

CDR20004-V3-MDDP.pdf Markup Summary

1 (2)

9919
PE Engineering Review
12/13/2021 1:28:14 PM
dsdrice
dsdrice@epc.com
(719) 530-7877
EPC Planning & Community
Development Department

Subject: EPC ENG Review
Page Index: 1
Date: 12/13/2021 1:28:14 PM
Author: dsdrice
Color: ■
Layer:
Space:
Page Label: 1

See comment letter also.

Rank MDDP.docx

Subject: Text Box
Page Index: 1
Date: 12/13/2021 1:28:28 PM
Author: dsdrice
Color: ■
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Page Label: 1

See comment letter also.

3 (1)

Integr. Calculations
Integr. Calculations
Add a note that this amendment is not intended to address drainage and bridge fees or credits for DBPS improvements and that other submittals will address this or include that information if you want to address those issues.
30 Page 4

Subject: Text Box
Page Index: 3
Date: 12/13/2021 1:27:56 PM
Author: dsdrice
Color: ■
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Page Label: 3

Add a note that this amendment is not intended to address drainage and bridge fees or credits for DBPS improvements and that other submittals will address this (or include that information if you want to address those issues.)

4 (1)

Integr. Calculations
Integr. Calculations
Add a note that this amendment is not intended to address drainage and bridge fees or credits for DBPS improvements and that other submittals will address this or include that information if you want to address those issues.
30 Page 4

Subject: Callout
Page Index: 4
Date: 12/3/2021 8:25:26 AM
Author: dsdrice
Color: ■
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not found

5 (2)

Integr. Calculations
Integr. Calculations
Add a note that this amendment is not intended to address drainage and bridge fees or credits for DBPS improvements and that other submittals will address this or include that information if you want to address those issues.
30 Page 4

Subject:
Page Index: 5
Date: 12/3/2021 8:32:12 AM
Author: dsdrice
Color: ■
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Page Label: 5

d firstly in the 2011
Drainage Basin Planning Study (DBPS) by Wilson

en presented in Appendix A.

UBBASINS

1996 DBPS? The Sand Creek Drainage Basin and the East no have been previously studied finally in the 2011 by Wilson, again in the 2018 Sterling Ranch MDDP tance.

approximately 77 square miles and basin area

of a portion of the Sterling Ranch Filing 2

ly being open space, and a large school

to Pond W-5. From Pond

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Author: dsdrice
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1996 DBPS?

6 (3)

ed from the MDDP.

This is confusing - should the last sentence be under SC3-9?

DDP, except where stated below:

of a portion of the Sterling Ranch Filing 2

ly being open space, and a large school

to Pond W-5. From Pond

at 61.

Subject: Callout
Page Index: 6
Date: 12/3/2021 8:33:47 AM
Author: dsdrice
Color: ■
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2018

Subject: Callout
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Date: 12/3/2021 8:52:04 AM
Author: dsdrice
Color: ■
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Page Label: 6

This is confusing - should the last sentence be under SC3-9?

14A is approximately 140.2 acres. It is con

ing. The basin is comprised of single-

west via a three on-site curb and gutter and

its directly into Sand Creek upstream of St

east of Sand Creek

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Page Index: 6
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Author: dsdrice
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east of Sand Creek

7 (4)

Basin MDDP Attachment 1

Basin of Sterling Ranch Road alignment

SC3-9 approximately 62 acres. It is composed of a portion of the Sterling Ra

Basin. The basin is comprised of single family housing and open space. The basin is

to Pond W-5. From Pond

at 61.

DDP, except where stated below:

of a portion of the Sterling Ranch Filing 2

ly being open space, and a large school

to Pond W-5. From Pond

at 61.

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Author: dsdrice
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east of Sterling Ranch Road alignment

SC3-9 approximately 62 acres. It is composed of a portion of the Sterling Ra

Basin. The basin is comprised of single family housing and open space. The basin is

to Pond W-5. From Pond

at 61.

DDP, except where stated below:

of a portion of the Sterling Ranch Filing 2

ly being open space, and a large school

to Pond W-5. From Pond

at 61.

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Author: dsdrice
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show A and B basins on the drainage plan

... east directly in Sand Creek at design point 69.
... is composed entirely of the Sand Creek channel
... present. The basin drains north to south via the Sand
... at 69.
... rural (or large-lot)
... is composed of a portion of the Retreat at Timber Ridge
... of single-family housing. The basin is comprised
... . The basin drains from northwest to southeast via
... sewer into the proposed full spectrum detention po

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rural (or large-lot)

... and include additional XX acres of contributing area
... proposed to be diverted to the main Sand Creek channel

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and includes additional XX acres of contributing
area proposed to be diverted to the main Sand
Creek channel

8 (3)

... delete "previously"?

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delete "previously"?

... is composed of a portion of the Retreat at Timber Ridge
... urban density
... is composed of a portion of the Retreat at Timber Ridge
... of single-family housing. The basin drains from
... from northwest to southeast via drainage swale,
... Sand Creek at design point 72.

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urban density

... rb and gutter and storm sewer
... labeled FSD27 in the MDDP
... nt 72
... 71?
... IGN CRITERIA

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71?

9 (2)

... surface hydrology which would then determine the amount of
... at existing Ranch Road. The final model was the proposed
... a future and various other growth in the adjacent development,
... drainage of the proposed Pond No. 1 with the goal of reducing
... flow. The adopted (1996) DBPS assumed
... low density development in this area.
... in to 2021 DBPS
... hydrology with the DBPS hydrology. The difference
... in. The DBPS shows improvements over with the current
... a comparison of future development plan. The adopted MDDP
... within existing Ranch, as well as upstream and off-line house
... with. With the intent of accounting for all possible future flows
... across the channel again in the future, it was decided that the
... if the value was used for the baseline of this study, rather than the

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The adopted (1996) DBPS assumed low density
development in this area.

2018 MDDP Comparison to 2021 MDDP
 Comparing the current MDDP drawings to the 2018 MDDP drawings between the two is important. The 2018 MDDP drawings are a good starting point for comparison, but the 2021 MDDP drawings are more current and may have changes that need to be noted. The 2021 MDDP drawings are being updated to reflect the current design and to include the changes that have been made to the 2018 MDDP drawings. The 2021 MDDP drawings are being updated to reflect the current design and to include the changes that have been made to the 2018 MDDP drawings.

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City

11 (2)

1 smaller stock pond in this area is being removed
 used to be included in the model.
 used in preliminary design, a 17.23 acre portion of
 water in PCS 10 has been added to basin PCS 14B
 describe where this
 was planned to be
 and 11.4 is used to be unnecessary or hydroplotted
 items to Pond FSD6.
 based on Pond WS using IR Engineering in
 detail the future meeting of the flows from the
 and/or through Sterling Ranch Phase 3, but for the

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describe where this was planned to be

please clarify
 location
 and near Sterling Ranch has been included in the mod
 laded from the model since the change of the chain
 ed on preliminary designs with this MDDP. Amendin
 s flows will instead pass directly through it and outst
 and

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please clarify location

12 (1)

note that the previous MDDP
 considered this pond to be temporary
 and it is now permanent.
 the pond was originally designed to be temporary
 and it is now permanent.
 the pond was originally designed to be temporary
 and it is now permanent.
 the pond was originally designed to be temporary
 and it is now permanent.
 the pond was originally designed to be temporary
 and it is now permanent.

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state that the previous MDDP considered this pond to be temporary and it is now permanent.

14 (1)

being designed
 it is an evaluation of the required volume for
 3). Along with an on site detention pond,
 and Intragate Parkway, others. The
 stock pond north of Sterling Ranch Road, the

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being designed


15 (4)

would channel improvements begin just north of the Sterling Ran
 ch and run north roughly two miles to the western property lines
 a 17 foot wide, 6.75 feet deep, meandering bank full channel alon
 g the SW side of the terrain from 90 feet to 120 feet wide. The
 will be rock 200 feet, while the curves will be cobble pools. The so
 see other
 comments

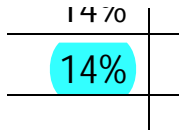
Subject: Callout
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Date: 12/13/2021 12:41:28 PM
Author: dsdrice
Color: ■
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see other comments

3 cfs and reduced the maximum volume
e proposed channel improvements begin
andary and run north roughly two miles
hade a 17 feet wide, 0.71 feet deep, meca
race along the east side that ranges from
unnel will be rock riffles, while the curv

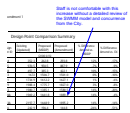
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17 feet wide, 0.71 feet dee



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14%




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Author: dsdrice
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Staff is not comfortable with this increase without a detailed review of the SWMM model and concurrence from the City.

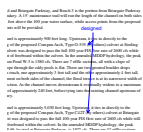
16 (3)


he 
.

Subject: Highlight
Page Index: 16
Date: 12/13/2021 12:45:51 PM
Author: dsdrice
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ay
les 
ed

Subject: Highlight
Page Index: 16
Date: 12/13/2021 12:42:39 PM
Author: dsdrice
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Subject: Callout
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Date: 12/13/2021 12:44:45 PM
Author: dsdrice
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designed

designed
3 feet tall. The flood barrier walls in width along this 300-foot wide. The height of the new existing structure approximately 900 feet upstream of the Barrage gate to the east just north of Sterling Ranch Road. This new structure will maintain a static water surface in the area the existing structure and will be constructed of the same 500-foot long concrete wall panel with a width of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet.

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Author: dsdrice
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designed

along the bank approximately 100 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet. The Barrage gate will be replaced with a new structure with a height of 10 feet.

Subject: Callout
Page Index: 17
Date: 12/13/2021 12:50:09 PM
Author: dsdrice
Color: ■
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Page Label: 17

Address bank stabilization along the west side of the channel in the Homestead North development (from the Wheatland Drive cul-de-sac to Poco Road).



Subject: Highlight
Page Index: 18
Date: 12/1/2021 2:43:17 PM
Author: dsdrice
Color: ■
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Page Label: 18

1. Add Kiowa DBPS (1996) (adopted by EPC)
2. Add Kiowa DBPS (1996) (adopted by EPC)
3. Add Kiowa DBPS (1996) (adopted by EPC)
4. Add Kiowa DBPS (1996) (adopted by EPC)
5. Add Kiowa DBPS (1996) (adopted by EPC)
6. Add Kiowa DBPS (1996) (adopted by EPC)
7. Add Kiowa DBPS (1996) (adopted by EPC)
8. Add Kiowa DBPS (1996) (adopted by EPC)
9. Add Kiowa DBPS (1996) (adopted by EPC)
10. Add Kiowa DBPS (1996) (adopted by EPC)

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Author: dsdrice
Color: ■
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Add Kiowa DBPS (1996) (adopted by EPC)

Homestead North at Sterling Ranch
Preliminary Plan, JR Engineering,
2021 (not adopted by EPC)
June 2021
of Flood Control District, Latest

Subject: Callout
Page Index: 18
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Author: dsdrice
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(not adopted by EPC)

Not checked in detail from here down.

Station	Notes	Checked	Approved	Signature
1000				
1001				
1002				

Subject: Text Box
Page Index: 24
Date: 12/13/2021 12:53:08 PM
Author: dsdrice
Color: ■
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Page Label: 24

Not checked in detail from here down.

Existing Conditions

Design Point Peak Flow Rate Summary					
MUDP Amendment					
Flow Rate	2010	2011	2012	2013	2014
100%	112	519.37	616.24	1066.91	1464.21

Subject: Text Box
Page Index: 29
Date: 12/13/2021 10:32:49 AM
Author: dsdrice
Color: ■
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Existing Conditions

% Difference					
Flow Rate	2010	2011	2012	2013	2014
100%	21%	20%	6%	9%	3%

Subject:
Page Index: 29
Date: 12/13/2021 10:48:39 AM
Author: dsdrice
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21% 20% 6% 9% 3%

% Difference					
Flow Rate	2010	2011	2012	2013	2014
100%	23%	21%	7%	10%	3%

Subject:
Page Index: 29
Date: 12/13/2021 10:48:57 AM
Author: dsdrice
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23% 21% 7% 10% 3%

Please add a note describing what this means.

Subject: Callout
Page Index: 42
Date: 12/13/2021 12:56:26 PM
Author: dsdrice
Color: ■
Layer:
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Page Label: 42

Please add a note describing what this means.

% Difference					
Flow Rate	2010	2011	2012	2013	2014
100%	23%	21%	7%	10%	3%

Verify that these values are not too high for developed basins

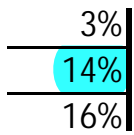
Subject: Callout
Page Index: 77
Date: 12/13/2021 1:01:59 PM
Author: dsdrice
Color: ■
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Page Label: 77

Verify that these values are not too high for developed basins

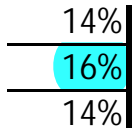
-41%
1188%

Subject:
Page Index: 99
Date: 12/13/2021 10:35:33 AM
Author: dsdrice
Color: ■
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Page Label: 99

1188%



Subject: 14%
Page Index: 99
Date: 12/13/2021 10:36:12 AM
Author: dsdrice
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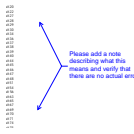


Subject: 16%
Page Index: 99
Date: 12/13/2021 10:37:11 AM
Author: dsdrice
Color:
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Page Label: 99



Subject: Callout
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Date: 12/13/2021 10:44:35 AM
Author: dsdrice
Color:
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Page Label: 99
Is detention not assumed?

195 (1)



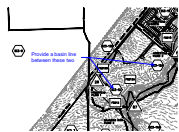
Subject: Callout
Page Index: 195
Date: 12/13/2021 1:24:11 PM
Author: dsdrice
Color:
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Page Label: 195
Please add a note describing what this means and verify that there are no actual errors.

206 (1)



Subject: Highlight
Page Index: 206
Date: 12/1/2021 2:38:54 PM
Author: dsdrice
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338 (7)

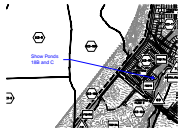


Subject: Callout
Page Index: 338
Date: 12/3/2021 8:54:21 AM
Author: dsdrice
Color:
Layer:
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Page Label: 338
Provide a basin line between these two



Subject: Callout
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Date: 12/3/2021 9:32:01 AM
Author: dsdrice
Color: ■
Layer:
Space:
Page Label: 338

Should there be 2 basins?



Subject: Callout
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Date: 12/3/2021 9:36:10 AM
Author: dsdrice
Color: ■
Layer:
Space:
Page Label: 338

Show Ponds 18B and C



Subject: Callout
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Date: 12/3/2021 9:37:23 AM
Author: dsdrice
Color: ■
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Turn off the dark Xs

Provide north arrow and scale

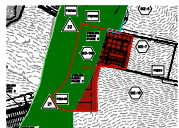
Subject: Text Box
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Author: dsdrice
Color: ■
Layer:
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Provide north arrow and scale



Subject: Callout
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Author: dsdrice
Color: ■
Layer:
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Clearly show basin boundary lines - maybe a different color and/or linetype



Subject: Area Measurement
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Date: 12/3/2021 11:52:15 AM
Author: dsdrice
Color: ■
Layer:
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Page Label: 338

64.12 ac