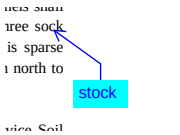
Final Drainage Report_V1.pdf Markup Summary

CDurham (64)



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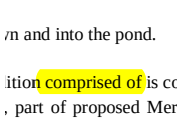

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Date: 2/14/2022 5:21:38 PM
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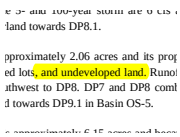

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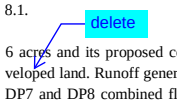
, and undeveloped land.



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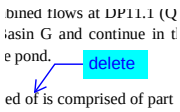

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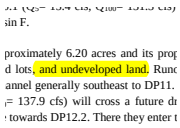

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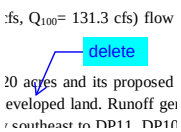
and undeveloped land



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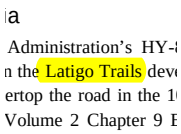

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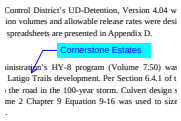
Latigo Trails



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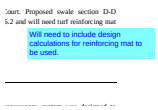
Cornerstone Estates



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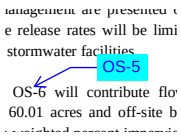
Will need to include design calculations for reinforcing mat to be used.



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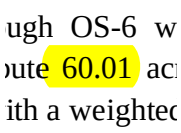
OS-5



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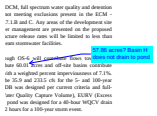

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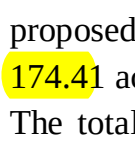
57.86 acres? Basin H does not drain to pond



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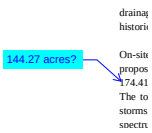
174.4



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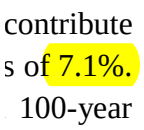
144.27 acres?



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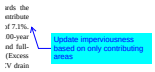
7.1%.



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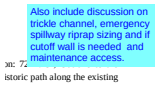
Update imperviousness based on only contributing areas



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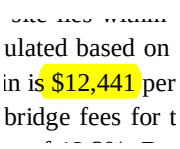
Also include discussion on trickle channel, emergency spillway riprap sizing and if cutoff wall is needed and maintenance access.



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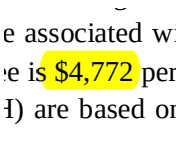

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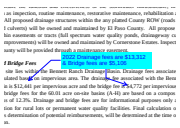

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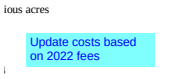
2022 Drainage fees are $13,312 & Bridge fees are $5,106



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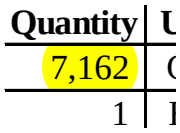
Update costs based on 2022 fees



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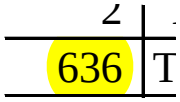
7,162



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636

Subject: Callout
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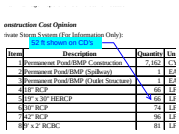
Reconcile quantities with what is shown on FAE



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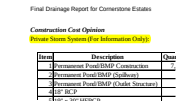
52 ft shown on CD's



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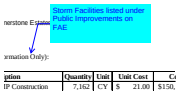
Private Storm System (For Information Only):



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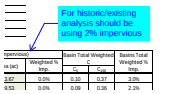
Storm Facilities listed under Public Improvements on FAE



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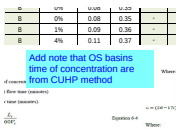
For historic/existing analysis should be using 2% impervious



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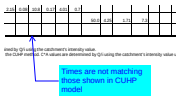
Add note that OS basins time of concentration are from CUHP method



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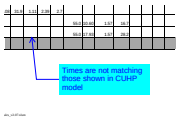
Times are not matching those shown in CUHP model



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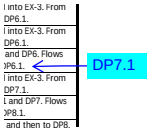

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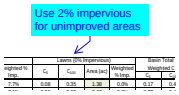
DP7.1



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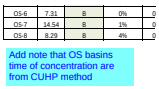
Use 2% impervious for unimproved areas



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Add note that OS basins time of concentration are from CUHP method

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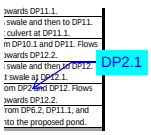

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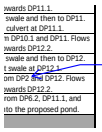
DP2.1



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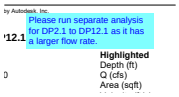
DP2.1



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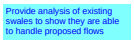
Please run separate analysis for DP2.1 to DP12.1 as it has a larger flow rate.



Subject: Text Box
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Provide analysis of existing swales to show they are able to handle proposed flows

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Subject: Text Box
Page Label: 42
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Date: 2/15/2022 2:15:43 PM
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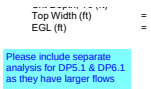
Include design of TRM's to be used in channels



Subject: Text Box
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Please include separate analysis for DP5.1 & DP6.1 as they have larger flows

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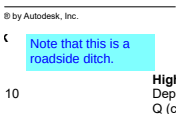

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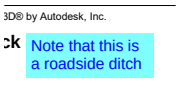
Note that this is a roadside ditch.



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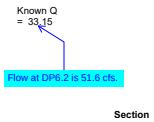
Note that this is a roadside ditch



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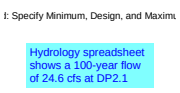
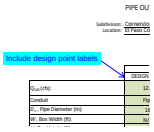
Space:

Flow at DP6.2 is 51.6 cfs.



Subject: Text Box
Page Label: 56
Author: CDurham
Date: 2/15/2022 2:18:29 PM
Status:
Color:
Layer:
Space:

Hydrology spreadsheet shows a 100-year flow of 24.6 cfs at DP2.1



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Page Label: 77
Author: CDurham
Date: 2/15/2022 2:19:41 PM
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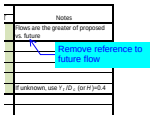
Space:

Include design point labels



Subject: Callout
Page Label: 77
Author: CDurham
Date: 2/15/2022 2:21:02 PM
Status:
Color:
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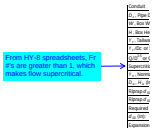
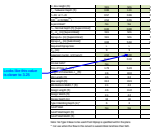
Space:

Remove reference to future flow



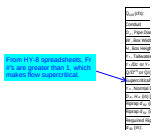
Subject: Callout
Page Label: 77
Author: CDurham
Date: 2/15/2022 2:23:02 PM
Status:
Color:
Layer:
Space:

From HY-8 spreadsheets, Fr #'s are greater than 1, which makes flow supercritical.



Subject: Callout
Page Label: 77
Author: CDurham
Date: 2/15/2022 2:23:23 PM
Status:
Color:
Layer:
Space:

Looks like this value is closer to 3.25



Subject: Callout
Page Label: 78
Author: CDurham
Date: 2/15/2022 2:23:55 PM
Status:
Color:
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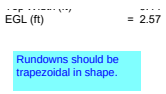
Space:

From HY-8 spreadsheets, Fr #'s are greater than 1, which makes flow supercritical.



Subject: Text Box
Page Label: 80
Author: CDurham
Date: 2/15/2022 2:36:00 PM
Status:
Color:
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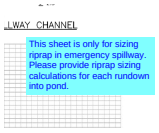
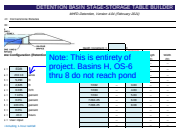
Space:

Rundowns should be trapezoidal in shape.



Subject: Text Box
Page Label: 83
Author: CDurham
Date: 2/15/2022 2:36:58 PM
Status:
Color:
Layer:
Space:

This sheet is only for sizing riprap in emergency spillway. Please provide riprap sizing calculations for each rundown into pond.



Subject: Callout
Page Label: 85
Author: CDurham
Date: 2/15/2022 2:46:43 PM
Status:
Color:
Layer:
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Note: This is entirety of project. Basins H, OS-6 thru 8 do not reach pond

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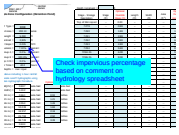

Subject: Callout
Page Label: 85
Author: CDurham
Date: 2/15/2022 2:47:29 PM
Status:
Color:
Layer:
Space:

Check impervious percentage based on comment on hydrology spreadsheet

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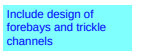
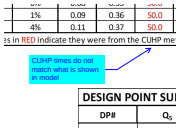


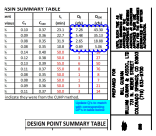
Subject: Text Box
Page Label: 84
Author: CDurham
Date: 2/15/2022 2:47:52 PM
Status:
Color:
Layer:
Space:

Include design of forebays and trickle channels



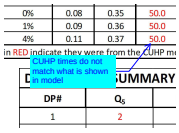
Subject: Callout
Page Label: 98
Author: CDurham
Date: 2/15/2022 2:49:21 PM
Status:
Color:
Layer:
Space:

CUHP times do not match what is shown in model



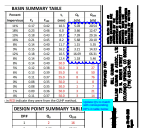
Subject: Cloud+
Page Label: 98
Author: CDurham
Date: 2/15/2022 2:50:09 PM
Status:
Color:
Layer:
Space:

Update Q's to match with corresponding DP's in table below



Subject: Callout
Page Label: 99
Author: CDurham
Date: 2/15/2022 2:51:54 PM
Status:
Color:
Layer:
Space:

CUHP times do not match what is shown in model



Subject: Cloud+
Page Label: 99
Author: CDurham
Date: 2/15/2022 2:52:30 PM
Status:
Color:
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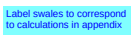
Space:

Update Q's to match with corresponding DP's in table below



Subject: Text Box
Page Label: 99
Author: CDurham
Date: 2/15/2022 2:53:55 PM
Status:
Color:
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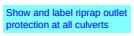
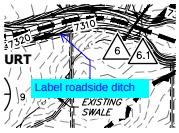
Space:

Label swales to correspond to calculations in appendix



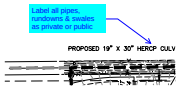
Subject: Text Box
Page Label: 99
Author: CDurham
Date: 2/15/2022 2:53:59 PM
Status:
Color:
Layer:
Space:

Show and label riprap outlet protection at all culverts



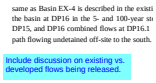
Subject: Callout
Page Label: 99
Author: CDurham
Date: 2/15/2022 2:54:54 PM
Status:
Color:
Layer:
Space:

Label roadside ditch



Subject: Callout
Page Label: 99
Author: CDurham
Date: 2/15/2022 2:55:20 PM
Status:
Color:
Layer:
Space:

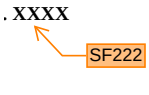
Label all pipes, rundowns & swales as private or public



Subject: Text Box
Page Label: 10
Author: CDurham
Date: 2/15/2022 7:35:13 AM
Status:
Color:
Layer:
Space:

Include discussion on existing vs. developed flows being released.

Glenn Reese - EPC Stormwater (9)



Subject: SW - Textbox with Arrow
Page Label: 1
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:09:24 AM
Status:
Color:
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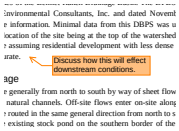
Space:

SF222

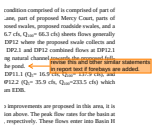


Subject: SW - Textbox with Arrow
Page Label: 5
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:09:43 AM
Status:
Color:
Layer:
Space:

Discuss how this will effect downstream conditions.

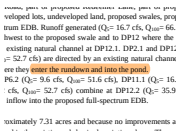
Subject: SW - Highlight
Page Label: 5
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:09:51 AM
Status:
Color:
Layer:
Space:

The Bennett
Ranch DBPS also modeled the site assuming residential development with less dense 5-acre single-family
lots, which is no longer accurate.



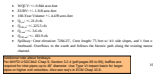
Subject: SW - Textbox with Arrow
Page Label: 10
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:10:02 AM
Status:
Color:
Layer:
Space:

revise this and other similar statements in report text if forebays are added.



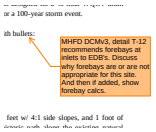
Subject: SW - Highlight
Page Label: 10
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:10:09 AM
Status:
Color:
Layer:
Space:

enter the rundown and into the pond.



Subject: SW - Textbox
Page Label: 13
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:10:19 AM
Status:
Color:
Layer:
Space:

Additional note about forebays:
Per MHFD USDCMv2 Chap 9, Section 3.2.4 (pdf pages 89 to 99), baffles are required for inlet pipes up to 48” diameter. Use Type VI impact basin for larger pipes or higher exit velocities. Also see req’s in ECM Chap 10.8.



Subject: SW - Textbox with Arrow
Page Label: 13
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:10:19 AM
Status:
Color:
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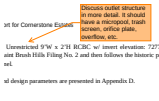
Space:

MHFD DCMv3, detail T-12 recommends forebays at inlets to EDB's. Discuss why forebays are or are not appropriate for this site. And then if added, show forebay calcs.



Subject: SW - Textbox with Arrow
Page Label: 14
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:10:28 AM
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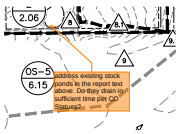
Color:
Layer:
Space:

Discuss outlet structure in more detail. It should have a micropool, trash screen, orifice plate, overflow, etc.



Subject: SW - Textbox with Arrow
Page Label: 99
Author: Glenn Reese - EPC Stormwater
Date: 2/7/2022 8:11:04 AM
Status:
Color:
Layer:
Space:

address existing stock ponds in the report text above. Do they drain in sufficient time per CO Statues?