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

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**Silt Fence (SF) SC-1**



**SF-1. SILT FENCE**

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**Silt Fence (SF) SC-1**

- SILT FENCE INSTALLATION NOTES**
- SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING. SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR PONDING AND DEPOSITION.
  - A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.
  - COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTOR SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR TRENCH BY HAND.
  - SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES.
  - SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.
  - AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK". THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').
  - SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
- SILT FENCE MAINTENANCE NOTES**
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROMPTIVE, 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.
  - SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6".
  - REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING, TEARING, OR COLLAPSE.
  - SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER SEDIMENT CONTROL BMP.
  - WHEN SILT FENCE IS REMOVED, ALL DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDS AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, 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.

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

# KUM & GO GAS & C-STORE

PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN

### EC-2 Temporary and Permanent Seeding (TS/PS)

have low nutrient value, little organic matter content, few soil microorganisms, rooting restrictions, and conditions less conducive to infiltration of precipitation. As a result, it is typically necessary to provide stockpiled topsoil, compost, or other soil amendments and rototill them into the soil to a depth of 6 inches or more.

Topsoil should be salvaged during grading operations for use and spread on areas to be revegetated later. Topsoil should be viewed as an important resource to be utilized for vegetation establishment, due to its water-holding capacity, structure, texture, organic matter content, biological activity, and nutrient content. The rooting depth of most native grasses in the semi-arid Denver metropolitan area is 6 to 18 inches. If present, at a minimum of the upper 6 inches of topsoil should be stripped, stockpiled, and ultimately respread across areas that will be revegetated.

Where topsoil is not available, subsoils should be amended to provide an appropriate plant-growth medium. Organic matter, such as well digested compost, can be added to improve soil characteristics conducive to plant growth. Other treatments can be used to adjust soil pH conditions when needed. Soil testing, which is typically inexpensive, should be completed to determine and optimize the types and amounts of amendments that are required.

If the disturbed ground surface is compacted, rip or rototill the upper 12 inches of the surface prior to placing topsoil. If adding compost to the existing soil surface, rototilling is necessary. Surface roughening will assist in placing a stable topsoil layer on steeper slopes, and allow infiltration and root penetration to greater depth. Topsoil should not be placed when either the salvaged topsoil or receiving ground are frozen or snow covered.

Prior to seeding, the soil surface should be rough and the seedbed should be firm, but neither too loose nor compacted. The upper layer of soil should be in a condition suitable for seeding at the proper depth and conducive to plant growth. Seed-to-soil contact is the key to good germination.

Refer to MHPD's Topsoil Management Guidance for detailed information on topsoil assessment, design, and construction.

#### Temporary Vegetation

To provide temporary vegetative cover on disturbed areas which will not be paved, built upon, or fully landscaped or worked for an extended period (typically 30 days or more), plant an annual grass appropriate for the time of planting and mulch the planted areas. Temporary grain seed mixes suitable for the Denver metropolitan area are listed in Table TS/PS-1. Native temporary seed mixes are provided in USDCM Volume 2, Chapter 13, Appendix A. These are to be considered only as general recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

#### Permanent Revegetation

To provide vegetative cover on disturbed areas that have reached final grade, a perennial grass mix should be established. Permanent seeding should be performed promptly (typically within 14 days) after reaching final grade. Each site will have different characteristics and a landscape professional or the local jurisdiction should be contacted to determine the most suitable seed mix for a specific site. In lieu of a specific recommendation, one of the perennial grass mixes appropriate for site conditions and growth season listed in seed mix tables in the USDCM Volume 2 *Revegetation* Chapter can be used. The pure live seed (PLS) rates of application recommended in these tables are considered to be absolute minimum rates for seed applied using proper drill-seeding equipment. These are to be considered only as general

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

Unlined dikes or swales should only be used for intercepting sheet flow runoff and are not intended for diversion of concentrated flows.

Details with notes are provided for several design variations, including:

- ED-1. Unlined Earth Dike formed by Berm
- DS-1. Unlined Excavated Swale
- DS-2. Unlined Swale Formed by Cut and Fill
- DS-3. ECB-lined Swale
- DS-4. Synthetic-lined Swale
- DS-5. Riprap-lined Swale

The details also include guidance on permissible velocities for cohesive channels if unlined approaches will be used.

#### Maintenance and Removal

Inspect earth dikes for stability, compaction, and signs of erosion and repair. Inspect side slopes for erosion and damage to erosion control fabric. Stabilize slopes and repair fabric as necessary. If there is recurring extensive damage, consider installing rock check dams or lining the channel with riprap.

If drainage swales are not permanent, remove dikes and fill channels when the upstream area is stabilized. Stabilize the fill or disturbed area immediately following removal by revegetation or other permanent stabilization method approved by the local jurisdiction.

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### Temporary and Permanent Seeding (TS/PS) EC-2

recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

If desired for wildlife habitat or landscape diversity, shrubs such as rubber rabbitbrush (*Chrysothamnus nauseosus*), fourwing saltbush (*Atriplex canescens*) and skunkbrush sumac (*Rhus trilobata*) could be added to the upland seed mixes at 0.25, 0.5 and 1 pound PLS/acre, respectively. In riparian zones, planting root stock of such species as American plum (*Prunus americana*), woods rose (*Rosa woodsii*), plains cottonwood (*Populus sargentii*), and willow (*Salix spp.*) may be considered. On non-topsoiled upland sites, a legume such as Ladak alfalfa at 1 pound PLS/acre can be included as a source of nitrogen for perennial grasses.

Timing of seeding is an important aspect of the revegetation process. For upland and riparian areas on the Colorado Front Range, the suitable timing for seeding is from October through May. The most favorable time to plant non-irrigated areas is during the fall, so that seed can take advantage of winter and spring moisture. Seed should not be planted if the soil is frozen, snow covered, or wet.

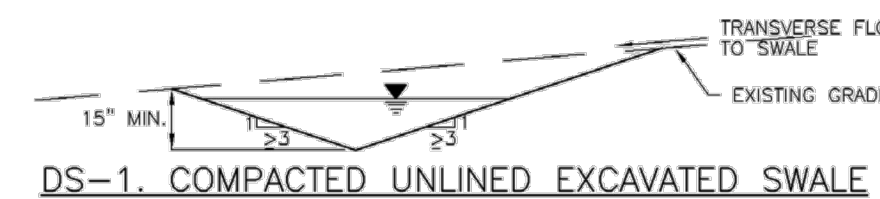
Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-2 for appropriate seeding dates.

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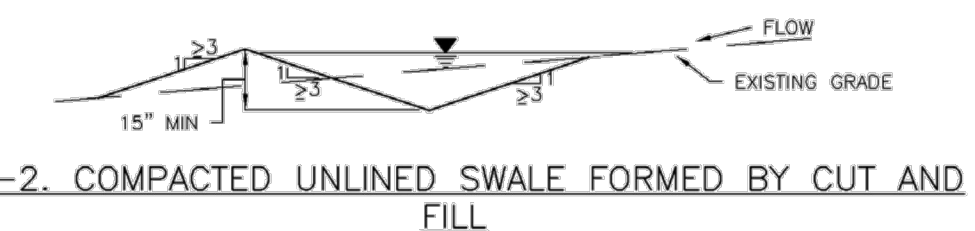
### Earth Dikes and Drainage Swales (ED/DS) EC-10



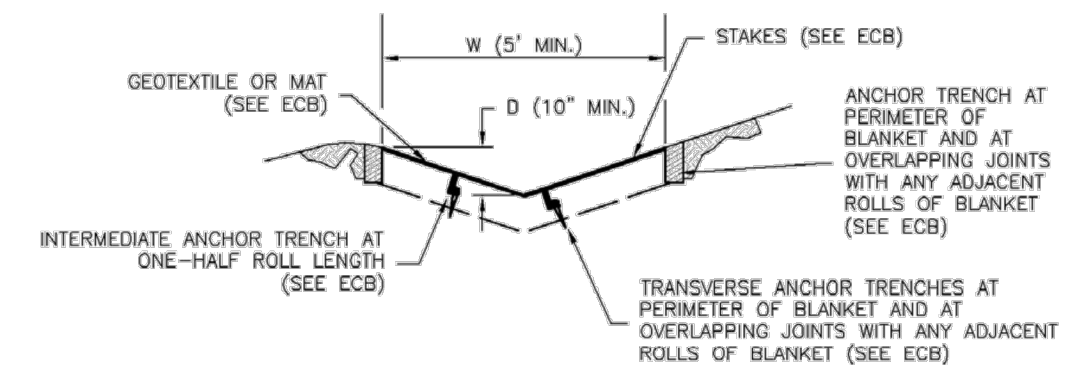
ED-1. COMPACTED UNLINED EARTH DIKE FORMED BY BERM



DS-1. COMPACTED UNLINED EXCAVATED SWALE



DS-2. COMPACTED UNLINED SWALE FORMED BY CUT AND FILL



DS-3. ECB LINED SWALE (CUT AND FILL OR BERM)

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### EC-2 Temporary and Permanent Seeding (TS/PS)

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species* (Common name)	Growth Season*	Pounds of Pure Live Seed (PLS)/acre*	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Winter wheat	Cool	20-35	1 - 2
7. Winter barley	Cool	20-35	1 - 2
8. Winter rye	Cool	20-35	1 - 2
9. Triticale	Cool	25-40	1 - 2

\* Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.

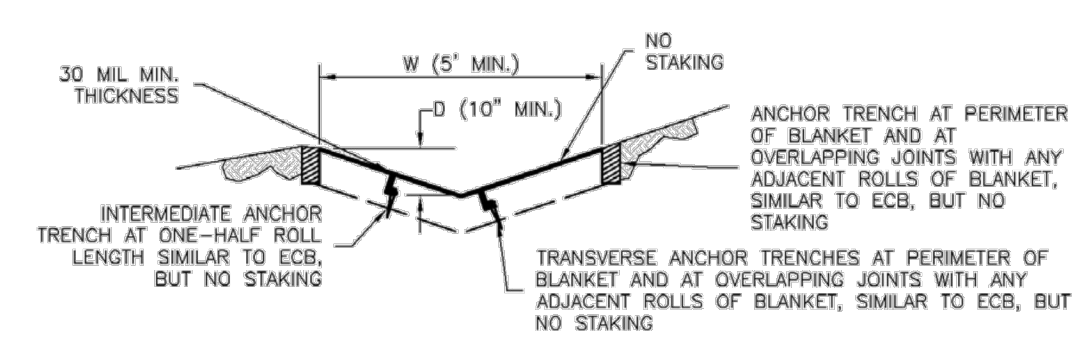
Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

† See Table TS/PS-2 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

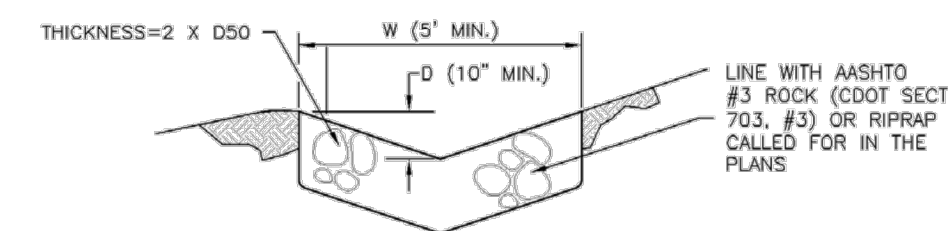
‡ Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

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



DS-4. SYNTHETIC LINED SWALE



DS-5. RIPRAP LINED SWALE

#### EARTH DIKE AND DRAINAGE SWALE INSTALLATION NOTES

- SEE SITE PLAN FOR:
  - LOCATION OF DIVERSION SWALE
  - TYPE OF SWALE (UNLINED, COMPACTED AND/OR LINED).
  - LENGTH OF EACH SWALE.
  - DEPTH, D, AND WIDTH, W DIMENSIONS.
  - FOR ECB/TRM LINED DITCH, SEE ECB DETAIL.
  - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, D50.
- SEE DRAINAGE PLANS FOR DETAILS OF PERMANENT CONVEYANCE FACILITIES AND/OR DIVERSION SWALES EXCEEDING 2-YEAR FLOW RATE OR 10 CFS.
- EARTH DIKES AND SWALES INDICATED ON SWMP PLAN SHALL BE INSTALLED PRIOR TO LAND-DISTURBING ACTIVITIES IN PROXIMITY.
- EMBANKMENT IS TO BE COMPACTED TO 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D1558.
- SWALES ARE TO DRAIN TO A SEDIMENT CONTROL BMP.
- FOR LINED DITCHES, INSTALLATION OF ECB/TRM SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
- WHEN CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION SWALE, INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12 INCHES.

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### Temporary and Permanent Seeding (TS/PS) EC-2

Table TS/PS-2. Seeding Dates for Annual and Perennial Grasses

Seeding Dates	Annual Grasses (Numbers in table reference species in Table TS/PS-1)		Perennial Grasses	
	Warm	Cool	Warm	Cool
January 1-March 15			✓	✓
March 16-April 30		1,2,3	✓	✓
May 1-May 15			✓	
May 16-June 30	5			
July 1-July 15	5			
July 16-August 31				
September 1-September 30		6, 7, 8, 9		
October 1-December 31			✓	✓

#### Mulch

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the USDCM Volume 2 *Revegetation* Chapter and Volume 3 *Mulching BMP Fact Sheet (EC-04)* for additional guidance.

#### Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

If a temporary annual seed was planted, the area should be reseeded with the desired perennial mix when there will be no further work in the area. To minimize competition between annual and perennial species, the annual mix needs time to mature and die before seeding the perennial mix. To increase success of the perennial mix, it should be seeded during the appropriate seeding dates the second year after the temporary annual mix was seeded. Alternatively, if this timeline is not feasible, the annual mix seed heads should be removed and then the area seeded with the perennial mix.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may also be necessary.

Protect seeded areas from construction equipment and vehicle access.

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

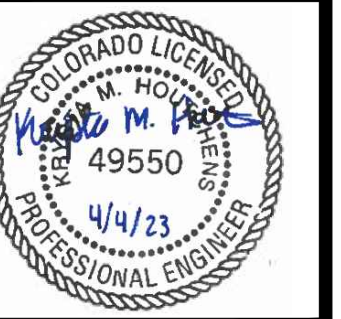
#### EARTH DIKE AND DRAINAGE SWALE MAINTENANCE NOTES

- 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.
- SWALES SHALL REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION; IF APPROVED BY LOCAL JURISDICTION, SWALES MAY BE LEFT IN PLACE.
- WHEN A SWALE IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF COLORADO SPRINGS, COLORADO, NOT AVAILABLE IN AUTOCAD)

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

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Des Moines, IA 50309  
P: 888-458-6646

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KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISIONS	DATE	REVISION DESCRIPTION
1	08/19/22	1ST REVIEW COMMENTS
2	01/06/23	2ND REVIEW COMMENTS
3	04/05/23	3RD REVIEW COMMENTS

DATE: 03-31-2023

SHEET NUMBER:

C3.6  
14 OF 42

PCD FILE NO. PPR-2225

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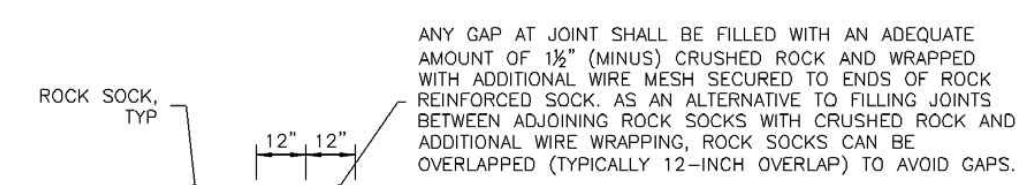
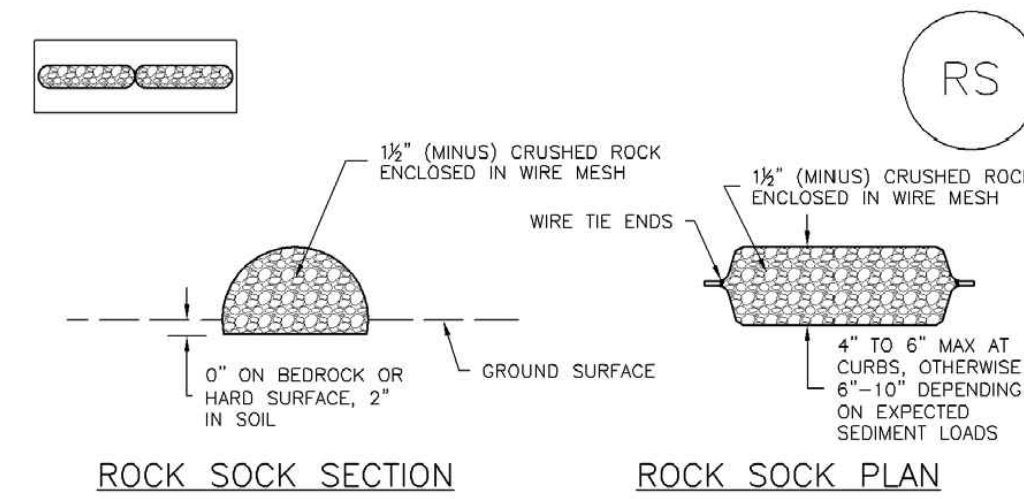
PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN

SC-8

Sediment Trap (ST)

### SC-5 Rock Sock (RS)



GRADATION TABLE	
SIEVE SIZE	MASS PERCENT PASSING SQUARE MESH SIEVES
NO. 4	
2"	100
1 1/2"	90 - 100
1"	20 - 55
3/4"	0 - 15
3/8"	0 - 5

- ROCK SOCK INSTALLATION NOTES**
- SEE PLAN VIEW FOR: -LOCATION(S) OF ROCK SOCKS.
  - CRUSHED ROCK SHALL BE 1 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1 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 "HOG 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**

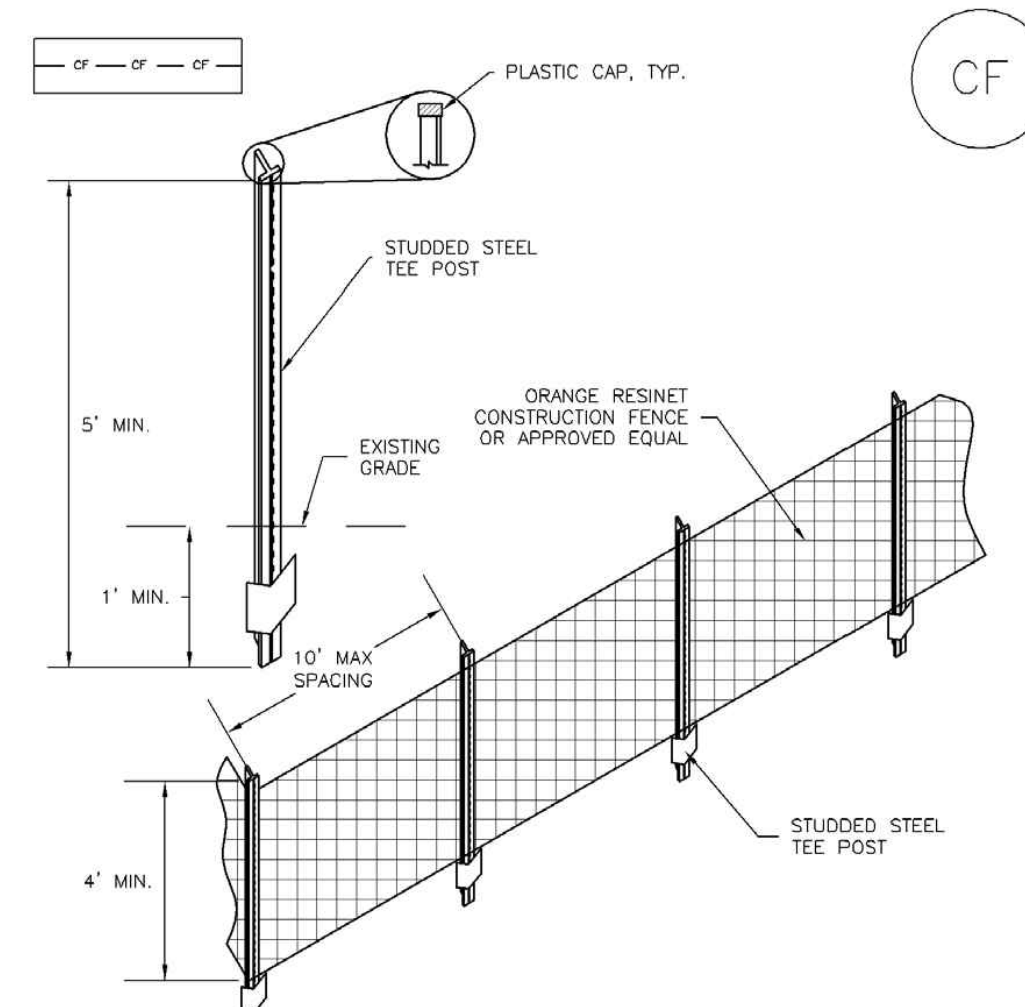
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### Rock Sock (RS) SC-5

- 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 SEDIMENTS IS APPROXIMATELY 1/2 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 UDFCD 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. UDFCD 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.

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### SM-3 Construction Fence (CF)



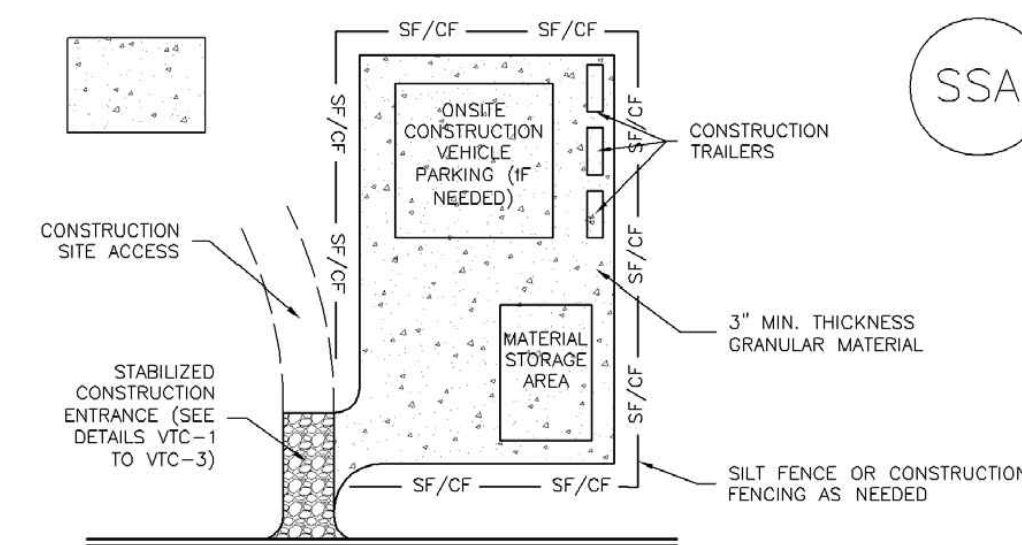
**CF-1. PLASTIC MESH CONSTRUCTION FENCE**

- CONSTRUCTION FENCE INSTALLATION NOTES**
- SEE PLAN VIEW FOR: -LOCATION OF CONSTRUCTION FENCE.
  - CONSTRUCTION FENCE SHOWN SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
  - CONSTRUCTION FENCE SHALL BE COMPOSED OF ORANGE, CONTRACTOR-GRADE MATERIAL THAT IS AT LEAST 4" HIGH. METAL POSTS SHOULD HAVE A PLASTIC CAP FOR SAFETY.
  - STUDDED STEEL TEE POSTS SHALL BE UTILIZED TO SUPPORT THE CONSTRUCTION FENCE. MAXIMUM SPACING FOR STEEL TEE POSTS SHALL BE 10'.
  - CONSTRUCTION FENCE SHALL BE SECURELY FASTENED TO THE TOP, MIDDLE, AND BOTTOM OF EACH POST.
- CONSTRUCTION FENCE 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.
  - CONSTRUCTION FENCE SHALL BE REPAIRED OR REPLACED WHEN THERE ARE SIGNS OF DAMAGE SUCH AS RIPS OR SAGS. CONSTRUCTION FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
  - WHEN CONSTRUCTION FENCES ARE REMOVED, ALL DISTURBED AREAS ASSOCIATED WITH THE INSTALLATION, MAINTENANCE, AND/OR REMOVAL OF THE FENCE SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.
- (DETAILS ADAPTED FROM TOWN OF PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)

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### Construction Fence (CF) SM-3

### Stabilized Staging Area (SSA) SM-6

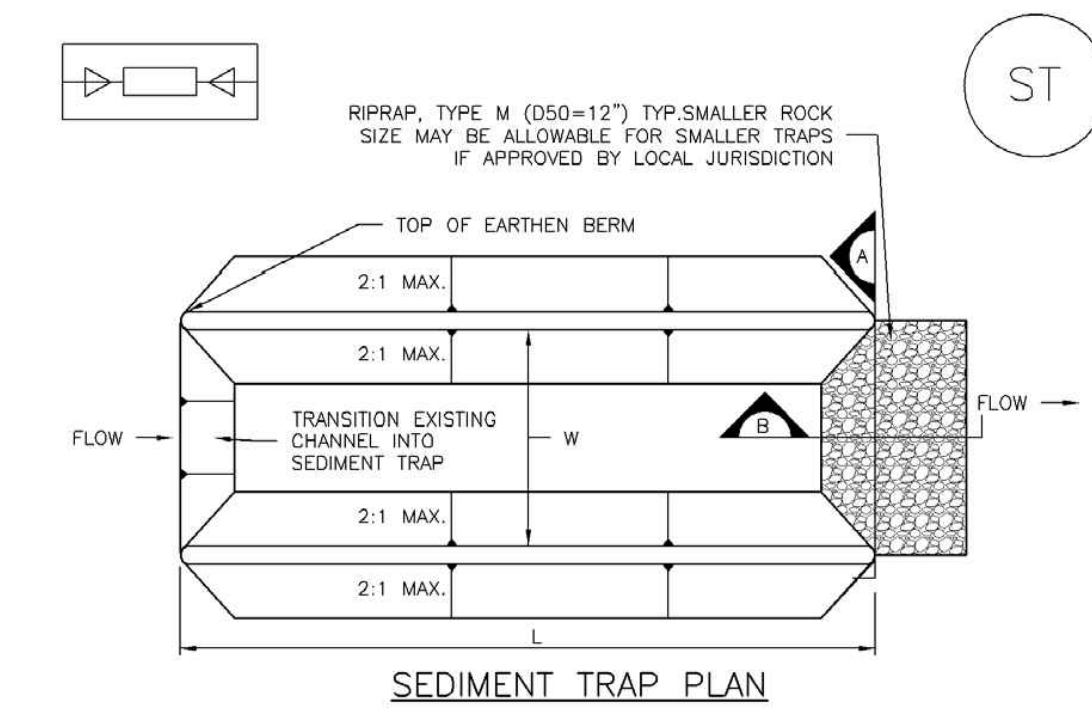


**SSA-1. STABILIZED STAGING AREA**

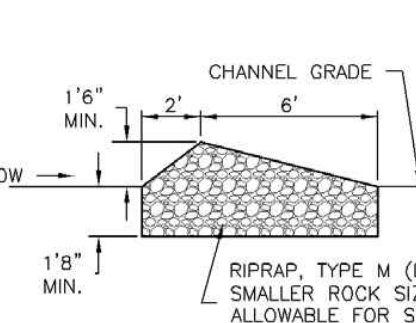
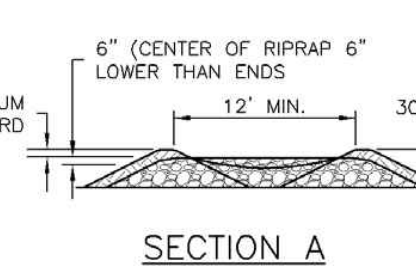
- STABILIZED STAGING AREA INSTALLATION NOTES**
- SEE PLAN VIEW FOR: -LOCATION OF STAGING AREA(S). -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
  - STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER 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.
- (DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

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### Stabilized Staging Area (SSA) SM-6



**SEDIMENT TRAP PLAN**



**SECTION B ST-1. SEDIMENT TRAP**

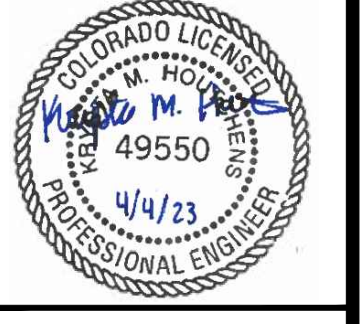
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### Sediment Trap (ST) SC-8

- SEDIMENT TRAP INSTALLATION NOTES**
- SEE PLAN VIEW FOR: -LOCATION, LENGTH AND WIDTH OF SEDIMENT TRAP.
  - ONLY USE FOR DRAINAGE AREAS LESS THAN 1 ACRE.
  - SEDIMENT TRAPS SHALL BE INSTALLED PRIOR TO ANY UPGRADED LAND-DISTURBING ACTIVITIES.
  - 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.
  - 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.
  - THE TOP OF THE EARTHEN BERM SHALL BE A MINIMUM OF 6" HIGHER THAN THE TOP OF THE RIPRAP OUTLET STRUCTURE.
  - 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**
- 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.
  - REMOVE SEDIMENT ACCUMULATED IN TRAP AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP. TYPICALLY WHEN THE SEDIMENT DEPTH REACHES 1/2 THE HEIGHT OF THE RIPRAP OUTLET.
  - SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
  - 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.

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3801 E. Florida Avenue, Suite 425  
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1459 Grand Ave  
Des Moines, IA 50309  
P: 888-458-6646

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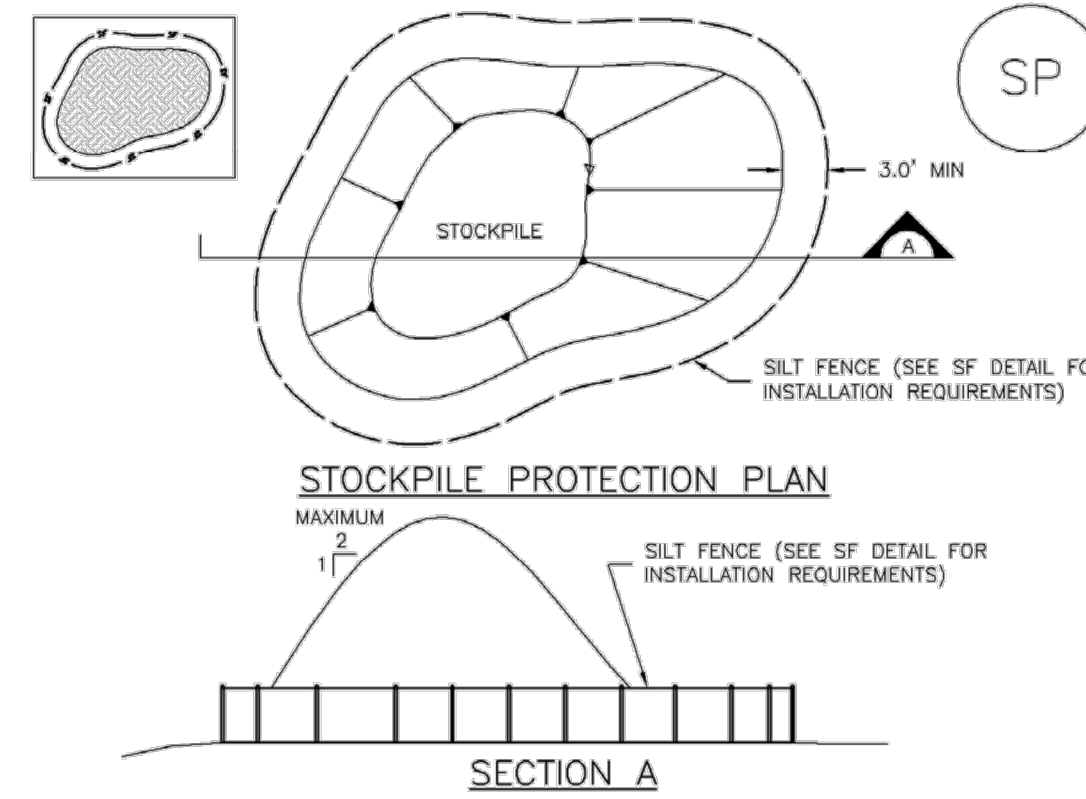
PART OF THE SOUTHEAST 1/4 OF SECTION 11, TOWNSHIP 15 SOUTH, RANGE 66  
WEST OF THE SIXTH PRINCIPAL MERIDIAN,  
COUNTY OF EL PASO, STATE OF COLORADO

## MAJOR SITE DEVELOPMENT PLAN

### MM-2 Stockpile Management (SM)

When the stockpile is no longer needed, properly dispose of excess materials and revegetate or otherwise stabilize the ground surface where the stockpile was located.

### Stockpile Management (SP)



SP-1. STOCKPILE PROTECTION

#### STOCKPILE PROTECTION INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATION OF STOCKPILES.
  - TYPE OF STOCKPILE PROTECTION.
- INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
- STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS. SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).
- FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADE CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

#### STOCKPILE PROTECTION 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.

#### STOCKPILE PROTECTION MAINTENANCE NOTES

- IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
- STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE STOCKPILE HAS BEEN USED.

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

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

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Urban Storm Drainage Criteria Manual Volume 3 SP-3

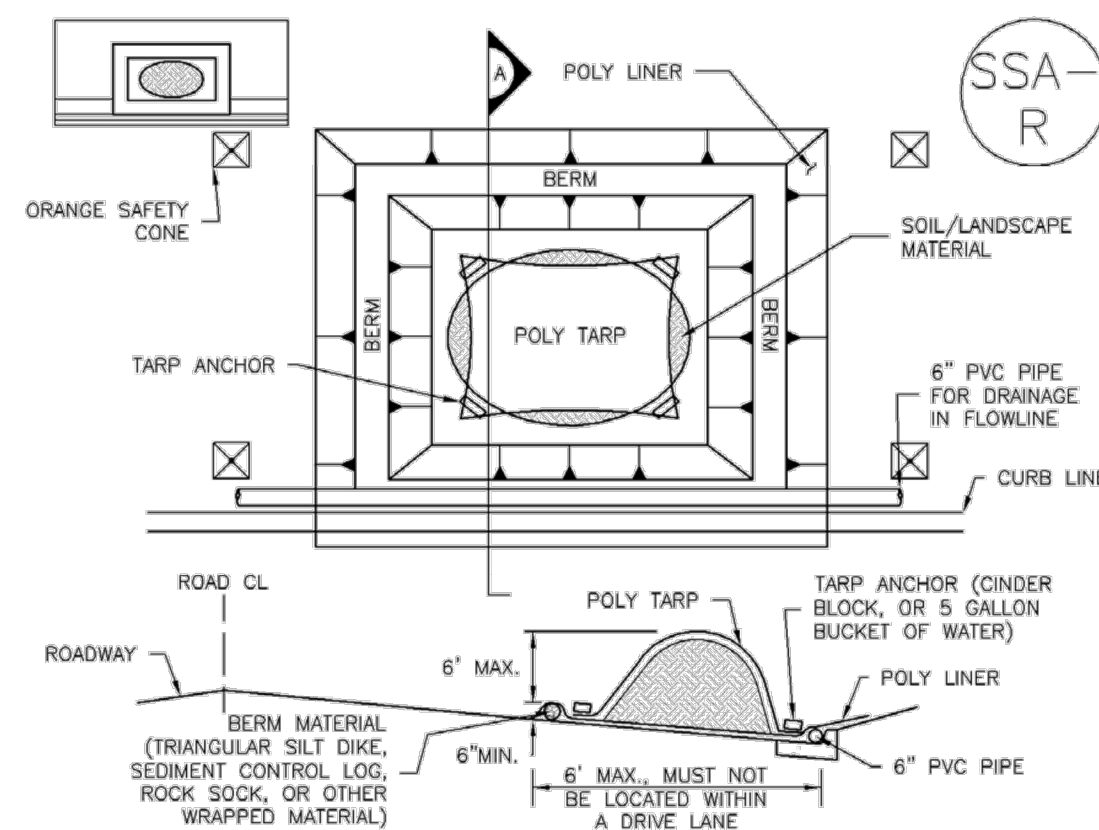
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### Stockpile Management (SP)

### MM-2

### MM-2

### Stockpile Management (SM)



SP-2. MATERIALS STAGING IN ROADWAY

#### MATERIALS STAGING IN ROADWAYS INSTALLATION NOTES

- SEE PLAN VIEW FOR:
  - LOCATION OF MATERIAL STAGING AREA(S).
  - CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.
- FEATURE MUST BE INSTALLED PRIOR TO EXCAVATION, EARTHWORK OR DELIVERY OF MATERIALS.
- MATERIALS MUST BE STATIONED ON THE POLY LINER. ANY INCIDENTAL MATERIALS DEPOSITED ON PAVED SECTION OR ALONG CURB LINE MUST BE CLEANED UP PROMPTLY.
- POLY LINER AND TARP COVER SHOULD BE OF SIGNIFICANT THICKNESS TO PREVENT DAMAGE OR LOSS OF INTEGRITY.
- SAND BAGS MAY BE SUBSTITUTED TO ANCHOR THE COVER TARP OR PROVIDE BERMING UNDER THE BASE LINER.
- FEATURE IS NOT INTENDED FOR USE WITH WET MATERIAL THAT WILL BE DRAINING AND/OR SPREADING OUT ON THE POLY LINER OR FOR DEMOLITION MATERIALS.
- THIS FEATURE CAN BE USED FOR:
  - UTILITY REPAIRS.
  - WHEN OTHER STAGING LOCATIONS AND OPTIONS ARE LIMITED.
  - OTHER LIMITED APPLICATION AND SHORT DURATION STAGING.

#### MATERIALS STAGING IN ROADWAY MAINTENANCE NOTES

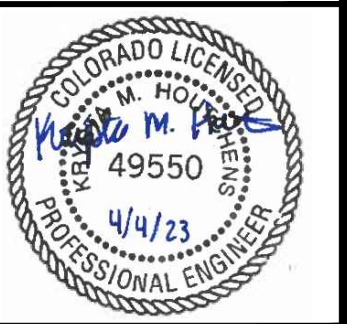
- INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS 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.
- INSPECT PVC PIPE ALONG CURB LINE FOR CLOGGING AND DEBRIS. REMOVE OBSTRUCTIONS PROMPTLY.
- CLEAN MATERIAL FROM PAVED SURFACES BY SWEEPING OR VACUUMING.

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

(DETAILS ADAPTED FROM AURORA, COLORADO)

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1459 Grand Ave  
Des Moines, IA 50309  
P: 888-458-6646

2232 - EL PASO, COLORADO  
SECURITY BLVD. AND MAIN ST.  
EROSION AND STORMWATER CONTROL DETAILS

KG PROJECT TEAM:  
RDM:  
SDM:  
CPM:

REVISION	DATE	REVISION DESCRIPTION
1	08/19/22	1ST REVIEW COMMENTS
2	01/06/23	2ND REVIEW COMMENTS
3	04/05/23	3RD REVIEW COMMENTS

DATE: 03-31-2023

SHEET NUMBER: C3.8  
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