

(Amendment Letter)
To the
MASTER DEVELOPMENT DRAINAGE
PLAN AND FINAL DRAINAGE REPORT
for SHILOH MESA FILING NO. 1

January 2016

Prepared for:

COLA, LLC
1710 Jet Stream Drive
Colorado Springs, CO 80921
Mike DeGrant

Prepared by:



CIVIL CONSULTANTS, INC.

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

Project #08-026

(Amendment Letter)

To the

MASTER DEVELOPMENT DRAINAGE PLAN AND FINAL DRAINAGE REPORT for SHILOH MESA FILING NO. 1

DRAINAGE PLAN STATEMENTS

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 established criteria 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.

COLA, LLC

BY:

Signature of Mike DeGrant
Mike DeGrant
Auth. Rep.

DATE:

5-31-16

TITLE:

Owner & Manager
DIRECTOR OF DEVELOPMENTS

ADDRESS:

COLA, LLC
1710 Jet Stream Drive
Colorado Springs, CO 80921

CITY OF COLORADO SPRINGS

Filed in accordance with Section 7-7-906 of the Code of the City of Colorado Springs, 2001, as amended.

BY:

Signature
For the City Engineer

DATE:

6/6/16

CONDITIONS:

(Amendment Letter)
To the
MASTER DEVELOPMENT DRAINAGE PLAN AND FINAL
DRAINAGE REPORT for SHILOH MESA FILING NO. 1

CERTIFICATION STATEMENT

"This report and plan for the final drainage design of Shiloh Mesa Filing No. 1 was prepared by me (or under my direct supervision) in accordance with the provisions of City of Colorado Springs Drainage Criteria Manual Volumes 1 and 2, Drainage Design and Technical Criteria for the owners thereof. I understand that the City of Colorado Springs does not and will not assume liability for drainage facilities designed by others."

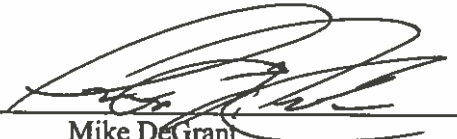


SIGNATURE: _____

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

" COLA, LLC hereby certifies that the drainage facilities for of Master Development Drainage Plan and Final Drainage Report for Shiloh Mesa & Shiloh Mesa Filing No. 1 shall be constructed according to the design presented in this report. COLA, LLC understand that the City of Colorado Springs does not and will not assume liability for the drainage facilities designed and/or certified by my engineer and that the City of Colorado Springs reviews drainage plans pursuant to Colorado Revised Statutes, Title 30, Article 28 (verify reference to CRS); but cannot, on behalf of Master Development Drainage Plan and Final Drainage Report for Shiloh Mesa & Shiloh Mesa Filing No. 1, guarantee that final drainage design review will absolve COLA, LLC and/or their successors and /or assigns of future liability for improper design. COLA, LLC further understand that approval of the final plat does not imply approval of my engineer's drainage design."

COLA, LLC

BY: 
Mike DeGrant
Auth Rep

DATE: 5-31-16

May 31, 2016

City of Colorado Springs
Subdivision Engineering Review Team
30 South Nevada Avenue, Suite 401
Colorado Springs, Colorado 80903
Attn: Elizabeth Nijkamp

RE: Amendment Letter to the Master Development Drainage Plan and Final Drainage Report for Shiloh Mesa Filing No. 1.

Dear Elizabeth,

The following is the Final Drainage Letter to amend the Master Development Drainage Plan and Final Drainage Report for Shiloh Mesa & Shiloh Mesa Filing No. 1, prepared by M&S Civil Consultants dated December 2015.

This letter is prepared to accompany the approved Development Plan amendment for Shiloh Mesa at Woodmen Heights (68.88 acres, 232 lots) and the recorded Final Plat for Shiloh Mesa Filing No. 1 (19.956 acres, 46 lots). The amendment to the Development Plan and Final Plat consisted of a four items; (1) reduction of lots from 236 to 232, (2) Minor lot line adjustments, (3) Incorporation of an eyebrow along Kenosha Drive between Barham Place and Sandsmere Drive, (4) Revision to the foot print of the south Water Quality Pond to better facilitate the construction and the aesthetics. Specifically, the walls within the pond were eliminated and the pond slopes were laid back at 3:1. The emergency spillway was moved from the west side along Marksheffel Road, to the south side of the pond along Kenosha Drive. Emergency overflow will exit onto Kenosha Drive and be routed via curb and gutter to Marksheffel Road. The sand filter area and pond volume requirements are still met as indicated by the attached Design Procedure Form: Sand Filter (SF) and the revised SDI Design Data Sheet (The SDI data sheet was revised – Exhibit 3). All storm sewer pipe and storm sewer structures out falling, and discharging from the pond were not be altered (see Exhibit 1 revised South WQ Pond). Due to changes of the pond side slopes, the placement of boulders adjacent to the 42" RCP and rip rap pad were needed. In general, no impacts to drainage patterns and/or quantities to storm facilities were required.

It is important to note, no changes to the fees were necessary, as a result of the approved minor amendments. Refer to the approved Master Development Drainage Plan and Final Drainage Report for Shiloh Mesa & Shiloh Mesa Filing No. 1, for Construction Cost Opinion, Drainage/Bridge/Pond Fees and Drainage Cost Comparison and Credit Summary fees.

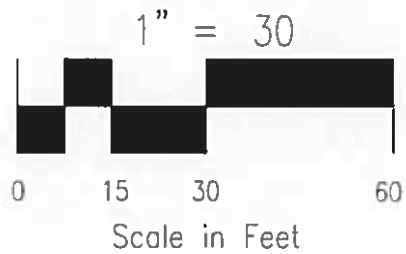
This amendment drainage letter and development of the Shiloh Mesa residential subdivisions will not adversely affect adjacent or downstream property and is in accordance with the Master Development Drainage Plan and Final Drainage Report for Shiloh Mesa & Shiloh Mesa Filing No. 1.

Respectfully,

Virgil A. Sanchez, P.E.
M&S Civil Consultants, Inc.



**Attachments: Exhibit 1-South WQ Pond
Exhibit 2-Design Procedure Form: Sand Filter (SF)
Exhibit 3-SDI Design Data Sheet**



LEGEND

- PROPOSED LOT DRAINAGE FLOW
- PROPOSED FLOW DIRECTION ARROW
- EXISTING FLOW DIRECTION ARROW
- EMERGENCY OVERFLOW DIRECTION

LOT 11 LOT NUMBER

H.P. X HIGH POINT

L.P. X LOW POINT

STORM SEWER PIPE

INLET

(6920) EXISTING MAJOR CONTOUR

(6918) EXISTING MINOR CONTOUR

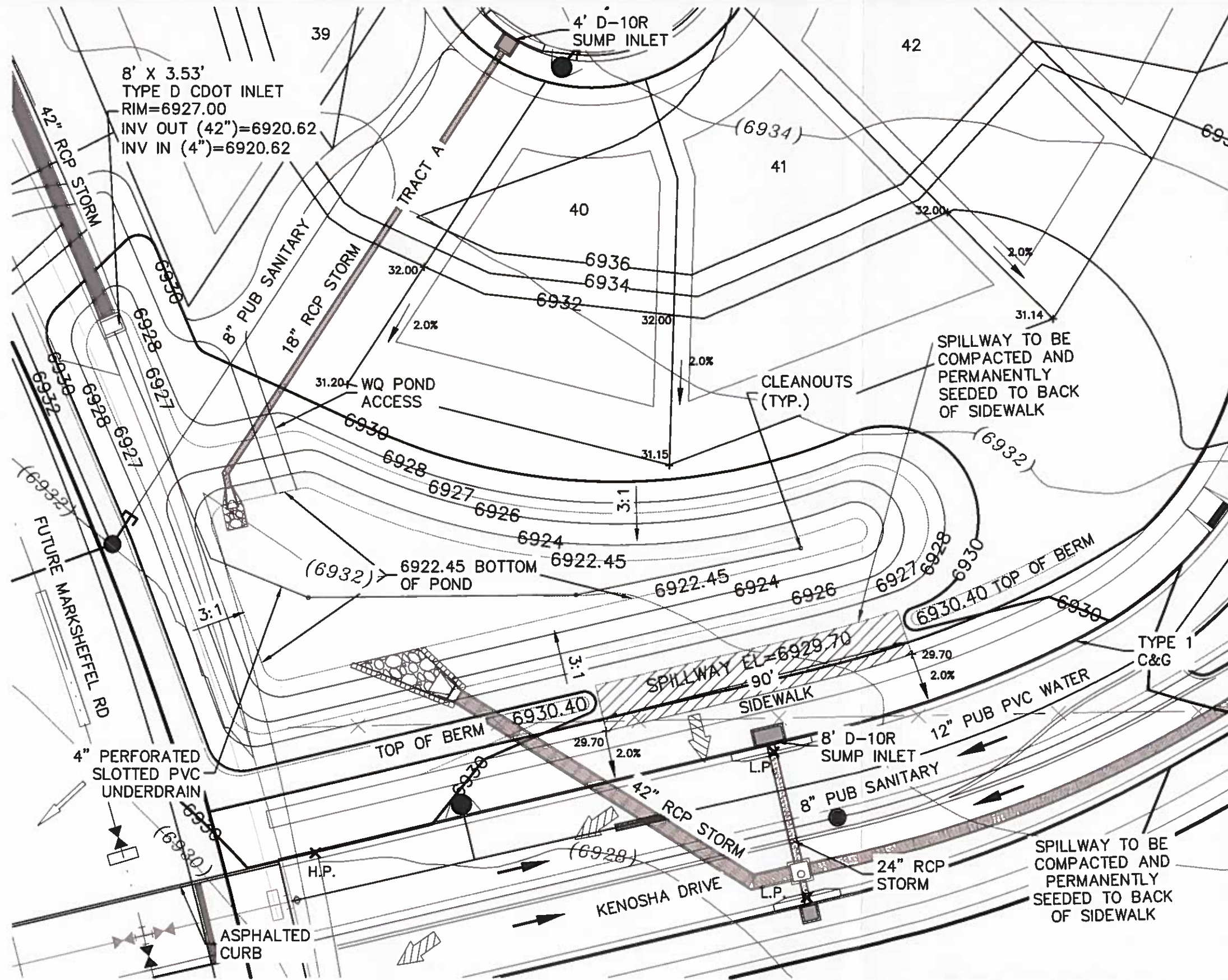
6920 PROPOSED MAJOR CONTOUR

6918 PROPOSED MINOR CONTOUR



CIVIL CONSULTANTS, INC.

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



**SHILOH MESA FILING NO. 1
 SOUTH WQ POND EXHIBIT**

Design Procedure Form: Sand Filter (SF)

Sheet 1 of 2

Designer: Eugene Tellaz
Company: MS Civil Consultants
Date: March 17, 2015
Project: Shiloh Mesa South Water Quality Pond
Location: Northeast of Marksheffel Road and Kenosha Road Intersection

1. Basin Storage Volume

- A) Effective Imperviousness of Tributary Area, I_p
(100% if all paved and roofed areas upstream of sand filter)
- B) Tributary Area's Imperviousness Ratio ($i = I_p/100$)
- C) Water Quality Capture Volume (WQCV) Based on 12-hour Drain Time
 $WQCV = 0.9 * (0.91 * l^2 - 1.19 * l^2 + 0.78 * l)$
- D) Contributing Watershed Area (Including sand filter area)
- E) Water Quality Capture Volume (WQCV) Design Volume
 $V_{WQCV} = WQCV / 12 * Area$
- F) For Watersheds Outside of the Denver Region, Depth of Average Runoff Producing Storm
- G) For Watersheds Outside of the Denver Region, Water Quality Capture Volume (WQCV) Design Volume
- H) User Input of Water Quality Capture Volume (WQCV) Design Volume (Only if a different WQCV Design Volume is desired)

$I_p = 65.0 \%$

$i = 0.650$

WQCV = 0.23 watershed inches

Area = 945,256 sq ft

$V_{WQCV} = 18,017$ cu ft

$d_0 =$ _____ in

$V_{WQCV \text{ OTHER}} =$ _____ cu ft

$V_{WQCV \text{ USER}} =$ _____ cu ft

2. Basin Geometry

- A) WQCV Depth
- B) Sand Filter Side Slopes (Horizontal distance per unit vertical, 4:1 or flatter preferred). Use "0" if sand filter has vertical walls.
- C) Minimum Filter Area (Flat Surface Area)
- D) Actual Filter Area
- E) Volume Provided

$D_{WQCV} = 6.0$ ft

$Z = 3.00$ ft / ft
DIFFICULT TO MAINTAIN, INCREASE WHERE POSSIBLE

$A_{Min} = 4004$ sq ft

$A_{Actual} = 4115$ sq ft

$V_T = 33,811$ cu ft

3. Filter Material

Choose One

18" CDOT Class C Filter Material

Other (Explain):

4. Underdrain System

- A) Are underdrains provided?
- B) Underdrain system orifice diameter for 12 hour drain time
 - i) Distance From Lowest Elevation of the Storage Volume to the Center of the Orifice
 - ii) Volume to Drain in 12 Hours
 - iii) Orifice Diameter, 3/8" Minimum

Choose One

YES

NO

$y = 1.8$ ft

$Vol_{12} = 18,017$ cu ft

$D_o = 2$ in

EXHIBIT 2

Design Procedure Form: Sand Filter (SF)

Sheet 2 of 2

Designer: Eugene Tellez
Company: MS Civil Consultants
Date: March 17, 2015
Project: Shiloh Meza South Water Quality Pond
Location: Northeast of Marksheffel Road and Kenosha Road Intersection

5. Impermeable Geomembrane Liner and Geotextile Separator Fabric

A) Is an Impermeable liner provided due to proximity of structures or groundwater contamination?

Choose One

YES NO

6-7. Inlet / Outlet Works

A) Describe the type of energy dissipation at inlet points and means of conveying flows in excess of the WQCV through the outlet

Riprap pad provided where needed. Emergency overflow provided to carry excess flow.

Notes: _____

Stormwater Detention and Infiltration Design Data Sheet

