Drainage Report Final_V2_Comments.pdf Markup Summary

Callout (28)



Subject: Callout Page Label: 8 Author: Carlos

Date: 10/24/2022 12:57:45 PM

Status: Color: Layer: Space: Unresolved Review 1 Comment:

- Use the IDF values from the City of Colorado Springs Drainage Criteria Manual Vol 1, May 2014. The County adopted this criteria and therefore the IDF values from Chapter 6 should be used.



Subject: Callout Page Label: 7 Author: dsdlaforce

Date: 10/25/2022 1:31:16 PM

Status: Color: Layer: Space: Based on the drainage design WQ and detention is required when basin A1 develops during phase 2.

Update description to describe WQ and detention requirements for this during phase 2 and state that drainage report is required with phase 2 for the final design of the WQ/Detention facility.



Subject: Callout Page Label: 7 Author: dsdlaforce

Date: 10/25/2022 1:36:03 PM

Status: Color: Layer: Space: Explain why basin A2 does not drain into a permanent WQ facility. See ECM I.7.1.B for exclusions from permanent WQ. If this is intended to be undeveloped land that will remain

undeveloped then state as such.



Subject: Callout Page Label: 7 Author: dsdlaforce

Date: 10/25/2022 1:46:42 PM

Status: Color: Layer: Space: Describe the minor/major flow rates calculated for each basin.

For each basindescribe where they discharge. Example: For basin A3 you should note runoff from this basin is collected by an inlet and conveyed by stormdrain system into the proposed EDB pond for WQ and Detention. Or Basin A4 runoff sheet flow into a proposed swale and routed into the proposed EDB pond for WQ and detention.



Subject: Callout Page Label: 7 Author: dsdlaforce

Date: 10/25/2022 1:49:04 PM

Status: Color: Layer: Space: See review #1 comment to the site plan and Traffic Study. This needs to be asphalt paving if the projected ADT is 200 trips.



Subject: Callout Page Label: 3 Author: dsdlaforce

Date: 10/25/2022 10:41:09 AM

Status: Color: Layer: Space: Format so the County Signature Block is in the same sheet as the Engineer and Owner Signature Block.



Subject: Callout Page Label: 27 Author: dsdlaforce

Date: 10/25/2022 10:59:07 AM

Status: Color: Layer: Space: Provide a schematic of the storm drain model and include the lane ID on the drainage on the drainage map so there is a reference exhibit. Staff is unable to determine the corresponding line with the given information.



Subject: Callout Page Label: 9 Author: dsdlaforce

Date: 10/25/2022 2:03:45 PM

Status: Color: Layer: Space: Identify the specific basin where grass buffer is being used.

The narrative is not consistent with the design procedure form. The south staff car park (basin A8) is 1.02 acres while the description noted 8.7 acres. Provide an exhibit showing the grass buffer area and the tributery area.

area and the tributary area.

ments will provide adequate storage and water q basin, which will limit peak runoff rates to allow drainage Revise sentence ems in th

ion pond facility and all its components will be c e with the plans and specifications described in estorm drain system and debtaption facilities are nance of the storm infrastructure will be carried land its outlet structure will operate and be main irected by El Paso County. It is our understanding Subject: Callout Page Label: 11 Author: dsdlaforce

Date: 10/25/2022 2:10:18 PM

Status: Color: Layer: Space: Revise sentence



Subject: Callout Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:25:09 PM

Status: Color: Layer: Space: Revise calculation



Subject: Callout Page Label: 33 Author: dsdlaforce

Date: 10/25/2022 2:32:33 PM

Status: Color: Layer: Space: Replace with City DCM Table 6-2



Subject: Callout Page Label: 33 Author: dsdlaforce

Date: 10/25/2022 2:37:00 PM

Status: Color: Layer: Space: Remove the override or update the WQCV chart in pg 31.



Subject: Callout Page Label: 31 Author: dsdlaforce

Date: 10/25/2022 2:37:22 PM

Status: Color: Layer: Space: Update the imperviousness to 0.84 to match the UD-Detention or remove this sheet and use the calculated value on the UD-Detention worksheet.



Subject: Callout Page Label: 35 Author: dsdlaforce

Date: 10/25/2022 2:41:10 PM

Status: Color: Layer: Space: Revise design. For Full Spectrum Design pond release must be equal to or less than historic for all design storm. Ratio must be 1.0 or less.



Subject: Callout
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 3:41:03 PM

Status: Color: Layer: Space: Provide the sizing calculation for each of the forebays. Recommend using UD-BMP



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:31:04 PM

Status: Color: Layer: Space: show the existing contours and delineate basin.



Subject: Callout
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 4:37:13 PM

Status: Color: Layer: Space: provide design point

Unresolved. Provide summary table of combined flows. Main intent is for the drainage report to provide a comparison between existing and proposed condition that would show runoff at the Falcon Hwy Culvert Crossing has not increased.



Subject: Callout
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 4:38:58 PM

Status: Color: Layer: Space: show the existing contours and delineate basin.



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:57:58 PM

Status: Color: Layer: Space: It appears offsite flows is being diverted off site at this location. If this is correct then downstream analysis is needed to verify downstream properties are not negatively impacted. Explain in the

sub-basin narrative. Add a design point

Unresolved. Provide the offsite basin analysis. Flow being diverted is unknown.



Subject: Callout Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 4:58:48 PM

Status:
Color: Layer:
Space:

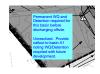
Site plan shows the bus parking as gravel. Adjust or explain in the basin description why you assumed asphalt paving.



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:59:16 PM

Status: Color: Layer: Space: Design point for combined flow unresolved.



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:00:24 PM

Status: Color: Layer: Space: Permanent WQ and Detention required for this basin before discharging offsite.

Unresolved. Provide callout to basin A1 noting WQ/Detention required with future development.



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:01:40 PM

Status: Color: Layer: Space: Label channel to match the calculations. Staff is assuming this is "Overflow Swale - East"



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:01:59 PM

Status: Color: Layer: Space: provide swale hydraulic calculation



Subject: Callout

Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:02:05 PM

Status: Color: Layer: Space: provide swale hydraulic calculation



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:02:18 PM

Status: Color: Layer: Space: provide channel hydraulic calculation



Subject: Callout
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 5:03:57 PM

Status: Color: Layer: Space: Drainage report to include hydraulic analysis of the drainage path from the pond outfall to the suitable outfall location defined in ECM Chapter 3 section 3.2.4. Analysis will likely be to the culvert at

Falcon Hwy.

Identify and provide construction plans for necessary offsite improvements so the conveyance is hydraulically adequate.

Unresolved.



Subject: Callout Page Label: [1] 24x36 Author: dsdlaforce Date: 10/25/2022 5:06:24 PM

Status: Color: Layer: Space: Since the grading and drainage plan is diverting flows then channel analysis (highlighted in blue) must be provided to ensure the receiving channel does not have negative impacts to the channel. Offsite improvements may be required to the

Unresolved.

receiving channel.

5...5

Cloud (1)



Subject: Cloud Page Label: 33 Author: dsdlaforce

Date: 10/25/2022 2:32:14 PM

Status: Color: Layer: Space:

Cloud+ (2)



Subject: Cloud+ Page Label: 26 Author: dsdlaforce

Date: 10/25/2022 4:42:38 PM

Status: Color: Layer: Space: Revise. Max overland is 100 ft.



Subject: Cloud+ Page Label: 25 Author: Carlos

Date: 10/25/2022 8:37:23 AM

Status: Color: Layer: Space:

Unresolved Review 1 Comment:

- Provide calculation for the composite calculation based on Table 6-6 and chapter 6 of the City DCM,

not the above equation.

Engineer (13)

impervious.

Subject: Engineer Page Label: 7 Basin A2 is a Author: dotprete

covered by v

Date: 10/27/2022 1:30:20 PM

Status: Color: Layer: Space:

Basin A2



Subject: Engineer Page Label: 7 Author: dotprete

Date: 10/27/2022 1:32:57 PM

Status: Color: Layer: Space:

Basin A2 includes a portion of the proposed roadways, therefore it does not qualify for ECM Exclusion I.7.1.B. Runoff from the roadways will need to be treated prior to discharge to the

wetland.



Subject: Engineer Page Label: 9 Author: dotprete

Date: 10/27/2022 1:36:11 PM

Status: Color: Layer: Space:

provide runoff reduction calculations for proposed

grass buffer

be treated prior c is too low to d Author: dotprete rovided.

Subject: Engineer Page Label: 11

Date: 10/27/2022 1:36:44 PM

Status: Color: Layer: Space:

too low



Subject: Engineer Page Label: 11 Author: dotprete

Date: 10/27/2022 1:38:26 PM

Status: Color: Layer: Space:

down gradient. WQ is still required. Consider runoff reduction or a small pond, sand filter basin, rain

garden, etc.



Subject: Engineer Page Label: 12 Author: dotprete

Date: 10/27/2022 1:42:44 PM

Status: Color: ■ Layer: Space: Show the "Four-Step Process" for selecting structural BMPs (ECM Section I.7.2 BMP Selection). Under each step, summarize how the

step was considered or implemented.

unresolved.



Subject: Engineer Page Label: 38 Author: dotprete

Date: 10/27/2022 1:49:56 PM

Status: Color: ■ Layer: Space: Include calculations for proposed swales and any required outlet protection (including riprap sizing). unresolved.



Subject: Engineer
Page Label: [1] 24x36
Author: dotprete

Date: 10/27/2022 1:58:36 PM

Status: Color: ■ Layer: Space: this portion of the project needs WQ or must fall under an ECM exclusion.

Note: runoff reduction can not be within a

floodplain



Subject: Engineer Page Label: [1] 24x36 Author: dotprete

Date: 10/27/2022 1:58:43 PM

Status: Color: ■ Layer: Space: this portion of the project needs WQ or must fall

under an ECM exclusion.

Note: runoff reduction can not be within a

floodplain



Subject: Engineer
Page Label: [1] 24x36
Author: dotprete

Date: 10/27/2022 1:58:55 PM

Status: Color: ■ Layer: Space: this portion of the project needs WQ or must fall under an ECM exclusion.

Note: runoff reduction can not be within a

floodplain



Subject: Engineer Page Label: [1] 24x36 Author: dotprete

Date: 10/27/2022 2:04:58 PM

Status: Color: ■ Layer: Space: provide calculations for this culvert and outlet and include text that explains this situation in the DR text. Unclear if the water is supposed to pass over the riprap outfall for the pond and flow into the

swale. unresolved.



Subject: Engineer Page Label: [1] 24x36 Author: dotprete

Date: 10/27/2022 2:23:25 PM

Status: Color: Layer: Space:

this portion of the project needs WQ or must fall

under an ECM exclusion.

All areas must be discussed in the DR text

Subject: Engineer **Page Label:** [1] 24x36 Author: dotprete

Date: 10/27/2022 2:24:30 PM

Status: Color: Layer: Space:

label contours, is SW flowing onsite from this

property?

Group (1)



Subject: Group Page Label: 26 Author: dsdlaforce

Date: 10/25/2022 4:42:16 PM

Status: Color: Layer: Space:

Highlight (17)



Subject: Highlight Page Label: 8 Author: Carlos

Date: 10/24/2022 12:57:11 PM

Status: Color: Layer: Space:

The design frequencies are the 10- and 100-year events for the minor and major storms

respectively. The 10-year storm with a 1-hour point rainfall of 1.48 inches and the 100-year

storm, with a 1-hour point rainfall of 2.5 inches

were used



Subject: Highlight Page Label: 8 Author: Carlos

Date: 10/24/2022 12:57:51 PM

Status: Color: Layer: Space:

). Intensity, Duration, Frequency (IDF) values for

the 2, 5, 10 & 100-year events from

NOAA Atlas for the subject site location were

utilized for the analysis.

d building and is mainly a gravel ya

Subject: Highlight Page Label: 7 and a gravel access road east of th Author: dsdlaforce

t and access, adjacent to the elemer Date: 10/25/2022 1:47:12 PM



Subject: Highlight Page Label: 9 Author: dsdlaforce

Date: 10/25/2022 1:58:09 PM

Status: Color: Layer: Space:

Due to site constraints including site elevation, storm runoff from the developed southern portion of the site equivalent to 8.7 acres will not be routed to the new detention basin but to a grass buffer to provide water

Subject: Highlight Page Label: 11 Author: dsdlaforce

Date: 10/25/2022 2:10:01 PM

Status: Color: Layer: Space:

Subject: Highlight Page Label: 11 Author: dsdlaforce

Date: 10/25/2022 2:10:04 PM

Status: Color: Layer: Space:

fees are waived as part of the proposed development and will not be assessed with t

working order: Subject: Highlight fees are waived Page Label: 11 application. Th Author: dsdlaforce

carried out by t

Status: Color: Layer: Space:

application

Subject: Highlight Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:21:11 PM

Status: Color: Layer: Space:

Subject: Highlight Page Label: 25

Author: dsdlaforce Date: 10/25/2022 2:21:17 PM

Status: Color: Layer: Space:

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Subject: Highlight Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:21:24 PM

Status: Color: Layer: Space:

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Subject: Highlight Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:21:26 PM

Status: Color: Layer: Space:



Subject: Highlight
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 4:00:13 PM

Status: Color: Layer: Space:

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Subject: Highlight Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:00:13 PM

Status: Color: Layer: Space:

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Subject: Highlight Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:38:51 PM

Status: Color: Layer: Space:

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Subject: Highlight
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 4:38:51 PM



Subject: Highlight
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 5:03:30 PM

Status: Color: Layer: Space:





Subject: Highlight
Page Label: [1] 24x36
Author: dsdlaforce

Date: 10/25/2022 5:05:14 PM

Status: Color: Layer: Space:

Image (9)



Subject: Image Page Label: 19 Author: dsdlaforce

Date: 10/25/2022 11:14:17 AM

Status: Color: Layer: Space:

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Subject: Image Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 11:29:55 AM

Status:
Color: Layer:
Space:

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Subject: Image Page Label: 19 Author: dsdlaforce

Date: 10/25/2022 12:47:26 PM

Status: Color: Layer: Space:

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Subject: Image Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:25:01 PM



Subject: Image Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:25:27 PM

Status: Color: Layer: Space:



Subject: Image Page Label: 33 Author: dsdlaforce

Date: 10/25/2022 2:33:00 PM

Status: Color: Layer: Space:

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Subject: Image Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:03:30 PM

Status: Color: Layer: Space:

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The marked from the control of the

Subject: Image Page Label: 24 Author: Carlos

Date: 10/25/2022 8:34:25 AM

Status: Color: Layer: Space:

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Subject: Image Page Label: 24 Author: Carlos

Date: 10/25/2022 8:34:27 AM

Status: Color: Layer: Space:

Line (6)



Subject: Line Page Label: 21 Author: Carlos

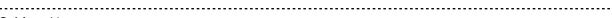
Date: 10/24/2022 3:53:26 PM



Subject: Line Page Label: 21 Author: Carlos

Date: 10/24/2022 3:53:39 PM

Status: Color: Layer: Space:





Subject: Line Page Label: 22 Author: Carlos

Date: 10/24/2022 3:54:41 PM

Status: Color: Layer: Space:



Subject: Line Page Label: 22 Author: Carlos

Date: 10/24/2022 3:54:46 PM

Status: Color: Layer: Space:

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Subject: Line Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:23:17 PM

Status: Color: Layer: Space:

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Subject: Line Page Label: 25 Author: dsdlaforce

Date: 10/25/2022 2:23:20 PM

Status: Color: Layer: Space:

Polygon (5)



Subject: Polygon
Page Label: [1] 24x36
Author: dotprete

Date: 10/27/2022 1:53:23 PM



Subject: Polygon
Page Label: [1] 24x36
Author: dotprete

Date: 10/27/2022 1:55:45 PM

Status: Color: Layer: Space:





Subject: Polygon
Page Label: [1] 24x36
Author: dotprete

Date: 10/27/2022 1:55:56 PM

Status: Color: Layer: Space:





Subject: Polygon
Page Label: [1] 24x36
Author: dotprete

Date: 10/27/2022 1:57:39 PM

Status: Color: Layer: Space:





Subject: Polygon Page Label: [1] 24x36 Author: dotprete

Date: 10/27/2022 2:22:42 PM

Status: Color: Layer: Space:

Rectangle (1)



Subject: Rectangle Page Label: 35 Author: dsdlaforce

Date: 10/25/2022 2:41:03 PM

Status: Color: Layer: Space:

Snapshot (2)



Subject: Snapshot Page Label: 21 Author: Carlos

Date: 10/24/2022 3:54:20 PM



Subject: Snapshot Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:05:14 PM

Status: Color: Layer: Space:

Text Box (15)



Subject: Text Box Page Label: 20 Author: Carlos

Date: 10/24/2022 3:53:13 PM

Status: Color: Layer: Space: Unresolved Review 1 Comment:

- Use the IDF values from the City DCM, May

2014.



Subject: Text Box Page Label: 21 Author: Carlos

Date: 10/24/2022 3:54:19 PM

Status: Color: Layer: Space: Unresolved Review 1 Comment:

-Delete



Subject: Text Box Page Label: 22 Author: Carlos

Date: 10/24/2022 3:55:35 PM

Status: Color: Layer: Space: Unresolved Review 1 Comment:

- Use the IDF values from the City DCM, May

2014.

- Remove page



Subject: Text Box Page Label: 23 Author: Carlos

Date: 10/24/2022 3:56:02 PM

Status:
Color: Layer:
Space:

Unresolved Review 1 Comment:

- Use the IDF values from the City DCM, May

2014.

- Remove page



Subject: Text Box Page Label: 8 Author: Carlos

Date: 10/24/2022 4:30:05 PM

Status: Color: Layer: Space: Unresolved Review 1 Comment:

- County criteria requires the minor design storm to be designed up to the 5-year event. It seems you are designing up to the 10-year event therefore in the narrative state that you are aware and the reason for designing to the 10-year event instead

of the 5-year.

Subject: Text Box Page Label: 1

Author: dsdlaforce Date: 10/25/2022 10:42:00 AM

Status: Color: Layer: Space:

Add PPR2236



Subject: Text Box Page Label: 19 Author: dsdlaforce

Date: 10/25/2022 12:48:14 PM

Status: Color: Layer: Space:

See the following comments on the GEC Plan. Supporting hydraulic calculations for all proposed drainage improvements, swales, storm drains, inlets must be included in the drainage report.



Subject: Text Box Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 2:04:32 PM

Status: Color: Layer: Space:

Show the grass buffer area used for WQ.



Subject: Text Box Page Label: 11 Author: dsdlaforce

Date: 10/25/2022 2:15:08 PM

Status: Color: Layer: Space:

Add a section for Drainage Fee.

- Identify which basin the site is located in and state that drainage and bridge fees are not assessed with site development plan application.

Unresolved. Add Subsection

"3. Drainage Fee.

The project is located within the Falcon Drainage Basin which is a part of the El Paso County Drainage Fee program. However, no drainage and bridge are assessed with site development plan application."



Subject: Text Box Page Label: 26 Author: dsdlaforce

Date: 10/25/2022 2:26:44 PM

Status: Color: Layer: Space:

Provide the basin storm runoff calculation showing the Q10 and Q100



Subject: Text Box Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:00:31 PM

Status: Color: Layer: Space:

Delineate all offsite basins draining onto the site. Update runoff calculations to include offsite basin.

Unresolved.



Subject: Text Box Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 4:38:51 PM

Status: Color: Layer: Space: Delineate all offsite basins draining onto the site. Update runoff calculations to include offsite basin.



Subject: Text Box Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:03:01 PM

Status: Color: Layer: Space: Provide summary table of combined flows.



Subject: Text Box Page Label: [1] 24x36 Author: dsdlaforce

Date: 10/25/2022 5:24:31 PM

Status: Color: Layer: Space: DBPS Selected alternative adjacent to the school site and the required improvements.

Unresolved. No analysis or discussion has been provided with regards to conformance to the DBPS.



Subject: Text Box Page Label: 24 Author: Carlos

Date: 10/25/2022 8:35:09 AM

Status: Color: Layer: Space: Unresolved Review 1 Comment:

- Add the footnotes on the right to the sheet.