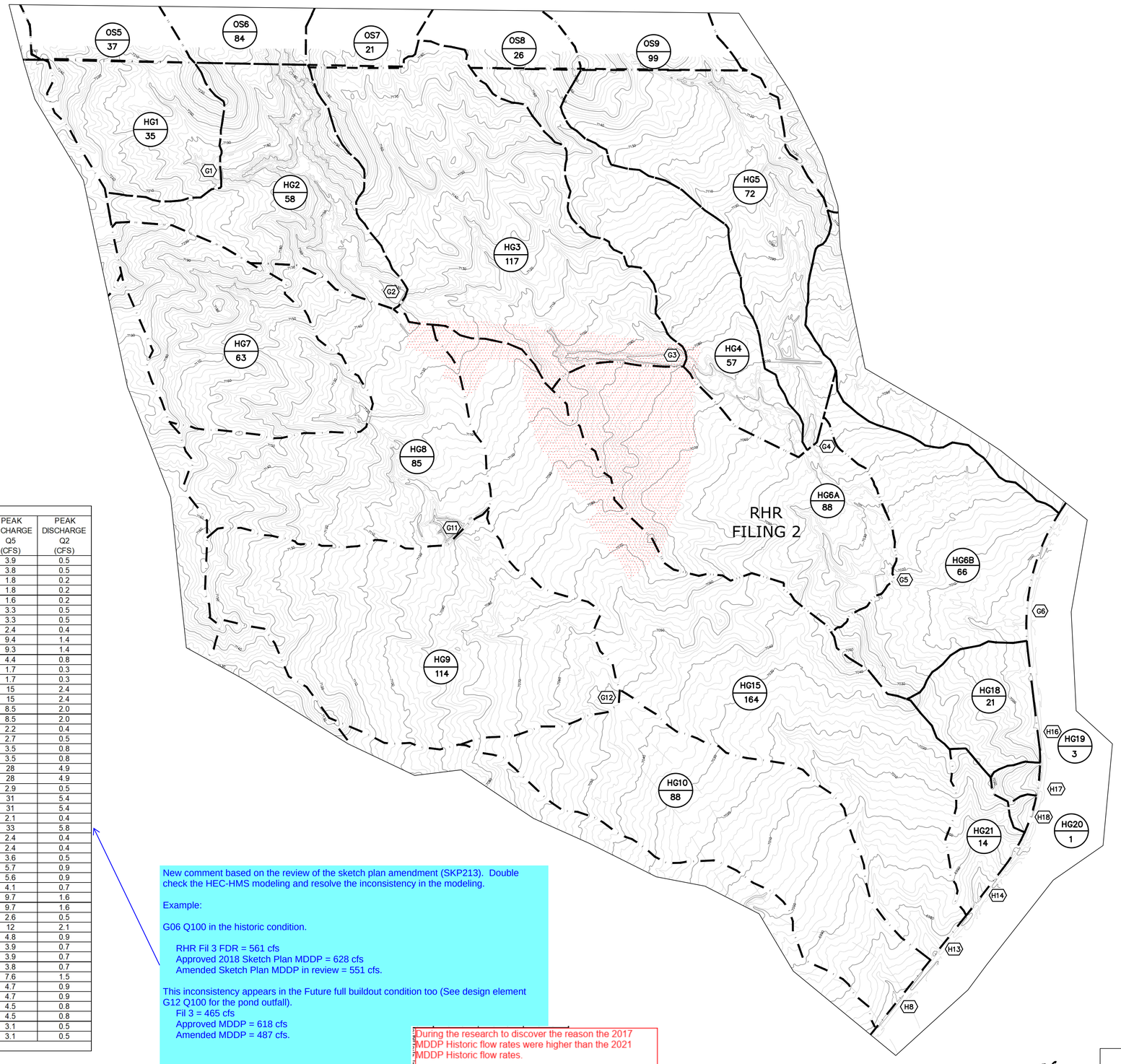
ROLLING HILL RANCH FILING 3
MERIDIAN RANCH



HISTORIC MDDP (Full Spectrum)						
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	PEAK DISCHARGE Q100 (CFS)	PEAK DISCHARGE Q50 (CFS)	PEAK DISCHARGE Q10 (CFS)	PEAK DISCHARGE Q5 (CFS)	PEAK DISCHARGE Q2 (CFS)
OS06	0.1313	81	53	12	3.9	0.5
OS06-G02	0.1313	79	52	12	3.8	0.5
OS05	0.0578	40	26	5.9	1.8	0.2
OS05-G01	0.0578	38	26	5.7	1.8	0.2
HG01	0.0547	33	21	4.8	1.6	0.2
G01	0.1125	71	47	10	3.3	0.5
G01-G02	0.1125	70	47	10	3.3	0.5
HG02	0.0906	46	30	6.9	2.4	0.4
G02	0.3344	194	129	28	9.4	1.4
G02-G03	0.3344	192	127	28	9.3	1.4
HG03	0.1828	79	51	12	4.4	0.8
OS07	0.0328	25	17	4.6	1.7	0.3
OS07-G03	0.0328	24	17	4.4	1.7	0.3
G03	0.5500	295	195	44	15	2.4
G03-G04	0.5500	286	192	43	15	2.4
OS09	0.1547	92	64	19	8.5	2.0
OS09-G04	0.1547	91	63	19	8.5	2.0
HG04	0.0891	40	27	6.1	2.2	0.4
HG05	0.1125	50	33	7.6	2.7	0.5
OS08	0.0406	36	25	7.9	3.5	0.8
OS08-G04	0.0406	34	24	7.6	3.5	0.8
G04	0.9469	502	336	78	28	4.9
G04-G05	0.9469	496	322	78	28	4.9
HG06A	0.1375	50	33	7.8	2.9	0.5
G05	1.0844	544	355	86	31	5.4
G05-G06	1.0844	530	353	86	31	5.4
HG06B	0.1031	34	22	5.4	2.1	0.4
G06	1.1875	561	375	91	33	5.8
HG07	0.0984	47	31	7.1	2.4	0.4
HG07-G11	0.0984	47	31	7.0	2.4	0.4
HG08	0.1328	73	48	11	3.6	0.5
G11	0.2312	115	75	17	5.7	0.9
G11-G12	0.2312	114	75	17	5.6	0.9
HG09	0.1781	73	48	11	4.1	0.7
G12	0.4093	187	122	28	9.7	1.6
G12-H08	0.4093	183	121	28	9.7	1.6
HG10	0.1375	39	26	6.5	2.6	0.5
H08	0.5468	216	142	34	12	2.1
HG14	0.2297	81	53	13	4.8	0.9
HG13	0.0844	55	37	9.8	3.9	0.7
G07	0.0844	55	37	9.8	3.9	0.7
G07-G08	0.0844	54	37	9.7	3.8	0.7
G08	0.3141	119	78	20	7.6	1.5
HG15	0.2563	70	46	12	4.7	0.9
H13	0.2563	70	46	12	4.7	0.9
HG11	0.2047	77	51	12	4.5	0.8
H09	0.2047	77	51	12	4.5	0.8
HG12	0.1297	57	38	8.7	3.1	0.5
H10	0.1297	57	38	8.7	3.1	0.5

New comment based on the review of the sketch plan amendment (SKP213). Double check the HEC-HMS modeling and resolve the inconsistency in the modeling.

Example:

G06 Q100 in the historic condition.

RHR Fil 3 FDR = 561 cfs
Approved 2018 Sketch Plan MDDP = 628 cfs
Amended Sketch Plan MDDP in review = 551 cfs.

This inconsistency appears in the Future full buildout condition too (See design element G12 Q100 for the pond outfall).
Fil 3 = 465 cfs
Approved MDDP = 618 cfs
Amended MDDP = 487 cfs.

During the research to discover the reason the 2017 MDDP Historic flow rates were higher than the 2021 MDDP Historic flow rates.

- The Control Specification for the run had a 2 minute interval as opposed to the current 6 minute interval.
- This change in interval periods resulted in lower Historic flow rates and higher Future rates for all design storms.

The interval will remain at 6 minutes as this appears to be more conservative. Lower target historic rates to be matched with higher developed flow rates. I believe this will result in storm drain facilities being designed to convey larger flow rates and the detention ponds designed to hold a larger volume.

No change to the report.

N

LEGEND

MAJOR BASIN BOUNDARY
MINOR BASIN BOUNARY
SCS MODEL ID / SIZE ACRES — EB15 / 65 — BASIN IDENTIFICATION
H8 B10 DESIGN POINTS
MAJOR CONTOUR INTERVAL
MINOR CONTOUR INTERVAL
100 YEAR FLOOD PLAIN

GRAPHIC SCALE
100 0 250 500 1000 2000
(IN FEET)
1 inch = 500 ft.

HISTORICAL CONDITIONS - SCS MAP

EXHIBIT 5

S:\OneDrive\Civil Proj\Rolling Hills Filing 3\DWG\Plan Sheets\Drainage Maps\ROLLING HILLS RANCH FILING 3 SCS - HIST.dwg, 11/19/2020 4:10:20 PM

HEC-HMS 4.2.1 [S:\OneDrive\CivilProj\Meridian Ranch MDDP\2-Working HMS Files\SCS MAIN FILE\2020_REVISED_SCS\2020_REVISED_SCS.hms]

File Edit View Components Parameters Compute Results Tools Help

--None Selected-- | Run: MDDP-100

- G9-G10
- FG23b
- G10
- G10-G11
- FG23c
- G11
- FG25
- FG26
- FG26-POND G
- FG27
- FG28
- POND G IN
- POND G
- G12
- G12-G06
- FG29
- FG32
- FG32-G06
- G06

Components | Compute | Results

Junction | Options

Basin Name: 2021 MDDP
Element Name: G06

Description:

Downstream: --None--

Summary Results for Junction "G06"

REVISED MDDP

Project: 2020 REVISED SCS Simulation Run: MDDP-100
Junction: G06

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 11:32:22

Basin Model: 2021 MDDP
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-6 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 513.50 (CFS) Date/Time of Peak Discharge: 01Jul2015, 13:00
Volume: 1.67 (IN)

-1%

Summary Results for Junction "G06"

Project: 2020 REVISED SCS Simulation Run: Run 3
Junction: G06

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: 2021 MDDP
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-2 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 518.64 (CFS) Date/Time of Peak Discharge: 01Jul2015, 12:56
Volume: 1.67 (IN)

Summary Results for Junction "G06"

ROLLING HILLS RANCH FILING 3

Project: 2020 REVISED SCS Simulation Run: F-100
Junction: G06

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 11:29:52

Basin Model: Future SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-6 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 492.95 (CFS) Date/Time of Peak Discharge: 01Jul2015, 12:54
Volume: 1.58 (IN)

-1%

Summary Results for Junction "G06"

Project: 2020 REVISED SCS Simulation Run: Run 2
Junction: G06

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 11:30:44

Basin Model: Future SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-2 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 497.96 (CFS) Date/Time of Peak Discharge: 01Jul2015, 12:54
Volume: 1.59 (IN)

Summary Results for Junction "G06"

HISTORIC RUN FOR BOTH

Project: 2020 REVISED SCS Simulation Run: H - 100 YR
Junction: G06

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 11:29:31

Basin Model: Historic SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-6 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 551.40 (CFS) Date/Time of Peak Discharge: 01Jul2015, 12:42
Volume: 1.34 (IN)

-10.7%

Summary Results for Junction "G06"

Project: 2020 REVISED SCS Simulation Run: Run 1
Junction: G06

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 11:02:17

Basin Model: Historic SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-2 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 617.34 (CFS) Date/Time of Peak Discharge: 01Jul2015, 12:36
Volume: 1.34 (IN)

```
NOTE 40043: The basin model "RHRF3" contains 2 elements with no downstream connection: G06, 4W4
NOTE 40043: The basin model "FUTURE SCS ERHR3" contains 4 elements with no downstream connection: G06, 4W4, G16, FG33
NOTE 40043: The basin model "Rolling Hills PUD" contains 4 elements with no downstream connection: G06, 4W4, G16, FG33
NOTE 40043: The basin model "RHRF1" contains 2 elements with no downstream connection: H08A, H09
NOTE 40043: The basin model "Rolling Hills Grading" contains 4 elements with no downstream connection: G06, 4W4, G16, FG33
NOTE 40043: The basin model "RHRF2" contains 2 elements with no downstream connection: G06, 4W4
NOTE 40043: The basin model "RHRF3" contains 2 elements with no downstream connection: G06, 4W4
NOTE 40043: The basin model "FUTURE SCS ERHR3" contains 4 elements with no downstream connection: G06, 4W4, G16, FG33
```

HEC-HMS 4.2.1 [S:\OneDrive\CivilProj\Meridian Ranch MDDP\2-Working HMS Files\SCS MAIN FILE\2020_REVISED_SCS\2020_REVISED_SCS.hms]

File Edit View Components Parameters Compute Results Tools Help

--None Selected-- | Run: Run 1

G01-G02
HG02
G02
G02-G03
HG03
OS07
OS07-G03
G03
G03-G04
OS09
OS09-G04
HG04
HG05
OS08
OS08-G04
G04
G04-G05
HG06A
G05

Components | Compute | Results

Junction | Options

Basin Name: Historic SCS
Element Name: G05

Description:

Downstream: G05-G06

Summary Results for Reservoir "POND G"

Project: 2020 REVISED SCS Simulation Run: Run 3
Reservoir: POND G

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 10:59:11

Basin Model: 2021 MDDP
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-2 MIN.

REVISED MDDP

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Inflow: 734.86 (CFS)
Peak Discharge: 492.07 (CFS)
Inflow Volume: 1.81 (IN)
Discharge Volume: 1.67 (IN)
Date/Time of Peak Inflow: 01Jul2015, 12:32
Date/Time of Peak Discharge: 01Jul2015, 12:58
Peak Storage: 26.90 (AC-FT)
Peak Elevation: 7030.52 (FT)

Summary Results for Reservoir "POND G"

Project: 2020 REVISED SCS Simulation Run: MDDP-100
Reservoir: POND G

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 10:56:24

Basin Model: 2021 MDDP
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-6 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Inflow: 696.57 (CFS)
Peak Discharge: 487.44 (CFS)
Inflow Volume: 1.80 (IN)
Discharge Volume: 1.67 (IN)
Date/Time of Peak Inflow: 01Jul2015, 12:30
Date/Time of Peak Discharge: 01Jul2015, 13:00
Peak Storage: 26.49 (AC-FT)
Peak Elevation: 7030.46 (FT)

-1%

Summary Results for Reservoir "POND G"

Project: 2020 REVISED SCS Simulation Run: Run 2
Reservoir: POND G

ROLLING HILLS RANCH FILING 3

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Future SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-2 MIN.

Volume Units: ( ) IN (•) AC-FT

Computed Results

Peak Inflow: 678.16 (CFS)
Peak Discharge: 470.16 (CFS)
Inflow Volume: 119.17 (AC-FT)
Discharge Volume: 109.58 (AC-FT)
Date/Time of Peak Inflow: 01Jul2015, 12:22
Date/Time of Peak Discharge: 01Jul2015, 12:54
Peak Storage: 25.21 (AC-FT)
Peak Elevation: 7030.25 (FT)

Summary Results for Reservoir "POND G"

Project: 2020 REVISED SCS Simulation Run: F-100
Reservoir: POND G

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Future SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-6 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Inflow: 653.14 (CFS)
Peak Discharge: 465.26 (CFS)
Inflow Volume: 1.71 (IN)
Discharge Volume: 1.57 (IN)
Date/Time of Peak Inflow: 01Jul2015, 12:24
Date/Time of Peak Discharge: 01Jul2015, 12:54
Peak Storage: 24.85 (AC-FT)
Peak Elevation: 7030.19 (FT)

-1%

Summary Results for Junction "G05"

Project: 2020 REVISED SCS Simulation Run: Run 1
Junction: G05

HISTORIC RUN FOR BOTH

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: 24Jun2021, 11:02:17

Basin Model: Historic SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-2 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 586.94 (CFS)
Volume: 1.35 (IN)
Date/Time of Peak Discharge: 01Jul2015, 12:34

Summary Results for Junction "G05"

Project: 2020 REVISED SCS Simulation Run: H - 100 YR
Junction: G05

Start of Run: 01Jul2015, 00:00
End of Run: 02Jul2015, 00:00
Compute Time: DATA CHANGED, RECOMPUTE

Basin Model: Historic SCS
Meteorologic Model: SCS TYPE II 100YR
Control Specifications: 24 HR-6 MIN.

Volume Units: (•) IN ( ) AC-FT

Computed Results

Peak Discharge: 536.32 (CFS)
Volume: 1.35 (IN)
Date/Time of Peak Discharge: 01Jul2015, 12:36

-8.7%

Basi...

NOTE 40043: The basin model "Rolling Hills Grading" contains 4 elements with no downstream connection: G06, 4W4, G16, FG33
NOTE 40043: The basin model "RHRF2" contains 2 elements with no downstream connection: G06, 4W4
NOTE 40043: The basin model "RHRF3" contains 2 elements with no downstream connection: G06, 4W4
NOTE 40043: The basin model "FUTURE SCS ERHR3" contains 4 elements with no downstream connection: G06, 4W4, G16, FG33