

# ENG-SF18020-R1-FDR.pdf Markup Summary

1 (1)

DSD Proj  
**SF-1820**

**Subject:** Engineer  
**Date:** 8/7/2018 8:10:08 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

SF-1820

6 (2)

What about Pond W-5 and outfall?  
additional water from the 1.5 MG Water Act to drainage design and all water treatment operations and management operations. "Water Drainage Report" for the construction of Santa Rosa Filing No. 1, 1/1/2016 and the 1.5 MG Water Act. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design.

**Subject:** Callout  
**Date:** 8/20/2018 3:06:22 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 6

What about Pond W-5 and outfall?

on with the wetlands consultant and the Army and permit. No other construction associated with the wetlands at the San Diego Ranch Filing No. 2 will be shown on the construction map. No. 2. This report is an appendix to the final drainage report and is intended to be used for design. This report is an appendix to the final drainage report and is intended to be used for design. This report is an appendix to the final drainage report and is intended to be used for design.

**Subject:** Cloud+  
**Date:** 8/20/2018 3:07:04 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 6

are?

10 (5)

ed up to the  
ow, form prev  
the OS3 basi

**Subject:** Engineer  
**Date:** 8/7/2018 8:11:42 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

to Pond W-5. The drainage report was prepared by Matt D. Kuehster and has been checked at the end of the review and Report for Filing No. 2 will address the revisions from the previous report. In the interim, a temporary diversion only will be constructed and the drainage map will show from the final drainage map. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design.

**Subject:** Engineer  
**Date:** 8/7/2018 8:20:25 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

The Final Drainage Report for Filing No. 2 will address the revisions from the previous report to the new Matrix report.

to Pond W-5. The drainage report was prepared by Matt D. Kuehster and has been checked at the end of the review and Report for Filing No. 2 will address the revisions from the previous report. In the interim, a temporary diversion only will be constructed and the drainage map will show from the final drainage map. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design. The drainage map in the Matrix report is a preliminary drainage map with the volume of water in the pond, which is not intended to be used for design.

**Subject:** Engineer  
**Date:** 8/7/2018 8:33:04 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

Show Tract 'I' on the drainage map.

Barbarick  
al Drainage This is the  
ort. final drainage  
report, the  
of PR32 revisions  
figure CU-9 should be  
l headwater addressed.  
lled.  
nts of 0.22

**Subject:** Engineer  
**Date:** 8/7/2018 8:39:50 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

This is the final drainage report, the revisions should be addressed.

be  
will  
red

**Subject:** Engineer  
**Date:** 8/7/2018 9:57:55 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

11 (3)



**Subject:** Engineer  
**Date:** 8/7/2018 10:17:09 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 11

The Final Drainage Report for Filing No. 2, will address the revisions from the previous report to the n

42" RCP (PR36) to PR38. Upon future development and will release to historic release rates of Q main CS2 will be accounted for in the calculation-Drainage Report for Filing No. 2, will address [See previous comment, this is Filing 2.](#) instructed and will replace the construction of P33 (Q5=45.9 cfs and Q100=115.2 cfs). Figures of swale grading comply with required height and will be removed and PR36 will be installed

**Subject:** Engineer  
**Date:** 8/7/2018 12:13:54 PM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 11

See previous comment, this is Filing 2.

DP44 5.50 acres consists of three (3) lots (undivided) per the comments and notes with final construction of 18" RCP (DP44) and a 24" RCP (DP44). The combined flow of DP44 and DP44 has been calculated for DP44. The reference to DP44 in the notes and DP44 will be replaced with a temporary 24" RCP (DP44) and will be replaced with a permanent 24" RCP (DP44) and will be replaced with a permanent 24" RCP (DP44). Call out what permanent drainage feature replaces the temporary sediment basin at DP 44

**Subject:** Engineer  
**Date:** 8/8/2018 7:26:30 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 11

Call out what permanent drainage feature replaces the temporary sediment basin at DP 44

13 (3)

at the outlet. The potential, via a 48" RCP (DP68) will be routed via a 48" RCP (DP68) to Sand Creek will be

**Subject:** Engineer  
**Date:** 8/8/2018 11:31:25 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 13

will routed

summed flows (P1 DP68 and outfall in sed TM-SCCS. determined using

**Subject:** Engineer  
**Date:** 8/8/2018 11:32:30 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 13

TM-SCCS



**Subject:** Engineer  
**Date:** 8/8/2018 11:46:45 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 13

Spell out this acronym and call out that this outfall will be constructed with this development.

14 (5)



**Subject:** Engineer  
**Date:** 8/15/2018 10:42:04 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 14

Comments to highlighted text above: Show the existing 24 inch pipes on the proposed drainage map. Include discussion as to how the overflows in this area impact the development of Filing 2. (Some portion of these flows over tops Vollmer continues through Barbarick Subdivision and needs to be addressed in this report) Also, does the 3.5' x 5.5' HECMP and inlet conditions handle the 100 year storm? Does it overtop and flow towards the proposed housing area?



**Subject:** Engineer  
**Date:** 8/15/2018 7:49:10 AM  
**Author:** Steve Kuehster  
**Color:**    
**Page Index:** 14

The existing roadside swale will provide adequate drainage, assuming the swale has been maintained

**Subject:** Engineer  
**Date:** 8/15/2018 7:50:13 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 14

The existing roadside swale will provide adequate drainage, assuming the swale has been maintained. FI

**Subject:** Engineer  
**Date:** 8/15/2018 7:52:18 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 14

via an existing 24" CMP under Glider Loop

**Subject:** Engineer  
**Date:** 8/15/2018 7:52:32 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 14

via an existing 24" CMP

15 (5)

t-grade inlet  
o a riprap fo  
osed roadsid

**Subject:** Pen  
**Date:** 8/8/2018 12:39:13 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 15

—

**Subject:** Engineer  
**Date:** 8/8/2018 12:40:20 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 15

The forebay will have to meet the requirements of a FS detention facility

**Subject:** Engineer  
**Date:** 8/8/2018 12:47:08 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 15

Please clarify when (Pond W-4) will be constructed

**Subject:** Engineer  
**Date:** 8/8/2018 12:53:21 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 15

Call out the type of material (armoring) needed for flows this high in a swale.

ed to  
ferim

**Subject:** Engineer  
**Date:** 8/8/2018 12:54:59 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 15


to

16 (3)

**Subject:** Callout  
**Date:** 8/20/2018 3:34:30 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 16


How?

r DP53. In the und  
rainage patterns an  
ows will routed sou  
; and Q100=322.7 c  
of this basin, full s

**Subject:** Engineer  
**Date:** 8/9/2018 7:56:49 AM  
**Author:** Steve Kuehster  
**Color:**   
**Page Index:** 16

will routed



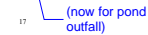
**Subject:** Engineer  
**Date:** 8/9/2018 8:28:14 AM  
**Author:** Steve Kuehster  
**Color:**   
**Page Index:** 16


DP 54 and DP 55 developed flows will need to be treated in a permanent facility.

17 (2)

will  
eck  
her 

**Subject:** Highlight  
**Date:** 8/20/2018 3:01:28 PM  
**Author:** dsdrice  
**Color:**   
**Page Index:** 17


d to be similar to what was anticipated in the SCDI  
area shall be installed to handle the volume of flows;  
sign strip of the applicable and adjoining development  
improvements necessary.  
  
17 (now for pond  
outfall)

**Subject:** Callout  
**Date:** 8/20/2018 3:02:33 PM  
**Author:** dsdrice  
**Color:**   
**Page Index:** 17

(now for pond outfall)


18 (5)



**Subject:** Engineer  
**Date:** 8/15/2018 10:51:52 AM  
**Author:** Steve Kuehster  
**Color:**   
**Page Index:** 18


t



**Subject:** Engineer  
**Date:** 8/15/2018 10:51:58 AM  
**Author:** Steve Kuehster  
**Color:**   
**Page Index:** 18


The approved Subdivision Improvements Agreement for Sterling Ranch Filing No. 2 address the timing and funding for channel improvements.



**Subject:** Engineer  
**Date:** 8/15/2018 11:07:57 AM  
**Author:** Steve Kuehster  
**Color:**   
**Page Index:** 18

Comment on highlighted text. The SIA did not call out the channel improvements that need to be constructed with this Filing. 1. Channel improvements need to be constructed that protect the outfall. 2. These improvements need to be evaluated due to the channel being unimproved for a long distance downstream. 3. Call out that all Sterling Ranch portions of Sand creek will be maintained by the Sterling ranch district until the channel is improved and accepted.

\*Dete

**Subject:** Engineer  
**Date:** 8/9/2018 8:21:12 AM  
**Author:** Steve Kuehster  
**Color:**   
**Page Index:** 18

\*D



**Subject:** Engineer  
**Date:** 8/9/2018 8:23:53 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 18

\*D

19 (4)



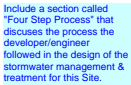
**Subject:** Callout  
**Date:** 8/20/2018 3:04:38 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 19

clarify where this comparison applies.



**Subject:** Cloud+  
**Date:** 8/20/2018 3:09:58 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 19

?



**Subject:** Engineer  
**Date:** 8/9/2018 8:33:16 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 19

Include a section called "Four Step Process" that discusses the process the developer/engineer followed in the design of the stormwater management & treatment for this Site.



**Subject:** Engineer  
**Date:** 8/9/2018 8:42:33 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 19

Include a tabulation of the offsite/channel improvements that need to be constructed with Filing 2.

20 (1)



**Subject:** Text Box  
**Date:** 8/20/2018 2:59:57 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 20

(Not checked this review)

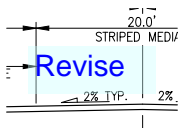
21 (1)



**Subject:** Text Box  
**Date:** 8/20/2018 3:08:40 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 21

MDDP ...  
2018 (TBD)

119 (1)



**Subject:** Text Box  
**Date:** 8/20/2018 2:22:27 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 119

Revise

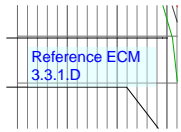
120 (1)



**Subject:** Text Box  
**Date:** 8/20/2018 2:22:39 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 120

Revise

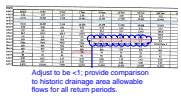
226 (1)



**Subject:** Text Box  
**Date:** 8/20/2018 2:32:11 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 226

Reference ECM 3.3.1.D

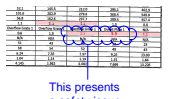
260 (1)



**Subject:** Cloud+  
**Date:** 8/20/2018 2:43:34 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 260

Adjust to be <1; provide comparison to historic drainage area allowable flows for all return periods.

267 (1)



**Subject:** Cloud+  
**Date:** 8/20/2018 2:46:21 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 267

This presents a safety issue

280 (1)



**Subject:** Engineer  
**Date:** 8/15/2018 11:37:43 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 280

Provide the SDI worksheets that demonstrate the detention ponds comply with Colorado Revised Statute 37-92-602(8). Provide this as a separate document.

281 (1)



**Subject:** Engineer  
**Date:** 8/7/2018 7:52:21 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 281

Please provide an additional existing condition drainage map at the same scale as the proposed condition map. This exhibit should show the show the boundary for this site.

284 (20)



**Subject:** Engineer  
**Date:** 8/15/2018 10:16:48 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Call out on this plan the outfall points of the approved Barbarick Subdivision Final Drainage Report.



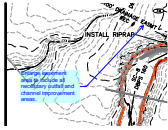
**Subject:** Engineer  
**Date:** 8/15/2018 10:17:49 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Call-out how they are collected and conveyed.

Include additional views of this plan sheet, so they will be legible on 11X17 inch print-outs.

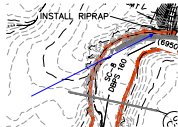
**Subject:** Engineer  
**Date:** 8/15/2018 10:33:42 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Include additional views of this plan sheet, so they will be legible on 11X17 inch print-outs.



**Subject:** Engineer  
**Date:** 8/15/2018 7:17:06 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Enlarge easement area to include all necessary outfall and channel improvement areas.



**Subject:** Arrow  
**Date:** 8/15/2018 7:17:25 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284



**Subject:** Engineer  
**Date:** 8/15/2018 7:23:39 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Show ultimate grading, contours and general layout of Marksheffel Road adjacent to Pond W-4, to ensure that both the pond and the road will fit here.



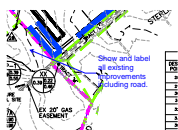
**Subject:** Engineer  
**Date:** 8/16/2018 9:35:04 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Show ultimate condition of Vollmer to ensure it will fit with proposed improvements.



**Subject:** Text Box  
**Date:** 8/17/2018 10:43:55 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Label City of Colorado Springs Boundary



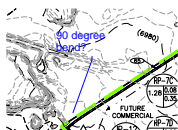
**Subject:** Callout  
**Date:** 8/17/2018 10:54:27 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Show and label all existing improvements including road.



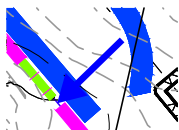
**Subject:** Text Box  
**Date:** 8/17/2018 10:55:06 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Show Shiloh Mesa



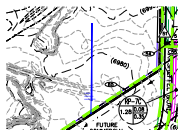
**Subject:** Cloud+  
**Date:** 8/17/2018 10:56:07 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

90 degree bend?



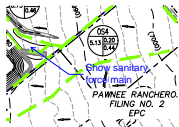
**Subject:** Arrow  
**Date:** 8/17/2018 11:36:58 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Culvert



**Subject:** Callout  
**Date:** 8/17/2018 11:54:09 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Label drainage easements



**Subject:** Callout  
**Date:** 8/20/2018 9:12:47 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Show sanitary force main

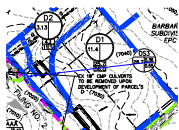


**Subject:** Cloud+  
**Date:** 8/20/2018 9:14:17 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 284

Is a check needed here for protection of the force main?



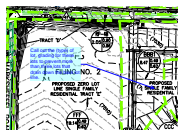
**Subject:** Arrow  
**Date:** 8/7/2018 11:51:40 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284



**Subject:** Arrow  
**Date:** 8/7/2018 11:51:55 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284



**Subject:** Engineer  
**Date:** 8/7/2018 8:12:06 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284



**Subject:** Engineer  
**Date:** 8/8/2018 7:24:46 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

Call out the (type) of lot grading for these lots to prevent more than three lots that drain down the back lot line.



**Subject:** Highlight  
**Date:** 8/8/2018 8:42:54 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 284

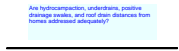


# Grading Eros Plan V\_1.pdf Markup Summary

1 (5)

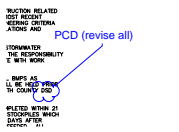


**Subject:** Image  
**Date:** 8/20/2018 5:18:33 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 1



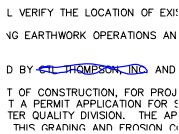
**Subject:** Text Box  
**Date:** 8/20/2018 7:37:08 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 1

Are hydrocompaction, underdrains, positive drainage swales, and roof drain distances from homes addressed adequately?



**Subject:** Cloud+  
**Date:** 8/20/2018 8:50:15 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 1

PCD (revise all)



**Subject:** Pen  
**Date:** 8/9/2018 11:23:04 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

no



**Subject:** Engineer  
**Date:** 8/9/2018 11:25:15 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

Entech Engineering, Identify the Report by job number or report date.

2 (18)



**Subject:** Engineer  
**Date:** 8/13/2018 7:25:47 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Call out side lot swales or lot types with side lot swales for these lots.

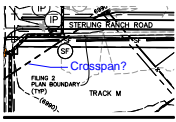


**Subject:** Arrow  
**Date:** 8/13/2018 7:26:34 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2



**Subject:** Cloud+  
**Date:** 8/16/2018 10:18:00 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

Unplatted?



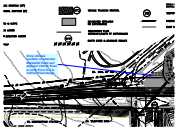
**Subject:** Cloud+  
**Date:** 8/16/2018 11:24:38 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

Crossspan?



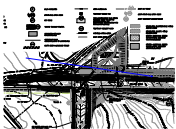
**Subject:** Text Box  
**Date:** 8/16/2018 11:26:53 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

Show all existing improvements.

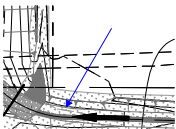


**Subject:** Engineer  
**Date:** 8/16/2018 9:28:20 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

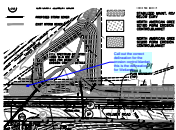
Show ultimate condition of extended Marsheffel Road and adjacent Vollmer Road to verify Pond W-4 & Vollmer Road design.



**Subject:** Arrow  
**Date:** 8/16/2018 9:28:32 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

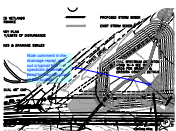


**Subject:** Arrow  
**Date:** 8/9/2018 11:54:07 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2



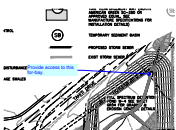
**Subject:** Engineer  
**Date:** 8/9/2018 11:54:36 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Call out the correct delineation for the erosion control blanket, this is the delineation for Wetlands.



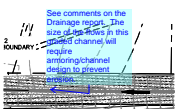
**Subject:** Engineer  
**Date:** 8/9/2018 12:21:15 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Note comment in the drainage report, call out a typical Full spectrum detention pond for-bay structure of this outfall.



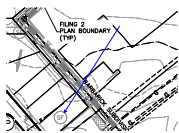
**Subject:** Engineer  
**Date:** 8/9/2018 12:21:36 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Provide access to this for-bay.



**Subject:** Engineer  
**Date:** 8/9/2018 12:27:18 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

See comments on the Drainage report. The size of the flows in this graded channel will require armoring/channel design to prevent erosion.

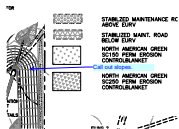


**Subject:** Arrow  
**Date:** 8/9/2018 12:33:27 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2



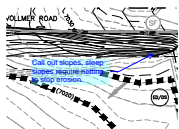
**Subject:** Engineer  
**Date:** 8/9/2018 12:33:59 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

some call outs are shaded and some are dark, please call out line type the same for both.



**Subject:** Engineer  
**Date:** 8/9/2018 12:41:02 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Call out slopes.



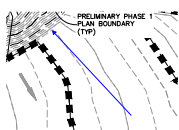
**Subject:** Engineer  
**Date:** 8/9/2018 12:42:30 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Call out slopes, steep slopes require netting to stop erosion.



**Subject:** Engineer  
**Date:** 8/9/2018 12:48:18 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Call out contours on both existing and proposed grading.



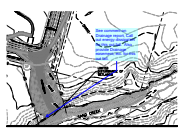
**Subject:** Arrow  
**Date:** 8/9/2018 12:48:49 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

3 (7)



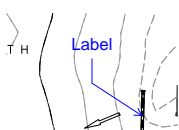
**Subject:** Engineer  
**Date:** 8/13/2018 7:41:13 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3

Call out slopes, slopes over 3:1 require protection.



**Subject:** Engineer  
**Date:** 8/13/2018 7:47:20 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3

See comment on Drainage report, Call out energy dissipation for this out fall. Also provide Drainage easement, etc. for this out fall.



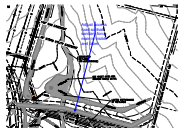
**Subject:** Callout  
**Date:** 8/16/2018 11:38:43 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 3

Label



**Subject:** Callout  
**Date:** 8/16/2018 11:39:33 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 3

Label sanitary force main.



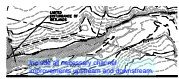
**Subject:** Callout  
**Date:** 8/16/2018 11:41:16 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 3

Adjust access road so that sanitary force main is visible and label.



**Subject:** Cloud+  
**Date:** 8/16/2018 11:42:20 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 3

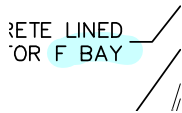
Provide or reference complete details



**Subject:** Text Box  
**Date:** 8/16/2018 11:42:59 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 3

Include all necessary channel improvements upstream and downstream.

4 (3)



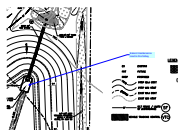
**Subject:** Engineer  
**Date:** 8/13/2018 7:48:11 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 4

See comment on drainage report. Requires a concrete structure for ease of clean-out.



**Subject:** Engineer  
**Date:** 8/13/2018 7:57:56 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 4

See comment on drainage report. Requires a concrete structure for ease of clean-out.



**Subject:** Engineer  
**Date:** 8/13/2018 8:33:54 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 4

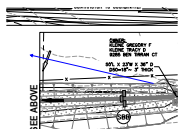
Extend maintenance road to this forbay

5 (6)

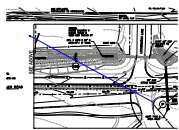
See comment on drainage report, Velocities exceed permissible limits in DCM 1 & 2 for a soft lined channel.

**Subject:** Engineer  
**Date:** 8/13/2018 8:42:45 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 5

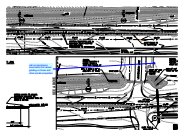
See comment on drainage report, Velocities exceed permissible limits in DCM 1 & 2 for a soft lined channel.



**Subject:** Arrow  
**Date:** 8/13/2018 8:45:16 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 5

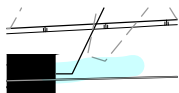


**Subject:** Arrow  
**Date:** 8/13/2018 8:46:04 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 5

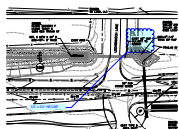


**Subject:** Engineer  
**Date:** 8/13/2018 8:49:19 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 5

call out permission documents that allows grading on these and other private properties



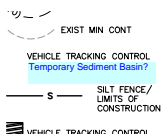
**Subject:** Engineer  
**Date:** 8/13/2018 9:06:40 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 5



**Subject:** Group  
**Date:** 8/15/2018 11:55:30 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 5

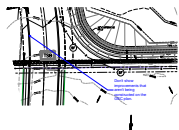
3.5' x 5.5' HECMP

6 (5)



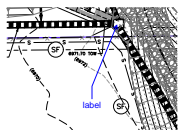
**Subject:** Engineer  
**Date:** 8/13/2018 8:54:28 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 6

Temporary Sediment Basin?



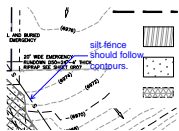
**Subject:** Callout  
**Date:** 8/16/2018 11:50:51 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 6

Don't show improvements that aren't being constructed on the GEC plan.



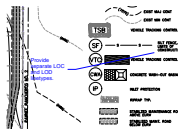
**Subject:** Callout  
**Date:** 8/16/2018 11:53:31 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 6

label



**Subject:** Callout  
**Date:** 8/16/2018 11:54:37 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 6

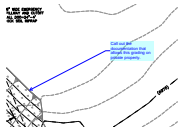
silt fence should follow contours.



**Subject:** Cloud+  
**Date:** 8/16/2018 11:55:34 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 6

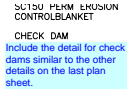
Provide separate LOC and LOD linetypes.

7 (2)



**Subject:** Engineer  
**Date:** 8/15/2018 12:10:10 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 7

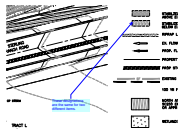
Call out the documentation that allows this grading on private property.



**Subject:** Engineer  
**Date:** 8/16/2018 9:07:30 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 7

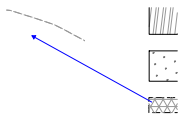
Include the detail for check dams similar to the other details on the last plan sheet.

8 (6)



**Subject:** Engineer  
**Date:** 8/15/2018 12:19:43 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 8

These designations are the same for two different items.

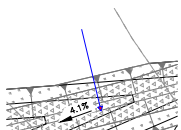


**Subject:** Arrow  
**Date:** 8/15/2018 12:19:54 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 8

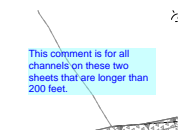


**Subject:** Engineer  
**Date:** 8/15/2018 12:22:17 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 8

Call out the 2 year storm velocities in these channels that demonstrate the North American Green erosion control is designed for this application.



**Subject:** Arrow  
**Date:** 8/15/2018 12:22:44 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 8



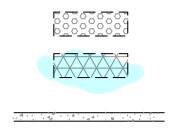
**Subject:** Engineer  
**Date:** 8/15/2018 12:29:08 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 8

This comment is for all channels on these two sheets that are longer than 200 feet.

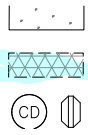


**Subject:** Arrow  
**Date:** 8/15/2018 12:29:42 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 8

9 (9)



**Subject:** Engineer  
**Date:** 8/15/2018 12:14:49 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

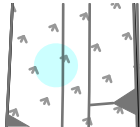


**Subject:** Engineer  
**Date:** 8/15/2018 12:14:53 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

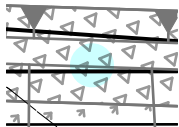


**Subject:** Engineer  
**Date:** 8/15/2018 12:16:20 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

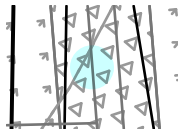
These designations are the same for different items.



**Subject:** Engineer  
**Date:** 8/15/2018 12:17:04 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9



**Subject:** Engineer  
**Date:** 8/15/2018 12:17:07 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9



**Subject:** Engineer  
**Date:** 8/15/2018 12:17:10 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

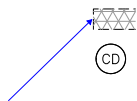


**Subject:** Engineer  
**Date:** 8/15/2018 12:31:00 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

See comment on velocities, previous page.

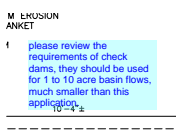


**Subject:** Arrow  
**Date:** 8/15/2018 12:31:17 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9



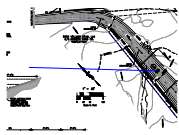
**Subject:** Arrow  
**Date:** 8/15/2018 12:31:51 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

10 (5)

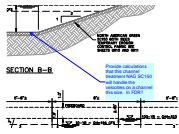


**Subject:** Engineer  
**Date:** 8/13/2018 9:21:23 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

please review the requirements of check dams, they should be used for 1 to 10 acre basin flows, much smaller than this application.

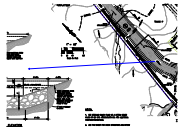


**Subject:** Arrow  
**Date:** 8/13/2018 9:21:45 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10



**Subject:** Engineer  
**Date:** 8/13/2018 9:25:53 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

Provide calculations that this channel treatment NAG SC150 will handle the velocities on a channel this size. In FDR?



**Subject:** Arrow  
**Date:** 8/13/2018 9:26:50 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10



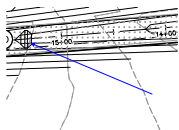
**Subject:** Highlight  
**Date:** 8/16/2018 9:03:38 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 10

11 (6)

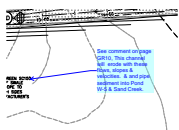
The pond W-4 outfall temporary diversion swale in lieu of constructing the permanent pipe will need to be designed and armored to be non erosive, per El Paso County criteria for open channels.

**Subject:** Engineer  
**Date:** 8/13/2018 9:39:48 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11

The pond W-4 outfall temporary diversion swale in lieu of constructing the permanent pipe will need to be designed and armored to be non erosive, per El Paso County criteria for open channels.



**Subject:** Arrow  
**Date:** 8/16/2018 7:59:44 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11



**Subject:** Engineer  
**Date:** 8/16/2018 8:02:57 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11

See comment on page GR10, This channel will erode with these flows, slopes & velocities. & and pipe sediment into Pond W-5 & Sand Creek.



**Subject:** Pen  
**Date:** 8/16/2018 8:15:43 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11



**Subject:** Callout  
**Date:** 8/17/2018 12:07:12 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 11

Ensure that all tract labels match the plat.





**Subject:** Callout  
**Date:** 8/17/2018 12:08:33 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 11

Is this road being abandoned?

# ENG-SF18020-R1-CDs.pdf Markup Summary

1 (8)

Use the signature block for Construction Drawings, this one is for drainage only.

2. SPECIFICATIONS, ENGINEER'S STATEMENT

ONE SHALL BE PREPARED UNDER MY PERSONAL AND SUPERVISOR'S DIRECT CONTROL TO THE EXTENT PERMITTED BY THE COUNTY FOR SETTING OF AND INSPECTIONS ARE IN CONFORMANCE WITH THE MAJOR PLAN TO DRAINAGE WITH THE PURPOSE OF SHOWING THE PROPOSED DRAINAGE SYSTEM CAUSED BY ANY NEIGHBOR ACT, CHANGE, OR OMISSION ON MY PART THEREIN.

**Subject:** Engineer  
**Date:** 8/13/2018 10:31:35 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

Use the signature block for Construction Drawings, this one is for drainage only.

3.05

USE AN APPROVED SIGNATURE SYSTEM

THE ENGINEER OR PROFESSIONAL ENGINEER OR ARCHITECT SHALL BE RESPONSIBLE FOR THE DESIGN, DIMENSIONS, AND/OR OTHER REQUIREMENTS OF THE EL PASO COUNTY L

IN ACCORDANCE WITH

ECM SECTION 1.12..."

PARAGRAPH IS MISSING.

WATER

**Subject:** Arrow  
**Date:** 8/13/2018 10:32:12 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

The "In accordance with ECM Section 1.12..." paragraph is missing.

UP THE DESIGN, DIMENSIONS, AND/OR OTHER REQUIREMENTS OF THE EL PASO COUNTY L

IN ACCORDANCE WITH

ECM SECTION 1.12..."

PARAGRAPH IS MISSING.

WATER

**Subject:** Engineer  
**Date:** 8/13/2018 10:38:27 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

ING SIGNAGE &

FEBRUARY 201

**Subject:** Highlight  
**Date:** 8/20/2018 11:32:01 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

FEBRUARY

SHEET 2 NOTES & DETAIL SHEET  
SHEET 3 PLAN & PROFILE - INTE  
SHEET 4 PLAN & PROFILE - ULTI  
SHEET 5 PLAN & PROFILE - PRE  
SHEET 6 SIGNAGE & STRIPING PL

Provide a table of pipe sizing to include velocities...

**Subject:** Engineer  
**Date:** 8/20/2018 11:34:29 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

Provide a table of pipe sizing to include velocities..

SHEET 3 PLAN & PROFILE - INTE  
SHEET 4 PLAN & PROFILE - ULTI  
SHEET 5 PLAN & PROFILE - PRE  
SHEET 6 SIGNAGE & STRIPING PL

**Subject:** Engineer  
**Date:** 8/20/2018 11:35:36 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

Include a schedule/table here that explains the phasing: Temporary, Interim, Ultimate. The table should state which streets, with the respective timing of improvements.

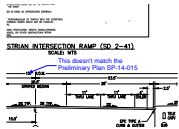
**Subject:** Engineer  
**Date:** 8/20/2018 12:13:49 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 1

Include a schedule/table here that explains the phasing  
Temporary  
Interim  
Ultimate.  
The table should state which streets, with the respective timing of improvements.

Also see scanned redlines.

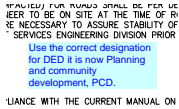
**Subject:** Text Box  
**Date:** 8/21/2018 12:16:51 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 1

Also see scanned redlines.



**Subject:** Callout  
**Date:** 8/16/2018 9:35:56 PM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

This doesn't match the Preliminary Plan SP-14-015



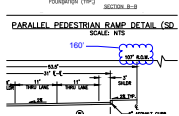
**Subject:** Engineer  
**Date:** 8/20/2018 11:40:36 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 2

Use the correct designation for DED it is now Planning and community development, PCD.



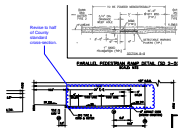
**Subject:** Cloud+  
**Date:** 8/20/2018 9:18:20 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

Revise to County standards



**Subject:** Cloud+  
**Date:** 8/20/2018 9:19:18 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

160'

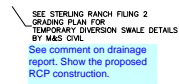


**Subject:** Cloud+  
**Date:** 8/20/2018 9:19:20 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2

Revise to half of County standard cross-section.

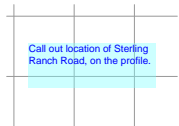
ANY ERROR:  
BY DSD

**Subject:** Highlight  
**Date:** 8/20/2018 9:19:49 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 2



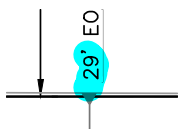
**Subject:** Engineer  
**Date:** 8/20/2018 11:45:36 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3

See comment on drainage report. Show the proposed RCP construction.

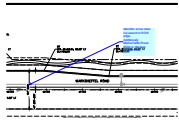


**Subject:** Engineer  
**Date:** 8/20/2018 11:58:08 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3

Call out location of Sterling Ranch Road, on the profile.

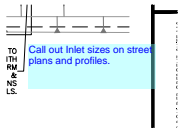


**Subject:** Highlight  
**Date:** 8/20/2018 12:00:31 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3



**Subject:** Engineer  
**Date:** 8/20/2018 12:07:08 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3

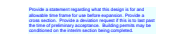
Identifier arrow does not extend to ROW edge.  
 Additionally Markscheffel Road ROW is 160 feet.  
 Please show.



**Subject:** Engineer  
**Date:** 8/20/2018 12:08:25 PM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 3

Call out Inlet sizes on street plans and profiles.

5 (1)



**Subject:** Text Box  
**Date:** 8/17/2018 8:14:19 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 5

Provide a statement regarding what this design is for and allowable time frame for use before expansion. Provide a cross section. Provide a deviation request if this is to last past the time of preliminary acceptance. Building permits may be conditioned on the interim section being completed.

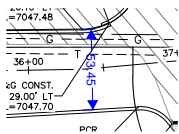
9 (1)



**Subject:** Engineer  
**Date:** 8/20/2018 7:44:17 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 9

Provide a dashed line to depict the final curb and gutter line of Markscheffel Rd.

11 (4)



**Subject:** Length Measurement  
**Date:** 8/20/2018 8:45:00 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11

53.45

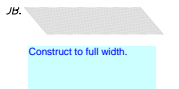


**Subject:** Engineer  
**Date:** 8/20/2018 8:51:22 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11

Curb and gutter should be added in this section through the curb return for the South side of the Barbarick Subdivision driveway. Including Pedestrian ramps etc.



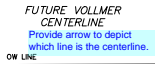
**Subject:** Arrow  
**Date:** 8/20/2018 8:51:41 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11



**Subject:** Engineer  
**Date:** 8/20/2018 8:52:02 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 11

Construct to full width.

13 (1)



**Subject:** Engineer  
**Date:** 8/20/2018 8:58:52 AM  
**Author:** Steve Kuehster  
**Color:** ■  
**Page Index:** 13

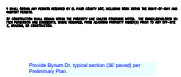
Provide arrow to depict which line is the centerline.

24 (2)



**Subject:** Highlight  
**Date:** 8/21/2018 12:13:37 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 24

Provide Bynum Dr. typical section (36' paved) per Preliminary Plan.



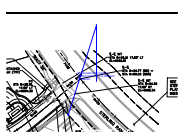
**Subject:** Text Box  
**Date:** 8/21/2018 12:37:51 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 24

27 (2)



**Subject:** Text Box  
**Date:** 8/20/2018 10:01:03 AM  
**Author:** dsdparsons  
**Color:** ■  
**Page Index:** 27

Is there a pond in the tract adjacent to the Kiosk? Please see criteria regarding hand rails if applicable.



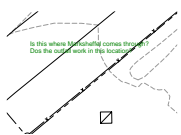
**Subject:** Callout  
**Date:** 8/21/2018 12:43:55 AM  
**Author:** dsdrice  
**Color:** ■  
**Page Index:** 27

Preliminary Plan typical section here ("D") is different - collector.

53 (5)



**Subject:** Highlight  
**Date:** 8/20/2018 9:53:32 AM  
**Author:** dsdparsons  
**Color:** ■  
**Page Index:** 53



**Subject:** Text Box  
**Date:** 8/20/2018 9:54:23 AM  
**Author:** dsdparsons  
**Color:** ■  
**Page Index:** 53

Is this where Marksheffel comes through? Does the outfall work in this location?



**Subject:** Text Box  
**Date:** 8/20/2018 9:55:26 AM  
**Author:** dsdparsons  
**Color:** ■  
**Page Index:** 53


WRONG DIRECTION



**Subject:** Highlight  
**Date:** 8/20/2018 9:55:46 AM  
**Author:** dsdparsons  
**Color:** ■  
**Page Index:** 53



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**Subject:** Highlight  
**Date:** 8/20/2018 9:55:49 AM  
**Author:** dsdparsons  
**Color:**   
**Page Index:** 53