

FINAL DRAINAGE REPORT

FOR

LOT 3 PADMARK BUSINESS PARK FILING NO. 1

(LOT 44 OF CLAREMONT BUSINESS PARK FILING NO. 2)
EL PASO COUNTY, COLORADO

JUNE 2018

Prepared for:

Hammers Construction, Inc.
1411 Woolsey Heights
Colorado Springs, CO 80915

Prepared by:



20 Boulder Crescent, Suite 110
Colorado Springs, CO 80903
(719) 955-5485

Project #44-031
PCD Project #PPR-18-000

PPR-18-034

**FINAL DRAINAGE REPORT
FOR
LOT 3 PADMARK BUSINESS PARK FILING NO. 1
(Lot 44 of Claremont Business Park Filing No. 2)**

DRAINAGE PLAN STATEMENTS

ENGINEERS STATEMENT

The attached drainage plan and report was prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

Virgil A. Sanchez, P.E. #37160
For and on Behalf of M&S Civil Consultants, Inc

DEVELOPER'S STATEMENT

I, the developer have read and will comply with all the requirements specified in this drainage report and plan.

BY: _____

TITLE: _____

DATE: _____

ADDRESS: Hammers Construction, LLC
1411 Woolsey Heights
Colorado Springs, CO80915

EL PASO COUNTY'S STATEMENT

Filed in accordance with the requirements of El Paso County Land Development Code, Drainage Criteria Manual Volumes 1 and 2, and the Engineering Manual, as amended.

BY: _____ DATE: _____
Jennifer Irvine, P.E.
County Engineer

CONDITIONS:

FINAL DRAINAGE REPORT
FOR
LOT 3 PADMARK BUSINESS PARK FILING NO. 1
(Lot 44 of Claremont Business Park Filing No. 2)

TABLE OF CONTENTS

PURPOSE	4
GENERAL LOCATION AND DESCRIPTION	4
SOILS	4
HYDROLOGIC CALCULATIONS	5
HYDRAULIC CALCULATIONS	5
FLOOD PLAIN STATEMENT	5
DRAINAGE CRITERIA	5
FOUR STEP PROCESS	5
EXISTING DRAINAGE CONDITIONS	6
PROPOSED DRAINAGE CONDITIONS	6
WATER QUALITY PROVISIONS AND MAINTENANCE	7
EROSION CONTROL	7
CONSTRUCTION COST OPINION	7
DRAINAGE AND BRIDGE FEES	8
SUMMARY	8
REFERENCES	9

APPENDIX

Vicinity Map
Soils Map
FIRM Panel W/Revised LOMR
Hydrologic Calculations
Hydraulic Calculations/SFB WQCV Calculations
Proposed Drainage Map
Existing Drainage Map
Grading Erosion Control Plan

FINAL DRAINAGE REPORT
FOR
LOT 3 PADMARK BUSINESS PARK FILING NO. 1
(Lot 44 of Claremont Business Park Filing No. 2)

PURPOSE

This document is intended to serve as the Final Drainage Report for Lot 3 PADMARK BUSINESS PARK FILING NO. 1 formerly (Lot 44 of Claremont Business Park Filing No. 2). The purpose of this document is to identify and analyze the on and offsite drainage patterns and to ensure that post development runoff is routed through the site safely and in a manner that satisfies the requirements set forth by the El Paso County Drainage Criteria Manual. The proposed principal use for Lot 3 consists of all infrastructures typically associated with commercial building structures. The majority of the site will consist of asphalt, curb, lighting, a storm water quality facility and landscaping. The proposed use is a permissible use within the Commercial Service zoning criteria.

GENERAL LOCATION AND DESCRIPTION

PADMARK BUSINESS PARK FILING NO. 1 is located in the northeast quarter of the northeast quarter of Section 8, Township 14 South, Range 65 West of the 6th P.M. in El Paso County, Colorado. The site is bound on the northeast by a vacant parcel of land (Tract B, Claremont Commercial Sub No. 1). The site is bound on the northwest by the East Fork Sand Creek Channel. The property is bound to the southwest by an existing development of an office/warehouse/storage yard (Lot 2 Padmark Business Park). An existing access road runs along the eastern property boundary of Lot 2 adjacent to Meadowbrook Parkway, and currently provides access to both Lot 1, 2 & 3. The site lies within the Sand Creek Drainage Basin. Flows from this site are tributary to Sand Creek.

Lot 3 of Padmark Business Park is presently undeveloped and consists of 0.870 acres. Vegetation is sparse, consisting of native grasses. The site had experienced overlot grading activities within the last ten years. Existing site terrain generally slopes from northeast to southwest at grade rates that vary between 2% and 12%.

The PADMARK BUSINESS PARK FILING NO. 1 site is currently zoned "CS" and the proposed principal uses for Lot 3 will be an office/warehouse/light manufacturing. The majority of Lot 3 shall consist of warehouse building, asphalt, curb, lighting, a storm water quality facility and landscaping. A sand filter basin is proposed within the southwest portion of the lot and will function to provide water quality treatment for the site. Flows discharge from the sand filter basin through an outlet structure and eventually outfall directly to East Fork Sand Creek.

SOILS

Soils for this project are delineated by the map in the appendix as Ellicott Loamy Course Sand (28) and characterized as Hydrologic Soil Types "A". Soils in the study area are shown as mapped by S.C.S. in the "Soils Survey of El Paso County Area". Vegetation is sparse, consisting of native grasses and weeds.

HYDROLOGIC CALCULATIONS

Hydrologic calculations were performed using the El Paso County and City of Colorado Springs Storm Drainage Design Criteria manual and where applicable the Urban Storm Drainage Criteria Manual. The Rational Method was used to estimate stormwater runoff anticipated from design storms with 5-year and 100-year recurrence intervals.

HYDRAULIC CALCULATIONS

Hydraulic calculations were estimated using the Manning's Formula and the methods described in the El Paso County and City of Colorado Springs Storm Drainage Design Criteria manual. The relevant data sheets are included in the appendix of this report.

FLOODPLAIN STATEMENT

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel No. 08041C0756 F and Panel No. 08041C0752 F, effective date March 17, 1997 and revised to reflect LOMR, 06-08-B137P, dated December 13, 2006, the site lies adjacent to and is NOT impacted by a Zone "AE". An annotated FIRM Panel is included in the Appendix. The approximate BFE of the East Fork Creek adjacent to the proposed pond is approximately 6358. The proposed sand filter pond and emergency spillway is designed above the East Sand Creek BFE.

DRAINAGE CRITERIA

This drainage analysis has been prepared in accordance with the current City of Colorado Springs/El Paso County Drainage Criteria Manual. Calculations were performed to determine runoff quantities for the 5-year and 100-year frequency storms for developed conditions using the Rational Method as required for basins having areas less than 100 acres.

FOUR STEP PROCESS

- Step1 Employ Runoff Reduction Practices** – Approx. 0.116 ac of the proposed developed 0.870 ac of ground within the project is being set aside for Open Space/WQ facility. Roof drains will be directed to landscaped areas if possible to minimize direct connection of impervious surfaces.
- Step 2 Stabilize Drainageways** – The site is directly adjacent to the Sand Creek Channel. The "Final Drainage Report for Claremont Business Park Filing No. 2", dated November 2006, by Matrix Design Group, Inc. (hence for referred to as "MDDP") has been designed to discharge developed flows via an existing public 48" RCP directly to the East Fork Sand Creek. The existing public 48" RCP is located south of Lot 44 Claremont Business Park Filing No. 2 as highlighted on the existing drainage map. Lot 3 proposes a Sand Filter Water Quality Facility before ultimately discharging to the existing public 48" RCP pipe. The outlet underdrain has been designed to drain the pond in a peak event within 12 hours, therefore is not anticipated to have negative effects on downstream drainageways.
- Step 3 Provide Water Quality Capture Volume** – A Sand Filter Basin water quality facility is proposed to provide WQCV.
- Step4 Consider Need for Industrial and Commercial BMP's** – This submittal provides a final grading and erosion control plans with BMPs in place. The proposed project will use silt fence, a vehicle tracking control pad, concrete washout area, mulching and reseeding to mitigate the potential for erosion across the site.

EXISTING DRAINAGE CONDITIONS

The Lot 3 PADMARK BUSINESS PARK FILING NO. 1 site consists of 0.870 acres and is situated east of the East Fork Reach of the Sand Creek Watershed. This area was previously studied in the "Final Drainage Report for Claremont Business Park Filing No. 2", dated November 2006, by Matrix Design Group, Inc. (hence for referred to as "MDDP") and was included within Sub-basin B5 (Lot 44). The MDDP calculations indicate that the total tributary area of Sub-basin B5 (4.0acres) would produce runoff of approximately $Q_5=12.0$ cfs and $Q_{100}=24.1$ cfs. The MDDP illustrated that the basin watershed would drain and be collected by a 10' Type R sump inlet which was proposed to be located at the southwest corner of the Lot 44. Flows from the sump inlet would be carried to the existing public 48" storm sewer before outfalling into East Fork Sand Creek.

In the existing condition, Lot 1 of Padmark Business Park is currently developed, and Lot 2 is currently under construction. The "Final Drainage Report for Padmark Business Park Filing No. 1", dated June 2017, by M & S Civil Consultants, Inc (hence for referred to as "FDR") details the subdivision of Lot 44 of Claremont Business Park Filing No. 2 into three lots and the development of Lot 1 within that subdivision. An existing access road runs along the eastern property boundary of Lot 2, adjacent to Meadowbrook Parkway, and currently provides access to Lots 1, 2 and 3 of the Padmark Business Park. Treated flows from Lots 1 & 2 are collected and discharged into an existing 30" RCP pipe that connects to the existing public 48" storm sewer, outfalling into East Fork Sand Creek as determined by the MDDP and implemented in the FDR. During development of Lot 1, the existing 30" RCP pipe was installed northeast through Lot 1 and capped at the intersecting boundary to Lot 2. During development of Lot 2, the existing 30" RCP pipe was connected to then extended to the WQ outfall manhole, then an 18" RCP was installed continually along the northwest property line of Lot 2 and the 18" RCP was capped for future connection for Lot 3. This provides a drainage connection upon the development of Lot 3.

PROPOSED DRAINAGE CHARACTERISTICS

General Concept Drainage Discussion

Runoff tributary to the southwestern boundary and sand filter basin of Lot 3 of PADMARK BUSINESS PARK FILING NO. 1 site is produced within Basin A (See Proposed Drainage Map in the appendix).

Runoff collected (Basin A) and conveyed to the water quality facility (Design Point 1) is discharged from a proposed sand filter basin via a 2.91' X 2.91' CDOT outlet box and an 18" RCP to an inline system conveying all treated flows from Lot 3, 2 and 1 that ultimately outfalls to an existing public 48" storm sewer at the southwest corner of Lot 1. The proposed 18" RCP outlet pipe from the sand filter basin connects to a Type II manhole proposed at the southwest corner of Lot 3. The proposed Type II manhole connects with the existing 18" RCP was stubbed at the north end of Lot 2. The existing capped 18" RCP storm sewer along the west side of Lot 2 discharges to an existing Type II manhole at the southwest corner of Lot 2 and ties to an existing 30" RCP located at the southwest property boundary. An emergency overflow spillway section has been proposed in the event of blockage of the 2.91' X 2.91' CDOT inlet for Lot 3. All flows generated by Lot 3 Padmark Business Park will eventually be discharged to the existing public 48" storm sewer, outfalling into East Fork Sand Creek as determined by the MDDP. A detailed drainage discussion of each basin is presented below.

Detailed Drainage Discussion

Basin A, 0.78 acres, ($Q_5=3.3$ cfs, $Q_{100}=6.0$ cfs), consists of office/warehouse/light manufacturing building, asphalt paving, crushed asphalt, curb and gutter, and landscaping. Flows produced within the watershed

Identify that the outlet box is designed to capture the 100yr developed runoff. The inline storm system for the three lots is not just for conveyance of the treated WQCV.

are routed as surface runoff to DP1 where they are conveyed to the onsite sand filter basin for water quality.

There are no planned or required improvements to the Sand Creek Drainage Channel with the development of the Lot 3 PADMARK BUSINESS PARK FILING NO. 1.

WATER QUALITY PROVISIONS AND MAINTENANCE

The proposed Sand Filter Basin functions to provide water quality for runoff produced on the Lot 3 PADMARK BUSINESS PARK FILING NO. 1 site (see Proposed Drainage Map). Lot 44 of Claremont Business Park Filing No. 2 has been replatted in to (3) lots. Each of the 3 lots shall be and has been responsible for each respective generated runoff. This water quality pond for Lot 3 is designed to treat approx 0.78 (Basin A) ac up to the 100 yr event, and provide 915 cubic-feet of water quality storage. The water quality basin will be private and shall be maintained by the property owner. Access shall be granted to the owner and El Paso County for access and maintenance of the private WQCV facility. A private maintenance agreement document shall accompany the submittal.

The subject site was previously analyzed within the Final Drainage Report for Claremont Business Park Filing No. 2 prepared by Matrix Design Group approved April 24, 2006. Per Resolution 16-426 of the BOCC, on-site WQCV is required but on-site stormwater detention is not required per the FDR for Claremont Business Park Fil. 2, (See Appendix). The water quality volume required for the site has been determined using the guidelines set forth in the City of Colorado Springs/El Paso County Drainage Criteria Manual - Volume II. Refer to the water quality facility sizing calculations (UD-Detention Version 3.07 & UD-BMP Version 3.06) located within the appendix of this report.

EROSION CONTROL

It is the policy of the El Paso County that we submit a grading and erosion control plan with the drainage report. Proposed silt fence, vehicle traffic control, and concrete washout area are proposed as erosion control measures.

CONSTRUCTION COST OPINION

Private Drainage Facilities NON-Reimbursable:

Item	Description	Quantity	Unit Cost	Cost
1.	18" RCP	15 LF	\$40 /LF	\$600.00
2.	Type II Manhole (4' DIA)	1 EA	\$6,000 /EA	\$6,000.00
3.	WQ Sand Filter Basin	1 EA	\$6,000 /EA	\$6,000.00
4.	Rip Rap Protection	7 CY	\$60 /CY	\$420.00
5.	Spillway Protection (SC250 Mat)	94 SY	\$10 /SY	\$940.00
6.	Pond Outlet Structure	1 EA	\$5,000 /EA	\$5,000.00
Total \$				\$18,960.00

Revise. This is a proposed site development plan, not a replat.

DRAINAGE & BRIDGE FEES

The proposed replat of the Claremont Business Park Filing No. 2, Lot 44 into 3 commercial lots does not proposed a change to the zoning designation nor the impervious acreage, therefore no drainage fees are due.

M &S Civil Consultants, Inc. (M &S) cannot and does not guarantee the construction cost will not vary from these opinions of probable costs. These opinions represent our best judgment as design professionals familiar with the construction industry and this development in particular. The above is only an estimate of the facility cost and drainage basin fee amounts in 2018.

SUMMARY

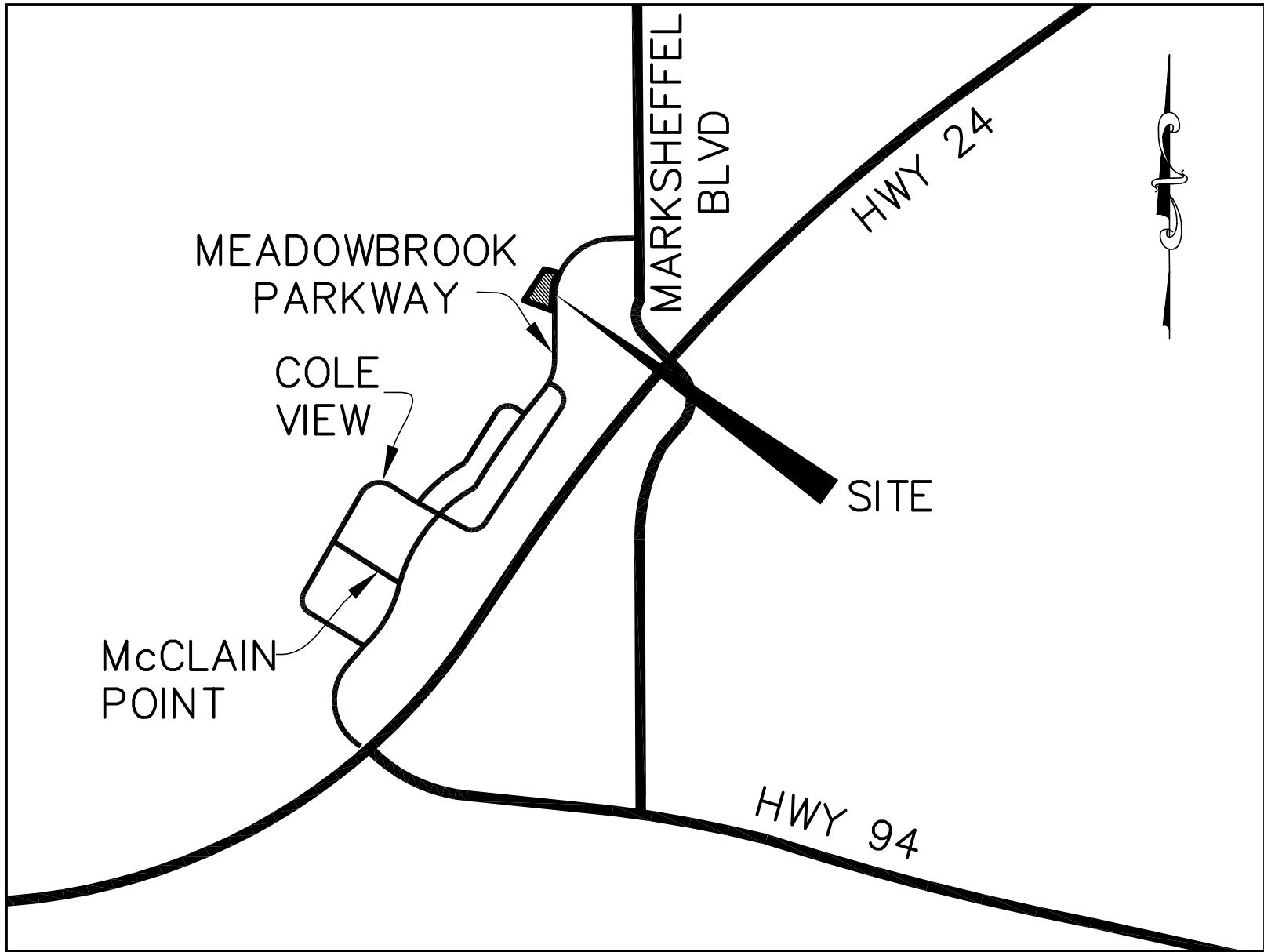
Development of Lot 3 PADMARK BUSINESS PARK FILING NO. 1 site will not adversely affect the surrounding development per this final drainage report with no negative impacts on surrounding developments and the East Fork Sand Creek channel. The proposed drainage facilities will adequately convey, detain and route runoff from the tributary onsite and existing offsite flows to the Sand Creek Drainage channel. All drainage facilities described herein and shown on the included drainage map are subject to change due to formal design considerations during the construction document preparation stage. Care will be taken to accommodate overland emergency flow routes on site and temporary drainage conditions. The development of Lot 3 PADMARK BUSINESS PARK FILING NO. 1, project shall not adversely affect adjacent or downstream property.

REFERENCES

- 1.) "El Paso County and City of Colorado Springs Drainage Criteria Manual".
- 2.) "Urban Storm Drainage Criteria Manual"
- 3.) SCS Soils Map for El Paso County.
- 4.) Flood Insurance Rate Map (FIRM), Federal Emergency Management Agency, Effective date March 17, 1997.
- 5.) "Final Drainage Report for Claremont Business Park Filing No. 2", dated November 2006, by Matrix Design Group, Inc.
- 6.) "Final Drainage Report for Padmark Business Park Filing No. 1", dated June 2017, by M & S Civil Consultants, Inc.

APPENDIX

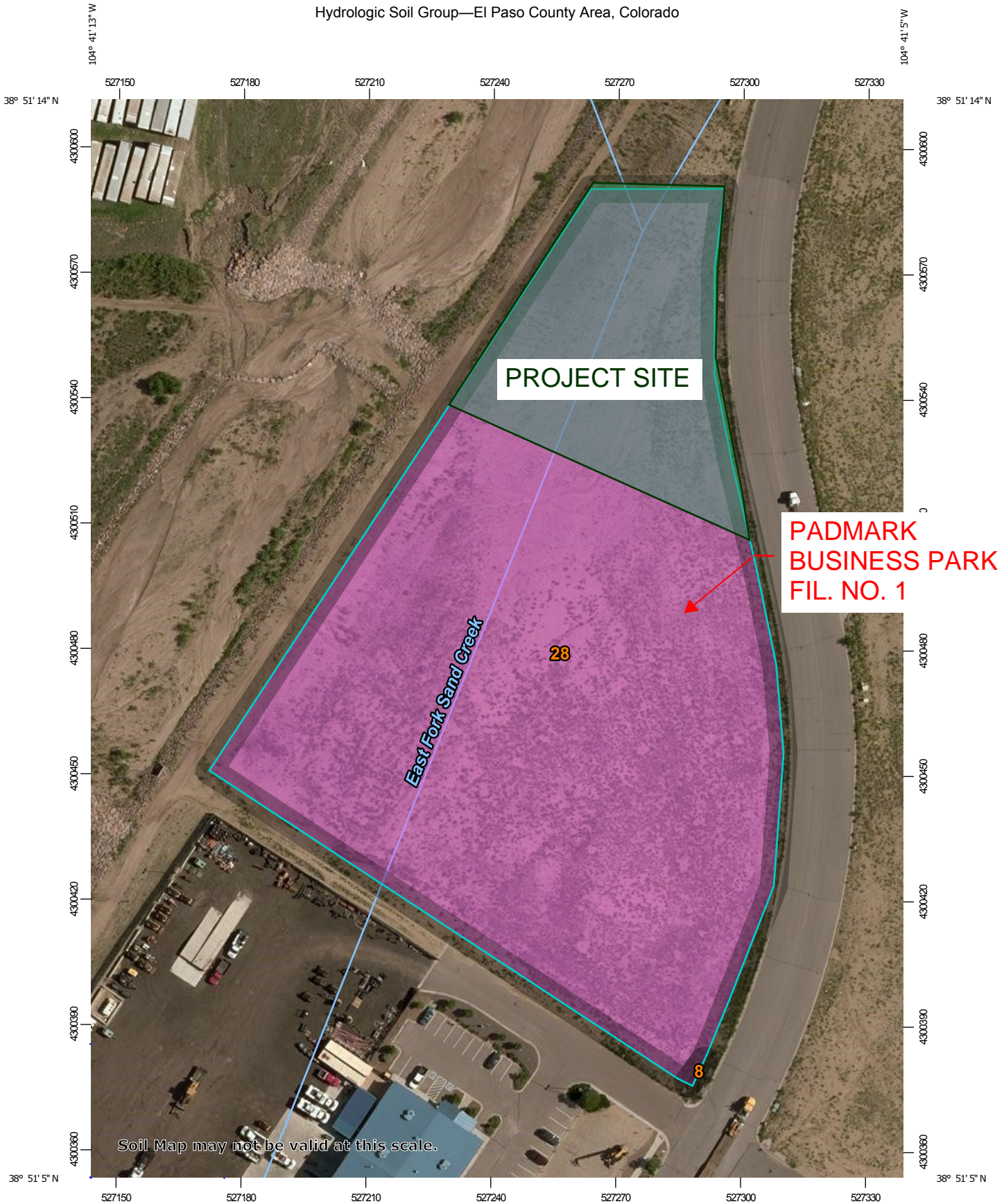
VICINITY MAP



VICINITY MAP
N.T.S.

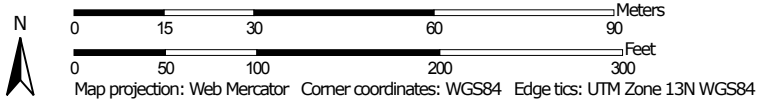
SOILS MAP

Hydrologic Soil Group—El Paso County Area, Colorado




Soil Map may not be valid at this scale.

Map Scale: 1:1,260 if printed on A portrait (8.5" x 11") sheet.



MAP LEGEND

Area of Interest (AOI)









 Area of Interest (AOI)

Soils

Soil Rating Polygons





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

Soil Rating Lines

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

Soil Rating Points






-  A
-  A/D
-  B
-  B/D

-  C
-  C/D
-  D
-  Not rated or not available


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: El Paso County Area, Colorado
 Survey Area Data: Version 15, Oct 10, 2017

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

Date(s) aerial images were photographed: Jun 3, 2014—Jun 17, 2014

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
8	Blakeland loamy sand, 1 to 9 percent slopes	A	0.0	0.0%
28	Ellicott loamy coarse sand, 0 to 5 percent slopes	A	4.2	100.0%
Totals for Area of Interest			4.2	100.0%

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

FIRM PANEL W/ REVISED LOMR



Federal Emergency Management Agency

Washington, D.C. 20472

NOV 13 2006

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

The Honorable Sallie Clark
Chair, El Paso County
Board of Commissioners
27 East Vermijo Avenue
Colorado Springs, CO 80903

IN REPLY REFER TO:

Case No.: 06-08-B137P
Follows Conditional
Case No.: 04-08-0469R
Community Name: El Paso County, CO
Community No.: 080059
Effective Date of
This Revision: **DEC 13 2006**

Dear Ms. Clark:

The Flood Insurance Study Report and Flood Insurance Rate Map for your community have been revised by this Letter of Map Revision (LOMR). Please use the enclosed annotated map panel(s) revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals issued in your community.

Additional documents are enclosed which provide information regarding this LOMR. Please see the List of Enclosures below to determine which documents are included. Other attachments specific to this request may be included as referenced in the Determination Document. If you have any questions regarding floodplain management regulations for your community or the National Flood Insurance Program (NFIP) in general, please contact the Consultation Coordination Officer for your community. If you have any technical questions regarding this LOMR, please contact the Director, Federal Insurance and Mitigation Division of the Department of Homeland Security's Federal Emergency Management Agency (FEMA) in Denver, Colorado, at (303) 235-4830, or the FEMA Map Assistance Center, toll free, at 1-877-336-2627 (1-877-FEMA MAP). Additional information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Sincerely,

Kevin C. Long, CFM, Project Engineer
Engineering Management Section
Mitigation Division

For: William R. Blanton Jr., CFM, Chief
Engineering Management Section
Mitigation Division

List of Enclosures:

Letter of Map Revision Determination Document
Annotated Flood Insurance Rate Map
Annotated Flood Insurance Study Report

cc: Mr. Kevin Stilson, P.E., CFM
Regional Floodplain Administrator

████████████████████
Central Marksheffel Business District

████████████████████
Matrix Design Group



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT

COMMUNITY AND REVISION INFORMATION		PROJECT DESCRIPTION	BASIS OF REQUEST
COMMUNITY	El Paso County Colorado (Unincorporated Areas)	CHANNELIZATION	FLOODWAY HYDRAULIC ANALYSIS NEW TOPOGRAPHIC DATA
	COMMUNITY NO.: 080059		
IDENTIFIER	Marksheffel Business District	APPROXIMATE LATITUDE & LONGITUDE: 38.863, -104.674 SOURCE: USGS QUADRANGLE DATUM: NAD 27	
ANNOTATED MAPPING ENCLOSURES		ANNOTATED STUDY ENCLOSURES	
TYPE: FIRM*	NO.: 08041C0752F DATE: March 17, 1997	DATE OF EFFECTIVE FLOOD INSURANCE STUDY: August 23, 1999 PROFILE: 212P FLOODWAY DATA TABLE 5	
TYPE: FIRM*	NO.: 08041C0756F DATE: March 17, 1997		

Enclosures reflect changes to flooding sources affected by this revision.

* FIRM - Flood Insurance Rate Map; ** FBFM - Flood Boundary and Floodway Map; *** FHBM - Flood Hazard Boundary Map

FLOODING SOURCE(S) & REVISED REACH(ES)

East Fork Sand Creek - from approximately 5,250 feet downstream to just upstream of Marksheffel Road

SUMMARY OF REVISIONS

Flooding Source	Effective Flooding	Revised Flooding	Increases	Decreases
East Fork Sand Creek	Floodway	Floodway	YES	YES
	Zone AE	Zone AE	YES	YES
	BFEs	BFEs	NONE	YES
	Zone X (Shaded)	Zone X (Unshaded)	NONE	YES

* BFEs - Base Flood Elevations

DETERMINATION

This document provides the determination from the Department of Homeland Security's Federal Emergency Management Agency (FEMA) regarding a request for a Letter of Map Revision (LOMR) for the area described above. Using the information submitted, we have determined that a revision to the flood hazards depicted in the Flood Insurance Study (FIS) report and/or National Flood Insurance Program (NFIP) map is warranted. This document revises the effective NFIP map, as indicated in the attached documentation. Please use the enclosed annotated map panels revised by this LOMR for floodplain management purposes and for all flood insurance policies and renewals in your community.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Kevin C. Long
Kevin C. Long, CFM, Project Engineer
Engineering Management Section
Mitigation Division



Federal Emergency Management Agency

Washington, D.C. 20472

LETTER OF MAP REVISION DETERMINATION DOCUMENT (CONTINUED)

COMMUNITY INFORMATION

APPLICABLE NFIP REGULATIONS/COMMUNITY OBLIGATION

We have made this determination pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65. Pursuant to Section 1361 of the National Flood Insurance Act of 1968, as amended, communities participating in the NFIP are required to adopt and enforce floodplain management regulations that meet or exceed NFIP criteria. These criteria, including adoption of the FIS report and FIRM, and the modifications made by this LOMR, are the minimum requirements for continued NFIP participation and do not supersede more stringent State/Commonwealth or local requirements to which the regulations apply.

We provide the floodway designation to your community as a tool to regulate floodplain development. Therefore, the floodway revision we have described in this letter, while acceptable to us, must also be acceptable to your community and adopted by appropriate community action, as specified in Paragraph 60.3(d) of the NFIP regulations.

NFIP regulations Subparagraph 60.3(b)(7) requires communities to ensure that the flood-carrying capacity within the altered or relocated portion of any watercourse is maintained. This provision is incorporated into your community's existing floodplain management ordinances; therefore, responsibility for maintenance of the altered or relocated watercourse, including any related appurtenances such as bridges, culverts, and other drainage structures, rests with your community. We may request that your community submit a description and schedule of maintenance activities necessary to ensure this requirement.

COMMUNITY REMINDERS

We based this determination on the 1-percent-annual-chance flood discharges computed in the FIS for your community without considering subsequent changes in watershed characteristics that could increase flood discharges. Future development of projects upstream could cause increased flood discharges, which could cause increased flood hazards. A comprehensive restudy of your community's flood hazards would consider the cumulative effects of development on flood discharges subsequent to the publication of the FIS report for your community and could, therefore, establish greater flood hazards in this area.

Your community must regulate all proposed floodplain development and ensure that permits required by Federal and/or State/Commonwealth law have been obtained. State/Commonwealth or community officials, based on knowledge of local conditions and in the interest of safety, may set higher standards for construction or may limit development in floodplain areas. If your State/Commonwealth or community has adopted more restrictive or comprehensive floodplain management criteria, those criteria take precedence over the minimum NFIP requirements.

We will not print and distribute this LOMR to primary users, such as local insurance agents or mortgage lenders; instead, the community will serve as a repository for the new data. We encourage you to disseminate the information in this LOMR by preparing a news release for publication in your community's newspaper that describes the revision and explains how your community will provide the data and help interpret the NFIP maps. In that way, interested persons, such as property owners, insurance agents, and mortgage lenders, can benefit from the information.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Kevin C. Long

Kevin C. Long, CFM, Project Engineer
Engineering Management Section
Mitigation Division



Federal Emergency Management Agency
Washington, D.C. 20472

**LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)**

We have designated a Consultation Coordination Officer (CCO) to assist your community. The CCO will be the primary liaison between your community and FEMA. For information regarding your CCO, please contact:

Ms. Jeanine D. Petterson
Director, Federal Insurance and Mitigation Division
Federal Emergency Management Agency, Region VIII
Denver Federal Center, Building 710
P.O. Box 25267
Denver, CO 80225-0267
(303) 235-4830

STATUS OF THE COMMUNITY NFIP MAPS

We will not physically revise and republish the FIRM and FIS report for your community to reflect the modifications made by this LOMR at this time. When changes to the previously cited FIRM panel(s) and FIS report warrant physical revision and republication in the future, we will incorporate the modifications made by this LOMR at that time.

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Kevin C. Long
Kevin C. Long, CFM, Project Engineer
Engineering Management Section
Mitigation Division



Federal Emergency Management Agency
Washington, D.C. 20472

**LETTER OF MAP REVISION
DETERMINATION DOCUMENT (CONTINUED)**

PUBLIC NOTIFICATION OF REVISION

PUBLIC NOTIFICATION

FLOODING SOURCE	LOCATION OF REFERENCED ELEVATION	BFE (FEET NGVD 29)		MAP PANEL NUMBER(S)
		EFFECTIVE	REVISED	
East Fork Sand Creek	Approximately 5,150 feet downstream of Marksheffel Road	6,316	6,315	08041C0752F
	Approximately 210 feet downstream of Marksheffel Road	6,381	6,379	08041C0756F

Within 90 days of the second publication in the local newspaper, a citizen may request that we reconsider this determination. Any request for reconsideration must be based on scientific or technical data. This revision will become effective 30 days from the date of this letter. However, until the 90-day period has elapsed, the revised BFEs presented in this LOMR may be changed.

A notice of changes will be published in the *Federal Register*. This information also will be published in your local newspaper on or about the dates listed below.

LOCAL NEWSPAPER Name: *El Paso County News*
Dates: 11/29/2006 and 12/06/2006

This determination is based on the flood data presently available. The enclosed documents provide additional information regarding this determination. If you have any questions about this document, please contact the FEMA Map Assistance Center toll free at 1-877-336-2627 (1-877-FEMA MAP) or by letter addressed to the LOMR Depot, 3601 Eisenhower Avenue, Alexandria, VA 22304. Additional Information about the NFIP is available on our website at <http://www.fema.gov/nfip>.

Kevin C. Long

Kevin C. Long, CFM, Project Engineer
Engineering Management Section
Mitigation Division

CHANGES ARE MADE IN DETERMINATIONS OF BASE FLOOD ELEVATIONS FOR THE UNINCORPORATED AREAS OF EL PASO COUNTY, COLORADO, UNDER THE NATIONAL FLOOD INSURANCE PROGRAM

On March 17, 1997, the Department of Homeland Security's Federal Emergency Management Agency identified Special Flood Hazard Areas (SFHAs) in the unincorporated areas of El Paso County, Colorado, through issuance of a Flood Insurance Rate Map (FIRM). The Mitigation Division has determined that modification of the elevations of the flood having a 1-percent chance of being equaled or exceeded in any given year (base flood) for certain locations in this community is appropriate. The modified Base Flood Elevations (BFEs) revise the FIRM for the community.

The changes are being made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (Public Law 93-234) and are in accordance with the National Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, Public Law 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65.

A hydraulic analysis was performed to incorporate the effects of channel improvements along Sand Creek East Fork from approximately 5,250 feet downstream to just upstream of Marksheffel Road, and has resulted in a revised delineation of the regulatory floodway, an increase in SFHA width, a decrease in SFHA width, and decreased BFEs for Sand Creek East Fork. The aforementioned channelized portion of Sand Creek East Fork contains the base flood. The table below indicates existing and modified BFEs for selected locations along the affected lengths of the flooding source(s) cited above.

Location	Existing BFE (feet)*	Modified BFE (feet)*
Sand Creek East Fork		
Approximately 5,150 feet downstream of Marksheffel Road	6,316	6,315
Approximately 210 feet downstream of Marksheffel Road	6,381	6,379

*National Geodetic Vertical Datum, rounded to nearest whole foot

Under the above-mentioned Acts of 1968 and 1973, the Mitigation Division must develop criteria for floodplain management. To participate in the National Flood Insurance Program (NFIP), the community must use the modified BFEs to administer the floodplain management measures of the NFIP. These modified BFEs will also be used to calculate the appropriate flood insurance premium rates for new buildings and their contents and for the second layer of insurance on existing buildings and contents.

Upon the second publication of notice of these changes in this newspaper, any person has 90 days in which he or she can request, through the Chief Executive Officer of the community, that the Mitigation Division reconsider the determination. Any request for reconsideration must be based on knowledge of changed conditions or new scientific or technical data. All interested parties are on notice that until the 90-day period elapses, the Mitigation Division's determination to modify the BFEs may itself be changed.

Any person having knowledge or wishing to comment on these changes should immediately notify:

The Honorable Sallie Clark
Chair, El Paso County
Board of Commissioners
27 East Vermijo Avenue
Colorado Springs, CO 80903

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE'	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY	WITHOUT FLOODWAY FEET (NGVD)	WITH FLOODWAY	INCREASE
Sand Creek East Fork								
A	1,100	100	455	11.9	6,038.7	6,038.7	6,038.7	0.0
B	2,400	100	446	12.2	6,054.3	6,054.3	6,054.3	0.0
C	3,330	100	450	12.0	6,069.9	6,069.9	6,069.9	0.0
D	4,240	100	449	12.1	6,085.1	6,085.1	6,085.1	0.0
E	4,870	100	451	12.0	6,095.2	6,095.2	6,095.2	0.0
F	5,820	250	602	8.9	6,118.4	6,118.4	6,118.9	0.5
G	6,690	150	518	10.3	6,128.1	6,128.1	6,129.1	1.0
H	7,795	125	477	11.2	6,155.2	6,155.2	6,155.2	0.0
I	8,665	150	505	10.6	6,168.8	6,168.8	6,168.8	0.0
J	9,675	100	443	12.0	6,188.4	6,188.4	6,188.4	0.0
K	10,565	115	465	11.5	6,196.2	6,196.2	6,196.2	0.0
L	11,325	166	525	10.2	6,207.3	6,207.3	6,207.3	0.0
M	11,375	173	632	8.4	6,207.9	6,207.9	6,207.9	0.0
N	12,610	367	699	7.6	6,228.8	6,228.8	6,228.8	0.1
O	13,720	188	570	10.0	6,241.7	6,241.7	6,241.7	0.0
P	14,805	125	479	11.1	6,257.9	6,257.9	6,257.9	0.0
Q	14,885	125	601	8.9	6,259.9	6,259.9	6,259.9	1.0
R	15,850	228	582	9.2	6,268.7	6,268.7	6,268.7	0.0
S	16,325	300	678	7.9	6,277.3	6,277.3	6,277.5	0.2
T	16,995	321	690	7.7	6,291.4	6,291.4	6,292.0	0.6
U	17,065	326	667	8.0	6,291.4	6,291.4	6,292.1	0.7
V	17,915	388	1,598	3.3	6,293.4	6,293.4	6,294.0	0.6
W	18,995	367	683	7.8	6,307.2	6,307.2	6,307.6	0.4
X	20,730	103	575	11.7	6,327.8	6,327.8	6,328.4	0.6
Y	22,560	142	506	11.0	6,348.8	6,348.8	6,349.4	0.6
Z	23,060	145	503	11.0	6,358.0	6,358.0	6,358.0	0.0
AA	24,835	418	3,156	7.0	6,383.5	6,383.5	6,383.5	0.0
AB	26,470	132	452	10.0	6,402.7	6,402.7	6,402.7	0.0
AC	27,715	112	419	10.8	6,416.6	6,416.6	6,416.6	0.0

1 Feet Above Confluence With Sand Creek

REVISED BY LOMR DATED OCTOBER 30, 2006

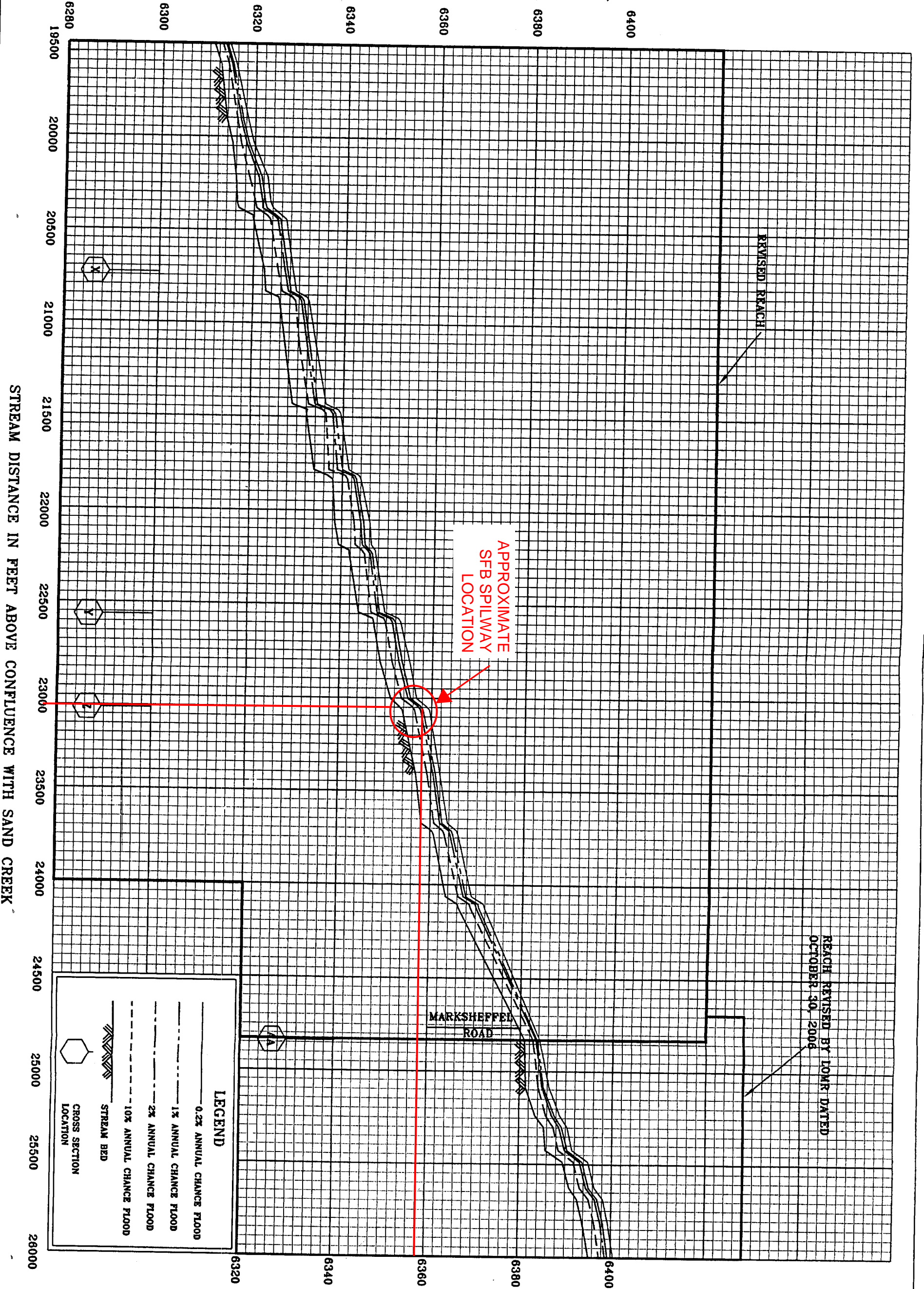
REFLECT LOMR

FLOODWAY DATA EFFECTIVE DEC 13 2006

FEDERAL EMERGENCY MANAGEMENT AGENCY
EL PASO COUNTY, CO
AND INCORPORATED AREAS

SAND CREEK EAST FORK

ELEVATION IN FEET (NGVD 29)



STREAM DISTANCE IN FEET ABOVE CONFLUENCE WITH SAND CREEK

LEGEND

	0.2% ANNUAL CHANCE FLOOD
	1% ANNUAL CHANCE FLOOD
	2% ANNUAL CHANCE FLOOD
	10% ANNUAL CHANCE FLOOD
	STREAM BED
	CROSS SECTION LOCATION

FEDERAL EMERGENCY MANAGEMENT AGENCY
 EL PASO COUNTY, CO
 AND INCORPORATED AREAS

212P

1% Annual
 Chance Flood
 EL=6358

REVISED TO
 FLOOD PROFILES
 REFLECT LOMR
 SAND CREEK EAST FORK EFFECTIVE DEC 13 2006

PALMER PARK BOULEVARD

MINEOLA STREET

CHAUTAQUA DRIVE
SHOSHONE WAY

WINNEBAGO ROAD
SEQUOYAH WAY

SIoux CIRCLE

5

OSAGE WAY

BACONE TERRACE

DRIVE

YAKIMA




YAKIMA

SHAWNEE DRIVE

OMAHA

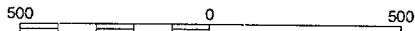
BOULEVARD

Legend

-  1% annual chance (100-Year) Floodplain
-  1% annual chance (100-Year) Floodway
-  0.2% annual chance (500-Year) Floodplain



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

EL PASO COUNTY,
COLORADO AND
INCORPORATED AREAS

PANEL 752 OF 1300
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO COUNTY, UNINCORPORATED AREAS	080059	0752	F
COLORADO SPRINGS, CITY OF	080060	0752	F

REVISED TO REFLECT LOMP EFFECTIVE DEC 13 2006

MAP NUMBER
08041C0752 F

EFFECTIVE DATE:
MARCH 17, 1997



Federal Emergency Management Agency

WHITE MOUNTAIN DRIVE

COMMANCHERO DRIVE
ZONE X

8

WESTERN DRIVE

6331
6328

ZONE X

ZONE AE

EL PASO COUNTY
UNINCORPORATED AREAS
080059

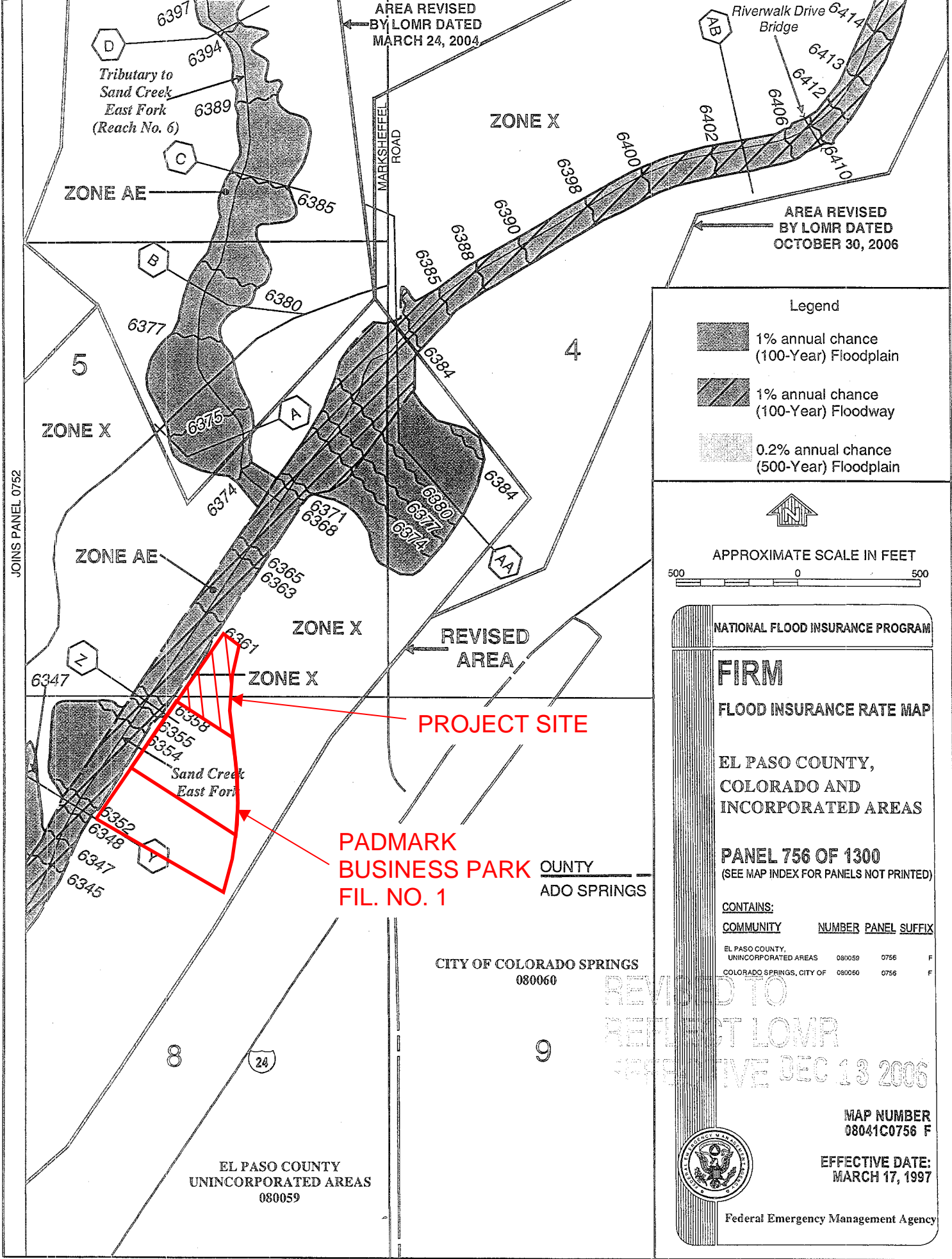
ZONE X

Sands Creek




REVISED AREA

24

JOINS PANEL NUMBER 0756

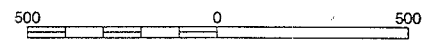


Legend

-  1% annual chance (100-Year) Floodplain
-  1% annual chance (100-Year) Floodway
-  0.2% annual chance (500-Year) Floodplain



APPROXIMATE SCALE IN FEET



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

EL PASO COUNTY,
COLORADO AND
INCORPORATED AREAS

PANEL 756 OF 1300
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:
COMMUNITY NUMBER PANEL SUFFIX

EL PASO COUNTY, UNINCORPORATED AREAS	080059	0756	F
COLORADO SPRINGS, CITY OF	080060	0756	F

CITY OF COLORADO SPRINGS
080060

REVISED TO
REFLECT LOMR
EFFECTIVE DEC 13 2006

MAP NUMBER
08041C0756 F

EFFECTIVE DATE:
MARCH 17, 1997



Federal Emergency Management Agency

JOINS PANEL 0752

Tributary to
Sand Creek
East Fork
(Reach No. 6)

AREA REVISED
BY LOMR DATED
MARCH 24, 2004

AREA REVISED
BY LOMR DATED
OCTOBER 30, 2006

REVISED
AREA

PROJECT SITE

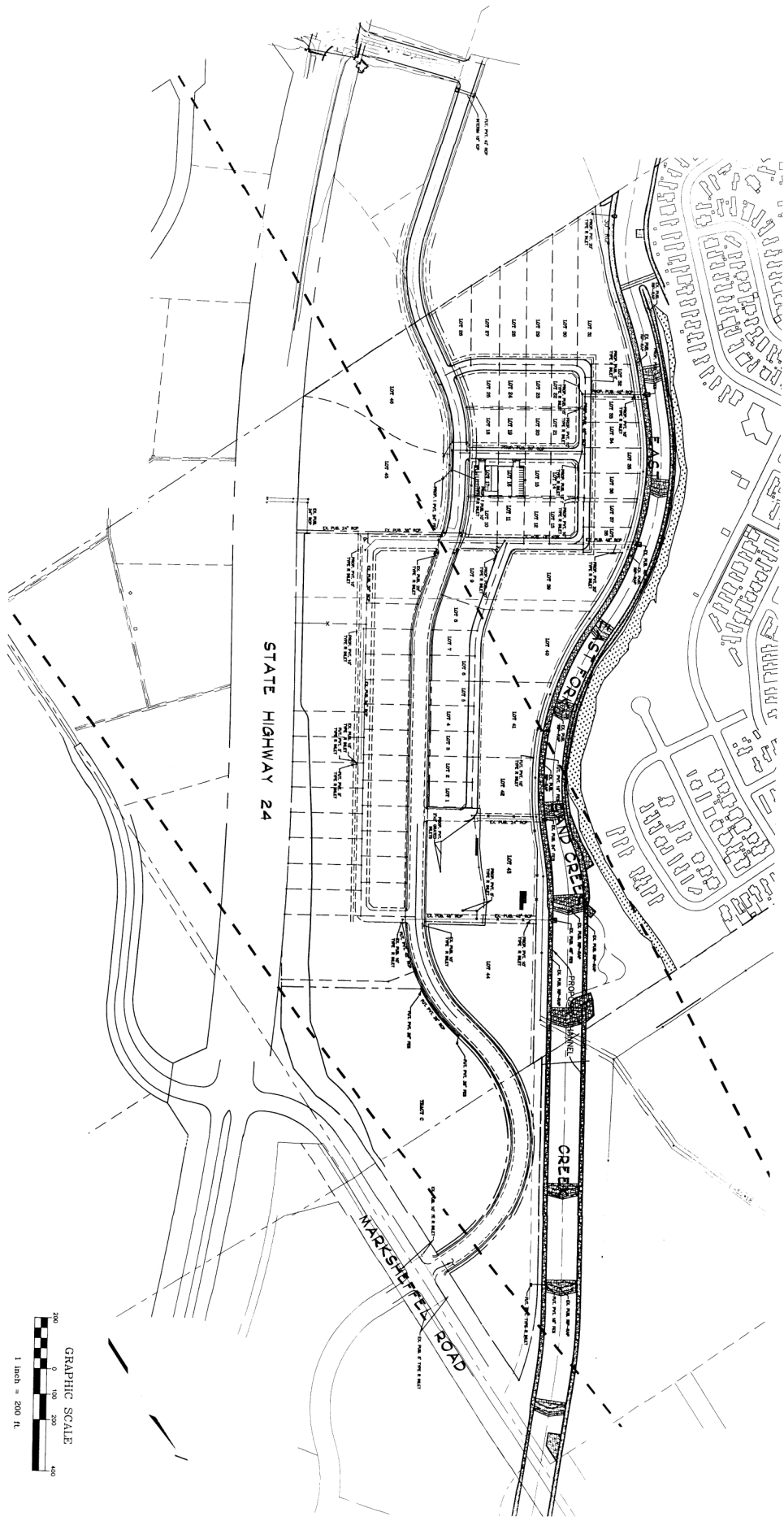
PADMARK
BUSINESS PARK
FIL. NO. 1

EL PASO COUNTY
UNINCORPORATED AREAS
080059

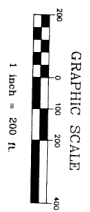


COUNTY
ADO SPRINGS

STORM DRAINAGE DESTINATION PLAN CLAREMONT BUSINESS PARK FILING NO. 2



REFERENCE DRAWINGS		SUBMITTER		FOR AND ON BEHALF OF		DESIGNER		PROJECT	
NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
REVISIONS		SUBMITTER		FOR AND ON BEHALF OF		DESIGNER		PROJECT	
NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE	NO.	DATE
DESCRIPTION		SUBMITTER		FOR AND ON BEHALF OF		DESIGNER		PROJECT	
BY		HAWKERS CONSTRUCTION, INC.		MATRIX DESIGN GROUP, INC.		CLAREMONT BUSINESS PARK FILING NO. 2		STORM DRAINAGE DESIGNATION PLAN	
BENCHMARK DATA(ELEV.)		3460 CAPITAL DRIVE		COLORADO SPRINGS, CO 80915		FILING NO. 2		EXH01	
(DESCRIPTION/LOCATION)		MATRIX DESIGN GROUP, INC.		3460 CAPITAL DRIVE		COLORADO SPRINGS, CO 80915		FILING NO. 2	
		FOR AND ON BEHALF OF		MATRIX DESIGN GROUP, INC.		CLAREMONT BUSINESS PARK FILING NO. 2		STORM DRAINAGE DESIGNATION PLAN	
		SUBMITTER		FOR AND ON BEHALF OF		DESIGNER		PROJECT	
		HAWKERS CONSTRUCTION, INC.		MATRIX DESIGN GROUP, INC.		CLAREMONT BUSINESS PARK FILING NO. 2		STORM DRAINAGE DESIGNATION PLAN	
		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE	
		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915	
		FOR AND ON BEHALF OF		FOR AND ON BEHALF OF		FOR AND ON BEHALF OF		FOR AND ON BEHALF OF	
		MATRIX DESIGN GROUP, INC.		MATRIX DESIGN GROUP, INC.		MATRIX DESIGN GROUP, INC.		MATRIX DESIGN GROUP, INC.	
		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE	
		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915	
		SUBMITTER		FOR AND ON BEHALF OF		DESIGNER		PROJECT	
		HAWKERS CONSTRUCTION, INC.		MATRIX DESIGN GROUP, INC.		CLAREMONT BUSINESS PARK FILING NO. 2		STORM DRAINAGE DESIGNATION PLAN	
		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE	
		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915	
		FOR AND ON BEHALF OF		FOR AND ON BEHALF OF		FOR AND ON BEHALF OF		FOR AND ON BEHALF OF	
		MATRIX DESIGN GROUP, INC.		MATRIX DESIGN GROUP, INC.		MATRIX DESIGN GROUP, INC.		MATRIX DESIGN GROUP, INC.	
		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE		3460 CAPITAL DRIVE	
		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915		COLORADO SPRINGS, CO 80915	



HYDROLOGIC CALCULATIONS

LOT 3 PADMARK BUSINESS PARK FILING NO. 1
PROPOSED DRAINAGE CALCULATIONS
(Area Runoff Coefficient Summary)

			<i>STREETS / DEVELOPED</i>			<i>OVERLAND / DEVELOPED</i>			<i>OVERLAND / UNDEVELOPED</i>			<i>WEIGHTED</i>	
BASIN	TOTAL AREA (SF)	TOTAL AREA (Acres)	AREA (Acres)	C₅	C₁₀₀	AREA (Acres)	C₅	C₁₀₀	AREA (Acres)	C₅	C₁₀₀	C₅	C₁₀₀
<i>A</i>	34031.31	0.78	0.78	0.81	0.88	0.00	0.81	0.88	0.00			0.81	0.88

LOT 3 PADMARK BUSINESS PARK FILING NO. 1
FINAL DRAINAGE REPORT
(Area Drainage Summary)

<i>From Area Runoff Coefficient Summary</i>				OVERLAND				STREET / CHANNEL FLOW				Time of Travel (T_t)		INTENSITY *		TOTAL FLOWS	
BASIN	AREA TOTAL (Acres)	C_s	C₁₀₀	C_s	Length (ft)	Height (ft)	T_c (min)	Length (ft)	Slope (%)	Velocity (fps)	T_t (min)	TOTAL (min)	CHECK (min)	I_s (in/hr)	I₁₀₀ (in/hr)	Q₅ (c.f.s.)	Q₁₀₀ (c.f.s.)
		<i>From DCM Table 5-1</i>															
A	0.78	0.81	0.88	0.81	45	1.0	2.7	200	1.0%	2.0	1.7	4.4	11.4	5.2	8.7	3.3	6.0

* Intensity equations assume a minimum travel time of 5 minutes.

Calculated by: CMN
Date: 6/25/2018
Checked by: VAS

LOT 3 PADMARK BUSINESS PARK FILING NO. 1
FINAL DRAINAGE REPORT
(Basin Routing Summary)

<i>From Area Runoff Coefficient Summary</i>				OVERLAND				PIPE / CHANNEL FLOW				Time of Travel (T_t)	INTENSITY *		TOTAL FLOWS		COMMENTS
DESIGN POINT	CONTRIBUTING BASINS	CA₅	CA₁₀₀	C_s	Length (ft)	Height (ft)	T_c (min)	Length (ft)	Slope (%)	Velocity (fps)	T_t (min)	TOTAL (min)	I₅ (in/hr)	I₁₀₀ (in/hr)	Q₅ (c.f.s.)	Q₁₀₀ (c.f.s.)	
<i>I</i>	<i>A</i>	0.63	0.69	0.81	45	1	2.7	200	1.0%	2.0	1.7	5.0	5.2	8.7	3.3	6.0	

Calculated by: CMN
Date: 6/25/2018
Checked by: VAS

LOT 3 PADMARK BUSINESS PARK FILING NO. 1
FINAL DRAINAGE REPORT
(Storm Sewer Routing Summary)

<i>PIPE</i>	<i>Contributing Pipes/Design Points</i>	<i>Equivalent CA₅</i>	<i>Equivalent CA₁₀₀</i>	<i>Maximum T_C</i>	<i>Intensity*</i>		<i>Flow</i>	
					<i>I₅</i>	<i>I₁₀₀</i>	<i>Q₅</i>	<i>Q₁₀₀</i>
1	DP1	0.63	0.69	5.0	5.2	8.7	3.3	6.0

* Intensity equations assume a minimum travel time of 5 minutes.

DP - Design Point

EX - Existing Design Point

FB- Flow By from Design Point

INT- Intercepted Flow from Design Point

Calculated by: CMN

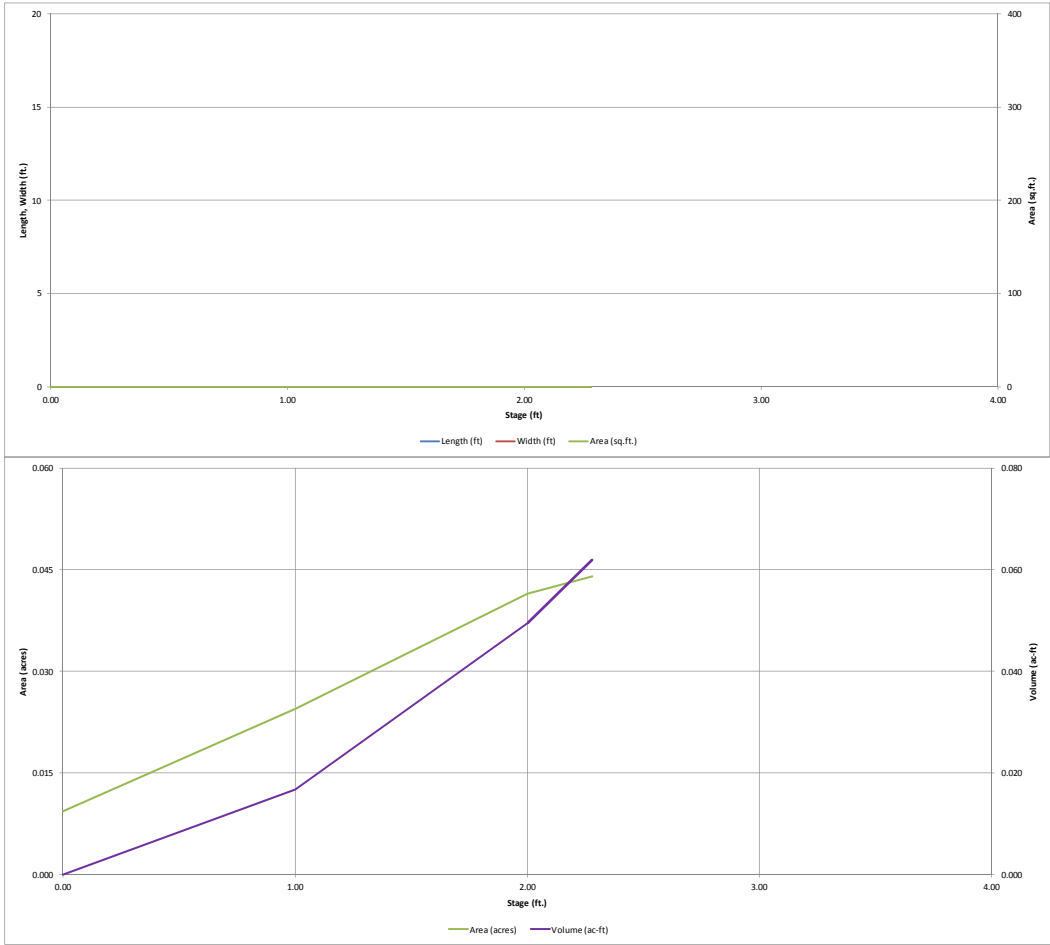
Date: 6/25/2018

Checked by: VAS

HYDRAULIC CALCULATIONS / SFB WQCV CALCULATIONS

DETENTION BASIN STAGE-STORAGE TABLE BUILDER

UD-Detention, Version 3.07 (February 2017)



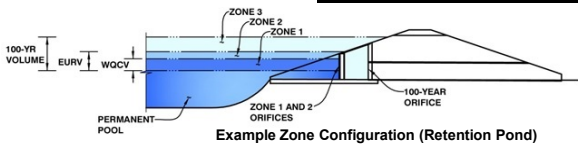
<i>Weighted Percent Imperviousness of WQ SFB</i>				
<i>Contributing Basins</i>	<i>Area (Acres)</i>	<i>C_s</i>	<i>Impervious % (I)</i>	<i>(Acres)*(I)</i>
<i>A</i>	0.7813	0.81	95	74.22
<i>Totals</i>	0.7813			74.22
<i>Imperviousness of WQ Pond 1</i>	95.0			

Detention Basin Outlet Structure Design

UD-Detention, Version 3.07 (February 2017)

Project: Lot 3 Padmark Business Park Filing No. 1

Basin ID: A



	Stage (ft)	Zone Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	1.24	0.023	Filtration Media
Zone 2			
Zone 3			
		0.023	Total

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth = 2.24 ft (distance below the filtration media surface)
Underdrain Orifice Diameter = 0.73 inches

Calculated Parameters for Underdrain

Underdrain Orifice Area = 0.0 ft²
Underdrain Orifice Centroid = 0.03 feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice = _____ ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate = _____ ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing = _____ inches
Orifice Plate: Orifice Area per Row = _____ inches

Calculated Parameters for Plate

WQ Orifice Area per Row = N/A ft²
Elliptical Half-Width = N/A feet
Elliptical Slot Centroid = N/A feet
Elliptical Slot Area = N/A ft²

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (optional)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								
	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

Invert of Vertical Orifice = Not Selected Not Selected ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice = _____ ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter = _____ inches

Calculated Parameters for Vertical Orifice

Vertical Orifice Area = Not Selected Not Selected ft²
Vertical Orifice Centroid = _____ feet

User Input: Overflow Weir (Dropbox) and Grate (Flat or Sloped)

Overflow Weir Front Edge Height, H_o = 1.24 ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length = 2.91 feet
Overflow Weir Slope = 0.00 H:V (enter zero for flat grate)
Horiz. Length of Weir Sides = 2.91 feet
Overflow Grate Open Area % = 70% % grate open area/total area
Debris Clogging % = 50% %

Calculated Parameters for Overflow Weir

Height of Grate Upper Edge, H₁ = 1.24 feet
Over Flow Weir Slope Length = 2.91 feet
Grate Open Area / 100-yr Orifice Area = _____ should be ≥ 4
Overflow Grate Open Area w/o Debris = 5.93 ft²
Overflow Grate Open Area w/ Debris = 2.96 ft²

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

Depth to Invert of Outlet Pipe = Not Selected Not Selected ft (distance below basin bottom at Stage = 0 ft)
Circular Orifice Diameter = _____ inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

Outlet Orifice Area = Not Selected Not Selected ft²
Outlet Orifice Centroid = _____ feet
Half-Central Angle of Restrictor Plate on Pipe = N/A N/A radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage = 1.62 ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length = 20.00 feet
Spillway End Slopes = 3.00 H:V
Freeboard above Max Water Surface = 0.50 feet

Calculated Parameters for Spillway

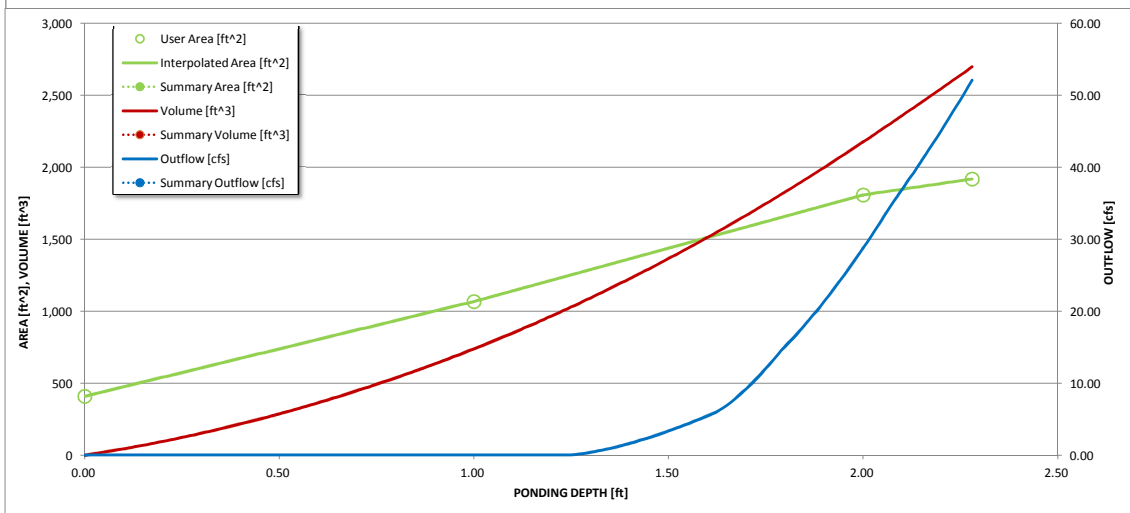
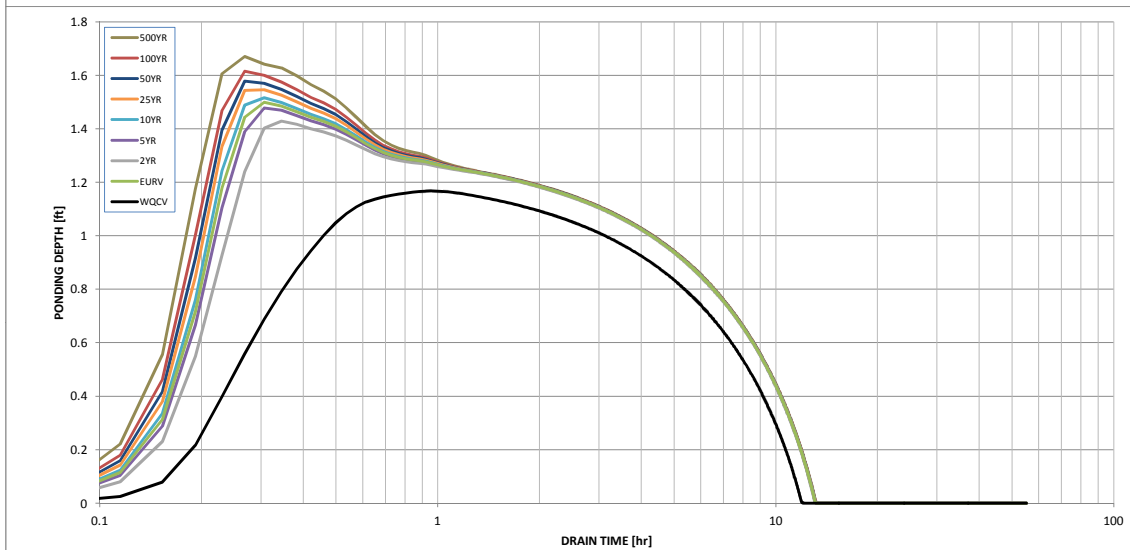
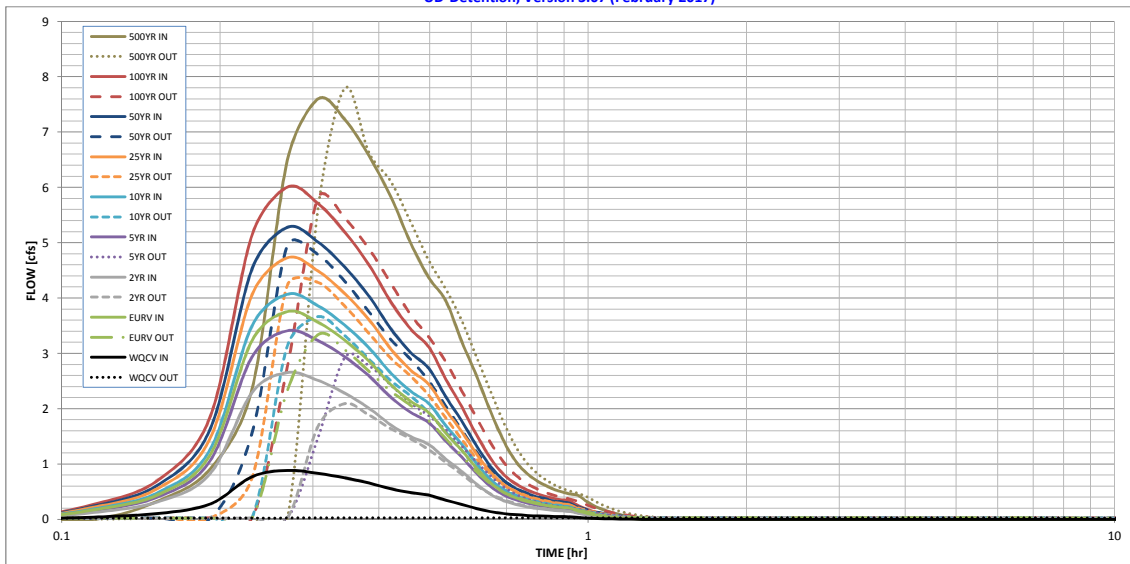
Spillway Design Flow Depth = 0.12 feet
Stage at Top of Freeboard = 2.24 feet
Basin Area at Top of Freeboard = 0.04 acres

Routed Hydrograph Results

	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
Design Storm Return Period									
One-Hour Rainfall Depth (in)	0.53	1.07	1.19	1.50	1.75	2.00	2.25	2.52	3.14
Calculated Runoff Volume (acre-ft)	0.023	0.102	0.071	0.092	0.110	0.128	0.144	0.163	0.208
OPTIONAL Override Runoff Volume (acre-ft)									
Inflow Hydrograph Volume (acre-ft)	0.023	0.101	0.071	0.092	0.110	0.128	0.143	0.163	0.207
Predevelopment Unit Peak Flow, q (cfs/acre)	0.00	0.00	0.00	0.01	0.02	0.03	0.25	0.61	1.34
Predevelopment Peak Q (cfs)	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.0
Peak Inflow Q (cfs)	0.9	3.8	2.7	3.4	4.1	4.7	5.3	6.0	7.6
Peak Outflow Q (cfs)	0.0	3.3	2.1	2.9	3.7	4.3	5.0	5.8	7.8
Ratio Peak Outflow to Predevelopment Q	N/A	N/A	N/A	572.5	307.7	163.4	25.2	12.3	7.4
Structure Controlling Flow	Filtration Media	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Spillway
Max Velocity through Grate 1 (fps)	N/A	0.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0
Max Velocity through Grate 2 (fps)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Time to Drain 97% of Inflow Volume (hours)	12	11	12	12	11	11	11	10	10
Time to Drain 99% of Inflow Volume (hours)	12	13	13	13	13	12	12	12	12
Maximum Ponding Depth (ft)	1.17	1.50	1.43	1.48	1.52	1.55	1.58	1.62	1.67
Area at Maximum Ponding Depth (acres)	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04
Maximum Volume Stored (acre-ft)	0.021	0.031	0.029	0.030	0.032	0.033	0.034	0.035	0.037

Detention Basin Outlet Structure Design

UD-Detention, Version 3.07 (February 2017)



S-A-V-D Chart Axis Override	X-axis	Left Y-Axis	Right Y-Axis
minimum bound			
maximum bound			

PROPOSED DRAINAGE MAP

EXISTING DRAINAGE MAP

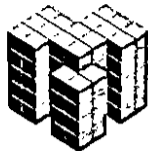


FINAL DRAINAGE REPORT
For
“Claremont Business Park Filing No. 2”

Prepared for:
El Paso County
Department of Public Works
Engineering Division

On Behalf of:
Claremont Development, Inc.

Prepared by:



Matrix Design Group, Inc.
Integrated Design Solutions *Infrastructure Engineering*
Community Development
Program Management

2435 Research Parkway, Suite 300
Colorado Springs, CO 80920
(719) 575-0100
fax (719) 572-0208

Revised November 2006

Engineer's Statement:

The *revisions* (changes made to the base Final Drainage Report since July, 2006) to the attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. The revisions encompassed adding additional right of way to the study area at the County's request, the handling of offsite drainage due to the additional right of way, a breakdown of private drainage within lot numbers 10 through 25 of Filing No. 2 due to cross-lot drainage (contrary to note # 25 on the recorded plat), profiling additional inlets along the channel edge, and rip-rap sizing for outlet structures along the channel. The Final Drainage Report dated July, 2006 was prepared under the direct supervision of Richard G. Gallegos, Jr. in July, 2006 and stamped (see next sheet).

The Final Drainage Report was prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing the *revisions* to this report.

Brady A. Shyrock
Registered Professional Engineer
State of Colorado
No. 38164

SEAL

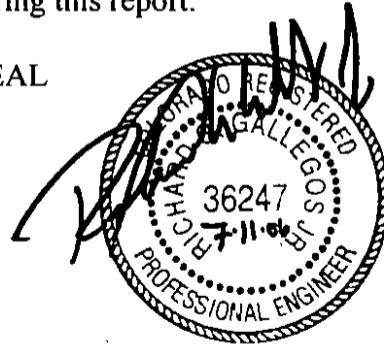


Engineer's Statement:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

SEAL

Richard G. Gallegos, Jr.
Registered Professional Engineer
State of Colorado
No. 36247



Developer's Statement:

I, the developer have read and will comply with all of the requirements specified in this drainage report and plan.

Claremont Development, Inc.

Business Name

By: _____

Title: _____

Address: 3460 Capital Drive

Colorado Springs, CO 80915

El Paso County:

Filed in accordance with Section 51.1 of the El Paso Land Development Code, as amended.

Fox John Hamacher
Mr. John McCarty, County Engineer/Director

4/23/07
Date

Conditions:

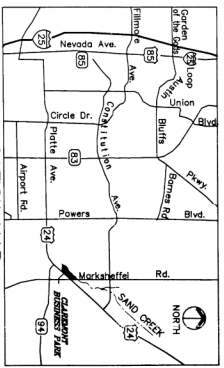
DRAINAGE PLAN CLAREMONT BUSINESS PARK FILING NO. 2

OWNER = ADVANCED RV & SELF STORAGE LLP

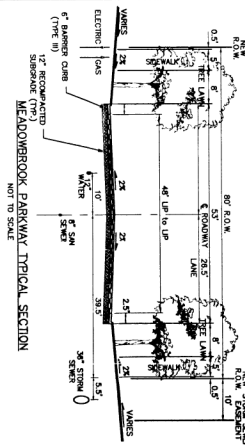
(69.8 1c.)

LAND USE = VACANT LAND

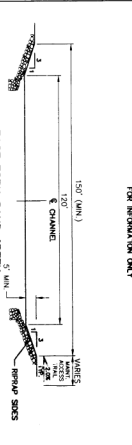
SIGNING = BLDG PLOT



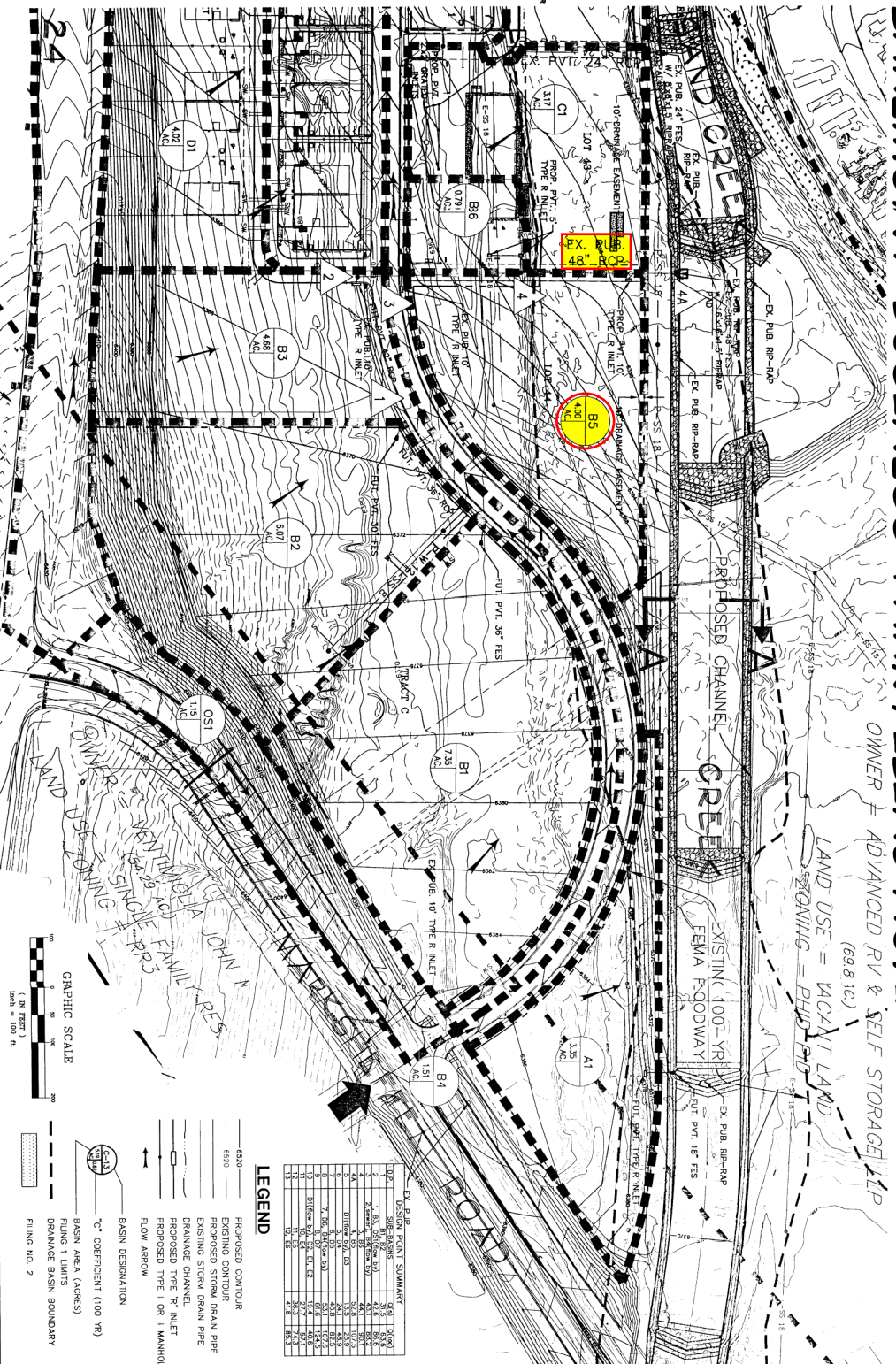
LOCATION MAP



MEADOWBROOK PARKWAY TYPICAL SECTION
NOT TO SCALE



EAST FORK SAND CREEK SECTION B-B
FOR REFERENCE ONLY



ELEVATION POINT SUMMARY	
NO.	ELEVATION
1	51.2
2	51.5
3	51.8
4	52.1
5	52.4
6	52.7
7	53.0
8	53.3
9	53.6
10	53.9
11	54.2
12	54.5
13	54.8
14	55.1
15	55.4
16	55.7
17	56.0
18	56.3
19	56.6
20	56.9
21	57.2
22	57.5
23	57.8
24	58.1
25	58.4
26	58.7
27	59.0
28	59.3
29	59.6
30	59.9
31	60.2
32	60.5
33	60.8
34	61.1
35	61.4
36	61.7
37	62.0
38	62.3
39	62.6
40	62.9
41	63.2
42	63.5
43	63.8
44	64.1
45	64.4
46	64.7
47	65.0
48	65.3
49	65.6
50	65.9
51	66.2
52	66.5
53	66.8
54	67.1
55	67.4
56	67.7
57	68.0
58	68.3
59	68.6
60	68.9
61	69.2
62	69.5
63	69.8
64	70.1
65	70.4
66	70.7
67	71.0
68	71.3
69	71.6
70	71.9
71	72.2
72	72.5
73	72.8
74	73.1
75	73.4
76	73.7
77	74.0
78	74.3
79	74.6
80	74.9
81	75.2
82	75.5
83	75.8
84	76.1
85	76.4
86	76.7
87	77.0
88	77.3
89	77.6
90	77.9
91	78.2
92	78.5
93	78.8
94	79.1
95	79.4
96	79.7
97	80.0
98	80.3
99	80.6
100	80.9

LEGEND

- 6250 PROPOSED CONTOUR
- 6350 PAVING CONTOUR
- 6400 EXISTING STORM DRAIN PIPE
- 6450 EXISTING STORM DRAIN PIPE
- 6500 DRAINAGE CHANNEL
- 6550 PROPOSED TYPE 'R' INLET
- 6600 PROPOSED TYPE 'I' OR 'II' MANHOLE
- 6650 FLOW ARROW
- 6700 BASIN DESIGNATION
- 6750 COEFFICIENT (100 RP)
- 6800 BASIN AREA (ACRES)
- 6850 FILING 1 LIMITS
- 6900 DRAINAGE BASIN BOUNDARY
- 6950 FILING NO. 2

CLAREMONT BUSINESS PARK

FINAL DRAINAGE PLAN

MASTER DEVELOPMENT DRAINAGE PLAN

FINAL DRAINAGE PLAN

FILING NO. 2

DR01

Matrix Design Group, Inc.

Integrated Design Solutions

2435 Research Parkway, Suite 20
Colorado Springs, CO 80909
Phone: 719-575-4288
Fax: 719-575-4288

FOR AND ON BEHALF OF
MATRIX DESIGN GROUP, INC.

SUBDIVIDER
HAMMERS CONSTRUCTION INC.
3460 CAPITAL DRIVE
COLORADO SPRINGS, CO 80915-9710

NO.	DATE	REVISIONS	BENCHMARK DATA(ELEV.)
1			
2			
3			
4			
5			

REFERENCES

NO. 1. DRAINAGE PLAN OF THE EAST FORK SAND CREEK CHANNEL, IMPROVEMENTS WILL BE REQUIRED TO REDUCE A PORTION OF CLAREMONT BUSINESS PARK TRACT NO. 1 FROM THE EXISTING TO A NEW 100-YEAR FLOOD PROTECTION PLAN (SEE SHEET DR-001 AND DR-002)

NO. 2. DRAINAGE PLAN OF THE EAST FORK SAND CREEK CHANNEL, IMPROVEMENTS WILL BE REQUIRED TO REDUCE A PORTION OF CLAREMONT BUSINESS PARK TRACT NO. 1 FROM THE EXISTING TO A NEW 100-YEAR FLOOD PROTECTION PLAN (SEE SHEET DR-001 AND DR-002)

DRAWINGS

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4. SCALE: CD (0:50.00)

4. SCALE: CD (0:50.00)

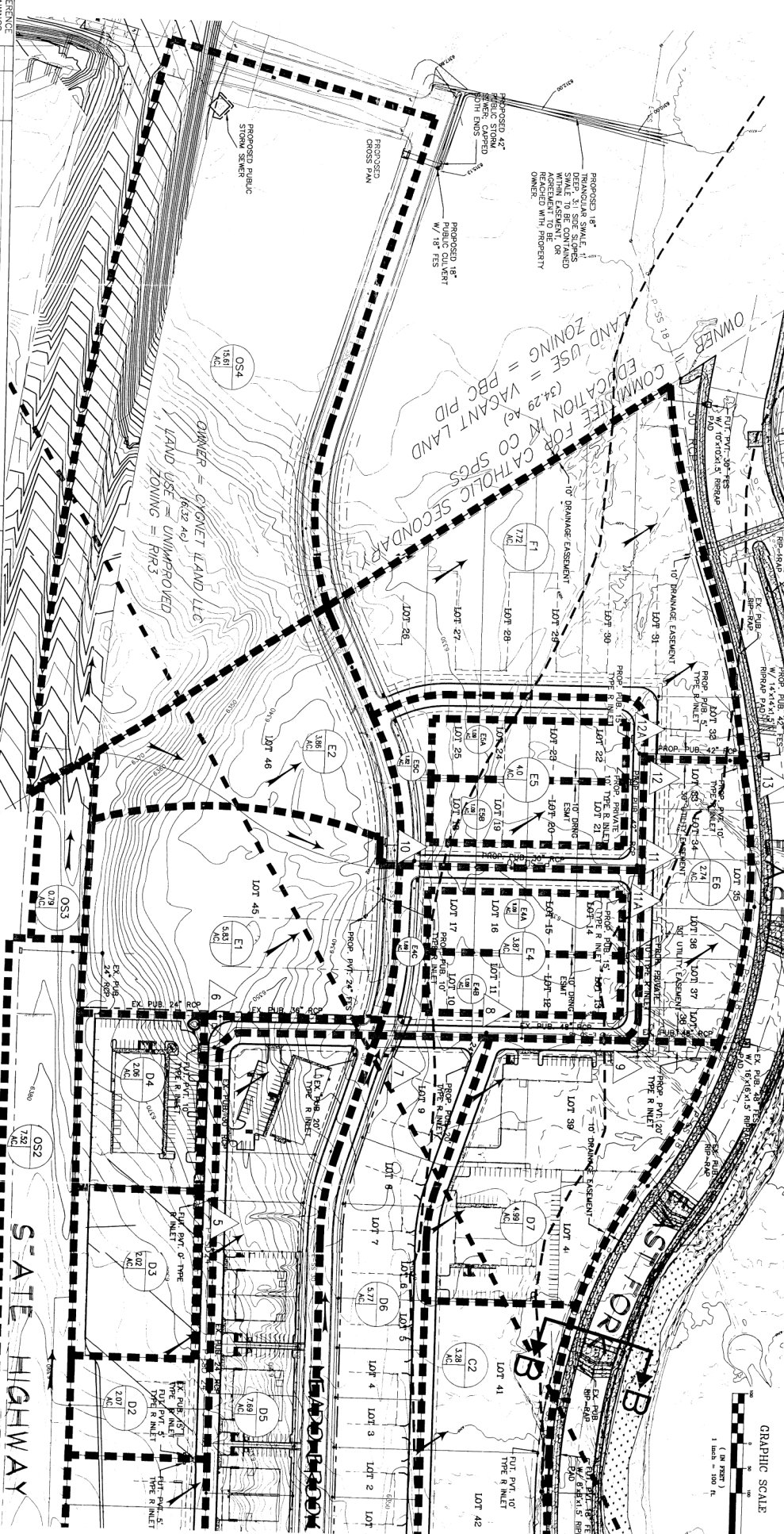
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4. SCALE: CD (0:50.00)

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PLOT DATE: Mar 02, 2007 7:30am

NO.	DATE	DESCRIPTION
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3	03/15/2017	REVISED
4	04/15/2017	REVISED
5	05/15/2017	REVISED
6	06/15/2017	REVISED
7	07/15/2017	REVISED
8	08/15/2017	REVISED
9	09/15/2017	REVISED
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57	09/15/2021	REVISED
58	10/15/2021	REVISED
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60	12/15/2021	REVISED

DRAINAGE PLAN CLAREMONT BUSINESS PARK FILING NO. 2



GRAPHIC SCALE
1 inch = 100 ft

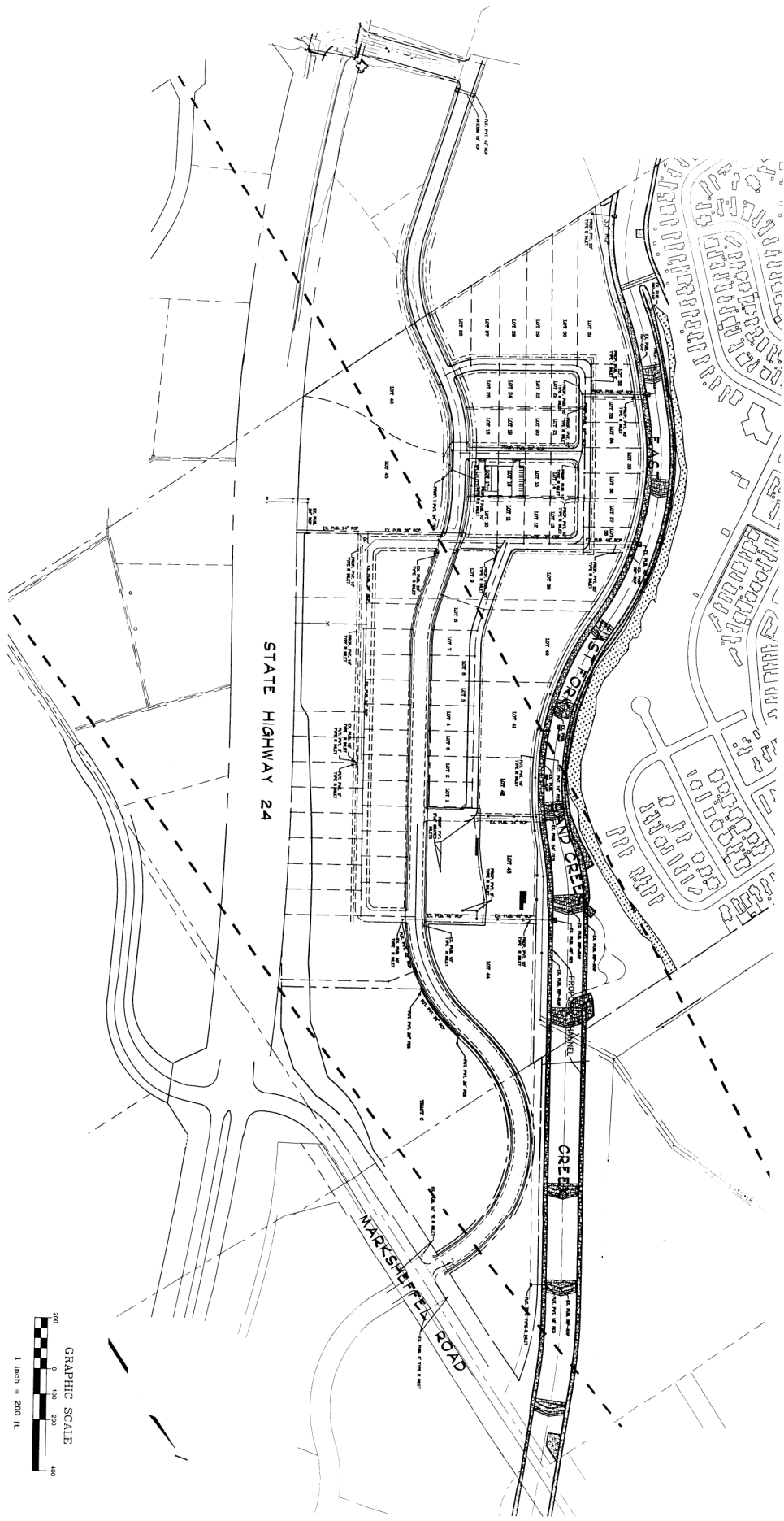
NO.	DATE	DESCRIPTION	BY


SUBDIVIDER HANMERS CONSTRUCTION INC. 3460 S. SPRING ST. COLORADO SPRINGS, CO 80915-9710	ENGINEER Matrix Design Group, Inc. Integrated Design Solutions 2435 Research Parkway, Suite 300 Colorado Springs, CO 80920 Phone: 719-575-2100 Fax: 719-575-6208
---	--

REVISIONS BENCHMARK DATA/ELEV. (941114) 8/20/2017 (DESCRIPTION/LOCATION)	FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.
---	--

REVISIONS CLAREMONT BUSINESS PARK REVISED FINAL DRAINAGE PLAN REVISED FINAL DRAINAGE PLAN FILING NO. 2	DRAWING NO. DR02
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STORM DRAINAGE DESTINATION PLAN CLAREMONT BUSINESS PARK FILING NO. 2



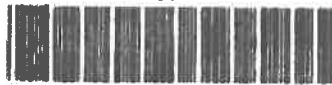
REFERENCE DRAWINGS		SUBMITTER		FOR AND ON BEHALF OF		DESIGNED BY		DRAWN BY		CHECKED BY		DATE ISSUED		SHEET NO.		SHEET NO.		SHEET NO.	
NO.	DATE	DESCRIPTION	BY	HANMERS CONSTRUCTION, INC.	MATRIX DESIGN GROUP, INC.	DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE	NO.	NO.	NO.	NO.	NO.	NO.	NO.	NO.
		BENCHMARK DATA(ELEV.)		3460 CAPITAL DRIVE															
		(DESCRIPTION/LOCATION)		COLOMADO SPRINGS, CO 80915															
				 Matrix Design Group, Inc. Integrated Design Solutions 2635 Research Parkway, Suite 300 Colorado Springs, CO 80909 Phone: 719-575-0030 Fax: 719-575-0208															
				CLAREMONT BUSINESS PARK FILING NO. 2 STORM DRAINAGE DESIGNATION PLAN FILING NO. 2															
																		EXH01	

GRADING EROSION CONTROL PLAN

RESOLUTION 16-426

502
Chuck Broerman
11/28/2016 11:50:04 AM
Doc \$0.00 2
Rec \$0.00 Pages

EL PASO COUNTY, W



216137149

RESOLUTION NO. 16- 426

**BOARD OF COUNTY COMMISSIONERS
COUNTY OF EL PASO, STATE OF COLORADO**

Resolution Denying an Appeal by Hammers Construction LLC (APP-16-002) of the Administrative Determination made by the Planning and Community Development Department Executive Director regarding the requirement for permanent/post construction Water Quality (permanent stormwater quality best management practices or BMP's).

WHEREAS, pursuant to §§30-11-101(1)(e) and 30-11-107(1)(e), C.R.S., the Board of County Commissioners of El Paso County, Colorado (hereinafter "Board") has the legislative authority to manage the concerns of El Paso County when deemed by the Board to be in the best interests of the County and its inhabitants; and

WHEREAS, after consultation with the County Attorney's Office, the Executive Director of Planning and Community Development on August 4, 2016 issued an administrative determination finding made an administrative determination that all undeveloped lots within the Claremont Business Park are subject to installation of permanent stormwater management best management practices (BMP's) associated with development, and that the terms of a 2008 approved deviation relieving the developer of the requirements have not been met.; and

WHEREAS, an appeal of the administrative determination was filed by Hammers Construction on August 10, 2016, and a hearing date was set for September 27, 2016 to hear the appeal; and

WHEREAS, the hearing was continued to a date certain of November 22, 2016; and

WHEREAS, at the Applicant's appeal hearing on November 22, 2016, testimony from the Applicant and the Applicant's representatives was heard by the Board in favor of the appeal, testimony from representatives of Planning and Community Development Department and was presented, and such testimony and associated evidence was weighed by the Board; and

WHEREAS, the Board, having reviewed the testimony and evidence, hereby finds and determines that the requested appeal of the administrative determination by the Planning and Community Development Executive Director by the Applicant did not satisfy the criteria of approval to overturn the administrative determination.

NOW, THEREFORE, BE IT RESOLVED that the Board of County Commissioners of El Paso County, Colorado, hereby denies the appeal of the administrative determination by Hammers Construction and determines that permanent stormwater management best management practices (BMP's) are required with new development within the Claremont Business Park: and

BE IT FURTHER RESOLVED that Sallie Clark, duly elected, qualified member and Chair of the Board of County Commissioners, or Darryl Glenn, duly elected, qualified member and Vice Chair of the Board of County Commissioners, be and is hereby authorized on behalf of the Board to execute any and all documents necessary to carry out the intent of the Board as described herein.

DONE THIS 22nd day of November, 2016, at Colorado Springs Colorado.

**BOARD OF COUNTY COMMISSIONERS
EL PASO COUNTY, COLORADO**

ATTEST:  Richard D. Broerman
County Clerk & Recorder

By: Sallie Clark
Chair of the Board

LOT 3 , PADMARK BUSINESS PARK FIL. NO. 1

EL PASO COUNTY, STATE OF COLORADO
GRADING & EROSION CONTROL PLAN

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

VIRGIL A. SANCHEZ, COLORADO P.E. #37160 DATE
FOR AND ON BEHALF OF M & S CIVIL CONSULTANTS, INC.

OWNER/DEVELOPER'S STATEMENT:

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

NAME: DATE

DBA: HAMMERS CONSTRUCTION

ADDRESS: 1411 WOOLSEY HEIGHTS COLORADO SPRINGS, 80915

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, 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.

JENNIFER IRVINE, P.E. DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

LEGEND

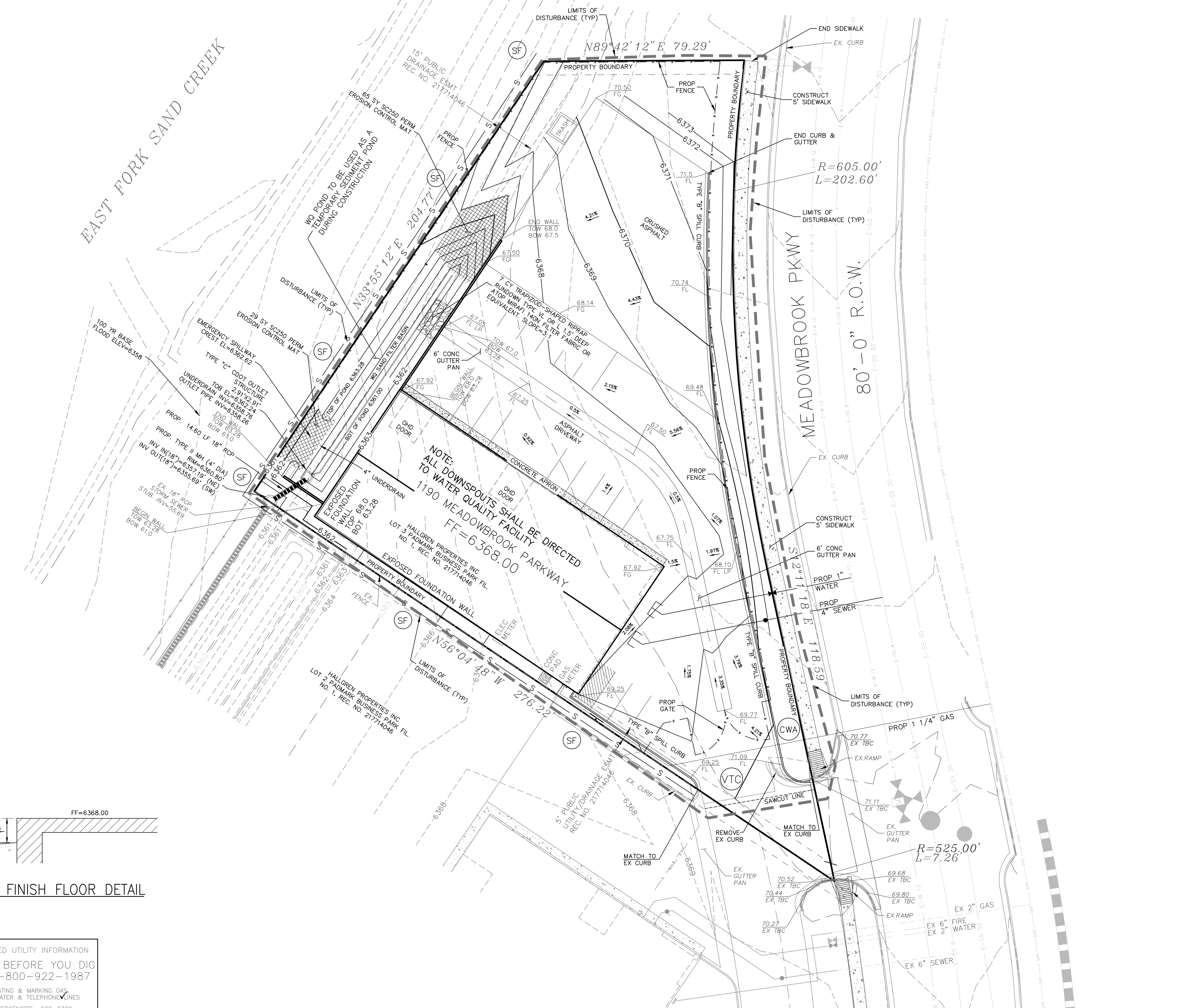
- EX MAJ CONT
- EX MIN CONT
- PROP MAJ CONT
- PROP MIN CONT
- LP LOW POINT
- HP HIGH POINT
- EX EXISTING
- FL FLOWLINE
- TC TOP OF CURB
- FG FINISH GRADE
- FF FINISH FLOOR
- TOF TOP OF FOOTING
- (SF) S SILT FENCE
- (VTC) VEHICLE TRACKING CONTROL
- (CWA) CONCRETE WASH-OUT BASIN
- LIMITS OF DISTURBANCE

GRADING & EROSION CONTROL PLAN
LOT 3, PADMARK BUSINESS PARK FIL. NO. 1
JOB NO. 44-031
DATE PREPARED: JUNE 29, 2018
DATE REVISED:

EL PASO COUNTY FILE NO. PPR 18-000



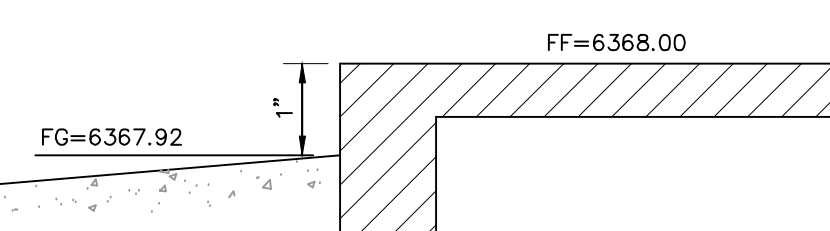
20 BOULDER CRESCENT, SUITE 110
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485



EAST FORK SAND CREEK

MEADOWBROOK PKWY
80'-0" R.O.W.

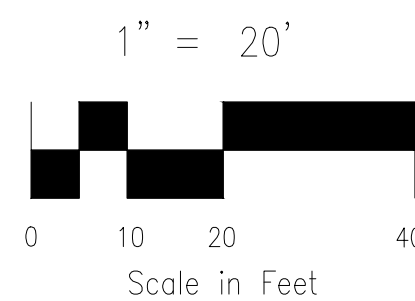
NOTE:
ALL DOWNSPOUTS SHALL BE DIRECTED
TO WATER QUALITY FACILITY
1190 MEADOWBROOK PARKWAY
FF=6368.00



BUILDING FINISH FLOOR DETAIL

FOR BURIED UTILITY INFORMATION
48 HRS BEFORE YOU DIG
CALL 1-800-922-1987

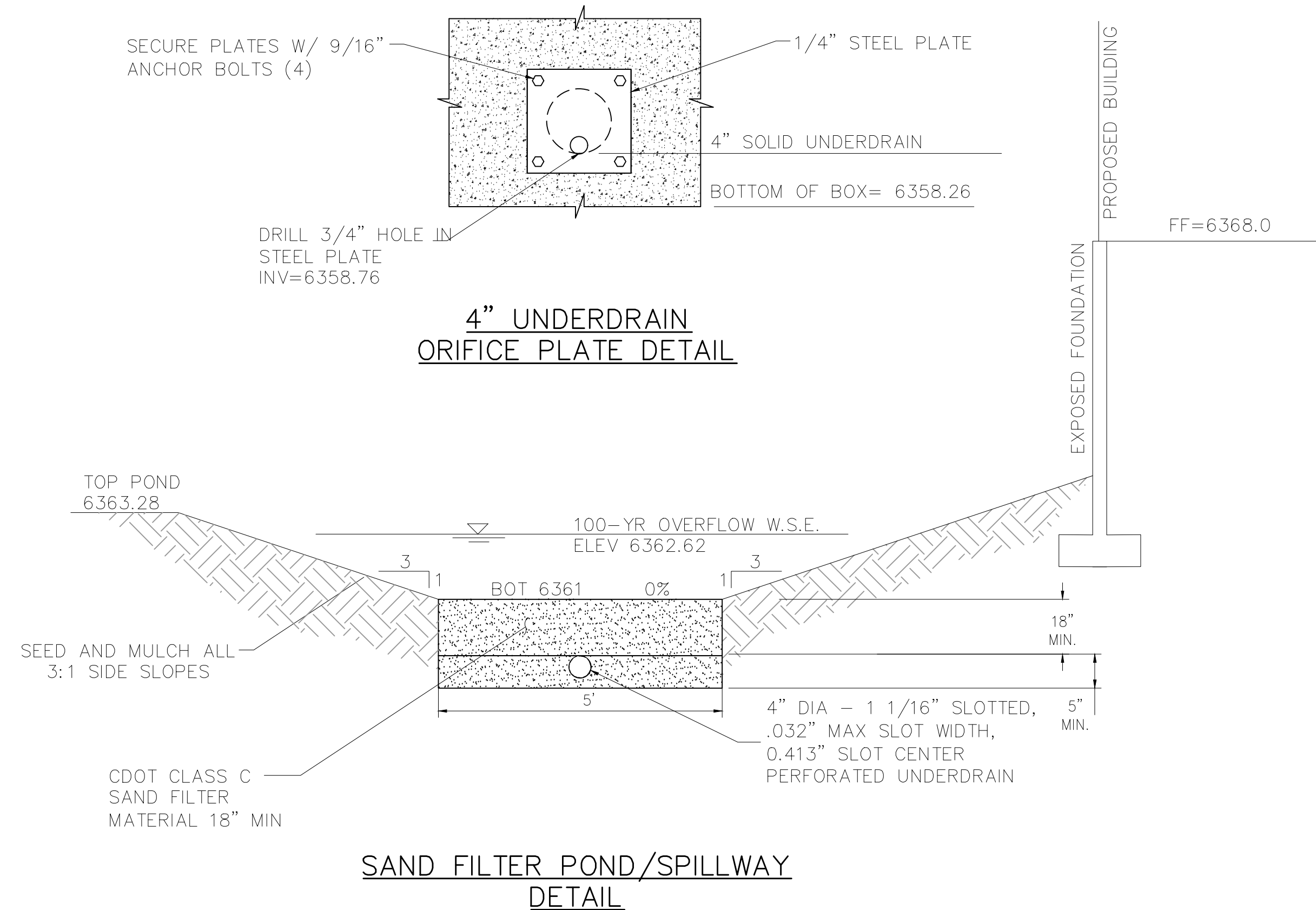
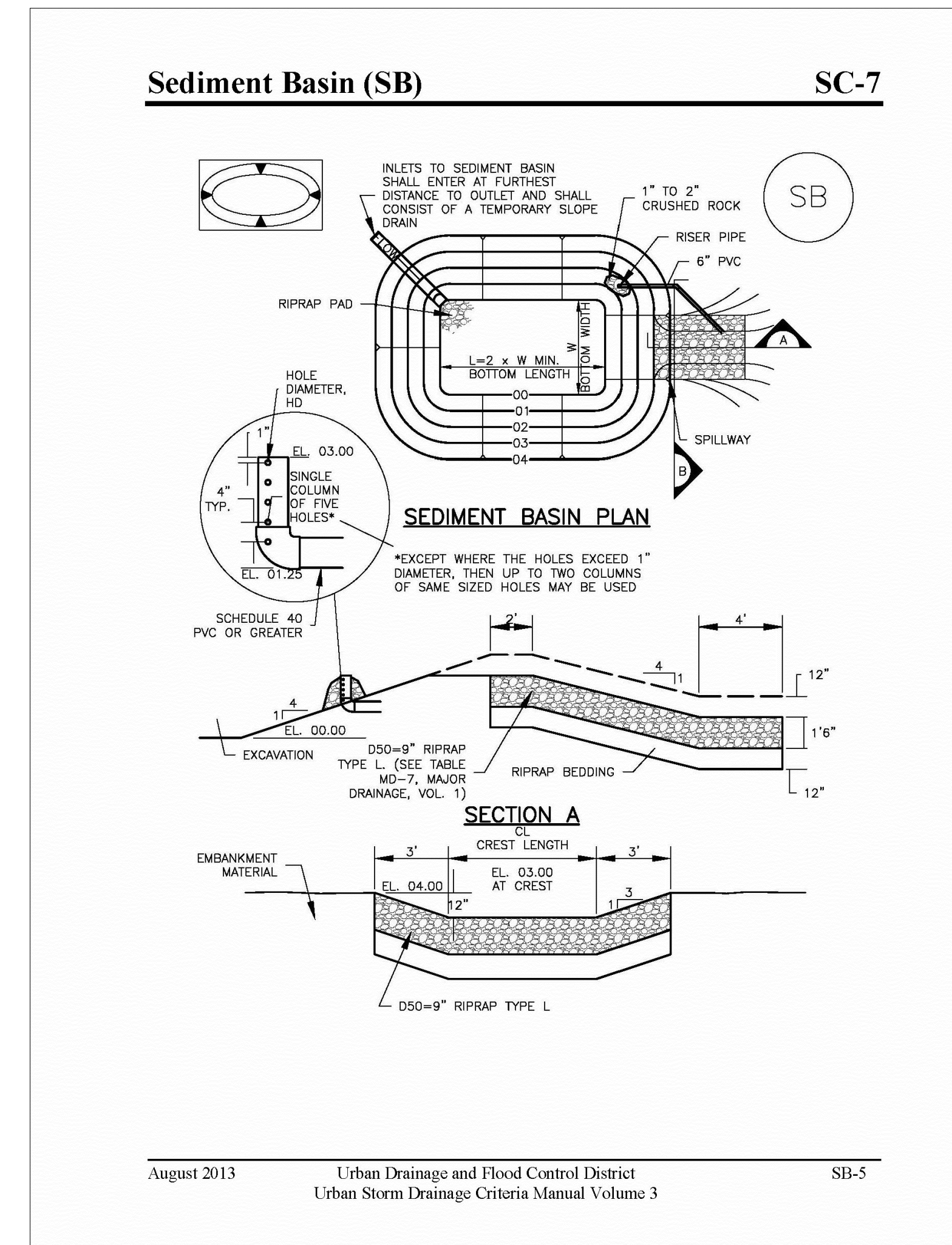
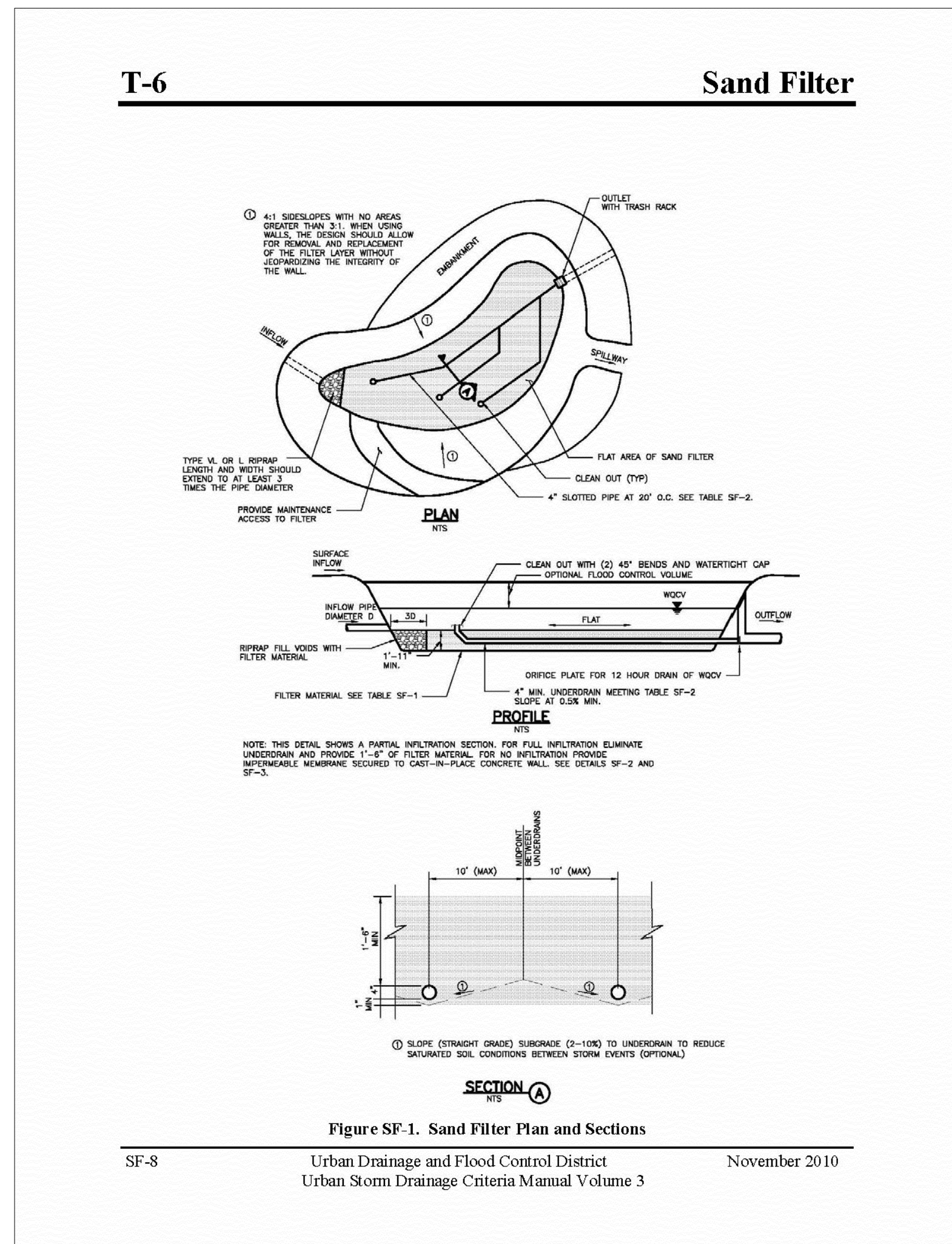
FOR LOCATING & MARKING GAS,
ELECTRIC, WATER & TELEPHONE LINES
WATER EMERGENCIES 520-0300



GRADING AND EROSION CONTROL NOTES:

- CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM DEVELOPMENT SERVICES AND A PRECONSTRUCTION CONFERENCE IS HELD WITH DEVELOPMENT SERVICES INSPECTIONS.
- 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 TO REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPs AS INDICATED ON THE 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 DSD INSPECTIONS STAFF.
- SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPs SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
- TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.
- ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPs IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).
- ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPs AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.
- ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE 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.
- ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON-EROSIVE VELOCITY.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
- EROSION CONTROL BLANKETING IS TO BE USED ON SLOPES STEEPER THAN 3:1.
- BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER 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. BMPs MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM 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 CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
- INDIVIDUALS 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 INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO ACTUAL CONSTRUCTION THE PERMITEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY TERRACON # 23055071 MAY 30, 2006. AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
 WATER QUALITY CONTROL DIVISION
 WQCD - PERMITS
 4300 CHERRY CREEK DRIVE SOUTH
 DENVER, CO 80246-1530
 ATTN: PERMITS UNIT



WQCV SUMMARY	
EPC/URBAN DRAINAGE SAND FILTER BASIN-SEE STD DET.	
WQCV REQUIRED =	915 CF
WQCV PROVIDED =	1002 CF
AREA REQUIRED =	402 SF
AREA PROVIDED =	409 SF
100 YR OUTLET - CDOT TYPE C INLET TOP OF BOX=	6362.24
100 YR WSE =	6362.62
EMERGENCY SPILLWAY EL =	6362.62

GRADING & EROSION CONTROL PLAN DETAILS
 LOT 3, PADMARK BUSINESS PARK FIL. NO. 1
 JOB NO. 44-031
 DATE PREPARED: JUNE 29, 2018
 DATE REVISED:

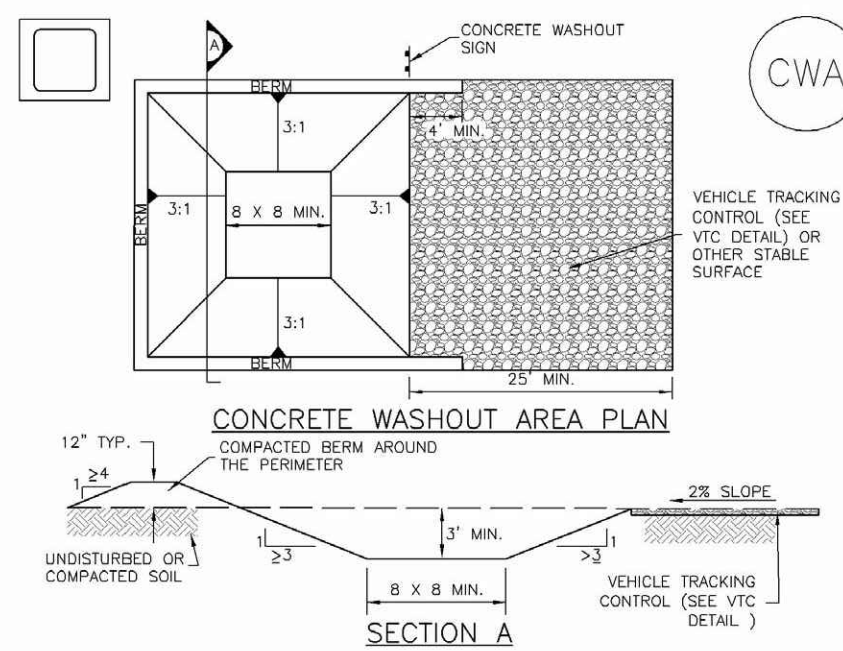
EL PASO COUNTY FILE NO. PPR 18-000



20 BOULDER CRESCENT, SUITE 110
 COLORADO SPRINGS, CO 80903
 PHONE: 719.955.5485

Concrete Washout Area (CWA)

MM-1



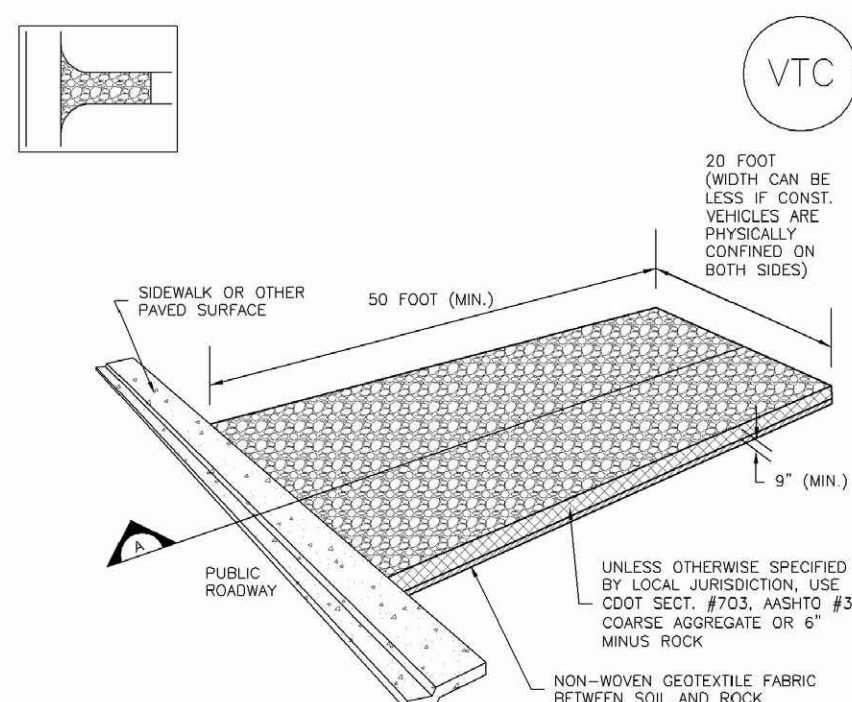
CWA-1. CONCRETE WASHOUT AREA

- CWA INSTALLATION NOTES
1. SEE PLAN VIEW FOR...
2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY...

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

Vehicle Tracking Control (VTC)

SM-4



VTC-1. AGGREGATE VEHICLE TRACKING CONTROL

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

Vehicle Tracking Control (VTC)

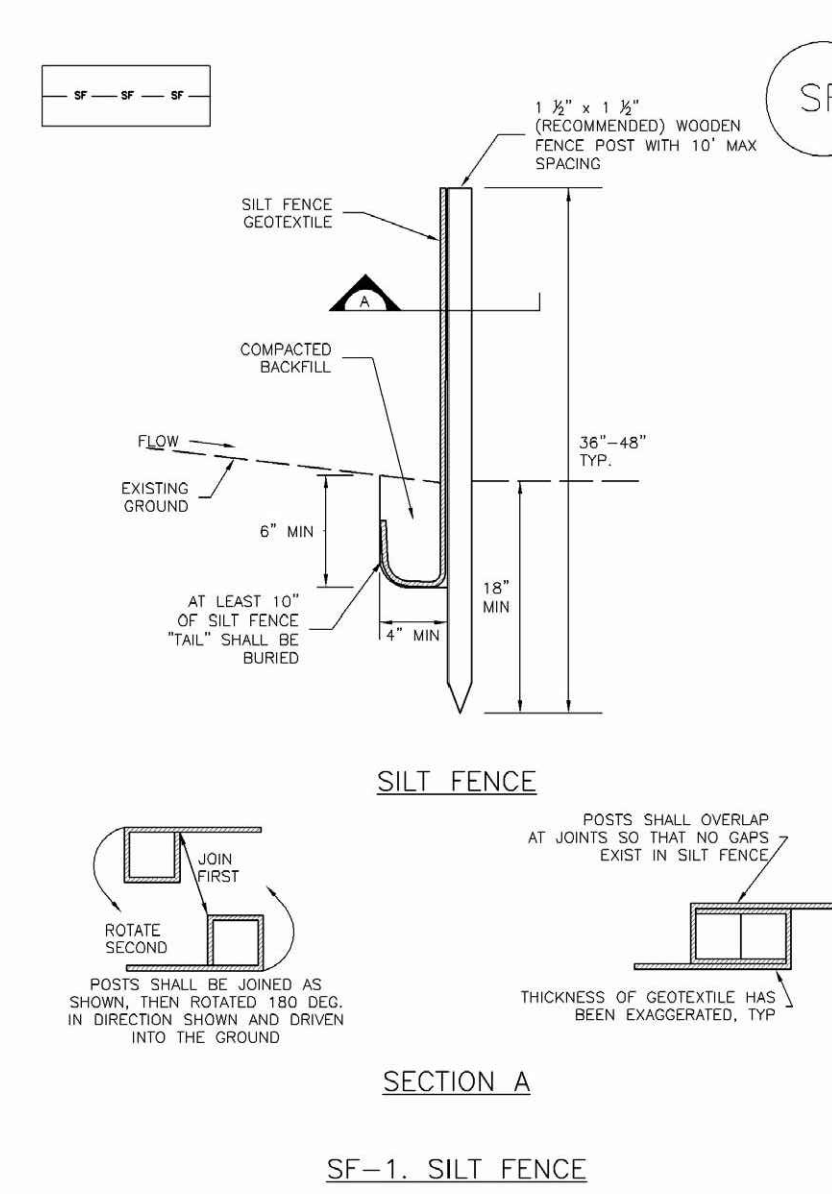
SM-4

- STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES
1. SEE PLAN VIEW FOR...
2. CONSTRUCTION MAT OR TBM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE USED ON SHORT DURATION PROJECTS...

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-6

Silt Fence (SF)

SC-1



SILT FENCE

SF-1. SILT FENCE

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

Silt Fence (SF)

SC-1

- SILT FENCE INSTALLATION NOTES
1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING...
2. A UNIFORM 6" x 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT FENCE INSTALLATION DEVICE...

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

Temporary and Permanent Seeding (TS/PS)

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses. Columns: Common Name, Botanical Name, Growth Season, Growth Form, Seeds/Pound, Pounds of PLS/Acre.

TS/PS-4 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 June 2012

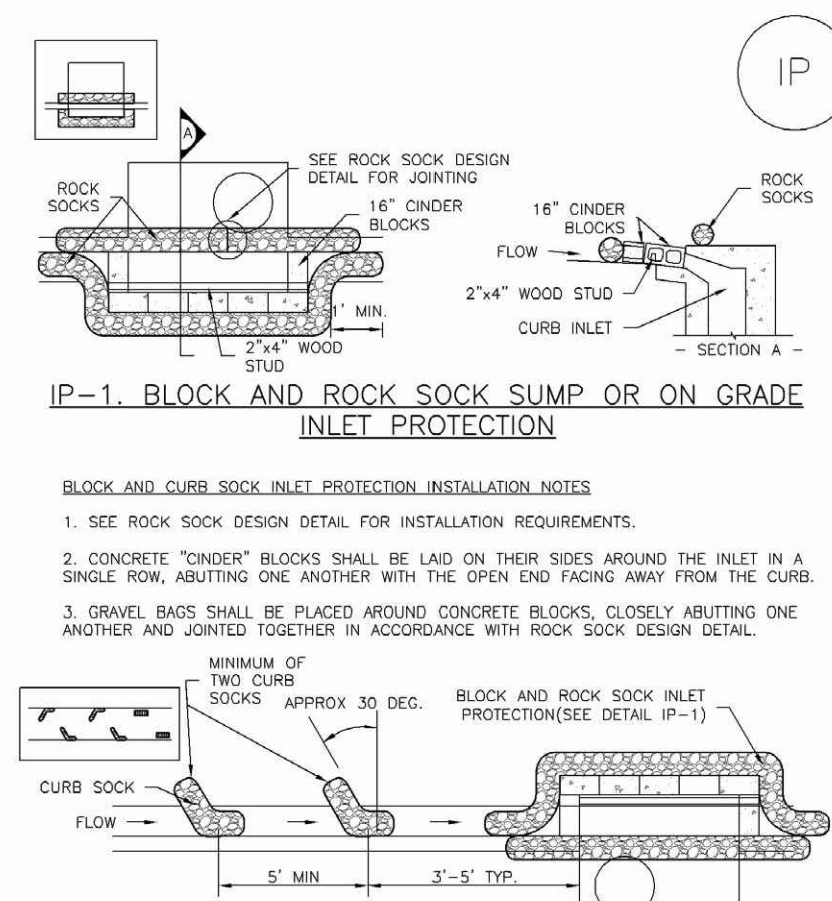
Temporary and Permanent Seeding (TS/PS)

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses (cont.). Columns: Common Name, Botanical Name, Growth Season, Growth Form, Seeds/Pound, Pounds of PLS/Acre.

June 2012 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 TS/PS-5

Inlet Protection (IP)

SC-6



IP-1. BLOCK AND ROCK SOCK SUMP OR ON GRADE INLET PROTECTION

IP-2. CURB SOCK SOCKS UPSTREAM OF INLET PROTECTION

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-4

Inlet Protection (IP)

SC-6

- GENERAL INLET PROTECTION INSTALLATION NOTES
1. SEE PLAN VIEW FOR...
2. CONCRETE 'ONDER' BLOCKS SHALL BE LAID ON THEIR SIDES AROUND THE INLET IN A SINGLE ROW...

August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 IP-8

Typical Curb and Gutter Details Standard Drawing. Includes diagrams for EPC Type A through E, a legend for curb heights, and drawing metadata (date 7/9/09, author André P. Brackin, date 7/7/11).

Markup Summary

dsdlaforce (3)

V / S, // V U.

Suite 110
80903
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18-000

PPR-18-034

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PPR-18-034

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Author: dsdlaforce
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Revise. This is a proposed site development plan, not a replat.

EASEMENTS & BRIDGE FEES

As proposed by the Cheverton Business Park Filing No. 2, Lot 48 into 1 commercial lot, does not intend a change to the zoning designation nor the respective average, therefore no bridge fees are required.

AS-ENR Consultants, Inc. (AS-ENR) cannot and does not guarantee the completion cost will not vary on these systems of public works. These systems represent our best judgment as design professionals familiar with the construction industry and this development in particular. This shall be an estimate of the facility cost and drainage basin to be assessed in 2018.

SUMMARY

Replacement of Lot 3 PALMCREST BUSINESS PARK FILING NO. 1 also will not adversely affect the

collected and discharged into an existing 30" RCP pipe that connects to an outfall into Lake Fork State Creek as determined by the MDDP and development of Lot 1, the existing 30" RCP pipe was installed southeast intersecting boundary to Lot 2. During development of Lot 2, the existing pipe was extended to the WO outfall manhole, then an 18" RCP was installed open line of Lot 2 and the 18" RCP was capped for future connection connection upon the development.

CHARACTERISTICS

designed to capture the 100yr developed runoff. The inline storm system for the three lots is not just for conveyance of the treated WQCV.

veyed to the water quality facility (Design Point 1) is discharged from 24" X 24" CDDF outlet box and an 18" RCP to an inline system Lot 3, 2 and 1 that ultimately outfalls to an existing public 48" storm Lot 1. The proposed 18" RCP outlet pipe from the sand filter basin pond at the southwest corner of Lot 1. The proposed Type II manhole P was installed at the north end of Lot 2. The existing capped 18" RCP of Lot 2 discharged to an existing Type II manhole at the southwest

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Identify that the outlet box is designed to capture the 100yr developed runoff. The inline storm system for the three lots is not just for conveyance of the treated WQCV.