

# ENG-SF1914-R3-TIS-Redlines Summary\_Markup Summary

1 (1)



**Subject:** EPC ENG Review  
**Page Index:** 1  
**Date:** 3/11/2020 10:19:47 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 1

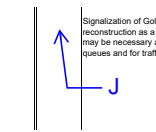
12 (1)



**Subject:** Text Box  
**Page Index:** 12  
**Date:** 3/11/2020 10:07:10 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 12

Address Woodmen/Falcon Market Place RAB which is pending approval and would capture some WB traffic heading to this site.

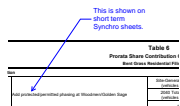
18 (1)



**Subject:** Callout  
**Page Index:** 18  
**Date:** 3/9/2020 3:48:39 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 18

J

19 (2)



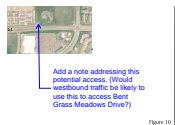
**Subject:** Callout  
**Page Index:** 19  
**Date:** 3/11/2020 11:12:11 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 19

This is shown on short term Synchro sheets.



**Subject:** Highlight  
**Page Index:** 19  
**Date:** 3/9/2020 3:55:45 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 19

29 (1)



**Subject:** Callout  
**Page Index:** 29  
**Date:** 3/11/2020 10:04:52 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 29

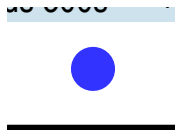
Add a note addressing this potential access.  
(Would westbound traffic be likely to use this to  
access Bent Grass Meadows Drive?)

72 (1)



**Subject:**  
**Page Index:** 72  
**Date:** 3/9/2020 10:43:32 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 72

84 (1)



**Subject:**  
**Page Index:** 84  
**Date:** 3/9/2020 10:51:36 PM  
**Author:** dsdrice  
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89 (1)



**Subject:**  
**Page Index:** 89  
**Date:** 3/9/2020 11:02:30 PM  
**Author:** dsdrice  
**Color:**   
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**Space:**  
**Page Label:** 89

93 (1)



**Subject:** Text Box  
**Page Index:** 93  
**Date:** 3/9/2020 10:57:48 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 93

/Meridian Rd.

95 (1)




**Subject:**  
**Page Index:** 95  
**Date:** 3/9/2020 10:59:17 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 95

# ENG-SF1914-R3-MDDP-Redlines Summary\_Markup Summary


1 (1)

Engineering Review  
03/12/2020 1:47:44 PM  
dsdrice@epc.com  
(719) 520-6813  
EPC Planning & Community  
Development Department

**Subject:** EPC ENG Review  
**Page Index:** 1  
**Date:** 3/12/2020 1:47:44 PM  
**Author:** Steve Kuehster  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 1


5 (1)

HEC-RAS calcs appear to be higher

**Subject:** Callout  
**Page Index:** 5  
**Date:** 3/13/2020 9:08:52 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 5


6 (1)

See Planning comments

**Subject:** Callout  
**Page Index:** 6  
**Date:** 3/13/2020 9:09:37 AM  
**Author:** dsdrice  
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**Space:**  
**Page Label:** 6


8 (1)

Is analysis provided?

**Subject:** Callout  
**Page Index:** 8  
**Date:** 3/13/2020 9:11:03 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 8

12 (2)

Most are higher on summary sheet.

**Subject:** Callout  
**Page Index:** 12  
**Date:** 3/13/2020 9:20:33 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 12



**Subject:** Callout  
**Page Index:** 12  
**Date:** 3/13/2020 9:21:53 AM  
**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** 12

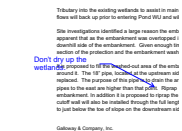
Provide comparison table with existing flows, proposed flows and flow attributes.

14 (2)



**Subject:** Callout  
**Page Index:** 14  
**Date:** 3/13/2020 9:27:06 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 14

discussion is necessary - what would release rate be without covering top?



**Subject:** Callout  
**Page Index:** 14  
**Date:** 3/13/2020 9:28:05 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 14

Don't dry up the wetlands.

16 (1)



**Subject:** text box  
**Page Index:** 16  
**Date:** 3/12/2020 2:35:17 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 16

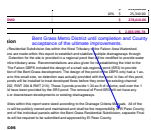
Add the following to the text. Reimbursement is limited to items identified in the DBPS (adjusted for fee increases). These will be further identified in final drainage reports.

18 (3)



**Subject:** arrow & box  
**Page Index:** 18  
**Date:** 3/12/2020 2:25:49 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 18

This does not completely resolve the matter of releasing EURV from Bentgrass that will go through two properties before getting to Pond WU. It would be best if you could get permission letters from these property owners; and/or the Bentgrass district would maintain the natural channel through these properties.




**Subject:** Callout  
**Page Index:** 18  
**Date:** 3/13/2020 2:13:47 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 18

Bent Grass Metro District until completion and County acceptance of the ultimate improvements.

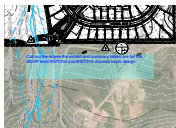



act which would have been provided by the SR3  
adverse impacts or downstream developments or  
All drainage facilities within this report were sized  
channel corridors will be publicly owned and meet  
Upon development of the individual parcels within  
Drainage Districts will be required to be installed  
doesn't make sense  
xvi. References  
1. City of Colorado Springs/County of El Paso  
2. Drainage Criteria Manual, Volume 2, City  
3. Urban Storm Drainage Criteria Manual, 10  
(with current revisions)  
4. Falcon Drainage Basin Planning Study, 10

**Subject:** Callout  
**Page Index:** 18  
**Date:** 3/13/2020 2:14:30 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 18

doesn't make sense

247 (1)



**Subject:** text box  
**Page Index:** 247  
**Date:** 3/12/2020 2:35:41 PM  
**Author:** Steve Kuehster  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 247

Call out the where the exhibit and summary tables  
are for the MDDP level RWT204 and RWT210  
channel reach design .

# ENG-SF1914-R3-FDR-Redlines Summary\_Markup Summary

1 (1)



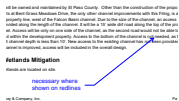
**Subject:** EPC ENG Review  
**Page Index:** 1  
**Date:** 3/13/2020 2:27:39 PM  
**Author:** dsdrice  
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**Space:**  
**Page Label:** 1

17 (2)



**Subject:** Callout  
**Page Index:** 17  
**Date:** 3/11/2020 1:23:57 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 17

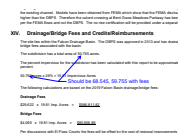
Will this take flow away from the wetlands?



**Subject:** Callout  
**Page Index:** 17  
**Date:** 3/13/2020 4:05:54 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 17

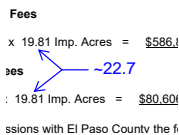
necessary where shown on redlines

18 (4)



**Subject:** Callout  
**Page Index:** 18  
**Date:** 3/13/2020 12:29:29 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 18

Should be 68.545, 59.755 with fees



**Subject:** Callout  
**Page Index:** 18  
**Date:** 3/13/2020 12:29:50 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 18

~22.7



**Subject:** Callout  
**Page Index:** 18  
**Date:** 3/13/2020 12:30:37 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** 18

38?

when items of value are received from a donor, a donor acknowledgment and receipt for the items must be provided. If the items are not received, no receipt acknowledgment will be provided under a separate report.

**Credits/Reimbursements**


1. The CDPS was approved in 2013 and has changed and been updated.

2. Show split of acreage that will pay fees when replatted.

3. as been calculated with this report to be approximately 30

4.


©19 Fulton Basin drainage/bridge fees

**Subject:** Text Box  
**Page Index:** 18  
**Date:** 3/13/2020 12:59:54 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 18

Show split of acreage that will pay fees when replatted.

19 (1)

13' Cutoff Wall - C  
13' Cutoff Wall - S  
13' Sheet Pile Cutoff  
Rip Rap - Type VH

**Subject:**  
**Page Index:** 19  
**Date:** 3/13/2020 12:31:55 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 19

' Sheet Pile

20 (3)


1. The CDPS was approved in 2013 and has changed and been updated.

2. Show split of acreage that will pay fees when replatted.

3. as been calculated with this report to be approximately 30

4.

©19 Fulton Basin drainage/bridge fees

**Subject:** Cloud+  
**Page Index:** 20  
**Date:** 3/13/2020 2:04:25 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 20

this doesn't make sense


1. The CDPS was approved in 2013 and has changed and been updated.

2. Show split of acreage that will pay fees when replatted.

3. as been calculated with this report to be approximately 30

4.

©19 Fulton Basin drainage/bridge fees

**Subject:** Callout  
**Page Index:** 20  
**Date:** 3/13/2020 2:04:44 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 20

district until final improvements are constructed


1. The CDPS was approved in 2013 and has changed and been updated.

2. Show split of acreage that will pay fees when replatted.

3. as been calculated with this report to be approximately 30

4.


©19 Fulton Basin drainage/bridge fees

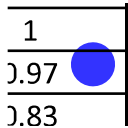
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**Page Label:** 20

Add a statement regarding no significant adverse impacts to downstream and adjacent properties


230 (37)

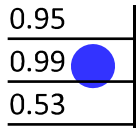
0.8  
1.07  
0.58

**Subject:**  
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**Date:** 3/13/2020 8:22:10 AM  
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**Page Label:** 230




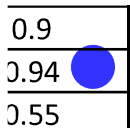
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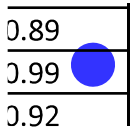
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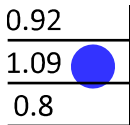
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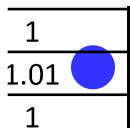
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**Page Label:** 230




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**Subject:**  
**Page Index:** 230  
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**Page Label:** 230


1
1
1.01

Subject:  
Page Index: 230  
Date: 3/13/2020 8:23:08 AM  
Author: dsdrice  
Color:   
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Space:  
Page Label: 230


0.55
1
1

Subject:  
Page Index: 230  
Date: 3/13/2020 8:23:19 AM  
Author: dsdrice  
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Space:  
Page Label: 230


1
1.01
0.76

Subject:  
Page Index: 230  
Date: 3/13/2020 8:23:26 AM  
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Space:  
Page Label: 230


1.01
1
1.01

Subject:  
Page Index: 230  
Date: 3/13/2020 8:23:31 AM  
Author: dsdrice  
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Space:  
Page Label: 230


.93
.99
.95

Subject:  
Page Index: 230  
Date: 3/13/2020 8:23:44 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 230


8.54	19
9.42	17
9.39	16

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:08 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 230


9.42	17
9.39	16
5.86	29

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:16 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 230


5.86	29
9.25	1
9.93	1

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:17 AM  
Author: dsdrice  
Color:   
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Page Label: 230


9.46	15
9	16
6.46	25

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:25 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 230


9.64	15
9.46	15
9	16

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:26 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 230


9.93	14
9.64	15
9.46	15

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:27 AM  
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Page Label: 230


9.25	15
9.93	14
9.64	15

Subject:  
Page Index: 230  
Date: 3/13/2020 8:24:28 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 230


9	16
9.51	16
8.54	19

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:24:30 AM  
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9.51	16
8.54	19
9.42	17

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:24:32 AM  
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**Space:**  
**Page Label:** 230


8.39	17
9.07	16
8.93	17

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:24:49 AM  
**Author:** dsdrice  
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**Page Label:** 230


7.44	20
8.39	17
9.07	17

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:24:51 AM  
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**Page Label:** 230


7.21	20
8.67	18
6.36	23

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:24:54 AM  
**Author:** dsdrice  
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**Page Label:** 230


6.36	2
8.24	2
5.43	2

**Subject:**  
**Page Index:** 230  
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**Page Label:** 230


5.43	2
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8.33	1

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:24:59 AM  
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**Space:**  
**Page Label:** 230


8.58	1
8.33	1
7.44	2

**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:25:00 AM  
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**Page Label:** 230


9.07	1
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8.78	1

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**Page Index:** 230  
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**Page Label:** 230


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5.64	2

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**Page Index:** 230  
**Date:** 3/13/2020 8:25:03 AM  
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**Space:**  
**Page Label:** 230


5.64	2
8.18	2
8.53	2


**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:25:06 AM  
**Author:** dsdrice  
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**Space:**  
**Page Label:** 230


8.18	2
8.53	2
8.55	2


**Subject:**  
**Page Index:** 230  
**Date:** 3/13/2020 8:25:07 AM  
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**Page Label:** 230





8.53	2	<b>Subject:</b>
8.55	2	<b>Page Index:</b> 230
7.28	3	<b>Date:</b> 3/13/2020 8:25:08 AM
		<b>Author:</b> dsdrice
		<b>Color:</b> 
		<b>Layer:</b>
		<b>Space:</b>
		<b>Page Label:</b> 230

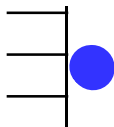
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7.28	3	<b>Page Index:</b> 230
4.82	3	<b>Date:</b> 3/13/2020 8:25:11 AM
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		<b>Page Label:</b> 230

8.33	1	<b>Subject:</b>
7.44	2	<b>Page Index:</b> 230
8.39	1	<b>Date:</b> 3/13/2020 8:25:14 AM
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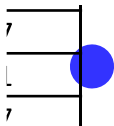
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8.67	20	<b>Page Index:</b> 230
9	16	<b>Date:</b> 3/13/2020 8:25:19 AM
		<b>Author:</b> dsdrice
		<b>Color:</b> 
		<b>Layer:</b>
		<b>Space:</b>
		<b>Page Label:</b> 230

8.67		<b>Subject:</b>
9		<b>Page Index:</b> 230
9.51		<b>Date:</b> 3/13/2020 8:25:19 AM
		<b>Author:</b> dsdrice
		<b>Color:</b> 
		<b>Layer:</b>
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		<b>Page Label:</b> 230

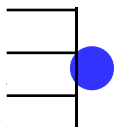
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7.26	19	<b>Page Index:</b> 230
8.67	20	<b>Date:</b> 3/13/2020 8:25:20 AM
		<b>Author:</b> dsdrice
		<b>Color:</b> 
		<b>Layer:</b>
		<b>Space:</b>
		<b>Page Label:</b> 230



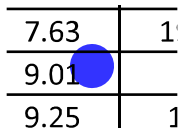
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**Page Label:** 315



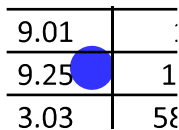
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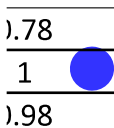
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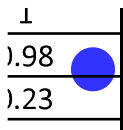
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**Space:**  
**Page Label:** 315

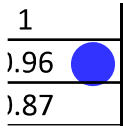


**Subject:**  
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**Page Label:** 315




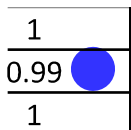
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**Page Label:** 315




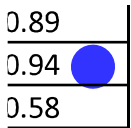
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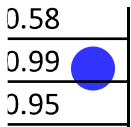
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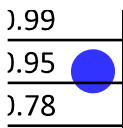
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Page Index: 315  
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Author: dsdrice  
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Page Label: 315


9.57	1
6.94	2

Subject:  
Page Index: 315  
Date: 3/13/2020 8:46:25 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 315


9.57	1
6.94	2
8.58	1

Subject:  
Page Index: 315  
Date: 3/13/2020 8:46:28 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 315


6.94	20
8.58	16
5.72	25

Subject:  
Page Index: 315  
Date: 3/13/2020 8:46:29 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 315


5.39	2
8.59	1
7.76	1

Subject:  
Page Index: 315  
Date: 3/13/2020 8:47:20 AM  
Author: dsdrice  
Color:   
Layer:  
Space:  
Page Label: 315


8.59	17
7.76	19
7.34	20

Subject:  
Page Index: 315  
Date: 3/13/2020 8:47:22 AM  
Author: dsdrice  
Color:   
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Space:  
Page Label: 315


7.76	1
7.34	2
8.63	1

**Subject:**  
**Page Index:** 315  
**Date:** 3/13/2020 8:47:24 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 315

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2179	8.63	172.72
2816	9.12	164
1701	8.89	173.92
2306	8.68	172.24
3459	5.7	271.11
10001	9.14	210.02

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**Page Label:** 315


0.57
1
1.01

**Subject:**  
**Page Index:** 315  
**Date:** 3/13/2020 8:47:33 AM  
**Author:** dsdrice  
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**Space:**  
**Page Label:** 315

362 (1)

Provide stage-storage  
 discharge calculations and  
 tables.

Provide electronic model.


**Subject:** Text Box  
**Page Index:** 362  
**Date:** 3/12/2020 11:52:29 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** 362

Provide stage-storage discharge calculations and tables.

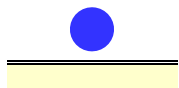
Provide electronic model.


366 (1)



**Subject:** Highlight  
**Page Index:** 366  
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**Space:**  
**Page Label:** 366

393 (1)



**Subject:**  
**Page Index:** 393  
**Date:** 3/12/2020 11:42:13 PM  
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394 (1)

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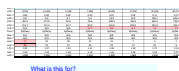


**Subject:**  
**Page Index:** 394  
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**Page Label:** 394

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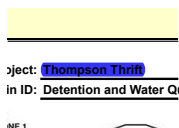
396 (3)

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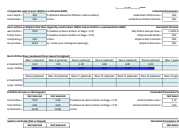
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**Date:** 3/11/2020 1:47:40 PM  
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What is this for?



**Subject:**  
**Page Index:** 396  
**Date:** 3/11/2020 1:47:52 PM  
**Author:** dsdrice  
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**Page Label:** 396

Thompson Thrift



**Subject:**  
**Page Index:** 396  
**Date:** 3/11/2020 1:47:58 PM  
**Author:** dsdrice  
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**Page Label:** 396

15.87 15.87 15.87 15.87 15.87 15.87

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405 (1)

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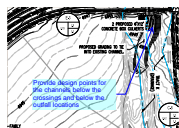
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**Date:** 3/13/2020 8:37:24 AM  
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**Space:**  
**Page Label:** [1] DR-2

Provide analysis showing how

---

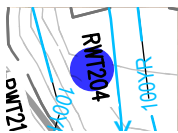
406 (3)


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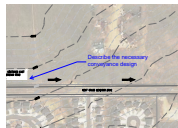



**Subject:** arrow & box  
**Page Index:** 406  
**Date:** 3/13/2020 1:02:33 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [1] DR-3

Provide design points for the channels below the crossings and below the outfall locations



**Subject:**  
**Page Index:** 406  
**Date:** 3/13/2020 1:14:18 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [1] DR-3

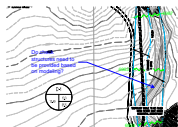



**Subject:** Callout  
**Page Index:** 406  
**Date:** 3/13/2020 8:36:41 AM  
**Author:** dsdrice  
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**Page Label:** [1] DR-3

Describe the necessary conveyance design

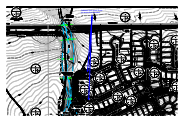
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407 (2)



**Subject:** Callout  
**Page Index:** 407  
**Date:** 3/13/2020 1:49:35 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [1] DR-3

Do check structures need to be provided based on modeling?



**Subject:** Callout  
**Page Index:** 407  
**Date:** 3/13/2020 8:34:12 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [1] DR-3

Address how street flows go around cul-de-sacs

# ENG-SF1914-R3-CD-Redlines Summary\_Markup Summary

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1 (1)

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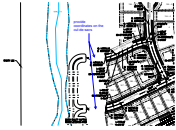


**Subject:** EPC ENG Review  
**Page Index:** 1  
**Date:** 3/13/2020 9:51:04 AM  
**Author:** dsdrice  
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**Page Label:** [1] 1 COVER SHEET

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5 (1)

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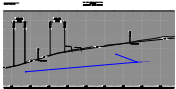
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**Page Index:** 5  
**Date:** 3/11/2020 12:36:11 PM  
**Author:** dsdrice  
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**Page Label:** [5] 5 OVERALL SITE PLAN

provide coordinates on the cul-de-sacs

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8 (1)

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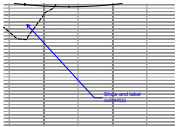
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**Page Label:** [8] 8 BENT GRASS MEADOWS DRIVE STREET IMPROVEMENT PLAN

Show and label RCP

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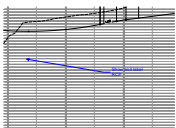
9 (2)

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**Subject:** Callout  
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**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** [9] 9 BENT GRASS MEADOWS DRIVE STREET IMPROVEMENT PLAN

Show and label culvert(s)



**Subject:** Callout  
**Page Index:** 9  
**Date:** 3/11/2020 12:39:16 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [9] 9 BENT GRASS MEADOWS DRIVE STREET IMPROVEMENT PLAN

Show and label RCP

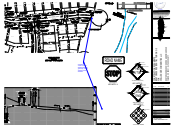
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17 (1)

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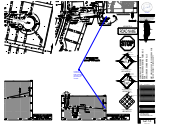
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**Date:** 3/11/2020 12:46:34 PM  
**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** [17] 17 WILLMORE DRIVE STREET  
IMPROVEMENT PLAN

Provide all cul-de-sac and ROW and profile  
geometry. Show pavement and shoulder.

---

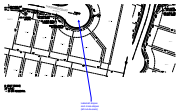
18 (2)

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**Subject:** Callout  
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**Author:** dsdrice  
**Color:** ■  
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**Page Label:** [18] 18 THEDFORD COURT & SILKY THREAD  
ROAD STREET IMPROVEMENT PLAN

Provide all cul-de-sac and ROW and profile  
geometry. Show pavement and shoulder.



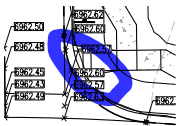
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**Page Label:** [18] 18 THEDFORD COURT & SILKY THREAD  
ROAD STREET IMPROVEMENT PLAN

Label all slopes and cross-slopes (all cul-de-sacs)

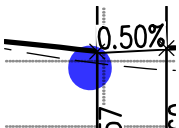
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19 (6)

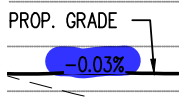
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**Page Label:** [19] 19 CROSS PAN & CURB RETURN  
PROFILES



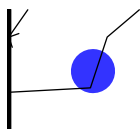
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**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [19] 19 CROSS PAN & CURB RETURN  
PROFILES



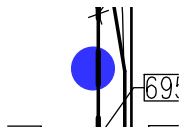
**Subject:**  
**Page Index:** 19  
**Date:** 3/11/2020 1:05:08 PM  
**Author:** dsdrice  
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**Space:**  
**Page Label:** [19] 19 CROSS PAN & CURB RETURN  
PROFILES



**Subject:**  
**Page Index:** 19  
**Date:** 3/11/2020 1:06:06 PM  
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**Space:**  
**Page Label:** [19] 19 CROSS PAN & CURB RETURN  
PROFILES

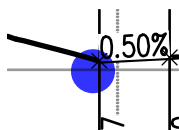


**Subject:**  
**Page Index:** 19  
**Date:** 3/11/2020 12:49:54 PM  
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**Space:**  
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PROFILES

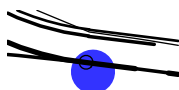


**Subject:**  
**Page Index:** 19  
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**Page Label:** [19] 19 CROSS PAN & CURB RETURN  
PROFILES

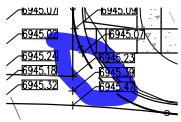
20 (3)



**Subject:**  
**Page Index:** 20  
**Date:** 3/11/2020 1:06:37 PM  
**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** [20] 20 CROSS PAN & CURB RETURN  
PROFILES

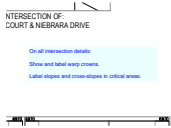


**Subject:**  
**Page Index:** 20  
**Date:** 3/11/2020 1:06:48 PM  
**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** [20] 20 CROSS PAN & CURB RETURN  
PROFILES



**Subject:**  
**Page Index:** 20  
**Date:** 3/11/2020 1:07:19 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [20] 20 CROSS PAN & CURB RETURN  
PROFILES

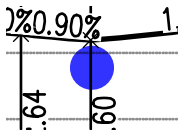
21 (1)



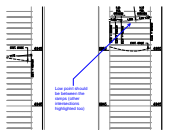
**Subject:** Text Box  
**Page Index:** 21  
**Date:** 3/11/2020 1:08:25 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [21] 21 CROSS PAN & CURB RETURN  
PROFILES

On all intersection details:  
  
Show and label warp crowns.  
  
Label slopes and cross-slopes in critical areas.

22 (4)

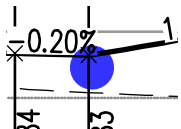


**Subject:**  
**Page Index:** 22  
**Date:** 3/11/2020 1:08:46 PM  
**Author:** dsdrice  
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**Layer:**  
**Space:**  
**Page Label:** [22] 22 CROSS PAN & CURB RETURN  
PROFILES

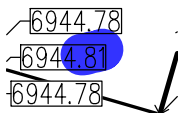


**Subject:** Callout  
**Page Index:** 22  
**Date:** 3/11/2020 1:10:26 PM  
**Author:** dsdrice  
**Color:** ■  
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**Space:**  
**Page Label:** [22] 22 CROSS PAN & CURB RETURN  
PROFILES

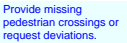

Low point should be between the ramps (other intersections highlighted too)

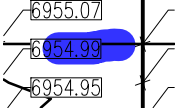

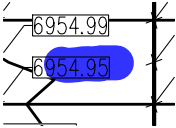

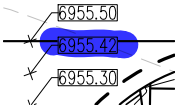



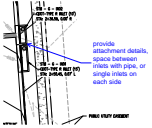

**Subject:**  
**Page Index:** 22  
**Date:** 3/11/2020 1:10:40 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [22] 22 CROSS PAN & CURB RETURN  
PROFILES

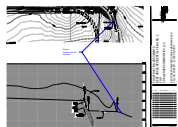


**Subject:**  
**Page Index:** 22  
**Date:** 3/11/2020 1:11:17 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [22] 22 CROSS PAN & CURB RETURN  
PROFILES

	<b>Subject:</b> Text Box <b>Page Index:</b> 23 <b>Date:</b> 3/11/2020 1:12:40 PM <b>Author:</b> dsdrice <b>Color:</b>  <b>Layer:</b> <b>Space:</b> <b>Page Label:</b> [23] 23 CROSS PAN & CURB RETURN PROFILES	Provide missing pedestrian crossings or request deviations.
---	--	---

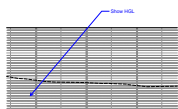
	<b>Subject:</b> <b>Page Index:</b> 24 <b>Date:</b> 3/11/2020 1:15:00 PM <b>Author:</b> dsdrice <b>Color:</b>  <b>Layer:</b> <b>Space:</b> <b>Page Label:</b> [24] 24 CROSS PAN & CURB RETURN PROFILES	
	<b>Subject:</b> <b>Page Index:</b> 24 <b>Date:</b> 3/11/2020 1:15:05 PM <b>Author:</b> dsdrice <b>Color:</b>  <b>Layer:</b> <b>Space:</b> <b>Page Label:</b> [24] 24 CROSS PAN & CURB RETURN PROFILES	
	<b>Subject:</b> <b>Page Index:</b> 24 <b>Date:</b> 3/11/2020 1:15:10 PM <b>Author:</b> dsdrice <b>Color:</b>  <b>Layer:</b> <b>Space:</b> <b>Page Label:</b> [24] 24 CROSS PAN & CURB RETURN PROFILES	

	<b>Subject:</b> Callout <b>Page Index:</b> 26 <b>Date:</b> 3/11/2020 1:18:11 PM <b>Author:</b> dsdrice <b>Color:</b>  <b>Layer:</b> <b>Space:</b> <b>Page Label:</b> [26] 26 BENT GRASS MEADOWS DRIVE STORM PLAN & PROFILE	provide attachment details, space between inlets with pipe, or single inlets on each side
---	--	---



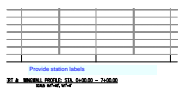
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**Page Index:** 30  
**Date:** 3/11/2020 2:05:16 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [30] 30 BOX CULVERT PLAN & PROFILE

Erosion protection/check structure?



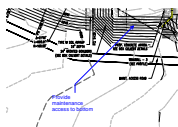
**Subject:** Callout  
**Page Index:** 30  
**Date:** 3/11/2020 2:06:32 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [30] 30 BOX CULVERT PLAN & PROFILE

Show HGL



**Subject:** Text Box  
**Page Index:** 31  
**Date:** 3/11/2020 1:53:28 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [31] 31 CULVERT & WINGWALL PLAN & PROFILE

Provide station labels



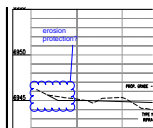
**Subject:** Callout  
**Page Index:** 31  
**Date:** 3/11/2020 1:54:39 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [31] 31 CULVERT & WINGWALL PLAN & PROFILE

Provide maintenance access to bottom



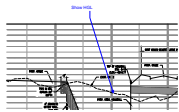
**Subject:** Callout  
**Page Index:** 31  
**Date:** 3/11/2020 1:55:09 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [31] 31 CULVERT & WINGWALL PLAN & PROFILE

Provide maintenance access to bottom



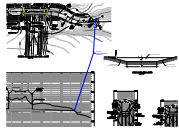
**Subject:** Cloud+  
**Page Index:** 31  
**Date:** 3/11/2020 2:02:25 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [31] 31 CULVERT & WINGWALL PLAN & PROFILE

erosion protection?



**Subject:** Callout  
**Page Index:** 31  
**Date:** 3/11/2020 2:03:20 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [31] 31 CULVERT & WINGWALL PLAN & PROFILE

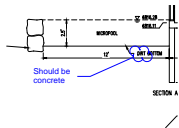
Show HGL



**Subject:** Callout  
**Page Index:** 31  
**Date:** 3/11/2020 2:06:06 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [31] 31 CULVERT & WINGWALL PLAN & PROFILE

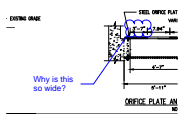
Erosion protection/check structure?

39 (5)



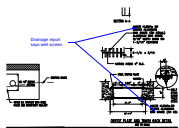
**Subject:** Cloud+  
**Page Index:** 39  
**Date:** 3/12/2020 10:40:42 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [39] 39 POND MODIFICATION PLAN

Should be concrete



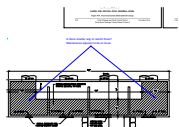
**Subject:** Cloud+  
**Page Index:** 39  
**Date:** 3/12/2020 11:01:34 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [39] 39 POND MODIFICATION PLAN

Why is this so wide?



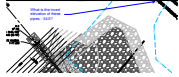
**Subject:** Callout  
**Page Index:** 39  
**Date:** 3/13/2020 8:55:46 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [39] 39 POND MODIFICATION PLAN


Drainage report says well screen.



**Subject:** Callout  
**Page Index:** 39  
**Date:** 3/13/2020 9:02:12 AM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [39] 39 POND MODIFICATION PLAN

Is there a better way to restrict flows?  
Maintenance appears to be an issue.




**Subject:** Callout  
**Page Index:** 39  
**Date:** 3/13/2020 9:31:52 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [39] 39 POND MODIFICATION PLAN

What is the invert elevation of these pipes - 34.5?

44 (1)

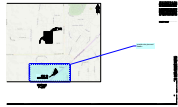


**Subject:** Text Box  
**Page Index:** 44  
**Date:** 3/13/2020 9:46:30 AM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [1] 1 COVER SHEET

Not reviewed

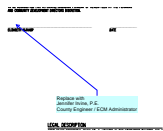
# ENG-SF1914-R3-GEC-Redlines Summary\_Markup Summary

1 (2)



**Subject:** Engineer  
**Page Index:** 1  
**Date:** 3/11/2020 3:34:30 PM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [1] 1 COVER SHEET

provide site plan and details



**Subject:** Engineer  
**Page Index:** 1  
**Date:** 3/12/2020 10:47:14 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [1] 1 COVER SHEET

Replace with  
Jennifer Irvine, P.E.  
County Engineer / ECM Administrator

2 (2)



**Subject:** Engineer  
**Page Index:** 2  
**Date:** 3/11/2020 10:03:38 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [2] 2 NOTES

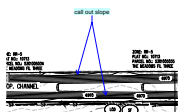
Update note in accordance with GEC Checklist  
Item 3.19



**Subject:** Engineer  
**Page Index:** 2  
**Date:** 3/12/2020 9:55:34 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [2] 2 NOTES

Update note in accordance with GEC Checklist  
Item 3.23

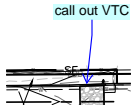
5 (8)



**Subject:** Engineer  
**Page Index:** 5  
**Date:** 3/11/2020 1:47:47 PM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING &  
EROSION CONTROL PLAN

call out slope





---

**Subject:** Engineer  
**Page Index:** 5  
**Date:** 3/11/2020 1:53:44 PM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

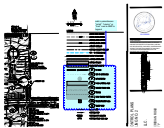
call out VTC



---

**Subject:** Engineer  
**Page Index:** 5  
**Date:** 3/11/2020 1:55:22 PM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

call out VTC



---

**Subject:** Engineer  
**Page Index:** 5  
**Date:** 3/12/2020 10:56:11 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

add in parentheses "initial", "interim" or "final" next to BMP in legend



---

**Subject:** Engineer  
**Page Index:** 5  
**Date:** 3/12/2020 11:00:56 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

define & show BMPs



---

**Subject:** Engineer  
**Page Index:** 5  
**Date:** 3/12/2020 8:27:18 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

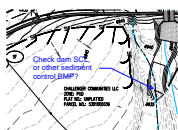
Show rock sock locations at curb cuts (as discussed in the SWMP)




---

**Subject:** Callout  
**Page Index:** 5  
**Date:** 3/13/2020 1:08:05 PM  
**Author:** dsdrice  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

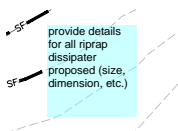
Check dam or other sediment control BMP?



**Subject:** Callout  
**Page Index:** 5  
**Date:** 3/13/2020 1:08:51 PM  
**Author:** dsdrice  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [5] 5 INTERIM OVERALL GRADING & EROSION CONTROL PLAN

Check dam SCL, or other sediment control BMP?

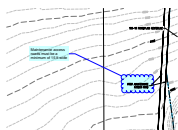
6 (1)




**Subject:** Engineer  
**Page Index:** 6  
**Date:** 3/11/2020 3:41:30 PM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [6] 6 INTERIM GRADING & EROSION  
 CONTROL PLAN

provide details for all riprap dissipater proposed  
(size, dimension, etc.)

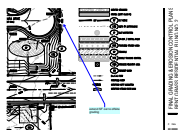
7 (1)



**Subject:** Engineer  
**Page Index:** 7  
**Date:** 3/11/2020 2:49:51 PM  
**Author:** dsdnijkamp  
**Color:**   
**Layer:**  
**Space:**  
**Page Label:** [7] 7 INTERIM GRADING & EROSION  
 CONTROL PLAN

Maintenance access roads must be a minimum of 15 ft wide

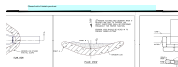
8 (1)



**Subject:** Engineer  
**Page Index:** 8  
**Date:** 3/12/2020 10:44:49 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [8] 8 INTERIM GRADING & EROSION  
 CONTROL PLAN

extend SF out to offsite grading

14 (1)



**Subject:** Engineer  
**Page Index:** 14  
**Date:** 3/12/2020 10:25:40 AM  
**Author:** dsdnijkamp  
**Color:** ■  
**Layer:**  
**Space:**  
**Page Label:** [14] 14 GRADING & EROSION CONTROL  
 DETAILS

Please limit to 3 details per sheet



**Subject:** Engineer

**Page Index:** 16

**Date:** 3/12/2020 9:59:10 AM

**Author:** dsdnijkamp

**Color:** ■

**Layer:**

**Space:**

**Page Label:** [16] 16 GRADING & EROSION CONTROL  
DETAILS

provide WQ Pond details, including forebay, trickle  
channel, outlet structure, spillway, etc.

## **II. PHASING AND PROPOSE CONSTRUCTION SEQUENCE**

### **PHASING**

Construction activities will be completed in three phases including Initial, interim and final. Initial phase includes the installation of silt fence around the entire project Limit of Disturbance. Interim phase includes the installation of temporary erosion and sediment controls as construction progresses. Final phase will be completed once the site is stabilized and all temporary measures are removed.

### **CONSTRUCTION DOCUMENTATION**

Construction drawings are provided with this document showing each of these phases and are intended to be a “living” document used by the SWMP Manager to document construction activities. See section IX “Inspection and Record Keeping” for additional information.

### **PROPOSED SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES**

Construction for the development of this project is currently projected to begin in December of 2019. It is estimated that construction activities will be completed by December 2020. Final stabilization is expected in the spring of 2021. The anticipated sequence of construction is as follows:

Bent Grass Residential F2:

1. Installation of perimeter erosion control measures as shown on the construction drawings.
2. Site Clearing/Grubbing and topsoil stockpiling.
3. Construct temporary sediment basins as necessary.
4. Rough grading of the site.
5. Construct underground water/sewer/storm.
6. Construct curb/gutter and pavement.
7. Final stabilize areas outside of ROW.
8. Construct gas/electric/cable/phone in the ROW areas.
9. Final stabilize ROW.
10. Final erosion control measures as areas are completed
11. Remove construction BMP's

Add Pond WU  
activities

See Section VI “Areas and Volumes” for information on anticipated disturbed area and grading volumes.

### III. FINAL STABILIZATION

Final site stabilization will be achieved when all final landscaping and paving is complete and when vegetation density is greater than 70 percent of pre-disturbance density over its entire area. The remainder of the site will consist of hardscape (drives and walks) or be a part of the building footprint. All final stabilization on the site will be of a permanent nature. All temporary BMPs will be removed upon completion of construction. It is the responsibility of the contractor to remove all dirt and garbage from the site.

Permanent BMP's such as water quality ponds will be owned and maintained by Bent Grass Metropolitan District.

### IV. PRE-DEVELOPMENT CONDITIONS & SOILS

#### FLOODWAY

According to the current FEMA Flood Insurance Rate Map (FIRM) Panel No. 08041C0553 G, dated December 7, 2018 (See Appendix for the FEMA FIRM Exhibit) this site is designated as Zone X (outside 0.2% chance of flood) and portions of the property are designated as Zone AE (regulatory floodway). The proposed residential lots are completely outside of the "regulatory floodway". Bent Grass Meadows Drive will cross the "regulatory floodway". A permit is required and will be obtained from the El Paso County Floodplain Administrator prior to commencing work inside the "regulatory floodway". Per the El Paso County Floodplain Administrator, the floodway is classified as follows:

*Riverine floodplain with base flood elevations, but no floodway: When the flood hazard map designates base flood elevations (100-year flood heights) but no floodway is delineated, the applicant must demonstrate that the cumulative effect of the proposed development, when combined with all other existing and anticipated floodplain development, would not increase the water surface elevation of the 100-year flood more than one foot at any location.*

#### EXISTING VEGETATION

The site is currently undeveloped and has been used as a pasture for many years. Vegetation consists of native grasses/weeds that have been heavily grazed for years. There is no brush or trees within the area to be graded. Ground cover is estimated at 70% density.

#### EXISTING DRAINAGE PATTERNS

Item 9. Add method used to determine ground cover (i.e. visual inspection, aerial, etc.)

The site is fully contained within the West Falcon Tributary drainage basin. Drainage through the site is generally north to south. Drainage is collected in a wet weather conveyance known as

2. Disturbed portions of the site where construction activity temporarily ceases for at least 14 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in the area.
3. Seed bed preparation is not required if soil is in loose condition.
4. Prior to seeding, fertilizer shall be applied to each acre to be stabilized in accordance with the manufacturer's specifications.
5. If required seeding areas shall be mulched with straw to a uniformed cover. The straw mulch is to be tacked into place by a disk with blades set nearly straight.
6. A site-specific erosion control drawing has been developed showing the location of Best Management practices to be used during site construction.
7. Where indicated on the erosion control plan, Best Management Practices will be installed.
8. Material shall be in accordance with the plans and specifications and all construction shall be provided in accordance with the manufacturer's specifications.
9. All BMP's will be inspected bi-weekly and cleaned/maintained as required.

## **VI. AREAS AND VOLUMES**

The site consists of 50.8 acres. 19.8 acres are expected to be disturbed.

The unadjusted cut and fill quantities as of the writing of this report are listed below:

Cut Volume = 83,838 Cubic Yards

Fill Volume = 87,889 Cubic Yards

Total Volume = 4,051 Cubic Yards (Fill)

Note: The Total disturbed area shall be updated on the SWMP as changes occur.

update to include  
Pond WU work

## **VII. APPROPRIATE CONTROLS AND MEASURES**

Also refer to attached Erosion and Sediment Control notes and plans included in the site plans

### **MINIMIZE DISTURBED AREA AND PROTECT NATURAL FEATURES AND SOIL**

All work will occur inside the limits of construction per the erosion Control Site Plan.

**PHASE CONSTRUCTION ACTIVITY** The sequence for the installation and removal of erosion and sediment control measures is as follows: Perimeter control measures (silt barriers and fencing) installed at designated areas as noted on the site plans (Exhibit 1), cleaning of street surfaces during construction if applicable, site grading, installation of utilities, paving final and grading,

