# V1\_Drainage Report - Final\_Comments.pdf Markup Summary

## Callout (21)



Subject: Callout Page Label: 7 Author: lpackman

Date: 2/22/2023 2:14:34 PM

Status: Color: Layer: Space: Update to provide a recommendation for each culvert size and culvert analysis for each culvert in the appendix.



Subject: Callout Page Label: 5

Author: lpackman

Date: 2/22/2023 2:14:56 PM

Status: Color: Layer: Space: Submit a financial assurance form for the common development improvements with the next

submittal.



Subject: Callout Page Label: 8

Author: lpackman

Date: 2/22/2023 2:30:00 PM

Status: Color: Layer: Space: Revise to 08041C0507G and 08041C0526G.

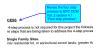


Add PCD File No.

Subject: Callout Page Label: 1 Author: Ipackman

Date: 2/22/2023 8:14:31 AM

Status: Color: Layer: Space: Add PCD File No. MS2213



Subject: Callout Page Label: 16 Author: Ipackman

Date: 2/23/2023 10:43:10 AM

Status:
Color: Layer:
Space:

Revise the four step process to EPC DCM Vol. 2 section 4.1 "Four step process".



Subject: Callout Page Label: 11 Author: lpackman

Date: 2/23/2023 3:37:58 PM

Status: Color: Layer: Space: Per EPC DCM VOL. 1 table 6-5, HW/D needs to

be 1.5 or less. Revise to meet criteria.



Subject: Callout Page Label: 10 Author: lpackman

Date: 2/23/2023 3:45:20 PM

Status: Color: Layer: Space: Revise to use City of Colorado Springs DCM Vol. 1 Ch 6 rainfall and coefficient information.

veway. Inere are no acrownes or improver water quality facilities for this project base is Section I.7.1.5.B.2, Section I.7.1.5.B.3 a

Subject: Callout Page Label: 14 Author: lpackman

Date: 2/23/2023 4:04:23 PM

Status: Color: Layer: Space: Remove. Exclusions do not apply.



Subject: Callout Page Label: 9 Author: lpackman

Date: 2/23/2023 4:11:13 PM

Status: Color: Layer: Space: Revise to remove TR55 references from report since it is not an allowed method.



Subject: Callout Page Label: 11 Author: lpackman

Date: 2/23/2023 4:16:10 PM

Status: Color: Layer: Space: Remove "existing" if this culvert is not installed yet.



Subject: Callout Page Label: 12 Author: Ipackman

Date: 2/23/2023 7:25:04 AM

Status: Color: Layer: Space: Per EPC DCM VOL. 1 table 6-5, HW/D needs to be 1.5 or less. Revise to meet criteria.



Subject: Callout Page Label: 14 Author: lpackman

Date: 2/23/2023 7:52:55 AM

Status: Color: Layer: Space: Include a grading and erosion control plan or a set of construction drawings for the construction of the driveway. Note: an ESQCP permit might be required if the 500 CY of fill is triggered.



Subject: Callout Page Label: 17 Author: lpackman

Date: 2/23/2023 8:17:51 AM

Status: Color: Layer: Space:

Revise total project area to only include residential lots and exclude tracts a and b since drainage fees are not paid for tracts.

Subject: Callout Page Label: 2 Author: lpackman

Date: 2/27/2023 10:45:21 AM

Status: Color: Layer: Space:

Add a list of references that were used in the report

Subject: Callout Page Label: 7 Author: lpackman

Date: 2/27/2023 11:00:48 AM

Status: Color: Layer: Space:

Reference Canyon Creek Ranch that was referenced in the body of the report and explain

what the study is.



Subject: Callout Page Label: 3 Author: lpackman

Date: 2/27/2023 4:38:45 PM

Status: Color: Layer: Space:

Replace with Joshua Palmer

Subject: Callout Page Label: 8 Author: dsdlaforce

Date: 2/27/2023 5:29:04 PM

Status: Color: Layer: Space:

Identify the zone of the 100yr floodplain going through the site



Subject: Callout Page Label: 83 Author: lpackman

Date: 2/27/2023 9:58:15 AM

Status: Color: Layer: Space:

Per ECM 3.3.4.A any drainage channels that convey more than 15 cfs need to be assigned drainage easements. Revise to show drainage easement dimensions. for ravines that have more

than 15 cfs.

a manner in order to
and are constructed on both
the ravine. Due to the
ional erosion protection is
ried riprap.

by

Cettle Creek. The drainage
site C (for a total of 7.2

tiffall is annovimetely (899.8)

Subject: Callout Page Label: 12 Author: lpackman

Date: 2/28/2023 8:44:19 AM

Status: Color: Layer: Space: Update to recommended riprap type and volume.

Provide rprap sizing calculation if this is the selected improvement proposed. the pipe. Intel it is approximated at z.o. 1 feet, it is reminimize the crossing polerate! The seeder that we are supported to the pipe. In the selection polerate! The seeder that we are the selection polerate! The seeder that we are the seeder that the seeder that the selection polerate is not provided in the crossing polerate.

Subject: Callout Page Label: 12 Author: dsdlaforce

Date: 2/28/2023 8:45:46 AM

Status: Color: Layer: Space: Provide riprap sizing calculation if this is the selected improvement proposed.

yr.1.0, Depth = 2.0 ft. at 29.5 (seel. It is recommended that more of fiscent manner in order to I. Update to recommended ripcopype and volume.

The 3 into Kettle Creek. The drainage
D, and orate C for a total of 172.38

Subject: Callout Page Label: 12 Author: lpackman

Date: 2/28/2023 8:47:28 AM

Status: Color: Layer: Space: Update to recommended riprap type and volume.

### Cloud+ (4)



Subject: Cloud+ Page Label: 15 Author: lpackman

Date: 2/23/2023 4:03:59 PM

Status: Color: Layer: Space: Remove. These exclusions do not apply.



Subject: Cloud+ Page Label: 17 Author: lpackman

Date: 2/23/2023 8:13:54 AM

Status: Color: Layer: Space: Update drainage fees to use 2023 drainage fee schedule.



Subject: Cloud+ Page Label: 83 Author: lpackman

Date: 2/27/2023 9:58:15 AM

Status: Color: Layer: Space: Note: you cannot modify a FEMA floodplain without a CLOMR/LOMR. Revise design to prevent modifications to the floodplain.



Subject: Cloud+ Page Label: 10 Author: lpackman

Date: 2/28/2023 8:43:55 AM

Status: Color: Layer: Space: Revise runoff calculations to use HEC-HMS for analysis of larger areas that rational method cannot be used. Remove all references to TR-55 and provide new runoff calculations for the site. See snippet that was provided over the narrative for what methods are allowed.

### Image (1)

Subject: Image Page Label: 10 Author: Ipackman

Date: 2/23/2023 1:06:52 PM

Status: Color: Layer: Space:

#### Text Box (7)



Subject: Text Box Page Label: 18 Author: lpackman

Date: 2/23/2023 4:06:00 PM

Status: Color: Layer: Space: Update summary to discuss if Kettle Creek is a suitable outfall per ECM 3.2.4. There appears to be a lot of areas in all of the ravines that lead to the creek with significant erosion. Provide pictures of the ravines that will be modified for the construction of the driveway and include an explanation of necessary mitigation, if required.



Subject: Text Box Page Label: 35 Author: Ipackman

Date: 2/23/2023 4:06:56 PM

Status: Color: Layer: Space: Highlight values that were used.



Subject: Text Box Page Label: 40 Author: lpackman

Date: 2/23/2023 4:07:24 PM

Status: Color: Layer: Space: Remove all references to TR55 since that method is not allowed to be used by the County.



Subject: Text Box Page Label: 11 Author: Ipackman

Date: 2/23/2023 4:26:43 PM

Status: Color: Layer: Space: Per DCM Vol. 1 6.5.2 Froude numbers should be less than 0.9. It appears that all Froude numbers for the ravines that are running through the site significantly exceed 0.9 and therefore require some kind of armoring to prevent erosion. In a separate narrative, address the high Froude numbers for all the ravines that run through the site and provide a recommendation for armoring. Per EPCD DCM Vol.1 1.4.2 property owners are required to stabilize unstable drainage channels if increasing historical flows. Froude numbers indicate channels are not stable. Provide channel analyses for the ravines and the creek.



Subject: Text Box Page Label: 83 Author: dsdlaforce

Date: 2/28/2023 10:31:44 AM

Status: Color: Layer: Space: Provide hydraulic analysis of Kettle Creek (HEC-RAS). For consistency with the City DBPS stabilization may be required if mean velocities exceed 5 fps.

Provide Froude and velocity calculations for all the ravines that are in the report. Submit those calculations in an appendix. Subject: Text Box Page Label: 11 Author: lpackman

Date: 2/28/2023 11:04:36 AM

Status:
Color: Layer:
Space:

Provide Froude and velocity calculations for all the ravines that are in the report. Submit those calculations in an appendix.

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Subject: Text Box Page Label: 11 Author: dsdlaforce

Date: 2/28/2023 8:35:04 AM

Status: Color: Layer: Space: Submit construction drawings for proposed channel improvements and for the proposed culvert/driveway improvement. These will be developer responsibilities associated with the

subdivision.