

# ENG-PUDSP22001-R1-PDR.pdf Markup Summary

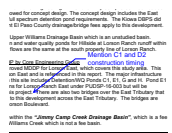
1 (1)



**Subject:** SW - Textbox with Arrow  
**Page Index:** 1  
**Date:** 3/14/2022 12:28:10 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 1

PUDSP221

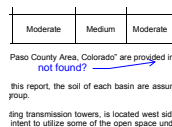
4 (1)



**Subject:** Callout  
**Page Index:** 4  
**Date:** 3/25/2022 5:53:46 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 4

Mention C1 and D2 construction timing

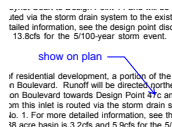
5 (1)



**Subject:** Callout  
**Page Index:** 5  
**Date:** 3/25/2022 6:00:35 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 5

not found?

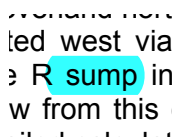
8 (1)



**Subject:** Callout  
**Page Index:** 8  
**Date:** 3/28/2022 10:09:21 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 8

show on plan


9 (9)



**Subject:**  
**Page Index:** 9  
**Date:** 3/28/2022 10:13:42 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 9


sump

Basin E1.2  
This basin consists of Hocking Trail and westerly via curb/gutter information, see it for the 5/100-year

**Subject:**  
**Page Index:** 9  
**Date:** 3/28/2022 10:15:23 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 9


Hocking Trail

basin is 2.6cfs and 9.9cfs for the at-grade?  
Peaceful Valley Lake Estates subdivision is directed overland and northwesterly via curb/gutter information, see it for the 5/100-year storm event. See the

**Subject:** Callout  
**Page Index:** 9  
**Date:** 3/28/2022 10:17:01 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 9


at-grade?

Sawtooth Ridge Way to Design Point detailed information, see the design point discussion for the 5/100-year storm event. See the delete?  
Basin E1.2 consists of runoff from the Hocking Trail and Sawtooth Ridge Way westerly via curb/gutter to Design Point information, see the design point discussion for the 5/100-year storm event. See the

**Subject:** Callout  
**Page Index:** 9  
**Date:** 3/28/2022 10:17:13 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 9


delete?

Peaceful Valley Lake Estates subdivision runoff is routed northwesterly via overland and detailed information, see the design point discussion for the 5/100-year storm event. See the 13/46?  
Flow is routed to the south and westerly Sawtooth to design point 18, then continues to ascend to Trappe Drive. For more detailed flow from this basin is 2.5cfs and 11.2cfs calculations.

**Subject:** Callout  
**Page Index:** 9  
**Date:** 3/28/2022 10:24:39 AM  
**Author:** dsdrice  
**Color:**   
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**Space:**  
**Page Label:** 9

13/46?


Peaceful Valley Lake Estate runoff is routed northwesterly more detailed information, see it for the 4.5cfs and 30.2cfs for the

**Subject:**  
**Page Index:** 9  
**Date:** 3/28/2022 10:24:59 AM  
**Author:** dsdrice  
**Color:**   
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**Page Label:** 9

4.5cfs and 30.2cfs

Flow is routed to the south and westerly

Peaceful Valley Lake Estate runoff is routed northwesterly more detailed information, see it for the 4.5cfs and 30.2cfs for the

**Subject:**  
**Page Index:** 9  
**Date:** 3/28/2022 10:25:35 AM  
**Author:** dsdrice  
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**Space:**  
**Page Label:** 9

and westerly Sawtooth Ridge Way



12 (3)



**Subject:** Callout  
**Page Index:** 12  
**Date:** 3/28/2022 10:39:25 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 12

State that the future Meridian Road drains to the east and WQ will be determined by that project

Estates subdivision. Runoff to spreader channel, these. For more detailed information is 4.4cfs and 18.9cfs for

**Subject:**  
**Page Index:** 12  
**Date:** 3/28/2022 10:44:17 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 12

4.4cfs and 18.9

of this report and the Deve

ge swale. For more details this basin is 4.4cfs and tions.

**Subject:** Callout  
**Page Index:** 12  
**Date:** 3/28/2022 10:44:30 AM  
**Author:** dsdrice  
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**Page Label:** 12

verify

back of this report and 1-year storm event amount

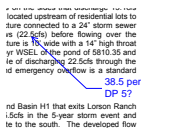
13 (1)

41.3  
29.7  
38.3

**Subject:**  
**Page Index:** 13  
**Date:** 3/28/2022 10:45:16 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 13

29.7

14 (1)



**Subject:** Callout  
**Page Index:** 14  
**Date:** 3/28/2022 11:18:59 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 14

38.5 per DP 5?

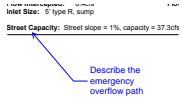
16 (1)



**Subject:** Callout  
**Page Index:** 16  
**Date:** 3/28/2022 11:29:17 AM  
**Author:** dsdrice  
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**Layer:**  
**Space:**  
**Page Label:** 16

State that any overflows will flow to the west in Lorson Blvd.

17 (1)



**Subject:** Callout  
**Page Index:** 17  
**Date:** 3/28/2022 11:32:47 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 17

Describe the emergency overflow path

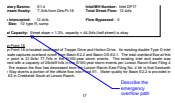
18 (1)



**Subject:** Callout  
**Page Index:** 18  
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**Author:** dsdrice  
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**Page Label:** 18

Describe the emergency overflow path

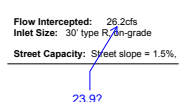
19 (1)



**Subject:** Callout  
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**Date:** 3/28/2022 11:37:07 AM  
**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** 19

Describe the emergency overflow path

23 (3)



**Subject:** Callout  
**Page Index:** 23  
**Date:** 3/28/2022 12:05:45 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 23

23.9?



**Subject:** Callout  
**Page Index:** 23  
**Date:** 3/28/2022 12:06:03 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 23

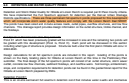
25'?

Flow Intercepted: 27.9cfs  
ed: 1.7cfs to [

**Subject:**  
**Page Index:** 23  
**Date:** 3/28/2022 12:06:16 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 23

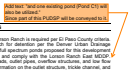
1.7cfs

27 (2)



**Subject:** SW - Highlight  
**Page Index:** 27  
**Date:** 3/14/2022 7:21:06 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 27

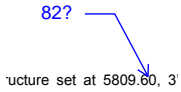
There are three permanent full spectrum ponds proposed for this development which will incorporate storm water quality features and comply with the Lorson Ranch East MDDP



**Subject:** SW - Textbox with Arrow  
**Page Index:** 27  
**Date:** 3/15/2022 7:47:32 AM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 27

Add text: "and one existing pond (Pond C1) will also be utilized."  
Since part of this PUDSP will be conveyed to it.

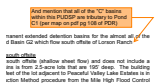
28 (1)



**Subject:** Callout  
**Page Index:** 28  
**Date:** 3/28/2022 12:35:09 PM  
**Author:** dsdrice  
**Color:** ■  
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**Page Label:** 28

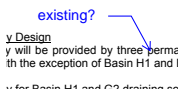
82?

29 (4)



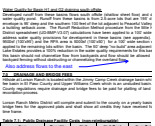
**Subject:** SW - Textbox with Arrow  
**Page Index:** 29  
**Date:** 3/15/2022 7:47:08 AM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 29

And mention that all of the "C" basins within this PUDSP are tributary to Pond C1 (per map on pdf pg 108 of PDR)



**Subject:** Callout  
**Page Index:** 29  
**Date:** 3/28/2022 12:37:16 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 29

existing?



**Subject:** Callout  
**Page Index:** 29  
**Date:** 3/28/2022 12:42:39 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 29

Also address flows to the east

**STORMWATER MANAGEMENT PLAN**

Minimum of 10% of the total impervious area must be treated with pervious pavement. The pervious pavement must be installed in a manner that meets the requirements of the City of Denver Stormwater Management Plan. The pervious pavement must be installed in a manner that meets the requirements of the City of Denver Stormwater Management Plan. The pervious pavement must be installed in a manner that meets the requirements of the City of Denver Stormwater Management Plan.

**Table 1.1. Public Drainage Facility Area Requirements**

Area	Quantity	Unit	Area	Unit
Impervious Area	100	SF	100	SF
Pervious Area	10	SF	10	SF
Total Area	110	SF	110	SF

**Subject:** Callout  
**Page Index:** 29  
**Date:** 3/28/2022 12:43:22 PM  
**Author:** dsdrice  
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**Layer:**  
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**Page Label:** 29

Please include in the appendix

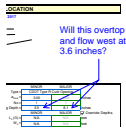
30 (1)



**Subject:** Callout  
**Page Index:** 30  
**Date:** 3/28/2022 12:46:21 PM  
**Author:** dsdrice  
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**Layer:**  
**Space:**  
**Page Label:** 30

Add a statement about matching existing flows to Upper Williams Creek basin.

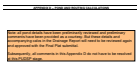
72 (1)



**Subject:** Callout  
**Page Index:** 72  
**Date:** 3/30/2022 7:48:57 AM  
**Author:** dsdrice  
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**Layer:**  
**Space:**  
**Page Label:** 72

Will this overtop and flow west at 3.6 inches?

107 (2)



**Subject:** SW - Textbox  
**Page Index:** 107  
**Date:** 3/14/2022 7:23:52 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 107

Note: all pond details have been preliminarily reviewed and preliminary comments have been provided as a courtesy. But these details and accompanying calcs in the Drainage Report will need to be reviewed again and approved with the Final Plat submittal.

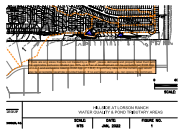
Subsequently, all comments in this Appendix D do not have to be resolved at this PUDSP stage.



**Subject:** Callout  
**Page Index:** 107  
**Date:** 3/28/2022 11:52:59 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 107

(If storm drain system is being constructed with early grading final details are needed.)

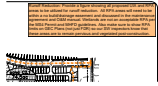
108 (6)



**Subject:** SW - Textbox  
**Page Index:** 108  
**Date:** 3/14/2022 6:28:26 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 108

If there are any areas that are not treated by a PBMP, please delineate and properly label them with the applicable exclusion labeled (ex: 20% up to 1ac of development can be excluded per ECM App I.7.1.C.1 and exclusions listed in ECM App I.7.1.B.#). A summary table on the current map would also be acceptable (example provided below). If no excluded areas, you can ignore this comment.

**Subject:** Image  
**Page Index:** 108  
**Date:** 3/14/2022 6:27:10 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 108



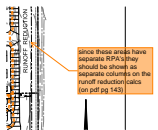
**Subject:** SW - Textbox  
**Page Index:** 108  
**Date:** 3/14/2022 6:27:15 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 108

Runoff Reduction: Provide a figure showing all proposed UIA and RPA areas to be utilized for runoff reduction. All RPA areas will need to be within a no build/drainage easement and discussed in the maintenance agreement and O&M manual. Wetlands are not an acceptable RPA per the MS4 Permit and MHFD guidelines. Also make sure to show RPA limits on GEC Plans (not just FDR) so our SW inspectors know that these areas are to remain pervious and vegetated post-construction.



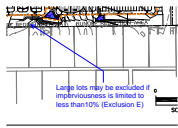
**Subject:** SW - Textbox with Arrow  
**Page Index:** 108  
**Date:** 3/14/2022 7:23:18 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 108

label as "Hillside at Lorson"



**Subject:** SW - Textbox with Arrow  
**Page Index:** 108  
**Date:** 3/14/2022 7:23:14 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 108

since these areas have separate RPA's they should be shown as separate columns on the runoff reduction calcs (on pdf pg 143)



**Subject:** Callout  
**Page Index:** 108  
**Date:** 3/25/2022 5:59:43 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
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**Page Label:** 108

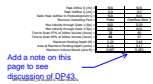
Large lots may be excluded if imperviousness is limited to less than 10% (Exclusion E)

121 (2)

**Subject:** SW - Textbox with Arrow  
**Page Index:** 121  
**Date:** 3/14/2022 1:23:46 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 121

Per ECM Chap 3.2.8.B, "The proposed project or developed land use shall not change historical runoff values, cause downstream damage, or adversely impact adjacent properties." Increases from the historical flowrates is allowable (with or without full spectrum detention) if it is shown (via text and/or calcs) that the flow increase can be accommodated downstream (ie: show that there is a suitable outfall, per ECM, Chap 3.2.4). If applicable, reference the downstream facilities in a DBPS or MDDP.



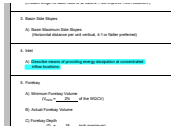


**Subject:** Callout  
**Page Index:** 121  
**Date:** 3/28/2022 12:15:08 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
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**Page Label:** 121

Add a note on this page to see discussion of DP43.

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125 (1)

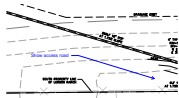


**Subject:**  
**Page Index:** 125  
**Date:** 3/30/2022 8:30:33 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 125

Describe means of providing energy dissipation at concentrated inflow locations:

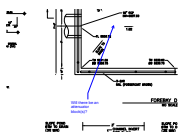
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129 (3)



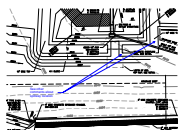
**Subject:** Callout  
**Page Index:** 129  
**Date:** 3/28/2022 12:32:51 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 129

Show access road



**Subject:** Callout  
**Page Index:** 129  
**Date:** 3/30/2022 8:24:40 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 129

Will there be an attenuator block(s)?



**Subject:** Callout  
**Page Index:** 129  
**Date:** 3/30/2022 8:34:57 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 129

See other comments about spillway location

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131 (2)



**Subject:** SW - Textbox with Arrow  
**Page Index:** 131  
**Date:** 3/14/2022 3:04:24 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 131

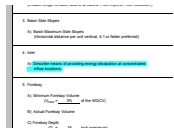
Per ECM Chap 3.2.8.B, "The proposed project or developed land use shall not change historical runoff values, cause downstream damage, or adversely impact adjacent properties." Increases from the historical flowrates is allowable (with or without full spectrum detention) if it is shown (via text and/or calcs) that the flow increase can be accommodated downstream (ie: show that there is a suitable outfall, per ECM, Chap 3.2.4). If applicable, reference the downstream facilities in a DBPS or MDDP.



**Subject:** Callout  
**Page Index:** 131  
**Date:** 3/28/2022 11:20:54 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 131

Add a note on this page to see discussion of DP5b.

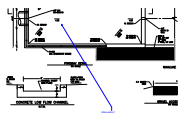
135 (1)



**Subject:**  
**Page Index:** 135  
**Date:** 3/30/2022 8:30:17 AM  
**Author:** dsdrice  
**Color:** ■  
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**Page Label:** 135

Describe means of providing energy dissipation at concentrated inflow locations:

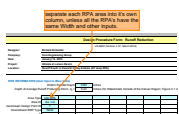
141 (1)



**Subject:** Callout  
**Page Index:** 141  
**Date:** 3/30/2022 8:33:29 AM  
**Author:** dsdrice  
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**Layer:**  
**Space:**  
**Page Label:** 141

Attenuation?

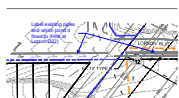
143 (1)



**Subject:** SW - Textbox with Arrow  
**Page Index:** 143  
**Date:** 3/14/2022 7:22:55 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 143

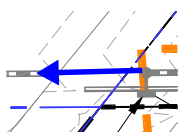
separate each RPA area into it's own column, unless all the RPA's have the same Width and other inputs.

163 (8)

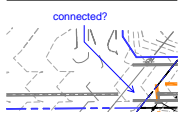


**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/28/2022 10:08:57 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

Label existing pipes and which pond it flows to (Hills at Lorson D2?)

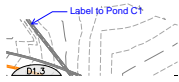


**Subject:** Arrow  
**Page Index:** 163  
**Date:** 3/25/2022 5:41:38 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163



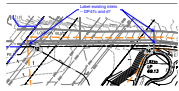
**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/25/2022 5:41:56 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

connected?



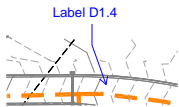
**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/25/2022 5:45:07 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

Label to Pond C1



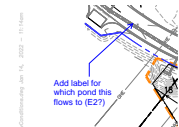
**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/28/2022 10:10:35 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

Label existing inlets -- DP47c and d?



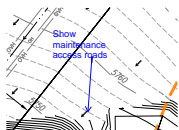
**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/28/2022 10:10:01 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

Label D1.4



**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/28/2022 10:19:12 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

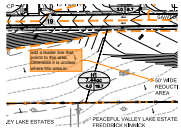
Add label for which pond this flows to (E2?)



**Subject:** Callout  
**Page Index:** 163  
**Date:** 3/28/2022 10:34:59 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 163

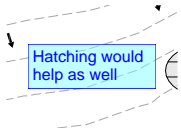
Show maintenance access roads

164 (3)



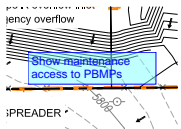
**Subject:** SW - Textbox with Arrow  
**Page Index:** 164  
**Date:** 3/14/2022 7:10:06 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 164

add a leader line that points to this area. Otherwise it is unclear where this area is.



**Subject:** Text Box  
**Page Index:** 164  
**Date:** 3/25/2022 10:42:33 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 164

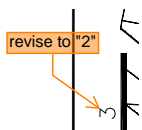
Hatching would help as well



**Subject:** Text Box  
**Page Index:** 164  
**Date:** 3/25/2022 10:43:56 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 164

Show maintenance access to PBMPs

165 (8)



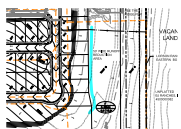
**Subject:** SW - Textbox with Arrow  
**Page Index:** 165  
**Date:** 3/14/2022 6:33:47 PM  
**Author:** Glenn Reese - EPC Stormwater  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165

revise to "2"



**Subject:** Callout  
**Page Index:** 165  
**Date:** 3/25/2022 10:39:07 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165

Please hatch the required 50'



**Subject:**  
**Page Index:** 165  
**Date:** 3/25/2022 10:41:29 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165

Show maintenance access to PBMPs

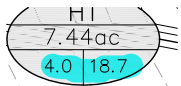
**Subject:** Text Box  
**Page Index:** 165  
**Date:** 3/25/2022 10:44:54 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165

Show maintenance access to PBMPs



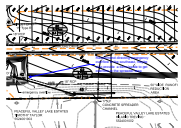
**Subject:** Callout  
**Page Index:** 165  
**Date:** 3/28/2022 10:43:00 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165

May not be needed if lots are limited to <10% imperviousness. If it is provided, hatch the area.



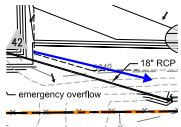
0' WIDE RUNC

**Subject:**  
**Page Index:** 165  
**Date:** 3/28/2022 10:44:46 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165



**Subject:** Callout  
**Page Index:** 165  
**Date:** 3/28/2022 12:17:18 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165

Recommend directing emergency overflow to the southeast, maybe also provide a berm/swale to get overflow to the spreader area



**Subject:** Arrow  
**Page Index:** 165  
**Date:** 3/28/2022 12:17:32 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 165