Final Drainage Report

for

Stonebridge Filing 4

at

Meridian Ranch

MERIDIAN RANCH

A GOLF & RECREATIONAL COMMUNITY

EL PASO COUNTY, COLORADO

September 2018

Prepared For:

GTL DEVELOPMENT, INC.
P.O. Box 80036
San Diego, CA 92138

Prepared By:
Tech Contractors
11886 Stapleton Drive
Falcon, CO 80831
719.495.7444

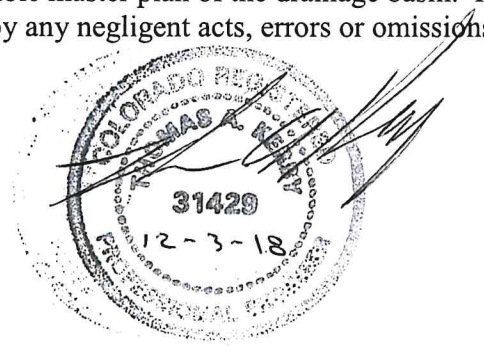
PCD Project No. SF-18-023

CERTIFICATIONS

Design Engineer's Statement:

The attached drainage plan and report were prepared under my direction and supervision and are correct to the best of my knowledge and belief. Said drainage report has been prepared according to the criteria established by the County for drainage reports and said report is in conformity with the applicable master plan of the drainage basin. I accept responsibility for any liability caused by any negligent acts, errors or omissions on my part in preparing this report.

Thomas A. Kerby, P.E. #31429



Owner/Developer's Statement:

I, the owner/developer have read and will comply with all of the requirements specified in this drainage report and plan.

Raul Guzman, Vice President
GTL Development, Inc.
P.O. Box 80036
San Diego, CA 92138

12/5/18
Date

El Paso County:

Filed in accordance with the requirements of the Drainage Criteria Manual, Volumes 1 & 2, El Paso County Engineering Criteria Manual and Land Development Code as amended.

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

Date

Stonebridge Filing 4 at Meridian Ranch
Final Drainage Report

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EXECUTIVE SUMMARY

The purpose of the following Final Drainage (FDR) is to present the changes to the drainage patterns as a result Stonebridge Filing 4 at Meridian Ranch (Stonebridge Filing 4) development. Runoff quantities and proposed facilities have been calculated using the current City of Colorado Springs/El Paso County Drainage Criteria Manual (DCM) (1994 version) and portions of the City of Colorado Springs Drainage Criteria Manual, Volume 1 (DCM-1) ((2014 version).

This report includes the recent revisions to the Meridian Ranch Sketch Plan amendment as adopted by the El Paso County Board of Commissioners. The Sketch Plan includes an increase of density to the overall development, but a general reduction in density in the area of this development resulting in lower developed runoff. Another significant change from previous drainage reports submitted to El Paso County concerning development associated within Meridian Ranch is the adopted changes to the drainage criteria. El Paso County by Resolution 15-042 adopted Chapter 6 of the 2014 version of the City of Colorado Springs Drainage Criteria Manual (COSDCM). Chapter 6 addresses the hydrologic calculations and includes an updated hydrograph to be used with storm drainage runoff. The new hydrograph results in lower historic values for runoff rates and higher developed values given the same input values. The county adopted Section 3.2.1 of Chapter 13 of the COSDCM referencing Full Spectrum Detention; the concept "provides better control of the full range of runoff rates that pass through detention facilities than the convention multi-stage concept. By providing an Excess Urban Runoff Volume (EURV) in the lower portion of the facility storage with an outlet similar to the Water Quality Capture Volume (WQCV), *frequent and infrequent inflows are released at rates approximating undeveloped conditions.*" This report includes hydrologic models from HEC-HMS for the historic, interim and future conditions for the 2-yr, 5-yr, 10-yr, 25-yr, 50-yr, and 100-yr design storm frequencies. The interim and the future conditions include detention facilities sized and modeled such that *"frequent and infrequent inflows are released at rates approximating undeveloped conditions"*

On November 16, 2000 the El Paso County Board of County Commissioners approved the rezoning of the Meridian Ranch project (PUD-00-010) from A-35 to PUD with several conditions. Condition number seven stated in part that "drainage plans shall release and/or retain at approximately eight percent (80%) of historic rates." At the time of the initial approvals there were no drainage improvements downstream of the Meridian Ranch project and the existing natural channels were shallow and undefined. Since the time of the original approvals, development has occurred downstream of Meridian Ranch with drainage facilities designed and constructed of sufficient size to safely convey the historic flow rates discharged from Meridian Ranch to downstream properties. The facilities installed downstream of Meridian Ranch were analyzed for capacity and conveyance sufficiency with the most recently approved Meridian Ranch Sketch Plan Amendment (SKP-17-001) and MDDP, (approved March 14, 2018) see the report for more information regarding the sufficiency of the downstream facilities.

Stonebridge Filing 4 encompasses 68± acres and is located in Sections 29 and 30, Township 12 South, Range 64 West of the 6th Principal Meridian. It is approximately 12 miles northeast of the city of Colorado Springs, 2.5 miles north of the unincorporated town of Falcon, and immediately north of the Woodmen Hills development.

Stonebridge Filing 4 is located within three separate drainage basins; the Bennett Ranch Basin. Gieck Ranch Basin and the Haegler Ranch Basin. The Bennett and the Haegler Basins have been studied Basin and have final approval from El Paso County. The Gieck Ranch Basin has been studied, but has not received final approval from El Paso County. The developer has agreed to meet the requirements of the studied Gieck Ranch Basin but as yet to be approved Drainage Basin Study.

Based on the aforementioned design parameters the development of the project will not adversely affect downstream properties.

INTRODUCTION

Purpose

The purpose of the following Final Drainage Report (FDR) is to present proposed changes to the drainage patterns as a result of the development of Stonebridge Filing 4. The report outlines the proposed drainage mitigation based on calculated developed flows in excess of allowable exiting runoff discharge.

Scope

The scope of this report includes:

- Location and description of the proposed development stating the proposed land use, density, acreage and adjacent features to the site.
- Calculations for design peak flows from all off-site tributary drainage areas.
- Calculations for design peak flows within the proposed project area for all drainage areas.
- Discussion of major drainage facilities required as a result of the development.
- Discussion and analysis of existing and proposed facilities.

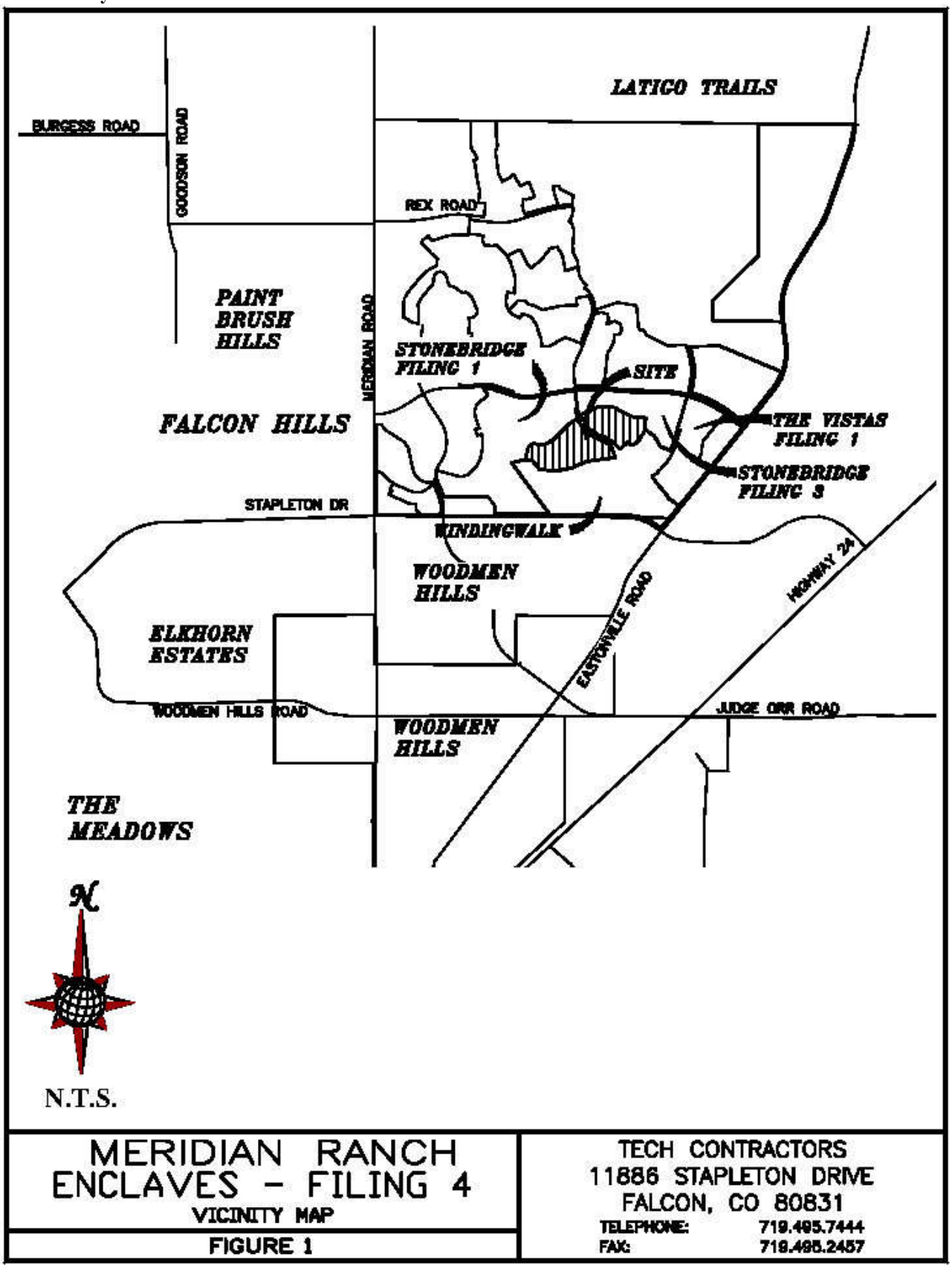
Runoff quantities and proposed facilities have been calculated using the current City of Colorado Springs/El Paso County Drainage Criteria Manual (DCM) (1994 version) and those portions of the City of Colorado Springs Drainage Criteria Manual, Volume 1 (DCM-1) ((2014 version) adopted by Resolution 15-042 of the El Paso County Board of County Commissioners.

Background

On November 16, 2000 the El Paso County Board of County Commissioners approved the rezoning of the Meridian Ranch project (PUD-00-010) from A-35 to PUD with several conditions. Condition number seven stated in part that "drainage plans shall release and/or retain at approximately eight percent (80%) of historic rates." At the time of the initial approvals there were no drainage improvements downstream of the Meridian Ranch project and the existing natural channels were shallow and undefined. The facilities installed downstream of Meridian Ranch were analyzed for capacity and conveyance sufficiency with the most recently approved Meridian Ranch Sketch Plan Amendment (SKP-17-001) and MDDP, (approved March 14, 2018) see the report for more information regarding the sufficiency of the downstream facilities. See the recently approved Meridian Ranch MDDP for the analysis of the downstream facilities

Development has occurred downstream of Meridian Ranch since the time of the original approvals with drainage facilities designed and constructed of sufficient size to safely convey the historic flow rates off of Meridian Ranch further downstream. The 4-Way Ranch development located adjacent and downstream of Meridian Ranch has processed a Letter of Map Revision (LOMR) and constructed storm drainage improvements downstream of the existing Pond E outlets. The LOMR was processed and the improvements constructed assuming historic flow rates from Meridian Ranch using the original El Paso County DCM.

Figure 1: Vicinity Map



Storm drain improvements near the intersection of Stapleton Drive and Eastonville have also been designed and constructed to convey the historic flow rates from Meridian Ranch. The design of these improvements and the downstream system anticipated 87 CFS to be collected near outlet of the future Pond H from Meridian Ranch. The design of Pond H has yielded a 100-year flow rate of 57 CFS, well below the anticipated 87 CFS figure.

Current estimates show the design discharge Pond E to 4-Way are near or below historic flow rates at full buildout for the 100-year discharge and the 5-year discharge.

EXISTING CONDITIONS

General Location

Stonebridge Filing 4 project encompasses 68± acres and is located in Sections 29 and 30, Township 12 South, Range 64 West of the 6th Principal Meridian. It is approximately 12 miles northeast of the city of Colorado Springs, 2.5 miles north of the unincorporated town of Falcon, and immediately north of the Woodmen Hills development.

Land Use

Historically, ranching dominated the area surrounding Meridian Ranch; however, currently urbanization has occurred in the general vicinity. Most notably, urbanization is occurring to the north with Latigo Trails, to the south in the Woodmen Hills Subdivision, to the east in Four Way Ranch, to the west in the Falcon Hills subdivision, and to the northwest in the Paint Brush Hills subdivision.

Climate

Mild summers and winter, light precipitation; high evaporation and moderately high wind velocities characterize the climate of the study area. The average annual monthly temperature is 48.4 F with an average monthly low of 30.3 F in the winter and an average monthly high of 68.1 F in the summer. Two years in ten will have maximum temperature higher than 98 F and a minimum temperature lower than –16 F. Precipitation averages 15.73" annually, with 80% of this occurring during the months of April through September. The average annual Class A pan evaporation is 45 inches. (Soil Survey of El Paso County Area, Colorado).

Topography and Floodplains

The topography of the site is typical of a high desert, short prairie grass with relatively flat slopes generally ranging from 2% to 4%. The project site drains generally from the northwest to southeast and is tributary to the Black Squirrel Creek.

The Flood Insurance Rate Maps (FIRM No. 08041C0575-F dated 3/17/1997) indicates that the project is outside of any designated flood plain. Letter of Map Revision (LOMR), Case No. 14-08-1121P was approved by FEMA on November 6, 2014 with an effective date of March 24, 2015. Please see Figure 2: Stonebridge Filing 4 Federal Emergency Management Agency (FEMA) Floodplain Map.

Geology

The National Resources Conservation Service (NRCS) soil survey records indicate that the service area is predominately covered by soils classified in the Stapleton series. This series is categorized in the Hydrological Group B.

Figure 2: FEMA Floodplain Map

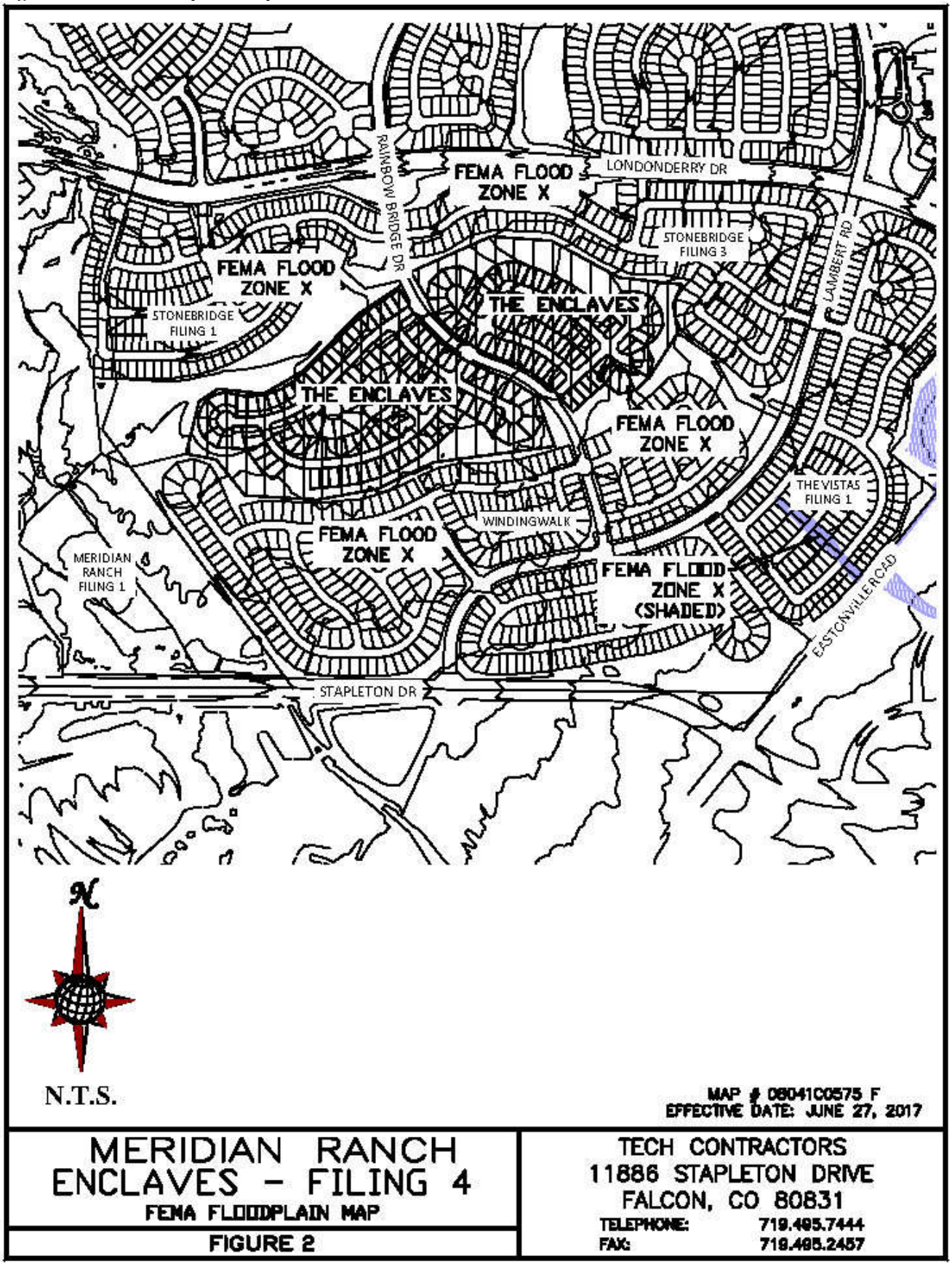
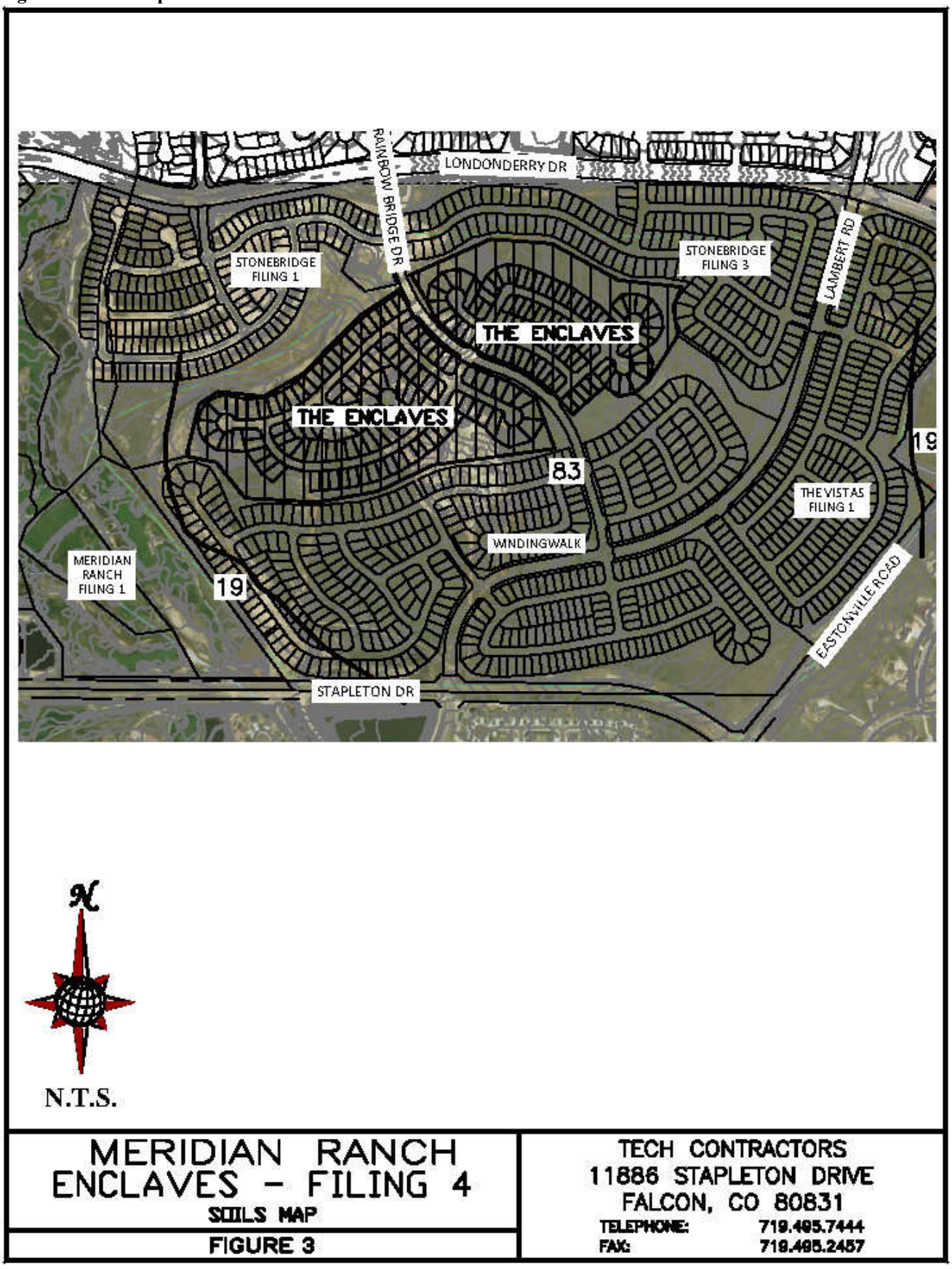


Figure 3: Soils Map



The Stapleton (83) sandy loam is a deep, non-calcareous, well-drained soil formed in alluvium derived from arkosic bedrock on uplands. Permeability of this soil is rapid. Available water capacity is moderate, surface runoff is slow, and the hazard of erosion and soil blowing is moderate. This soil is suited to habitat for open land and rangeland wildlife. The main limitation of this soil for urban development is frost-action potential.

Typically, these soils are well-drained, gravelly sandy loams that form on alluvial terraces and fans and exhibit high permeability and low available water capacity with depth to bedrock greater than 6 feet.

Note: (#) indicates Soil Conservation Survey soil classification number. See Figure 3 Stonebridge Filing 4 – Soils Map.

Natural Hazards Analysis

Natural hazards analysis indicates that no unusual surface or subsurface hazards are located near the vicinity. However, because the soils are cohesionless, sloughing of steep banks during drilling and/or excavation could occur. By citing improvements in a manner that provides an opportunity to lay the banks of excavations back at a 1:1 slope during construction, the problems associated with sloughing soils can be minimized.

DRAINAGE BASINS AND SUB-BASINS

The site is within the Bennett Ranch, Gieck Ranch and the Haegler Ranch Basins and accepts flow from areas north of the project site within portions of Meridian Ranch.

Three different scenarios were analyzed for the drainage conditions for the project.

The first scenario analyzes the historic conditions for Meridian Ranch. This condition has all of the Meridian Ranch development in the pre-development state; where the entirety of Meridian Ranch is modeled in its predeveloped, undisturbed condition.

The second scenario, the interim conditions scenario is the current existing conditions with the addition of Stonebridge Filing 4 in the developed condition. The current existing conditions assumes all approved projects and the WindingWalk PUD are at full buildout. The development of Stonebridge Filing 4 is entirely dependent upon the completion of the drainage improvements to be constructed with WindingWalk Filing 1 at Meridian Ranch (SK-18-002). See associated final drainage report and improvement plans for more information. This condition was analyzed to ensure that historic conditions at the outlets of Pond E (Design Points H08 & H09) located along Eastonville Road were maintained after the development of Stonebridge Filing 4 is completed. The development of the area south of Londonderry Drive will be finished with the completion of Stonebridge Filing 4, there will be areas north of Londonderry Drive that are tributary to Pond E that are yet to be developed.

The final scenario analyzes the future build out conditions for the entirety of Meridian Ranch to ensure the storm drain facilities located at the discharge points of the project are able to properly convey the historic peak flow rates as the storm drainage exits the project.

DRAINAGE DESIGN CRITERIA

SCS Hydrograph Procedure

The US Army Corp of Engineers HEC-HMS computer program was used to model the Soil Conservation Service (SCS) Hydrograph procedure was used to determine final design parameters for the major drainage facilities within the project. Onsite basin areas were calculated using aerial topography of the site and approved final design data. Times of concentration were estimated using the SCS procedures described in the DCM. Based upon the hydrologic soil type, the natural conditions found in the basins and the runoff curve numbers (CN) chart from Table 6-10 of the City of Colorado Springs DCM for Antecedent Runoff Condition II (ARC II), the following CN values were used for the given conditions.

Table 1: SCS Runoff Curve Numbers

Condition	CN
Residential Lots (5 acre)	63
Residential Lots (2.5 acre)	66
Residential Lots (1 acre)	68
Residential Lots (1/2 acre)	70
Residential Lots (1/3 acre)	72
Residential Lots (1/4 acre)	75
Residential Lots (1/5 acre)	78
Residential Lots (1/6 acre)	80

School	80
Parks/Open Space	62
Commercial	85
Roadways	98
Graded	67
Golf Course	62
Latigo Undeveloped	65
Undeveloped	61

*Curve Numbers were interpolated and based on amount of impervious area per lot. The 24 hour storm precipitation values were selected from the NOAA Atlas 14, Volume 8, Version 2 for the Meridian Ranch location (Latitude 38.9783°, Longitude -104.5842°, Elevation 7054 ft). These numbers along with SCS information were used as input to the U.S. Army Corp of Engineers HEC-HMS computer model to determine design runoffs. See the table for all the design storm events in Appendix A. These numbers along with SCS information were used as input to the U.S. Army Corp of Engineers HEC-HMS computer model to determine design runoffs.

Full Spectrum Design

The City of Colorado Springs adopted a new Drainage Criteria Manual (DCM) in 2014 which incorporated the use of *Full Spectrum Design* for storm drainage analysis for projects located within the city limits. Full Spectrum analyzes the storm water runoff for the 2-year, 5-year, 10-year, 25-year, 50-year and the 100-year design storms in order ensure the analysis more accurately project the conditions of post development. El Paso County adopted portions of the City's 2014 DCM by resolution in January 2015; the County resolution adopted Chapter 6 (Hydrology) and Section 3.2.1 of Chapter 13 (Full Spectrum Detention) for projects outside of the City of Colorado Springs establishing a 1 year review period to analyze the impacts of the Full Spectrum Design on the storm drainage analysis of projects. This report has incorporated the use of full spectrum in the analysis of the interim and future conditions.

The idea behind full spectrum detention is to release the developed runoff flows to at or below those of the pre-developed condition. The design of Pond H and the outlet control structure meets or exceeds the intent and spirit of the concept.

Table 2: Detention Pond Summary:

BENNETT REGIONAL DETENTION POND						
	PEAK INFLOW	PEAK OUTFLOW	TOTAL INFLOW	TOTAL OUTFLOW	PEAK STORAGE	PEAK ELEVATION
	CFS	CFS	AC-FT	AC-FT	AC-FT	FT
INTERIM and FUTURE CONDITIONS						
5-YEAR STORM	251	95	71	64	18.0	6969.8
10-YEAR STORM	414	235	119	110	29.7	6970.7
25-YEAR STORM	736	571	207	194	47.4	6971.7
50-YEAR STORM	1209	950	292	275	63.8	6972.6
100-YEAR STORM	1751	1365	396	376	84.4	6973.7

POND H						
	PEAK INFLOW	PEAK OUTFLOW	TOTAL INFLOW	TOTAL OUTFLOW	PEAK STORAGE	PEAK ELEVATION
	CFS	CFS	AC-FT	AC-FT	AC-FT	FT
INTERIM and FUTURE CONDITIONS						
5-YEAR STORM	34	3.1	4.5	2.7	2.8	6971.7
10-YEAR STORM	54	7.8	6.7	4.7	3.7	6972.1
25-YEAR STORM	87	18	10.5	7.9	5.1	6972.6
50-YEAR STORM	117	32	14.0	11.3	6.5	6973.1
100-YEAR STORM	153	57	18.1	15.2	7.7	6973.4

POND E						
	PEAK INFLOW	PEAK OUTFLOW	TOTAL INFLOW	TOTAL OUTFLOW	PEAK STORAGE	PEAK ELEVATION
	CFS	CFS	AC-FT	AC-FT	AC-FT	FT
INTERIM CONDITIONS						
5-YEAR STORM	114	12	24.6	10.1	16.1	6971.2
10-YEAR STORM	174	25	38.4	20.1	21.5	6971.7
25-YEAR STORM	276	61	61.7	39.7	27.9	6972.3
50-YEAR STORM	373	119	84.9	61.7	33.5	6972.8
100-YEAR STORM	484	199	112.6	88.6	39.5	6973.3
FUTURE CONDITIONS						
5-YEAR STORM	126	16	29.0	13.1	17.9	6971.4
10-YEAR STORM	198	30	43.9	24.6	23.0	6971.9
25-YEAR STORM	321	81	69.4	47.1	30.1	6972.5
50-YEAR STORM	435	151	94.1	70.8	36.2	6973.1
100-YEAR STORM	609	240	123.4	99.4	42.2	6973.6

DRAINAGE CALCULATIONS

SCS General Overview

The project is located within portions of the Bennett Ranch, Gieck Ranch and the Haegler Ranch Basins. Storm water runoff will be conveyed across the site overland and within storm drain networks to the detention ponds and existing drainage swales. Temporary sedimentation ponds were constructed during the WindingWalk grading operations within the boundaries of this project and the WindingWalk project. The sedimentation ponds installed within the boundaries of WindingWalk Filings 1 & 2 were removed with the completion of those improvements. The temporary sedimentation ponds within Stonebridge Filing 4 are to be removed during the construction of that project.

The detention facilities have been adequately sized such that the developed flows will be detained and released at or below the historic flow rates for the various design storm events as outlined in the El Paso County DCM and those sections of the City of Colorado Springs DCM-1 adopted by the El Paso County Board of County Commissioners. Existing facilities located downstream of the proposed development have been designed and/or constructed to accept the given release flow rates from Meridian Ranch. Those existing facilities have been reviewed sufficiently to verify the capacity to convey the storm flow rates from Meridian Ranch. See approved Meridian Ranch MDDP, dated January 2018.

Portions of rear lots within the site are tributary to the Bennett Ranch Basin (SCS DB28) and drain into open space and then will be directed to an existing sedimentation pond prior to being released into the adjacent channel then conveyed downstream to the existing Bennett Ranch Regional Detention facility. The existing sedimentation pond located near the Stapleton Box culvert will be removed upon establishment of 70% of historic vegetative cover for areas tributary to this pond.

The portions of the project are tributary to the existing Bennett Regional Detention Pond located downstream in Woodmen Hills. The pond was designed using the old criteria hydrologic methods and with a release rate approximating 80% of the historic peak flow rates for the 5-year and the 100-year storm events. The analysis shows the pond releasing the developed peak flows below the historic flow rates for the full spectrum of design storms. The pond was also designed with water quality provisions to accommodate the entirety of all tributary areas from Meridian Ranch and Woodmen Hills.

Those portions of the site tributary to the Haegler Ranch Basin (SCS FH1) will be collected by existing and proposed storm drains located with the Stonebridge Filing 4 PUD and the existing WindingWalk development to the south and released to the existing Pond H detention basin. The Pond H is an extended detention pond until and will provide the necessary water quality for the portions located within the Haegler Basin.

The analysis shows the pond releasing the developed peak flows below the historic flow rates for the full spectrum of design storms. The existing storm drain pipe accepting flow from the proposed Pond H is designed to accept a higher flow rate than the Historic rate of flow and the rate of flow that will be discharge from the pond during the 100-yr storm event.

That portion of the site (SCS FG18) located within the Gieck Ranch Basin, tributary to existing Pond E was designed using the old criteria hydrologic methods and with a release rate approximating 80% of the historic peak flow rates for the 5-year and the 100-year storm events. The analysis shows the pond releasing the developed peak flows below the historic flow rates for the full spectrum of design storms using the newly adopted unit hydrograph from the City DCM-1.

Figure 5: Meridian Ranch SCS Calculations – Historic Conditions Map, Figure 6: Meridian Ranch SCS Calculations – Interim Conditions Map and Figure 7: Meridian Ranch SCS Calculations – Future Conditions Map depict the historic, interim and future general drainage patterns for Stonebridge Filing 4.

The purpose of this report is to show that the development of Stonebridge Filing 4 will not adversely impact the existing drainage facilities adjacent to and downstream of the developed area and the existing Ponds E & H are properly sized for the anticipated future development of Stonebridge Filing 4.

SCS Calculations

Historic Drainage - SCS Calculation Method

Following is a tabulation of the surface drainage characteristics under Existing Conditions using the SCS calculation method. Please refer to Figure 5 - Meridian Ranch SCS Calculations - Historic Basin Map.

Table 3: Historic Drainage Basins – SCS

HISTORIC							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
OS02	0.2219	140	96	62	28	12	2.5
B01	0.2219	140	96	62	28	12	2.5
B01-B07	0.2219	139	96	61	28	12	2.5
OS03	0.1984	123	83	51	22	8.7	1.6
B02-B03	0.1984	119	81	51	22	8.7	1.6
HB01	0.0234	18	12	6.8	2.6	0.8	0.1
B03	0.2218	131	88	55	23	9.3	1.7
B03-B07	0.2218	129	88	54	23	9.3	1.7
OS04	0.1359	77	51	30	11	3.8	0.6
B04-B05	0.1359	76	50	30	11	3.7	0.6
HB03	0.1266	94	61	36	14	4.2	0.5
B05	0.2625	137	87	50	19	6.6	1.1
B05-B07	0.2625	137	85	49	19	6.5	1.1
HB02	0.1063	71	47	28	10	3.3	0.4
HB04	0.0609	43	28	17	6.4	2	0.3
B07	0.8734	490	321	195	80	31	5.6
B07-B12	0.8734	486	319	193	79	31	5.6
HB05	0.1375	94	62	37	14	4.3	0.6
HB06	0.1641	104	68	40	15	4.9	0.7
B12	1.175	636	415	243	97	38	6.8
B12-PB	1.175	629	413	242	97	37	6.8
HB07	0.0313	27	18	11	3.9	1.2	0.1
POND B	1.2063	639	420	245	98	38	6.9
PB-19	1.2063	636	416	244	97	38	6.9
OS01	1.5594	726	488	303	130	53	11
OS01-B19	1.5594	720	487	301	130	53	11
HB08	0.1344	76	50	30	11	3.7	0.6
HB09	0.3047	132	86	51	20	7.2	1.2
B19	3.2048	1490	990	602	253	100	19
B19-B26	3.2048	1475	987	599	252	100	19
HB10	**0.3047**	**162**	**105**	**63**	**24**	**8.1**	**1.3**
HB12	0.0797	51	33	19	7.4	2.4	0.3
HB12-B26	0.0797	49	33	19	7.3	2.3	0.3
B26	3.5892	1651	1086	657	274	108	21
26-32	3.5892	1633	1081	656	273	108	21
HB11	**0.1125**	**57**	**37**	**22**	**8.5**	**2.9**	**0.5**
32	3.7017	1678	1112	672	279	110	21
32-37	3.7017	1667	1104	667	277	109	21
B-14	0.4039	171	111	67	26	9.4	1.6
B-13	0.2813	122	80	47	19	6.6	1.1
36	0.6852	293	191	114	45	16	2.7
36-37	0.6852	290	190	113	45	16	2.7
B-15	0.075	37	24	14	5.6	1.9	0.3
37	4.4619	1988	1306	782	320	126	24

HISTORIC							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
HG07	0.0984	47	31	18	7.1	2.4	0.4
HG07-G11	0.0984	47	31	18	7.0	2.4	0.4
HG08	0.1328	73	48	28	11	3.6	0.5
G11	0.2312	115	75	44	17	5.7	0.9
G11-G12	0.2312	114	75	44	17	5.6	0.9
HG09	0.1781	73	48	29	11	4.1	0.7
G12	0.4093	187	122	72	28	9.7	1.6
G12-H08	0.4093	183	121	71	28	9.7	1.6
HG10	**0.1375**	**39**	**26**	**16**	**6.5**	**2.6**	**0.5**
H08	**0.5468**	**216**	**142**	**85**	**34**	**12**	**2.1**
HG11	**0.2047**	**77**	**51**	**30**	**12**	**4.5**	**0.8**
H09	**0.2047**	**77**	**51**	**30**	**12**	**4.5**	**0.8**
HH01	**0.0984**	**65**	**43**	**25**	**9.4**	**3**	**0.4**
H12	**0.0984**	**65**	**43**	**25**	**9.4**	**3**	**0.4**
HG12	**0.1297**	**57**	**38**	**22**	**8.7**	**3.1**	**0.5**
H10	**0.1297**	**57**	**38**	**22**	**8.7**	**3.1**	**0.5**

See approved Meridian Ranch MDDP (EPC File SKP171) dated January 2018 for complete hydrologic calculations and maps.

Interim Drainage - SCS Calculation Method

Following is a tabulation of the surface drainage characteristics for the interim conditions using the SCS calculation method. Please refer to Figure 5 - Meridian Ranch SCS Calculations – Interim Basins Map

Table 4: Interim Drainage Basins-SCS

INTERIM CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
OS01	1.5594	726	488	303	130	53	11
DB16	0.0578	85	66	50	32	22	12
B10	1.6172	765	516	322	143	60	13
B10-B11	1.6172	763	514	322	142	60	13
DB17	0.0048	15	13	11	8.3	6.9	5.3
B11	1.622	765	516	323	143	61	15
B11-POND C	1.622	759	515	321	143	61	14
DB21	0.0519	49	34	22	11	4.9	1.0
DB18	0.0346	60	47	36	24	16	9.0
DB19	0.0281	34	25	18	11	6.2	2.6
DB20	0.0147	23	18	13	8.5	5.8	3.2
POND C	1.7513	727	492	302	126	50	11
POND C-B16	1.7513	725	488	300	126	50	11
DB25	0.0211	40	32	25	16	11	6.6
B16	1.7724	730	492	303	128	51	11
B16-B17	1.7724	724	492	302	127	51	11
DB26	0.0682	124	101	80	57	42	27
B17	1.8406	751	511	315	135	55	31
B17-B26	1.8406	748	508	315	135	55	30
OS03	0.1984	123	83	51	22	8.7	1.6
DB01	0.0719	83	61	42	23	12	4.3
B01	0.2703	190	132	85	39	18	4.6
B01-B02	0.2703	184	129	83	39	18	4.6
OS02	0.2219	140	96	62	28	12	2.5
DB02	0.0516	66	48	34	18	9.6	2.9
B02	0.5438	358	249	161	75	34	8.1
B02-POND A	0.5438	357	248	160	74	34	8.1
OS04	0.1359	77	51	30	11	3.8	0.6
DB03	0.0703	63	45	30	14	6.5	1.4
B03	0.2062	137	92	57	24	9.4	1.5

INTERIM CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
B03-B04	0.2062	135	92	56	24	9.1	1.5
DB04	0.0422	40	28	19	10	4.6	1.1
DB05	0.0384	35	25	17	8.6	4.4	1.3
B04	0.2868	201	139	88	39	17	3.4
B04-B05	0.2868	201	139	88	38	16	3.3
DB06	0.0219	41	33	26	18	13	7.8
B05	0.3087	232	162	107	51	24	9.6
B05-POND A	0.3087	230	162	106	50	23	9.4
DB07	0.0254	33	24	17	9.2	5.0	1.7
DB08	0.0297	30	21	13	6.0	2.6	0.4
POND A	0.9076	523	365	210	69	18	1.5
POND A-B06	0.9076	523	364	209	68	18	1.5
DB09	0.0189	31	24	18	11	7.0	3.4
B06	0.9265	530	370	213	70	18	3.4
B06-B07	0.9265	530	363	211	69	18	3.2
DB11	0.0969	107	80	57	32	18	7.6
DB10	0.0364	52	40	29	18	11	5.3
B07	1.0598	609	421	241	81	32	13
B07-B09	1.0598	608	416	241	81	31	13
DB12	0.0453	76	59	45	29	19	10
B09	1.1051	632	431	250	85	43	18
B09-POND B	1.1051	631	430	249	85	42	18
DB15	0.1234	98	70	47	23	11	3.1
DB13	0.0703	84	63	46	27	16	7.4
DB14	0.0556	86	66	50	32	21	11
POND B	1.3544	669	486	282	119	67	29
POND B-B12	1.3544	669	483	279	119	66	28
DB22	0.0516	84	66	50	33	22	13
DB23	0.0172	42	36	29	22	17	12
B12	1.4232	698	505	294	140	80	36
B12-B14	1.4232	697	502	293	139	80	36
DB24	0.0531	88	69	52	33	22	12
B14	1.4763	719	517	301	152	89	44
B14-B15	1.4763	716	514	301	151	89	43
DB28	**0.0741**	**79**	**59**	**41**	**23**	**13**	**4.7**
B15	1.5504	750	534	312	168	99	48
B15-B18	1.5504	748	532	311	166	99	47
DB29	0.1697	138	100	67	35	18	5.8
DB27	0.0508	63	49	37	24	16	8.3
B26	3.6115	1570	1090	661	273	169	83
B26-27	3.6115	1567	1090	658	267	166	82
FB-02	0.05	63	50	38	24	16	8.9
FB-01	0.0373	58	45	34	21.2	13.8	7.4
FB01-27a	0.0373	56	43	32	20.7	13.8	7.3
B19	0.0873	117	91	69	44	29	15.4
B19-27	0.0873	115	90	67	43	28	15.4
FB-03	0.0078	19	16	13	9.6	7.5	5.2
27	3.7066	1607	1118	677	304	189	92
27-32	3.7066	1605	1116	674	300	186	91
WH-24	0.1325	199	156	119	77	52	29
WH-26	0.0839	46	31	19	7.5	2.8	0.5
WH-27	0.0217	20	14	8.7	3.6	1.2	0.1
30	0.2381	252	191	139	85	55	29
30-31	0.2381	251	190	138	84	53	28
WH-28	0.0398	57	44	33	21	14	7.6
31	0.2779	308	234	171	105	68	35
31-32	0.2779	301	227	165	100	65	35
WH-29	0.0495	71	56	42	27	18	9.5
WH-31	0.0406	71	56	43	28	19	11
WH-30	0.0159	24	18	12	6.4	3.3	1.0
32	4.0905	1744	1205	733	411	249	120
WH32	0.0458	49	33	20	7.9	2.8	0.3
BEN POND	**4.1363**	**1365**	**950**	**571**	**235**	**95**	**45**

INTERIM CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
WH-33	0.0064	11	8.9	6.8	4.4	3.0	1.7
33	4.1427	1366	951	572	236	95	45
33-37	4.1427	1363	948	571	236	95	45
WH35	0.155	155	112	77	40	21	5.8
WH34	0.045	63	48	35	21	13	6.4
B34-36	0.045	61	46	34	21	13	6.1
36	0.2	216	159	111	61	34	12
36-37	0.2	214	156	108	59	33	12
WH36	0.075	58	39	25	10	3.9	0.6
37	**4.4177**	**1404**	**977**	**590**	**245**	**100**	**49**
FG08A	0.075	117	91	67	42	27	14
FG08A-G05	0.075	111	86	65	41	27	14
FG08B	0.063	87	67	50	31	20	10
FG08B-G05	0.063	85	66	49	30	20	10
FG11	0.0625	76	59	45	29	19	10
FG09	0.0484	49	36	26	15	8.4	3.3
FG09-G05	0.0484	48	36	25	14	8.2	3.3
HG10	0.0467	29	20	12	5.3	2.1	0.4
G05	0.2956	344	261	190	115	72	36
FG13	0.0661	44	31	20	10	4.9	1.4
FG12	0.0328	51	40	31	20	14	7.9
POND D	0.3945	107	70	34	16	9.1	2.9
POND D-G17	0.3945	107	69	34	16	9.1	2.9
HG15	0.0297	13	8.8	5.4	2.2	0.9	0.2
FG15a	0.0156	28	22	17	11	7.3	4.0
G17	0.4398	119	77	38	17	9.9	4.4
G17-G18	0.4398	119	77	38	17	9.9	4.2
FG16	0.0773	127	98	74	47	31	16
G18	0.5171	167	126	93	59	39	20
G18-POND E	0.5171	161	121	89	56	37	20
HG30	0.1844	50	33	20	8.4	3.3	0.7
FG30-PONDHS	0.1844	50	33	20	8.4	3.3	0.7
FG31	0.0922	118	92	71	46	31	18
POND HS	0.2766	102	62	40	27	19	10
FG17a	0.0694	108	84	63	40	26	14
FG17a-POND E	0.0694	106	82	61	39	26	14
FG18	**0.0644**	**57**	**43**	**31**	**18**	**10.7**	**4.8**
FG18-POND E	0.0644	57	42	30	18	10.7	4.7
FG19	0.0527	85	67	51	33	23	13.3
FG17c	0.0313	32	22	15	6.7	2.9	0.5
FG17b	0.0214	40	31	24	16	11	6.2
POND E	**1.0329**	**199**	**119**	**61**	**25**	**12**	**5.6**
H08		**174**	**107**	**54**	**19**	**8.6**	**3.4**
H09		**25**	**12**	**7.4**	**5.4**	**3.5**	**2.2**
FH01	**0.1348**	**153**	**117**	**87**	**54**	**34**	**16.7**
POND H	**0.1348**	**57**	**32**	**18**	**7.8**	**3.0**	**1.2**
FH02	0.0091	11	8.0	5.6	3.2	1.9	0.7
FH03	0.0081	14	11	8.3	5.5	3.8	2.2
H12	0.152	62	35	20	9.5	6.3	3.5

See approved Meridian Ranch MDDP (EPC File SKP171) dated January 2018 for complete hydrologic calculations and maps.

Future Drainage - SCS Calculation Method

Following is a tabulation of the surface drainage characteristics for the future conditions using the SCS calculation method. Please refer to Figure 6 - Meridian Ranch SCS Calculations – Future Basins Map

Table 5: Future Drainage Basins-SCS

FUTURE CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
OS01	1.5594	726	488	303	130	53	11
DB16	0.0578	85	66	50	32	22	12
B10	1.6172	765	516	322	143	60	13
B10-B11	1.6172	763	514	322	142	60	13
DB17	0.0048	15	13	11	8.3	6.9	5.3
B11	1.6220	765	516	323	143	61	15
B11-POND C	1.6220	759	515	321	143	61	14
DB21	0.0519	49	34	22	11	4.9	1.0
DB18	0.0346	60	47	36	24	16	9
DB19	0.0281	34	25	18	11	6.2	2.6
DB20	0.0147	23	18	13	8.5	5.8	3.2
POND C	1.7513	727	492	302	126	50	11
POND C-B16	1.7513	725	488	300	126	50	11
DB25	0.0211	40	32	25	16	11	6.6
B16	1.7724	730	492	303	128	51	11
B16-B17	1.7724	724	492	302	127	51	11
DB26	0.0682	124	101	80	57	42	27
B17	1.8406	751	511	315	135	55	31
B17-B26	1.8406	748	508	315	135	55	30
OS03	0.1984	123	83	51	22	8.7	1.6
DB01	0.0719	83	61	42	23	12	4.3
B01	0.2703	190	132	85	39	18	4.6
B01-B02	0.2703	184	129	83	39	18	4.6
OS02	0.2219	140	96	62	28	12	2.5
DB02	0.0516	66	48	34	18	10	2.9
B02	0.5438	358	249	161	75	34	8.1
B02-POND A	0.5438	357	248	160	74	34	8.1
OS04	0.1359	77	51	30	11	3.8	0.6
DB03	0.0703	63	45	30	14	6.5	1.4
B03	0.2062	137	92	57	24	9	1.5
B03-B04	0.2062	135	92	56	24	9	1.5
DB04	0.0422	40	28	19	10	4.6	1.1
DB05	0.0384	35	25	17	8.6	4.4	1.3
B04	0.2868	201	139	88	39	17	3.4
B04-B05	0.2868	201	139	88	38	16	3.3
DB06	0.0219	41	33	26	18	13	7.8
B05	0.3087	232	162	107	51	24	10
B05-POND A	0.3087	230	162	106	50	23	9
DB07	0.0254	33	24	17	9	5	1.7
DB08	0.0297	30	21	13	6	3	0.4
POND A	0.9076	523	365	210	69	18	1.5
POND A-B06	0.9076	523	364	209	68	18	1.5
DB09	0.0189	31	24	18	11	7	3.4
B06	0.9265	530	370	213	70	18	3.4
B06-B07	0.9265	530	363	211	69	18	3.2
DB11	0.0969	107	80	57	32	18	7.6
DB10	0.0364	52	40	29	18	11	5.3
B07	1.0598	609	421	241	81	32	13
B07-B09	1.0598	608	416	241	81	31	13
DB12	0.0453	76	59	45	29	19	10
B09	1.1051	632	431	250	85	43	18
B09-POND B	1.1051	631	430	249	85	42	18

FUTURE CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
DB15	0.1234	98	70	47	23	11	3.1
DB13	0.0703	84	63	46	27	16	7.4
DB14	0.0556	86	66	50	32	21	11
POND B	1.3544	669	486	282	119	67	29
POND B-B12	1.3544	669	483	279	119	66	28
DB22	0.0516	84	66	50	33	22	13
DB23	0.0172	42	36	29	22	17	12
B12	1.4232	698	505	294	140	80	36
B12-B14	1.4232	697	502	293	139	80	36
DB24	0.0531	88	69	52	33	22	12
B14	1.4763	719	517	301	152	89	44
B14-B15	1.4763	716	514	301	151	89	43
DB28	**0.0741**	**79**	**59**	**41**	**23**	**13**	**4.7**
B15	1.5504	750	534	312	168	99	48
B15-B26	1.5504	748	532	311	166	99	47
DB29	0.1697	138	100	67	35	18	5.8
DB27	0.0508	63	49	37	24	16	8.3
B26	3.6115	1570	1090	661	273	169	83
B26-27	3.6115	1567	1090	658	267	166	82
FB-02	0.0500	63	50	38	24	16	8.9
FB-01	0.0373	58	45	34	21	14	7.4
FB01-B19	0.0373	56	43	32	21	14	7.3
B19	0.0873	117	91	69	44	29	15
B19-27	0.0873	115	90	67	43	28	15
FB-03	0.0078	19	16	13	10	7.5	5.2
27	3.7066	1607	1118	677	304	189	92
27-32	3.7066	1605	1116	674	300	186	91
WH-24	0.1325	199	156	119	77	52	29
WH-26	0.0839	46	31	19	7.5	2.8	0.5
WH-27	0.0217	20	14	9	3.6	1.2	0.1
30	0.2381	252	191	139	85	55	29
30-31	0.2381	251	190	138	84	53	28
WH-28	0.0398	57	44	33	21	14	7.6
31	0.2779	308	234	171	105	68	35
31-32	0.2779	301	227	165	100	65	35
WH-29	0.0495	71	56	42	27	18	10
WH-31	0.0406	71	56	43	28	19	11
WH-30	0.0159	24	18	12	6.4	3.3	1.0
32	4.0905	1744	1205	733	411	249	120
WH32	0.0458	49	33	20	8	2.8	0.3
BEN POND	**4.1363**	**1365**	**950**	**571**	**235**	**95**	**45**
WH-33	0.0064	11	8.9	6.8	4.4	3.0	1.7
33	4.1427	1366	951	572	236	95	45
33-37	4.1427	1363	948	571	236	95	45
WH35	0.1550	155	112	77	40	21	5.8
WH34	0.0450	63	48	35	21	13	6.4
B34-36	0.0450	61	46	34	21	13	6.1
36	0.2000	216	159	111	61	34	12
36-37	0.2000	214	156	108	59	33	12
WH36	0.0750	58	39	25	10	3.9	0.6
37	**4.4177**	**1404**	**977**	**590**	**245**	**100**	**49**
FG08A	0.0750	117	91	67	42	27	14
FG08A-G05	0.0750	111	86	65	41	27	14
FG10	0.0669	46	34	24	14	8.3	3.6
FG08B	0.0630	87	67	50	31	20	10
FG08B-G05	0.0630	85	66	49	30	20	10
FG11	0.0625	76	59	45	29	19	10
FG09	0.0484	49	36	26	15	8.4	3.3
FG09-G05	0.0484	48	36	25	14	8.2	3.3
G05	0.3158	342	262	192	117	75	38
FG13	0.0661	44	31	20	10	4.9	1.4
FG14	0.0331	42	32	24	15	10	5.2

FUTURE CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
FG12	0.0328	51	40	31	20	14	7.9
POND D	0.4478	131	89	51	19	12	4.5
POND D-G17	0.4478	131	89	51	19	12	4.5
FG15	0.1017	95	71	51	29	18	7.5
G17a	0.1017	95	71	51	29	18	7.5
FG15a	0.0156	28	22	17	11	7.3	4.0
G17	0.5651	184	121	72	40	23	11
G17-G18	0.5651	184	121	72	40	23	11
FG16	0.0773	127	98	74	47	31	16
G18	0.6424	235	177	127	77	49	24
G18-POND E	0.6424	233	176	126	77	48	24
FG31	0.0922	118	92	71	46	31	18
FG30	0.0400	76	60	46	31	21	12
FG30-PONDHS	0.0400	74	59	45	29	20	11
POND HS	0.1322	156	107	60	37	27	15
FG17a	0.0694	102	79	58	36	23	12
FG17a-POND E	0.0694	100	77	57	36	23	12
FG18	**0.0644**	**57**	**43**	**31**	**18**	**11**	**4.8**
FG18-POND E	0.0644	57	42	30	18	11	4.7
FG19	0.0527	85	67	51	33	23	13
FG17c	0.0313	32	22	15	6.7	2.9	0.5
FG17b	0.0214	40	31	24	16	11	6.2
POND E	**1.0138**	**240**	**151**	**81**	**30**	**16**	**6.6**
H08		**204**	**136**	**73**	**24**	**12**	**4.1**
H09		**36**	**16**	**8.4**	**6.0**	**4.2**	**2.5**
FH01	**0.1344**	**152**	**117**	**87**	**53**	**34**	**17**
POND H	**0.1344**	**57**	**32**	**18**	**7.8**	**3.0**	**1.2**
FH02	0.0091	11	8.0	5.6	3.2	1.9	0.7
FH03	0.0081	14	11	8.3	5.5	3.8	2.2
H12	0.1516	62	35	20	10	6.3	3.5

See approved Meridian Ranch MDDP (EPC File SKP171) dated January 2018 for complete hydrologic calculations and maps.

Rational Calculations

The Rational Hydrologic Calculation Method was used to estimate the total runoff from the 5-year and the 100-year design storm and thus establish the storm drainage system design. Using the rational calculation methodology outlined in the Hydrology Section (Ch 6) of the COSDCM coupled with the El Paso County EPCDCM an effective storm drainage design for Stonebridge Filing 4 has been designed. The storm drainage facilities have been designed such that the minor storm will be captured by the inlets and conveyed by the storm drain pipes such that the street flow does not overtop the curbs. The storm drainage facility has been designed such that the major storm will be captured by the inlets and conveyed by the storm drain pipes such that the street flow does not exceed the right-of-way widths for residential streets and the hydraulic grade line will be less than one foot below the surface.

The far eastern portion of the site is located within the Gieck Ranch Drainage Basin, the middle section (along Rainbow Bridge Dr) is located within Haegler Ranch Drainage Basin and the western rear lots (adjacent to open space) are within the Bennett Ranch Drainage Basin. The project will discharge the collected surface flow from the project into existing downstream facilities properly sized to safely convey the storm water flows away from the project without damaging adjacent property.

Rational hydrologic calculations were performed for the entire PUD area and hydraulic calculations will be provided in the final drainage report at final plat. That portion located within the Gieck Basin will be collected by a series of inlets and storm drain pipe then conveyed through an existing storm drain system constructed as a part of the Vistas Filing 1 and discharged into the existing Pond E.

The Haegler Ranch portion will consist of a single backbone storm drain system located along Rainbow Bridge Dr that was installed during the construction on WindingWalk Filing 1. The system ranges in size from 24" to 48" that collects runoff from laterals and inlets, conveying the collected flow southerly through WindingWalk Filing 1 and discharging the storm water into Pond H located near northwest of the intersection of Stapleton Drive and Eastonville Road. The storm water (57 CFS) will be released into an existing storm drainage system at rates below the historic flow rates and significantly below the anticipated design flow (87 CFS) when the system was designed and constructed.

The Bennett Ranch portion consists of the rear yards of walkout and garden level lots that runoff toward open space. The runoff will either enter an existing drainage swale or into an existing storm drain system, conveyed to an existing temporary sedimentation pond where it will be discharged into the main Bennett Ranch Channel then be conveyed to the Bennett Ranch Regional Detention Pond. The Bennett Ranch Regional Detention Pond was designed and constructed to provide water quality and detain developed runoff from the Bennett Ranch portions of both the Meridian Ranch and Woodmen Hills subdivisions such that the storm flow rates at Judge Orr Road and the Bennett Channel are at or near 80% of historic flow rates.

Rational Narrative

The following is a detailed narrative of the storm drainage system located within Stonebridge Filing 4. The description is organized by system beginning on the west in the Bennett Ranch portion of Stonebridge Filing 4 and ending on the east side of the project in the Gieck Ranch Basin.

<u>Bennett Ranch</u>

- Basin B18 (6.1 acres, Q_5= 6.2 CFS, Q_{100} = 16 CFS) contains the rear lots of Stonebridge Filing 4 at the western end of Enclave Scenic Way and the open space behind the lots. The surface runoff will sheet flow off of the residential lots and be directed to a swale in the open space then to an existing Type C inlet. All of the flow is captured by this inlet (Q_5= 6.2 CFS, Q_{100} = 16 CFS) and is conveyed downstream via an existing 24" RCP constructed with WindingWalk Filing 1 to an existing swale combining with additional storm runoff collected with the WindingWalk Filing 1 subdivision.

- Basin B22 (11.6 acres, Q_5= 13 CFS, Q_{100} = 32 CFS) contains the rear lots along Enclave Scenic Way and from Stonebridge Filing 1, the Lodge Recreation Center and the open space behind the lots. The surface runoff will sheet flow off of the residential lots and be directed to a swale in the open space and conveyed downstream continuing through the open space.

- Basin B23 (9.8 acres, Q_5= 10 CFS, Q_{100} = 26 CFS) contains the rear lots along Enclave Scenic Way and from Stonebridge Filing 1, and the open space behind the lots. The surface runoff will sheet flow off of the residential lots, combined with the flow from Basin B22 for a total flow of Q_5= 18 CFS, Q_{100} = 46 CFS then be conveyed downstream via the existing swale continuing through the open space.

- Basin B24 (9.1 acres, Q_5= 8.1 CFS, Q_{100} = 21 CFS) contains the rear lots from WindingWalk Filing 1 from Stonebridge Filing 1, and the open space behind the lots. The surface runoff will sheet flow off of the residential lots, combined with the flow from Basin B22 and B23 for a total flow of Q_5= 19 CFS, Q_{100} = 49 CFS and then be combined with flow from an existing storm drain constructed as a part of WindingWalk Filing 1.

- The total combined flow within the storm drain pipe (Q_5= 14 CFS, Q_{100} = 41 CFS) is discharged into an existing temporary sedimentation pond, combined with surface flow from Stonebridge Filing 1 and a portion of Stonebridge Filing 4 (Q_5= 19 CFS, Q_{100} = 49 CFS). The total flow (Q_5= 30 CFS, Q_{100} = 72 CFS) is then discharged in the main Bennett Ranch Channel and conveyed southerly toward the Bennett Ranch Regional Detention Pond.

- Basin B01 (1.9 acres, Q_5= 2.6 CFS, Q_{100} = 6.0 CFS) contains lots along the north side of Enclave Scenic Way, the surface runoff will sheet flow off of the residential lots and be conveyed to a 5' Type R sump Inlet located at I01. All of the flow is captured by this inlet (Q_5= 2.6 CFS, Q_{100} = 6.0 CFS) is conveyed via an 18" RCP to Junction J01 where it will combine with the runoff captured at I02.

- Basin B02 (1.9 acres, Q_5= 2.7 CFS, Q_{100} = 6.3 CFS) contains lots along the south side of Enclave Scenic Way, the surface runoff will sheet flow off of the residential lots and be conveyed to a 10' Type R flow-by inlet located at I02. The flow captured by this inlet (Q_5= 2.1 CFS, Q_{100} = 4.2 CFS) is conveyed via an 18" RCP to Junction J01. The remaining surface runoff (Q_5= 0.6 CFS, Q_{100} = 2.1 CFS) continues along the curb and gutter toward I04.

- The pipe flow from Junction J01 (Q_5= 3.7 CFS, Q_{100} = 10 CFS) is conveyed via a storm drain system through several manholes to Junction J05.

- Basin B03 (4.4 acres, Q_5= 7.2 CFS, Q_{100} = 16 CFS) contains lots along the west side of Marble Canyon Way and east side of Granite Park Lane., the surface runoff will sheet flow off of the residential lots and be conveyed to a 15' Type R forced sump Inlet located at I03. Most of the flow is captured by this inlet (Q_5= 7.2 CFS, Q_{100} = 15 CFS) is conveyed via a storm drain to Junction J05 where it will combine with the pipe flow from Junction J01. The remaining surface runoff (Q_{100} = 1.5 CFS) continues along the curb and gutter toward I04.

- Basin B04 (7.4 acres, Q_5= 9.3 CFS, Q_{100} = 23 CFS) contains lots along the north side of Granite Ridge Dr. The surface runoff will sheet flow off of the residential lots and be captured by a 15' Type R sump inlet located at I04. The flow captured by this inlet (Q_5= 9.3 CFS, Q_{100} = 23 CFS) is conveyed via an 18" RCP to Junction J05.

- The pipe flow conveyed to Junction J05 from J01 and I03 is combined with flow captured by I04 for a total flow of Q_5= 14 CFS, Q_{100} = 42 CFS.

- Basin B05 (2.5 acres, Q_5= 3.3 CFS, Q_{100} = 7.6 CFS) contains lots along the south side of Granite Ridge Dr, the surface runoff will sheet flow off of the residential lots and be conveyed to a 10' Type R sump inlet located at I05. All of the flow is captured by this inlet (Q_5= 3.3 CFS, Q_{100} = 7.6 CFS) and is combined with flow from Junction J05 (Q_5= 14 CFS, Q_{100} = 42 CFS) for a total flow of Q_5= 16 CFS, Q_{100} = 49 CFS and is conveyed southerly through a future open space with Stonebridge Filing 4 and an existing Type C inlet (CB01). Should both sump inlets (I04 & I05) at this location become clogged, the side yard is able to safely convey the total Q_{100} flow of 29 CFS through the rear yard to the open space and collect the surface flow at CB01.

- Basin B06 (5.8 acres, Q_5= 6.6 CFS, Q_{100} = 17 CFS) contains the rear lots along Granite Ridge Dr. and an open space of Stonebridge Filing 4. The surface runoff will sheet flow off of the residential lots and be directed to a swale in the open space then to a Type C inlet (CB01). All of the flow is captured by this inlet (Q_5= 6.6 CFS, Q_{100} = 17 CFS) is combined with the upstream flow and is conveyed via an existing 36" RCP (Q_5= 20 CFS, Q_{100} = 62 CFS) to inlet I06. The total flow is then conveyed through WindingWalk Filing 1 via an existing storm drain system. See the approved WindingWalk Filing 1 Final Drainage Report for more information.

Haegler Ranch

- Basin H01 (1.0 acres, Q_5= 1.5 CFS, Q_{100} = 3.5 CFS) contains lots fronting along the Granite Ridge Dr and Meridian Mills Tr, the surface runoff will sheet flow off of the residential lots and be conveyed via curb and gutter to DP05.

- Basin H02 (3.5 acres, Q_5= 6.1 CFS, Q_{100} = 13 CFS) contains lots along the Meridian Mills Tr and the east side of Rainbow Bridge Dr, the surface runoff will sheet flow off of the residential lots and is combined with the surface flow from DP05 then is conveyed to an existing 20' Type R forced sump inlet located at I20. Most of the flow is captured by this inlet (Q_5= 7.4 CFS, Q_{100} = 15 CFS) is conveyed via an existing 18" RCP to J22, J23, and J24 where it will combine with the pipe flow from I23. The remaining surface runoff (Q_{100} = 1.3 CFS) continues along the curb and gutter southerly along Rainbow Bridge toward I23.

- Basin H03 (3.0 acres, Q_5= 5.8 CFS, Q_{100} = 12 CFS) contains lots from Stonebridge Filing 1 on Stone Valley Dr and the west side of Rainbow Bridge Dr, the surface runoff will sheet flow off of the residential lots and be conveyed via curb and gutter to DP06.

- Basin H04 (2.4 acres, Q_5= 4.8 CFS, Q_{100} = 10 CFS) contains lots along the east side of Marble Canyon Way and the west side of Rainbow Bridge Dr, the surface runoff will sheet flow off of the residential lots and is combined with the surface flow from DP06 then is conveyed to an existing 20' Type R forced sump inlet located at I21. The flow captured by this inlet (Q_5= 9.0 CFS, Q_{100} = 19 CFS) is conveyed via a proposed 24" RCP to J25A and I22.

- Basin H05 (2.0 acres, Q_5= 3.5 CFS, Q_{100} = 7.9 CFS) contains lots along Marble Canyon Way. The surface runoff will sheet flow off of the residential lots and be conveyed to a proposed 10' Type R sump inlet located at I22. All of the flow is captured by this inlet and is combined with the upstream flow from I21 (Q_5= 9 CFS, Q_{100} = 25 CFS) and conveyed via an existing 24" RCP downstream to manholes J25B and J26 located in Rainbow Bridge. Should the sump inlet at this location become clogged, the side yard is able to safely convey the total Q_{100} flow of 7.9 CFS through the rear yard to the open space and collect the surface flow at CB03.

- During the interim condition, prior to the construction of Stonebridge Filing 4, the surface runoff from Basins H03 and H04 was directed to a temporary sedimentation pond constructed during the grading operations associated with the WindingWalk Grading Permit. A temporary temporary CMP riser was connected to the storm drain system constructed with WindingWalk Filing 1. The temporary pond will be removed during the construction of the improvements for Stonebridge Filing 4 and the CMP riser will be replaced with the proposed 10' Type R sump inlet at I22.

- Basin H06 (2.5 acres, Q_5= 4.3 CFS, Q_{100} = 9.9 CFS) contains lots along the east side of Meridian Mills Tr, the surface runoff will sheet flow off of the residential lots and be conveyed via curb and gutter to DP07.

- Basin H07 (3.1 acres, Q_5= 6.3 CFS, Q_{100} = 14 CFS) contains lots along the west side of Meridian Mills Tr and the east side of Rainbow Bridge Dr, the surface runoff will sheet flow off of the residential lots and is combined with the surface flow from DP07 then is conveyed to an existing 15' Type R forced sump inlet located at I23. Most of the flow is captured by this inlet (Q_5= 8.4 CFS, Q_{100} = 15 CFS) is conveyed via an existing 24" RCP to J24 where it will combine with the pipe flow from I20 (Q_5= 12 CFS, Q_{100} = 29 CFS) and conveyed via an existing 24" RCP downstream to manholes J26. The remaining surface runoff (Q_{100} = 5.0 CFS) continues along the curb and gutter southerly along Rainbow Bridge toward I25.

- The pipe flow conveyed to Junction J26 from J25B and J24 is combined at J26 for a total flow of Q_5= 20 CFS, Q_{100} = 51 CFS conveyed via a 30" RCP downstream to manhole J27.

- Basin H08 (4.4 acres, Q_5= 4.6 CFS, Q_{100} = 12 CFS) contains the rear lots and an open space of Stonebridge Filing 4. The surface runoff will sheet flow off of the residential lots and be directed to a swale in the open space then to an existing Type C inlet

(CB03). All of the flow is captured by this inlet (Q_5= 4.6 CFS, Q_{100} = 12 CFS) and is conveyed via an existing 18" to J27.

- Basin H09 (2.8 acres, Q_5= 3.1 CFS, Q_{100} = 8.0 CFS) contains the rear lots of Stonebridge Filing 4 and a park within WindingWalk Filing 1. The surface runoff will sheet flow off of the residential lots and be directed to a swale in the park then to an existing Type C inlet (CB04). All of the flow is captured by this inlet (Q_5= 3.1 CFS, Q_{100} = 8.0 CFS) and is conveyed via an existing 18" to J27.

- The pipe flow conveyed to Junction J27 from J26, CB03 and CB04 is combined at J27 for a total flow of Q_5= 25 CFS, Q_{100} = 69 CFS conveyed via a 42" RCP.

- Basin H10 (5.0 acres, Q_5= 8.2 CFS, Q_{100} = 18 CFS) contains lots along the north side of WindingWalk Dr. and rear lots along the west side of Rainbow Bridge Drive. The surface runoff will sheet flow off of the residential lots and be conveyed to an existing 10' Type R forced sump inlet located at I24. Most of the flow is captured by this inlet (Q_5= 8.2 CFS, Q_{100} = 11 CFS) is conveyed via an existing 18" RCP to J28 where it will combine with the pipe flow from I25 and J27. The remaining surface runoff (Q_{100} = 7.0 CFS) continues along the curb and gutter southerly along Rainbow Bridge toward an existing inlet located within WindingWalk Filing 1.

- Basin H11 (2.0 acres, Q_5= 3.8 CFS, Q_{100} = 11 CFS) contains the lots in Stonebridge Filing 4 and WindingWalk Filing 2 along with the east side of Rainbow Bridge Dr. The surface runoff will sheet flow off of the residential lots and be conveyed to an existing 10' Type R forced sump inlet located at I25. Most of the flow captured by this inlet (Q_5= 3.8 CFS, Q_{100} = 11 CFS) is conveyed via an 18" RCP to J28 where it will combine with the pipe flow from I25 and J27. The remaining surface runoff (Q_{100} = 0.3 CFS) continues along the curb and gutter southerly along Rainbow Bridge toward an existing inlet located within WindingWalk Filing 1.

- The pipe flow conveyed to Junction J28 from J27, I24 and I25 is combined for a total flow of Q_5= 33 CFS, Q_{100} = 89 CFS conveyed via a 42" RCP downstream along Rainbow Bridge Dr through WindingWalk Filing 1 toward existing Pond H.

<u>Gieck Ranch</u>

- Basin G01 (2.7 acres, Q_5= 4.6 CFS, Q_{100} = 11 CFS) contains lots fronting along the west side of Hidden Ranch Ct within Stonebridge Filing 4, the surface runoff will sheet flow off of the residential lots and be conveyed via curb and gutter to DP10.

- Basin G02 (4.4 acres, Q_5= 6.0 CFS, Q_{100} = 14 CFS) contains lots fronting along the east side of Hidden Ranch Ct within Stonebridge Filing 4, the surface runoff will sheet flow off of the residential lots and is combined with the surface flow from DP10 then is conveyed to a proposed 10' Type R sump inlet located at I40. Most of the flow is captured by this inlet (Q_5= 9.7 CFS, Q_{100} = 18 CFS) is conveyed via a proposed RCP to I41 where it will combine with the pipe flow from I41. The remaining surface runoff (Q_{100} = 4.3 CFS) crosses the centerline toward I41.

- Basin G03 (1.2 acres, Q_5= 2.1 CFS, Q_{100} = 4.8CFS) contains lots fronting along the south side of Ranch Gate Tr within Stonebridge Filing 4, the surface runoff will sheet flow off of the residential lots and is combined with the surface flow from I40 at a proposed 10' Type R sump inlet located at I41. All of the flow captured by this inlet is conveyed via a proposed RCP to a proposed storm drain end section (OS5) where it will discharge into an existing swale constructed with Stonebridge Filing 3 (Basin E02) at DP12. Should both sump inlets (I40 & I41) at this location become clogged, the side yard is able to safely convey the total Q_{100} flow of 26 CFS through the rear yard to the open space.

- Basin E02 (11 acres, Q_5= 11 CFS, Q_{100} = 27 CFS) contains rear lots along the south side of existing Stone Valley Dr in Stonebridge Filing 3 and along the east side of Hidden Ranch Ct within Stonebridge Filing 4, the surface runoff will sheet flow off of the residential lots and be conveyed via an existing swale to DP12 for a total flow of 11 acres, Q_5= 17 CFS, Q_{100} = 42 CFS. The surface flow will continue downstream toward the Vistas Filing 1 where it will be collected and conveyed through an existing storm drain system to the existing Pond E.

DETENTION PONDS

Bennett Regional Detention Pond

The Bennett Regional Detention Pond was constructed with in 2001 and was designed to accept the developed flows from Woodmen Hills Filing 11 and all the portions of Meridian Ranch that lies within the Bennett Ranch Drainage Basin. The developed flow rates were to be released from the pond at rates less than 80% of the historic flow rates. The water quality component was sized to accommodate the tributary areas from Woodmen Hills Filing 11 and Meridian Ranch.

The development of the Stonebridge Filing 4 PUD will complete the tributary areas to the Bennett Regional Pond within the Meridian Ranch Development. No improvements or modifications are necessary to this pond as a result of the development of Stonebridge Filing 4. The table below shows the ultimate release rates from the detention pond in comparison to the historic flow rates.

Table 6: Bennett Regional Detention Pond Summary Data

BENNETT REGIONAL DETENTION POND						
	PEAK INFLOW	PEAK OUTFLOW	TOTAL INFLOW	TOTAL OUTFLOW	PEAK STORAGE	PEAK ELEVATION
	CFS	CFS	AC-FT	AC-FT	AC-FT	FT
INTERIM and FUTURE CONDITIONS						
5-YEAR STORM	251	95	71	64	18.0	6969.8
10-YEAR STORM	414	235	119	110	29.7	6970.7
25-YEAR STORM	736	571	207	194	47.4	6971.7
50-YEAR STORM	1209	950	292	275	63.8	6972.6
100-YEAR STORM	1751	1365	396	376	84.4	6973.7

Pond H Detention Storage Criteria

Detention Pond H was constructed as a part of the WindingWalk grading in anticipation of the future development of WindingWalk and the Stonebridge Filing 4 PUD in accordance with the approved Sketch Plan. The existing pond is located within the Haegler Ranch Drainage Basin in the southeastern corner of Meridian Ranch near the intersection of Eastonville Road and Stapleton Drive. The pond is owned and maintained by the Meridian Service Metropolitan District (MSMD). A maintenance agreement between the Meridian Service Metropolitan District and El Paso County has been recorded with the WindingWalk Filing 1 final plat.

The pond is designed to accommodate the developed final inflow from WindingWalk Filings 1 and 2 at Meridian Ranch and Stonebridge Filing 4. Permanent concrete control structures has been designed to handle full build out of the tributary area and reduce the developed flows to at or below the historic full spectrum peak flow rates. No improvements or modifications are necessary to this pond as a result of the development of Stonebridge Flg. 4.

A WQCV analysis for Pond H was also performed based on proposed future development of the proposed tributary area to the pond; this analysis shows that Pond H will require 0.5 acre-ft of storage for first flush water quality for all the areas tributary to the pond. The control structure at DP H12 is proposed to consist of a 6" water quality control riser with a trash grate having a top elevation of 6970.0 to achieve the required 0.5 ac-ft of storage.

The WQCV was calculated by using the equations found in Volume 2, of the Drainage Criteria Manual (DCM). The release rate from the WQCV is generally very small, which helps minimize downstream impacts. Detaining the WQCV also serves to cleanse the "first flush" of runoff from the higher initial concentration of sediment and pollutants by allowing for settlement to occur. This greatly improves the quality of runoff, leaving the facility and reduces the potential for erosion. The positive impact on water quality is expected to be significant, particularly during the construction phase of the development.

The existing concrete control structure the outlet of Pond H will attenuate the peak developed flow rates to historic peak rates or less for the full spectrum of design storms as per the requirements set forth in Resolution 15-042 adopted by the Board of County Commissioners, County of El Paso. The control structure consists of a water quality control standpipe, a rectangular slotted orifice located on the front and a grated top to reduce the developed peak flow rates. Table 6 provides summary data for the various design storms for the completed development for all areas tributary to Pond H including Stonebridge Filing 4.

Table 7: Pond H Summary Data

POND H						
	PEAK INFLOW	PEAK OUTFLOW	TOTAL INFLOW	TOTAL OUTFLOW	PEAK STORAGE	PEAK ELEVATION
	CFS	CFS	AC-FT	AC-FT	AC-FT	FT
INTERIM and FUTURE CONDITIONS						
5-YEAR STORM	34	3.1	4.5	2.7	2.8	6971.7
10-YEAR STORM	54	7.8	6.7	4.7	3.7	6972.1
25-YEAR STORM	87	18	10.5	7.9	5.1	6972.6
50-YEAR STORM	117	32	14.0	11.3	6.5	6973.1
100-YEAR STORM	153	57	18.1	15.2	7.7	6973.4

Existing Pond E Detention Storage Criteria

Existing Detention Pond E is located south of Londonderry and west of Eastonville, and was constructed as a part of the Meridian Ranch Filing 11 Grading, is owned and maintained by the Meridian Service Metropolitan District (MSMD). It has been in operation since 2013 with no reported issues. A maintenance agreement between the Meridian Service Metropolitan District and El Paso County has been recorded as a part of the Meridian Ranch Filing 11A Final Plat process.

The SCS calculation method was used to determine inflow and outflow from the detention pond to ensure the developed runoff does not overcharge the pond and the discharges do not adversely impact drainage patterns downstream of Eastonville Road. Storm drainage runoff will enter the pond from upstream development via an existing pipe network and overland from existing rear lots of the Vistas Filing 1 at Meridian Ranch. The ultimate future build-out design of the tributary areas was analyzed to insure the sizing of the pond would be adequate after development of Meridian Ranch is complete. This SCS calculation can be found in the appendix.

An analysis of the SCS calculations show that with the permanent concrete control structures, recently installed with the operations associated with the WindingWalk Grading permit the developed flow rates are reduced to at or below the historic flow rates at Eastonville Road. The temporary CMP control structures installed at the time of the original pond construction with the Meridian Ranch Filing 11 grading operations were replaced with permanent concrete control structures. No additional improvements or modifications are necessary to this pond as a result of the development of Stonebridge Filing 4.

Table 8: Existing Pond E Summary Data

POND E						
	PEAK INFLOW	PEAK OUTFLOW	TOTAL INFLOW	TOTAL OUTFLOW	PEAK STORAGE	PEAK ELEVATION
	CFS	CFS	AC-FT	AC-FT	AC-FT	FT
INTERIM CONDITIONS						
5-YEAR STORM	114	12	24.6	10.1	16.1	6971.2
10-YEAR STORM	174	25	38.4	20.1	21.5	6971.7
25-YEAR STORM	276	61	61.7	39.7	27.9	6972.3
50-YEAR STORM	373	119	84.9	61.7	33.5	6972.8
100-YEAR STORM	484	199	112.6	88.6	39.5	6973.3
FUTURE CONDITIONS						
5-YEAR STORM	126	16	29.0	13.1	17.9	6971.4
10-YEAR STORM	198	30	43.9	24.6	23.0	6971.9
25-YEAR STORM	321	81	69.4	47.1	30.1	6972.5
50-YEAR STORM	435	151	94.1	70.8	36.2	6973.1
100-YEAR STORM	609	240	123.4	99.4	42.2	6973.6

A water quality capture volume (WQCV) was added to the required storage volume for the final build out condition. The purpose of the WQCV is to allow particulates to settle out and accumulate over time to improve water quality and to maintain full volume for detention during the life of the facility for a major storm event. The WQCV of 1.6 ac-ft. was added to

the detention of the minor storm and half (0.8 ac-ft.) was added to the detention volume of the major storm. This was accomplished with respect to the HEC-HMS computer run by providing a starting detention volume of 1.6 ft. for the 5-year storm and 0.8 ft. for the 100-year storm. The resulting storage elevations remain well below the emergency spillway elevation. See Appendix B for more information.

The WQCV was calculated by using the equations found in Volume 2, of the Drainage Criteria Manual (DCM). The release rate from the WQCV is generally very small, which helps minimize downstream impacts. Detaining the WQCV also serves to cleanse the "first flush" of runoff from the higher initial concentration of sediment and pollutants by allowing for settlement to occur. This greatly improves the quality of runoff, leaving the facility and reduces the potential for erosion. The positive impact on water quality is expected to be significant, particularly during the construction phase of the development.

Downstream Analysis

The facilities located downstream of SCS Basin DB28 are the Bennett Regional Detention Pond and the North Channel running between Stapleton Drive and the Bennett Pond. The pond and channel were originally designed and constructed with Woodmen Hills Filings 10 & 11 and the channel was reconstructed in 2008. With the completion of the WindingWalk and the Stonebridge Filing 4 PUDs the areas within Meridian Ranch tributary to the Bennett Regional Pond and the North Channel will be complete.

The Bennett Regional Detention Pond design provides detention and water quality for all Bennett Ranch Drainage Basin areas tributary to the pond within Woodmen Hills and Meridian Ranch. The analysis of the Bennett Pond shows the pond has sufficient capacity during the 100-yr storm event to accept the runoff from the upstream developed tributary areas and the release rates from the pond for the full spectrum of design storms are acceptable.

The channel was redesigned and reconstructed as a rip-rap lined channel with multiple drop structures between Stapleton and the detention pond. The channel crosses under Lambert Road and has a carrying capacity of 1,930 CFS with an average velocity of 5.0 FPS. The final 100-yr design flow rate for the North Channel 1,650 CFS with an average velocity of 4.7 FPS, both the flow rate and velocity are below the original design parameters. The existing channel shows no significant signs of degradation from the flows over the past 10 years. Based on the above analysis the development of those portions of the WindingWalk and the Stonebridge Filing 4 PUDs tributary to the Bennett Ranch Drainage Basin will have no adverse impacts to the downstream facilities.

The outlets (DP H08 & H09) for Pond E located along Eastonville Road upstream of 4-Way Ranch Filing 1 were analyzed in detail with the 2018 MDDP associated with the most recent Meridian Ranch Sketch Plan Amendment. The information can be found in Appendix D of the January 2018 Meridian Ranch MDDP. Below you will find a summary table providing release rates of flow for each Pond E outlet. See the Downstream Channel Analysis Appendix in the WindingWalk Filing 1 Final Drainage Report for a letter to the El Paso County Engineer regarding channel stability and analysis.

Table 9: Key Design Point Comparison - SCS

KEY DESIGN POINT FLOW RATES					
EVENT	HISTORIC	INTERIM		FUTURE	
	PEAK FLOW (CFS)	PEAK FLOW (CFS)	PERCENT OF HISTORIC	PEAK FLOW (CFS)	PERCENT OF HISTORIC
BENNETT REGIONAL DETENTION POND					
BENNETT POND OUTLET (B32)					
5-YEAR	110	249	226%	249	226%
10-YEAR	279	411	148%	411	148%
25-YEAR	672	733	109%	733	109%
50-YEAR	1112	1205	108%	1205	108%
100-YEAR	1678	1744	104%	1744	104%
JUDGE ORR ROAD (B37)					
5-YEAR	126	100	80%	100	80%
10-YEAR	320	245	77%	245	77%
25-YEAR	782	590	75%	590	75%
50-YEAR	1306	977	75%	977	75%
100-YEAR	1988	1404	71%	1404	71%
DETENTION POND H (Windingwalk)					
STAPLETON DR/EASTONVILLE ROAD (H12)					
5-YEAR	3.0	3.0	100%	3.0	100%
10-YEAR	9.4	7.8	83%	7.8	83%
25-YEAR	25	18	72%	18	71%
50-YEAR	43	32	75%	32	74%
100-YEAR	65	57	88%	57	87%
DETENTION POND E (FILING 11A)					
EASTONVILLE ROAD (H08)					
5-YEAR	12	8.6	71%	12	97%
10-YEAR	34	19	58%	24	72%
25-YEAR	85	54	64%	73	86%
50-YEAR	142	107	75%	136	95%
100-YEAR	216	174	81%	204	95%
EASTONVILLE ROAD (H09)					
5-YEAR	4.5	3.5	78%	4.2	93%
10-YEAR	12	5.4	45%	6.0	50%
25-YEAR	30	7.4	24%	8.4	28%
50-YEAR	51	12	23%	16	31%
100-YEAR	77	25	33%	36	47%

The outlet (DP H12) for Pond H is located northwest of the intersection of Eastonville Road and Stapleton Drive and upstream of 4-Way Ranch Filing 1. Pond H will discharge 58 CFS during the 100-yr storm event into an existing sedimentation/detention pond constructed with a concrete sedimentation control structure and connected to a 4' x 2' RCB installed with the construction of Stapleton Drive. The plans set, prepared by URS in 2007, indicates the anticipated flow conveyed by the storm drain to be 87 CFS. A quick analysis indicates the 58 CFS will travel through the box culvert at an average velocity of 9 FPS under normal flow.

See the Downstream Channel Analysis Appendix in the WindingWalk Filing 1 Final Drainage Report for the hydraulic profile of the RCB storm drain.

The original 4-Way Ranch calculations show the anticipated flow from Meridian Ranch to be approximately 100 CFS, the Stapleton Drive Improvement Plans show an discharge of 110 CFS from the above mentioned RCB storm drain. The calculations show the discharge from Pond H to be 58 CFS and the discharge from the RCB storm drain to be 63 CFS with a discharge velocity of 8 FPS. The storm drain discharges into an existing natural broad bottomed swale and the swale conveys the flow downstream at an average non-erosive velocity of 3.2 FPS for the 100-yr event. See the Downstream Channel Analysis Appendix in the WindingWalk Filing 1 Final Drainage Report for the hydraulic worksheets for the downstream channel.

In the event Pond H should overtop the embankment and run through the emergency spillway, the overflow would be conveyed safely down the embankment toward the existing box inlet located north of Stapleton Drive. After a portion of the flow is captured by the inlet the remainder will enter Stapleton Drive and cross both Stapleton Drive and Eastonville Road to the southeast side of the intersection and continue downstream in the existing natural channel.

EROSION CONTROL DESIGN

General Concept

Historically, erosion on this property has been held to a minimum by a variety of natural features and agricultural practices including:

- Substantial prairie grass growth
- Construction of drainage arresting berms
- Construction of multiple stock ponds along drainage courses

Existing temporary sediment ponds will also help to minimize erosion by reducing both the volume and velocity of the peak runoff.

During construction, best management practices (BMP) for erosion control will be employed based on El Paso county Criteria. BMP's will be utilized as deemed necessary by the contractor and/or engineer and are not limited to the measures shown on the construction drawing set. The contractor shall minimize the amount of area disturbed during all construction activities.

In general the following shall be applied in developing the sequence of major activities:

- Install down-slope and side-slope perimeter BMP's before the land disturbing activity occurs.
- Do not disturb an area until it is necessary for the construction activity to proceed
- Cover or stabilize as soon as possible.
- Time the construction activities to reduce the impacts from seasonal climatic changes or weather events.
- The construction of filtration BMP's should wait until the end of the construction project when upstream drainage areas have been stabilized.
- Do not remove the temporary perimeter controls until after all upstream areas are stabilized.

Four Step Process

The following four step process is recommended for selecting structural BMP's in developing urban areas:

Step 1: Employ Runoff Reduction Practices

This development incorporates wider rights-of-way than other developments, thus decreasing the amount area devoted to pavement. The rights-of-way within Meridian Ranch are 20% wider, 60 ft. instead of 50 ft., creating more landscaped area within the development.

The project has over ten acres of open space, accounting for over 20% of the entire project, creating a lower density development.

Home owners and builders are encouraged to direct roof drains to the sideyards where the runoff will travel overland to the streets and creating an opportunity to allow the runoff to infiltrate into the ground.

Step 2: Stabilize Drainageways

The drainage swale located adjacent and south of the project was designed to have a wide flat bottom and slope reducing the velocity of the concentrated flow traveling along the drainageway. The construction of the swale also included erosion control mat along the entire length of the swale. At steeper sections of the swale straw logs or rip-rap has been installed to reduce velocities and erosion.

Step 3: Provide Water Quality Capture Volume (WQCV)

An existing extended detention pond with water quality capture volume is located to the east of the project that was designed to accommodate the runoff from this development.

Step 4: Consider Need for Industrial and Commercial BMP's

This project is neither industrial nor commercial and therefore this section does not apply.

Temporary Sedimentation Pond

Temporary sedimentation ponds installed during the overlot grading process will act as the primary water quality control for the areas upstream. Runoff will travel overland toward the existing sedimentation ponds, collected and diverted into the proposed storm drain system and discharged into existing downstream systems. The pond will provide initial sediment control over exposed upstream areas.

Detention Pond

The detention ponds will act as the primary water quality control for the areas within the project boundaries. Runoff will be collected by the proposed storm drainage system and diverted into the detention pond where practical. The pond will serve a dual purpose: first, by facilitating the settling of sediment in runoff during and after construction (by means of the WQCV) and, second, by maintaining runoff at or below existing levels.

Silt Fence

Silt fence will be place along downstream limits of disturbed areas. This will prevent suspended sediment from leaving the site during infrastructure construction. Silt fencing is to remain in place until vegetation is reestablished.

Erosion Bales

Erosion bales will be placed ten (10) feet from the inlet of all culverts during construction to prevent culverts from filling with sediment. Erosion bales will remain in place until vegetation is reestablished. Erosion bale checks will be used on slopes greater than 1 percent to reduce flow velocities until vegetation is reestablished.

Miscellaneous

Best erosion control practices will be utilized as deemed necessary by the Contractor or Engineer and are not limited to the measures described above.

DRAINAGE FEES

The proposed Stonebridge Filing 4 development is located within three major drainage basins; the Bennett Ranch, the Haegler Ranch, and the Gieck Ranch Drainage Basins. Of the 68.9 acres of Stonebridge Filing 4, 32.5 acres fall within the Bennett Ranch Basin, 17.4 acres is located within the Haegler Ranch Basin, and 17.9 acres is located within the Gieck Ranch Basin. The Bennett Ranch portion includes 20.8 acres of residential development and 5.5 acres are designated as right-of-way, and 6.2 acres landscape tract. The portion within the Haegler Ranch includes 11.6 acres of residential development and 3.8 acres designated as right-of-way, and 2.0 acres landscape tract. See the calculation below.

The following is the imperviousness calculation:

BENNETT RANCH

	Acres	Assumed Imperviousness	Impervious Acres
Right-of-way	5.5	85%	4.7
Residential Lots	20.8	52%	10.8
Landscape Tract	6.2	5%	0.3
Total	32.5		26.7 = 48.6% imp.

Bennett Ranch

Drainage Basin Fees: 32.5 ac*$ 10,832/Ac*0.486 Imp Area = $ 171,091.00

Meridian Ranch holds Bridge Fee credits for the construction of the Stapleton Drive bridge constructed in 2007, these credits are to be applied against the bridge fee requirements associated with this project.

Bridge Fees:	32.5 ac*$ 4,155/Ac*0.486 Imp Area = $	65,282.00
Existing Credits:	$	-432,526.93
Bridge Fee Paid at Plat Recording:	$	0.00
Remaining Credits	$	-367,244.93

HAEGLER RANCH

	Acres	Assumed Imperviousness	Impervious Acres
Right-of-way	3.8	85%	3.2
Residential Lots	11.6	52% (73 Lots)	6.0
Landscape Tract	2.0	5%	0.1
Total	17.4		9.3 = 53.4% imp.

Pond H is identified in the approved Haegler Basin Planning Study as Sub-regional Detention Pond SR-01 and is reimbursable to developer after construction. Pond H was constructed as a part of WindingWalk Filing 1 and a final credit amount is yet to be determined at the writing of this report. If any credit is remaining from the construction of Pond H at the time of recordation of Stonebridge Filing 4, that credit will offset the calculated drainage basin fees listed below.

Haegler Ranch

Drainage Basin Fees:	17.4 ac*$ 9,676/Ac*0.534 Imp Area = $	89,906.00
Bridge Fees:	17.4 ac*$ 1,428/Ac*0.534 Imp Area = $	13,268.00

GIECK RANCH

There are no drainage or bridge fees associated with the Gieck Ranch Drainage Basin.

REFERENCES

1. "City of Colorado Springs/El Paso County Drainage Criteria Manual" September 1987, Revised November 1991, Revised October 1994.

2. Chapter 6, Hydrology and Chapter 11, Storage, Section 3.2.1 of the "City of Colorado Springs Drainage Criteria Manual" May 2014.

3. "Volume 2, El Paso County/City of Colorado Springs Drainage Criteria Manual-Stormwater Quality Policies, Procedures and Best Management Practices" November 1, 2002.

4. Flood Insurance Rate Study for El Paso County, Colorado and Incorporated Areas. Federal Emergency Management Agency, Revised March 17, 1997.

5. Soils Survey of El Paso County area, Natural Resources Conservation Services of Colorado.

6. Master Development Drainage Plan Meridian Ranch. August 2000. Prepared by URS Corp.

7. Revision to Master Development Drainage Plan Meridian Ranch. May 2015. Prepared by Tech Contractors.

8. Master Development Drainage Plan Latigo Trails. October 2001. Prepared by URS Corp.

9. Final Drainage Report for Meridian Ranch Filing 1. November 2001. Prepared by URS Corp.

10. Preliminary Drainage Plan for Meridian Ranch Phase II. September 2003. Prepared by URS.

11. Final Drainage Plan for The Trails Filing No.7. March 2005. Prepared by URS.

12. Final Drainage Report for Meridian Ranch Filing 3. August 2011. Prepared by Tech Contractors.

13. Preliminary and Final Drainage Report for Meridian Ranch Filing 7. June 2012. Prepared by Tech Contractors.

14. Final Drainage Report for Meridian Ranch Estates Filing 2. July 2013. Prepared by Tech Contractors.

15. Final Drainage Report for Meridian Ranch Filing 11A. March 2014. Prepared by Tech Contractors.

16. Preliminary and Final Drainage Report for Meridian Ranch Filing 8. December 2014. Prepared by Tech Contractors.

17. Preliminary and Final Drainage Report for Meridian Ranch Filing 4B. April 2014. Prepared by Tech Contractors.

18. Final Drainage Report for Stonebridge Filing 1 at Meridian Ranch. June 2014. Prepared by Tech Contractors.

19. Final Drainage Report for Meridian Ranch Filing 9. May 2015. Prepared by Tech Contractors.

20. Revision to Master Development Drainage Plan Meridian Ranch. July 2015. Prepared by Tech Contractors.

21. Final Drainage Report for Meridian Ranch Estates Filing 3. October 2015. Prepared by Tech Contractors.

22. Final Drainage Report for the Vistas Filing 1 at Meridian Ranch. July 2016. Prepared by Tech Contractors.

23. Final Drainage Report for Stonebridge Filing 2 at Meridian Ranch. September 2016. Prepared by Tech Contractors.

24. Final Drainage Report for Stonebridge Filing 3 at Meridian Ranch. April 2017. Prepared by Tech Contractors.

25. Interim Drainage Report for WindingWalk Grading. February 2018. Prepared by Tech Contractors.

26. Revision to Master Development Drainage Plan Meridian Ranch. January 2018. Prepared by Tech Contractors.

27. Preliminary Drainage Report for WindingWalk Filings 1 & 2 PUD and Final Drainage Report for WindingWalk Filing 1 at Meridian Ranch. April 2018. Prepared by Tech Contractors.

Appendices

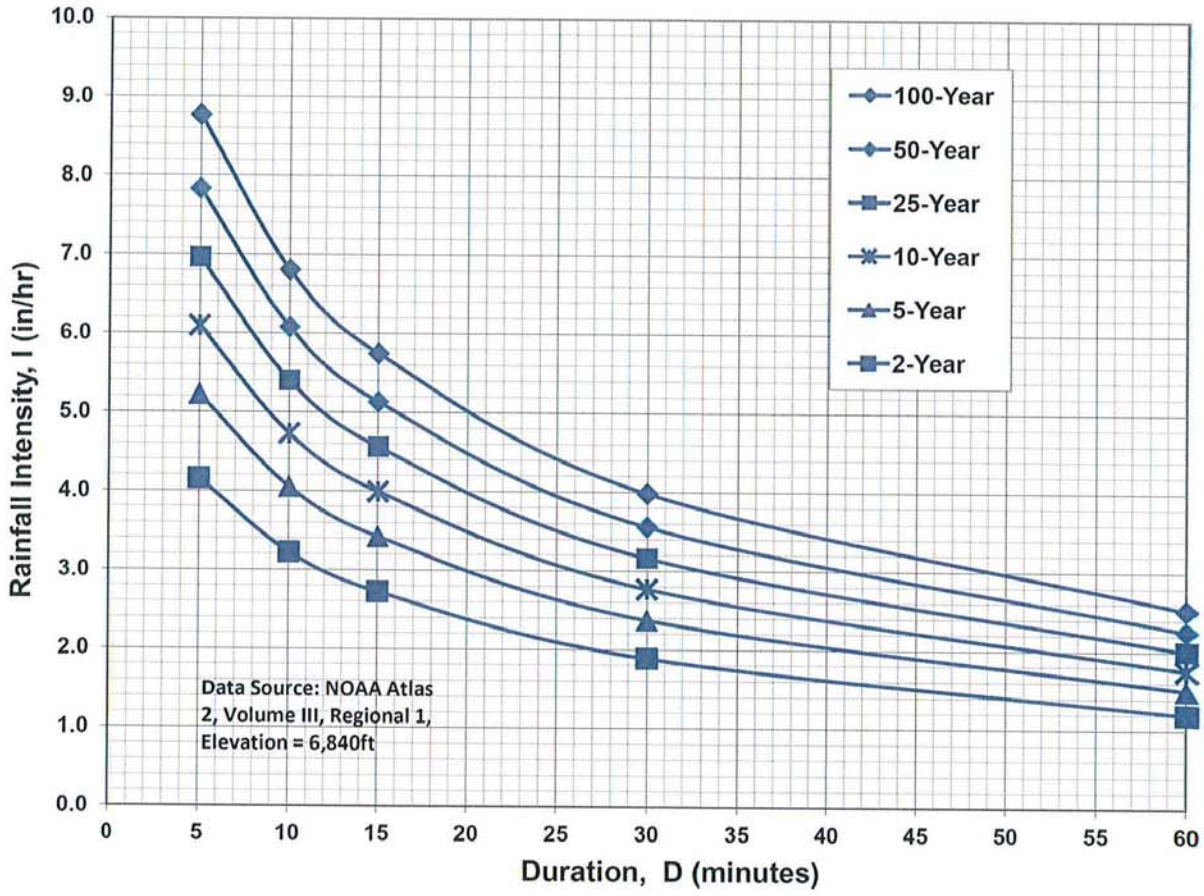
Appendix A – Rational Calculations

Table 6-6. Runoff Coefficients for Rational Method

(Source: UDFCD 2001)

Land Use or Surface Characteristics	Percent Impervious	Runoff Coefficients											
		2-year		5-year		10-year		25-year		50-year		100-year	
		HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D	HSG A&B	HSG C&D
Business													
Commercial Areas	95	0.79	0.80	0.81	0.82	0.83	0.84	0.85	0.87	0.87	0.88	0.88	0.89
Neighborhood Areas	70	0.45	0.49	0.49	0.53	0.53	0.57	0.58	0.62	0.60	0.65	0.62	0.68
Residential													
1/8 Acre or less	65	0.41	0.45	0.45	0.49	0.49	0.54	0.54	0.59	0.57	0.62	0.59	0.65
1/4 Acre	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
1/3 Acre	30	0.18	0.22	0.25	0.30	0.32	0.38	0.39	0.47	0.43	0.52	0.47	0.57
1/2 Acre	25	0.15	0.20	0.22	0.28	0.30	0.36	0.37	0.46	0.41	0.51	0.46	0.56
1 Acre	20	0.12	0.17	0.20	0.26	0.27	0.34	0.35	0.44	0.40	0.50	0.44	0.55
Industrial													
Light Areas	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Heavy Areas	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Parks and Cemeteries	7	0.05	0.09	0.12	0.19	0.20	0.29	0.30	0.40	0.34	0.46	0.39	0.52
Playgrounds	13	0.07	0.13	0.16	0.23	0.24	0.31	0.32	0.42	0.37	0.48	0.41	0.54
Railroad Yard Areas	40	0.23	0.28	0.30	0.35	0.36	0.42	0.42	0.50	0.46	0.54	0.50	0.58
Undeveloped Areas													
Historic Flow Analysis--Greenbelts, Agriculture	2	0.03	0.05	0.09	0.16	0.17	0.26	0.26	0.38	0.31	0.45	0.36	0.51
Pasture/Meadow	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Forest	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50
Exposed Rock	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Offsite Flow Analysis (when landuse is undefined)	45	0.26	0.31	0.32	0.37	0.38	0.44	0.44	0.51	0.48	0.55	0.51	0.59
Streets													
Paved	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Gravel	80	0.57	0.60	0.59	0.63	0.63	0.66	0.66	0.70	0.68	0.72	0.70	0.74
Drive and Walks	100	0.89	0.89	0.90	0.90	0.92	0.92	0.94	0.94	0.95	0.95	0.96	0.96
Roofs	90	0.71	0.73	0.73	0.75	0.75	0.77	0.78	0.80	0.80	0.82	0.81	0.83
Lawns	0	0.02	0.04	0.08	0.15	0.15	0.25	0.25	0.37	0.30	0.44	0.35	0.50

Figure 6-5. Colorado Springs Rainfall Intensity Duration Frequency



IDF Equations

$I_{100} = -2.52 \ln(D) + 12.735$

$I_{50} = -2.25 \ln(D) + 11.375$

$I_{25} = -2.00 \ln(D) + 10.111$

$I_{10} = -1.75 \ln(D) + 8.847$

$I_{5} = -1.50 \ln(D) + 7.583$

$I_{2} = -1.19 \ln(D) + 6.035$

Note: Values calculated by equations may not precisely duplicate values read from figure.

COMPOSITE 'C' FACTORS

PROJECT: **The Enclaves at Stonebridge Filing 4** 7/17/2018

BASIN LABEL	DEV.	AREA (AC.) UNDEV	6 DU/AC	STREETS	REC CENTER	OPEN SPACE PARKS/GC	TOTAL	COMPOSITE FACTOR 5-year	100-year	Percent Impervious
B01	**The Enclave (TE)**		1.9				1.9	**0.40**	**0.55**	**52.0%**
B02			1.9				1.9	**0.40**	**0.55**	**52.0%**
B03			4.4				4.4	**0.40**	**0.55**	**52.0%**
B04			7.4				7.4	**0.40**	**0.55**	**52.0%**
B05			2.5				2.5	**0.40**	**0.55**	**52.0%**
B06			2.8			3.0	5.8	**0.32**	**0.48**	**26.2%**
B18	**TE**		1.6			4.6	6.1	**0.28**	**0.44**	**14.8%**
B22	**S1**		3.9		1.3	6.4	11.6	**0.34**	**0.49**	**24.4%**
B23			4.0			5.8	9.8	**0.30**	**0.46**	**22.3%**
B24	**WW**		3.1			5.9	9.1	**0.30**	**0.46**	**19.3%**
H01	**The Enclave**		1.0				1.0	**0.40**	**0.55**	**52.0%**
H02			1.9	0.7		0.9	3.5	**0.45**	**0.59**	**47.9%**
H03			1.2	0.7	0.5	0.5	3.0	**0.54**	**0.66**	**55.7%**
H04			1.8	0.4		0.2	2.4	**0.46**	**0.60**	**55.3%**
H05			2.0				2.0	**0.40**	**0.55**	**52.0%**
H06			2.5				2.5	**0.40**	**0.55**	**52.0%**
H07			2.4	0.5		0.3	3.1	**0.46**	**0.60**	**54.9%**
H08			1.5			2.9	4.4	**0.29**	**0.46**	**19.1%**
H09			1.1			1.7	2.8	**0.30**	**0.46**	**21.4%**
H10	**Windi**		3.6	0.8		0.6	5.0	**0.46**	**0.59**	**53.8%**
H11			1.4	0.4		0.2	2.0	**0.48**	**0.61**	**56.0%**
G01	**TE**		2.7				2.7	**0.40**	**0.55**	**52.0%**
G02			4.4				4.4	**0.40**	**0.55**	**52.0%**
G03			1.2				1.2	**0.40**	**0.55**	**52.0%**
									Composite:	**42.9%**

TIME OF CONCENTRATION

SCS Calculations

PROJECT: **The Enclaves at Stonebridge Filing 4** DATE: 7/17/2018

TIME OF CONCENTRATION																	
			INIT./OVERLAND TIME (T_i)				TRAVEL TIME (T_t)							TOTAL	Tc Check (Urbanized Basins)		FINAL T_c
BASIN DESIGNATION	C_5	AREA (AC)	LENGTH (FT)	ΔH	SLOPE %	Ti (Min.)*	LENGTH (FT)	ΔH	SLOPE %	CONVEYANCE TYPE	CONVEYANCE COEF.	VEL. (FPS)	Tt(Min.)**	Ti+Tt(Min.)	L (FT)	Tc = (L/180) + 10	(min)
B01	0.40	1.9	40	0.8	2.0%	6.4	1110	12	1.1%	P	20	2.1	8.9	15.3	1150.00	16.4	**15.3**
B02	0.40	1.9	40	0.8	2.0%	6.4	977	11	1.1%	P	20	2.1	7.7	14.1	1017.00	15.7	**14.1**
B03	0.40	4.4	40	0.8	2.0%	6.4	795	23	2.9%	P	20	3.4	3.9	10.3	835.00	14.6	**10.3**
B04	0.40	7.4	40	0.8	2.0%	6.4	1022	13	1.3%	P	20	2.3	7.6	14.0	1062.00	15.9	**14.0**
B05	0.40	2.5	40	0.8	2.0%	6.4	1433	18	1.3%	P	20	2.2	10.7	17.1	1473.00	18.2	**17.1**
B06	0.32	5.8	100	8.0	8.0%	7.2	700	7	1.0%	B	10	1.0	11.7	18.8	800.00	14.4	**14.4**
B18	0.28	6.1	100	7.0	7.0%	7.8	660	15	2.3%	B	10	1.5	7.3	15.1	760.00	14.2	**14.2**
B22	0.34	11.6	100	7.0	7.0%	7.3	1140	19	1.7%	G	15	1.9	9.8	17.1	1240.00	16.9	**16.9**
B23	0.30	9.8	100	7.0	7.0%	7.6	1085	18	1.7%	G	15	1.9	9.4	17.0	1185.00	16.6	**16.6**
B24	0.30	9.1	100	7.0	7.0%	7.7	1900	35	1.8%	G	15	2.0	15.6	23.3	2000.00	21.1	**21.1**
H01	0.40	1.0	100	2.0	2.0%	10.2	370	14	3.8%	P	20	3.9	1.6	11.8	470.00	12.6	**11.8**
H02	0.45	3.5	100	2.0	2.0%	9.4	520	16	3.1%	P	20	3.5	2.5	11.9	620.00	13.4	**11.9**
H03	0.54	3.0	100	2.0	2.0%	8.1	850	13	1.5%	P	20	2.5	5.7	13.9	950.00	15.3	**13.9**
H04	0.46	2.4	15	0.3	2.0%	5.0	707	18	2.5%	P	20	3.2	3.7	8.7	722.00	14.0	**8.7**
H05	0.40	2.0	15	0.3	2.0%	5.0	606	9	1.5%	P	20	2.4	4.1	9.1	621.00	13.5	**9.1**
H06	0.40	2.5	15	0.3	2.0%	5.0	800	23	2.9%	P	20	3.4	3.9	8.9	815.00	14.5	**8.9**
H07	0.46	3.1	25	0.5	2.0%	5.0	764	22	2.9%	P	20	3.4	3.8	8.8	789.00	14.4	**8.8**
H08	0.29	4.4	100	6.0	6.0%	8.1	800	23	2.9%	B	10	1.7	7.9	16.0	900.00	15.0	**15.0**
H09	0.30	2.8	100	2.0	2.0%	11.6	455	8	1.8%	B	10	1.3	5.7	17.3	555.00	13.1	**13.1**
H10	0.46	5.0	100	2.0	2.0%	9.3	840	17	2.0%	P	20	2.8	4.9	14.2	940.00	15.2	**14.2**
H11	0.48	2.0	40	0.8	2.0%	5.7	810	14	1.7%	P	20	2.6	5.1	10.8	850.00	14.7	**10.8**
G01	0.40	2.7	15	0.3	2.0%	5.0	870	26	3.0%	P	20	3.5	4.2	9.2	885.00	14.9	**9.2**
G02	0.40	4.4	100	2.0	2.0%	10.2	1115	28	2.5%	P	20	3.2	5.9	16.0	1215.00	16.8	**16.0**
G03	0.40	1.2	40	0.8	2.0%	6.4	352	5	1.4%	P	20	2.4	2.5	8.9	392.00	12.2	**8.9**

Notes:

$$* Ti = \frac{* Ti = 0.395\,(1.1-C5)L^{0.5}}{S^{0.33}}$$

$V = C_V S_W^{0.5}$

** Tt = L x V

TYPE OF SURFACE		C_V
HEAVY MEADOW	H	2.5
TILLAGE/FIELD	T	5
RIPRAP (not buried)	R	6.5
SHORT PASTURE AND LAWNS	L	7
NEARLY BARE GROUND	B	10
GRASSED WATERWAY	G	15
PAVED AREAS	P	20

STORM DRAINAGE SYSTEM DESIGN
(RATIONAL METHOD PROCEDURE)
SURFACE ROUTING

PROJECT: **The Enclaves at Stonebridge Filing 4**

Date: 7/17/2018

	DIRECT RUNOFF											TOTAL RUNOFF							OVERLAND TRAVEL TIME						
				I (in./ hr.)		COEFF. ©		CA		Q			I (in./ hr.)		CA		Q								
DESIGN POINT	BASIN	AREA (AC)	Tc (Min.)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	Sum Tc (min.)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	**(5 YR)**	**(100 YR)**	DESTINATION DP	CONVEYANCE TYPE	COEFFICIENT C_V	SLOPE %	VEL. (FPS)	LENGTH (FT)	TRAVEL TIME Tt
I01	B01	1.9	15.3	3.49	5.85	0.40	0.55	0.75	1.03	2.6	6.0						**2.6**	**6.0**							
I02	B02	1.9	14.1	3.61	6.06	0.40	0.55	0.76	1.04	2.7	6.3						**2.7**	**6.3**	I04	P	20.0	1.30%	2.3	1072	7.8
I03	B03	4.4	10.3	4.08	6.85	0.40	0.55	1.76	2.40	7.2	16						**7.2**	**16**	I04	P	20.0	1.80%	2.7	163	1.0
I04	B04	7.4	22.0	2.95	4.95	0.40	0.55	2.96	4.03	8.7	20	22.0	2.95	4.95	3.13	4.59	**9.2**	**23**							
I05	B05	2.5	17.1	3.32	5.58	0.40	0.55	1.00	1.36	3.3	7.6						**3.3**	**7.6**							
CB01	B06	5.8	14.4	3.58	6.01	0.32	0.48	1.85	2.76	6.6	17						**6.6**	**17**							
DP05	H01	1.0	11.8	3.88	6.52	0.40	0.55	0.40	0.54	1.5	3.5						**1.5**	**3.5**	I20	P	20.0	1.20%	2.2	140	1.1
I20	H02	3.5	11.9	3.87	6.49	0.45	0.59	1.57	2.04	6.1	13	12.8	3.75	6.30	1.97	2.58	**7.4**	**16**	I23	P	20.0	3.10%	3.5	650	3.1
DP06	H03	3.0	13.9	3.64	6.11	0.54	0.66	1.60	1.96	5.8	12						**5.8**	**12**	I21	P	20.0	2.75%	3.3	618	3.1
I21	H04	2.4	8.7	4.34	7.29	0.46	0.60	1.10	1.42	4.8	10	17.0	3.34	5.60	2.70	3.38	**9.0**	**19**							
I22	H05	2.0	9.1	4.26	7.16	0.40	0.55	0.81	1.11	3.5	7.9						**3.5**	**7.9**							
DP07	H06	2.5	8.9	4.30	7.22	0.40	0.55	1.01	1.37	4.3	9.9						**4.3**	**9.9**	I23	P	20.0	1.00%	2.0	152	1.3
I23	H07	3.1	8.8	4.33	7.27	0.46	0.60	1.45	1.87	6.3	14	15.9	3.43	5.76	2.46	3.46	**8.4**	**20**	I25	P	20.0	3.30%	3.6	520	2.4
CB03	H08	4.4	15.0	3.52	5.91	0.29	0.46	1.30	2.01	4.6	12						**4.6**	**12**							
CB04	H09	2.8	13.1	3.73	6.26	0.30	0.46	0.84	1.28	3.1	8.0						**3.1**	**8.0**							
I24	H10	5.0	14.2	3.60	6.04	0.46	0.59	2.29	2.96	8.2	18						**8.2**	**18**	I29	P	20.0	2.50%	3.2	523	2.8
I25	H11	2.0	10.8	4.01	6.73	0.48	0.61	0.95	1.21	3.8	8.1	18.3	3.22	5.41	0.95	2.08	**3.8**	**11**							
CB02	B18	6.1	14.2	3.60	6.04	0.28	0.44	1.72	2.72	6.2	16						**6.2**	**16**							
DP01	B22	11.6	16.9	3.34	5.61	0.34	0.49	3.94	5.71	13	32						**13**	**32**	DP02	G	15.0	1.10%	1.6	921	9.8
DP02	B23	9.8	16.6	3.37	5.66	0.30	0.46	2.99	4.56	10	26	26.6	2.66	4.46	6.93	10.28	**18**	**46**	DP03	G	15.0	1.40%	1.8	1546	14.5
DP03	B24	9.1	21.1	3.01	5.05	0.30	0.46	2.68	4.14	8.1	21	41.2	2.01	3.37	9.61	14.42	**19**	**49**	DP04	G	15.0	1.40%	1.8	210	2.0
DP04	B25	1.5	11.3	3.95	6.64	0.32	0.48	0.50	0.74	2.0	4.9	43.1	1.94	3.25	15.28	22.23	**30**	**72**							
DP10	G01	2.7	9.2	4.26	7.14	0.40	0.55	1.08	1.47	4.6	11						**4.6**	**11**	I40	P	20.0	0.90%	1.9	143	1.3
I40	G02	4.4	16.0	3.42	5.74	0.40	0.55	1.74	2.38	6.0	14	16.0	3.42	5.74	2.82	3.85	**9.7**	**22**	I41	P	20.0	2.00%	2.8	15	0.1
I41	G03	1.2	8.9	4.30	7.23	0.40	0.55	0.49	0.66	2.1	4.8	16.1	3.41	5.73	0.49	1.42	**2.1**	**8.1**							
DP12	E02	18.1	43.4	1.93	3.23	0.30	0.46	5.48	8.38	11	27	43.4	1.93	3.23	8.92	12.89	**17**	**42**	DP13	G	15.0	4.50%	3.2	693	3.6

TYPE OF SURFACE		C_V
HEAVY MEADOW	H	3
TILLAGE/FIELD	T	5
RIPRAP (not buried)	R	7
SHORT PASTURE AND LAWNS	L	7
NEARLY BARE GROUND	B	10
GRASSED WATERWAY	G	15
PAVED AREAS	P	20

STORM DRAINAGE SYSTEM DESIGN
INLET CALCULATIONS

PROJECT: **The Enclaves at Stonebridge Filing 4** Date: 7/17/2018

							Q_{Total}		$Q_{Capture}$				$Q_{Flow-by}$				DEPTH (max)		SPREAD	
DP	Inlet size L(i)	Proposed or Existing	INLET TYPE	CROSS SLOPE	STREET SLOPE	T_c	Q_5 (cfs)	Q_{100} (cfs)	Q_5 (cfs)	Q_{100} (cfs)	CAeqv. (5-yr)	$CA_{eqv.}$ (100-yr)	Q_5 (cfs)	Q_{100} (cfs)	CAeqv. (5-yr)	$CA_{eqv.}$ (100-yr)	Q_5 (cfs)	Q_{100} (ft)	Q_5 (cfs)	Q_{100} (ft)
I01	5	PROP	SUMP	2.0%		15.3	2.6	6.0	2.6	6.0	0.75	1.03	-	-	-	-	0.50	0.50		
I02	10	PROP	FLOW-BY	2.0%	0.5%	14.1	2.7	6.3	2.1	4.2	0.59	0.70	0.6	2.1	0.17	0.34	0.32	0.41	12.0	16.3
I03	15	PROP	SUMP[1]	2.0%		10.3	7.2	16	7.2	15	1.76	2.18	-	1.5	-	0.22	0.40	0.50		
I04	15	PROP	SUMP	2.0%		22.0	9.2	23	9.2	23	3.13	4.59	-	-	-	-	0.50	0.70		
I05	10	PROP	SUMP	2.0%		17.1	3.3	7.6	3.3	7.6	1.00	1.36	-	-	-	-	0.50	0.70		
EX CB01	Type C	PROP	SUMP	2.0%		14.4	6.6	17	6.6	17	1.85	2.76	-	-	-	-	0.46	0.68		
EX CB02	Type C	PROP	SUMP	2.0%		14.2	6.2	16	6.2	16	1.72	2.72	-	-	-	-	0.45	0.68		
I20	15	PROP	SUMP[1]	2.0%		12.8	7.4	16	7.4	15	1.97	2.37	-	1.3	-	0.21	0.50	0.50		
I21	20	PROP	SUMP[1]	2.0%		17.0	9.0	19	9.0	19	2.70	3.38	-	-	-	-	0.50	0.50		
I22	10	PROP	SUMP	2.0%		9.1	3.5	7.9	3.5	7.9	0.81	1.11	-	-	-	-	0.50	1.00		
I23	15	PROP	SUMP[1]	2.0%		15.9	8.4	20	8.4	15	2.46	2.59	-	5.0	-	0.87	0.50	0.50		
CB03	Type C	PROP	SUMP	2.0%		15.0	4.6	12	4.6	12	1.30	2.01	-	-	-	-	0.40	0.59		
CB04	Type C	PROP	SUMP	2.0%		13.1	3.1	8.0	3.1	8.0	0.84	1.28	-	-	-	-	0.32	0.50		
I24	10	PROP	SUMP[1]	2.0%		14.2	8.2	18	8.2	11	2.29	1.81	-	7.0	-	1.15	0.50	0.50		
I25	10	PROP	SUMP[1]	2.0%		18.3	3.8	11	3.8	11	1.18	2.02	-	0.3	-	0.06	0.50	0.50		
I40	10	PROP	SUMP	2.0%		16.0	9.7	22	9.7	18	2.82	3.09	-	4.3	-	0.76	0.50	0.70		
I41	10	PROP	SUMP	2.0%		16.1	2.1	8.1	2.1	8.1	0.61	1.42	-	-	-	-	0.50	0.70		

[1] Forced sump at intersection

STORM DRAINAGE SYSTEM DESIGN
(RATIONAL METHOD PROCEDURE)
PIPE ROUTING

PROJECT: **The Enclaves at Stonebridge Filing 4** Date: 7/17/2018

UPSTREAM DESIGN POINT	UPSTREAM BASIN	INLET FLOW							SYSTEM FLOW							TRAVEL TIME						
			I (in./ hr.)		CA		Q			I (in./ hr.)		CA		Q								
		Tc (Min.)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	Sum Tc (min.)	(5 YR)	(100 YR)	(5 YR)	(100 YR)	**(5 YR)**	**(100 YR)**	PIPE DIA	ROUGHNESS (n)	DESTINATION DP	SLOPE %	LENGTH (FT)	VEL. (FPS) (Estimate)*	TRAVEL TIME Tt
I01	B01	15.3	3.49	5.85	0.75	1.03	2.6	6.0						**2.6**	**6.0**	18	0.013	J01	0.90%	33	6	0.1
I02	B02	14.1	3.61	6.06	0.59	0.70	2.1	4.2						**2.1**	**4.2**	18	0.013	J01	1.40%	24	7	0.1
J01									15.4	3.48	5.84	1.34	1.72	**4.7**	**10**	18	0.013	J02	3.34%	297	11	0.5
J02									15.9	3.43	5.77	1.34	1.72	**4.6**	**10**	18	0.013	J02	0.81%	285	5	0.9
J03									16.8	3.35	5.63	1.34	1.72	**4.5**	**10**	24	0.013	J05	0.55%	487	5	1.5
I03	B03	10.3	4.08	6.85	1.76	2.18	7.2	15						**7.2**	**15**	18	0.013	J04	1.04%	48	6	0.1
J04									10.5	4.06	6.82	1.76	2.18	**7.1**	**15**	24	0.013	J05	1.85%	127	10	0.2
I04	B04	22.0	2.95	4.95	3.13	4.59	9.2	23						**9.2**	**23**	18	0.013	J05	1.93%	5	8	0.0
J05									22.0	2.95	4.95	6.24	8.50	**18**	**42**	24	0.013	I05	7.55%	25	20	0.0
I05	B05	17.1	3.32	5.58	1.00	1.36	3.3	7.6	22.0	2.95	4.95	7.24	9.86	**21**	**49**	24	0.013	J06	5.71%	147	17	0.1
J06									22.1	2.94	4.93	7.24	9.86	**21**	**49**	30	0.013	CB01	1.08%	102	9	0.2
EX CB01	B06	14.4	3.58	6.01	1.85	2.76	6.6	17	22.3	2.92	4.91	9.08	12.62	**27**	**62**	36	0.013	I06	1.62%	160	12	0.2
EX CB02	B18	14.2	3.60	6.04	1.72	2.72	6.2	16						**6.2**	**16**	24	0.013	J17	1.00%	180	7	0.4
I20	H02	12.8	3.75	6.30	1.97	2.37	7.4	15						**7.4**	**15**	18	0.013	J22	1.00%	65	6.0	0.2
J22									13.0	3.73	6.27	1.97	2.37	**7.3**	**15**	18	0.013	J23	3.69%	330	11.4	0.5
J23									13.5	3.68	6.18	1.97	2.37	**7.2**	**15**	18	0.013	J24	3.82%	234	11.6	0.3
I22	H07	15.9	3.43	5.76	2.46	2.59	8.4	15						**8.4**	**15**	24	0.013	J24	1.08%	32	7.5	0.1
J24									16.0	3.43	5.75	4.43	4.96	**15**	**29**	24	0.013	J26	2.91%	105	12.3	0.1
I20	H04	17.0	3.34	5.60	2.70	3.38	9.0	19						**9.0**	**19**	24	0.013	J25A	1.03%	183	7.3	0.4
J25A									17.4	3.30	5.54	2.70	3.38	**8.9**	**19**	24	0.013	I22	3.32%	344	13.2	0.4
I21	H05	9.1	4.26	7.16	0.81	1.11	3.5	7.9	17.8	3.26	5.48	3.52	4.49	**11**	**25**	24	0.013	J25B	4.97%	178	16	0.2
J25B									18.0	3.25	5.45	3.52	4.49	**11**	**24**	24	0.013	J26	1.00%	100	7	0.2
J26									18.2	3.23	5.42	7.94	9.45	**26**	**51**	30	0.013	J27	4.13%	216	17	0.2
CB03	H08	15.0	3.52	5.91	1.30	2.01	4.6	12						**4.6**	**12**	18	0.013	J27	0.99%	71	6	0.2
CB04	H09	13.1	3.73	6.26	0.84	1.28	3.1	8.0						**3.1**	**8.0**	18	0.013	J27	1.38%	51	7	0.1
J27									18.4	3.21	5.39	10.08	12.74	**32**	**69**	42	0.013	J28	3.10%	158	18	0.1
I24	H10	14.2	3.60	6.04	2.29	1.81	8.2	11						**8.2**	**11**	18	0.013	J28	1.04%	53	6	0.1
I25	H11	18.3	3.22	5.41	1.18	2.02	3.8	11						**3.8**	**11**	18	0.013	J28	1.68%	33	8	0.1
J28									18.6	3.20	5.37	13.55	16.57	**43**	**89**	42	0.013	J29	3.43%	264	19	0.2
I40	G02	16.0	3.42	5.74	2.82	3.09	9.7	18						**9.7**	**18**	18	0.013	I41	0.99%	35	6	0.1
I41	G03	16.1	3.41	5.73	0.61	1.42	2.1	8.1	16.1	3.41	5.73	3.44	4.51	**12**	**26**	24	0.013	J36	2.62%	193	12	0.3
J33									16.4	3.39	5.68	3.44	4.51	**12**	**26**	24	0.013	OS5	1.00%	114	7	0.3

* Velocity estimated for calculation of travel time. Refer to Hydraulics for calculated velocity.

STORM DRAINAGE SYSTEM DESIGN
HYDRAULICS

PROJECT: **The Enclaves at Stonebridge Filing 4** Date: 7/17/2018

Label	Upstrm Node	Dnstrm Node	Intlet CA (acres)	Inlet Tc (min)	Inlet Flow (ft³/s)	System CA (acres)	System Flow Time (min)	System Intensity (in/hr)	Length (ft)	Section Size (in)	Slope (%)	Capacity (Full Flow) (ft³/s)	System Flow (ft³/s)	Velocity (Ave) (ft/s)	Elevation Ground (Upstrm) (ft)	Hydraulic Grade Line (Upstrm) (ft)	Invert (Upstrm) (ft)	Elevation Ground (Dnstrm) (ft)	Hydraulic Grade Line (Dnstrm) (ft)	Invert (Dnstrm) (ft)
P01	I01	J01	1.03	15.3	6	1.03	15.3	5.86	34	18	0.90%	10	6.1	3.9	7061.73	7058.3	7057.20	7061.16	7058.3	7056.90
P02	I02	J01	0.70	14.1	4	0.70	14.1	6.07	24	18	1.40%	13	4.3	2.9	7061.76	7058.3	7057.25	7061.16	7058.3	7056.90
P03	J01	J02				1.73	15.4	5.84	297	18	3.40%	19	10	11	7061.16	7058.1	7056.90	7051.06	7048.3	7046.90
P04	J02	J03				1.73	15.9	5.76	285	18	0.80%	9	10	6.1	7051.06	7048.3	7046.90	7048.74	7045.8	7044.60
P05	J03	J05				1.73	16.7	5.64	487	24	0.60%	17	10	4.4	7048.74	7045.2	7044.10	7046.29	7043.8	7041.40
P08	I04	J05	4.59	22.0	23	4.59	22.0	4.95	5.2	18	1.90%	15	23	13	7046.52	7044.3	7042.00	7046.29	7044.0	7041.90
P07	J04	J05				2.18	10.4	6.84	127	24	1.90%	31	15	6.7	7048.77	7045.2	7043.75	7046.29	7044.0	7041.40
P06	I03	J04	2.18	10.3	15	2.18	10.3	6.86	48	18	1.00%	11	15	8.5	7049.27	7046.7	7044.75	7048.77	7045.7	7044.25
P08A	J05	I05				8.50	22.0	4.95	25	24	7.50%	62	42	14	7046.29	7043.4	7041.40	7046.52	7042.2	7039.50
P09	I05	J06	1.36	17.1	8	9.86	22.0	4.94	147	24	5.70%	54	49	16	7046.52	7041.5	7039.50	7038.50	7034.3	7031.10
P10	J06	CB01				9.86	22.2	4.92	102	30	1.50%	50	49	10	7038.50	7033.4	7030.60	7033.00	7031.9	7029.10
P11	CB01	I06	2.76	14.4	17	12.62	22.4	4.90	160	36	1.40%	78	62	11	7033.00	7031.1	7028.60	7032.48	7029.3	7026.40
P12	I06	J07	1.82	14.9	11	14.44	22.6	4.88	296	36	3.10%	118	71	15	7032.48	7029.1	7026.40	7024.03	7020.5	7017.15
P13	I07	J07	1.73	10.5	12	1.73	10.5	6.81	45	18	1.00%	10	12	6.7	7023.64	7021.2	7019.10	7024.03	7020.6	7018.65
P14	J07	J08				16.17	22.9	4.84	332	36	1.20%	73	79	11	7024.03	7020.5	7017.15	7019.13	7016.0	7013.20
P15	I08	J08	1.32	10.6	9	1.32	10.6	6.79	5	18	1.90%	15	9.0	5.1	7019.34	7016.6	7014.80	7019.13	7016.6	7014.70
P16	J08	J09				17.49	23.4	4.79	57	42	1.10%	103	84	10	7019.13	7015.6	7012.70	7018.80	7015.3	7012.10
P17	J09	J10				17.49	23.5	4.78	305	42	2.80%	169	84	16	7018.80	7015.0	7012.10	7009.71	7006.5	7003.50
P18	J10	J15				17.49	23.8	4.74	205	42	1.90%	137	84	9.9	7009.71	7006.4	7003.50	7006.80	7004.5	6999.70
P29	I14	J16	1.57	13.4	10	1.57	13.4	6.20	33	18	1.90%	15	9.8	5.6	7006.01	7004.4	7001.50	7005.99	7004.1	7000.86
P28	I13	J16	3.04	13.2	19	3.04	13.2	6.23	21	24	2.30%	34	19	6.1	7005.85	7004.3	7000.85	7005.99	7004.1	7000.36
P26	J14	J15				9.08	16.4	5.69	113	36	0.90%	63	52	7.4	7009.00	7005.4	7001.20	7006.80	7004.7	7000.20
P25	I12	J14	1.97	13.5	12	9.08	16.2	5.72	166	30	4.20%	84	52	14	7015.46	7010.9	7008.60	7009.00	7005.5	7001.70
P24	J13	I12				7.11	16.2	5.72	25	24	2.80%	38	41	13	7015.22	7012.2	7009.80	7015.46	7011.4	7009.10
P23	I11	J13	3.12	13.4	19	3.12	13.4	6.20	5	18	1.90%	15	19	11	7015.46	7013.1	7010.40	7015.22	7012.9	7010.30
P22	J12	J13				1.77	14.1	6.07	76	18	1.10%	11	11	6.1	7015.90	7013.5	7011.10	7015.22	7012.7	7010.30
P21	I10	J12	1.77	13.9	11	1.77	13.9	6.10	58	18	1.00%	11	11	6.2	7016.22	7014.6	7011.70	7015.90	7014.0	7011.10
P21	I10	J12	1.77	13.9	11	1.77	13.9	6.10	58	18	1.00%	11	11	6.2	7016.22	7014.6	7011.70	7015.90	7014.0	7011.10
P20	J11	J13				2.22	15.4	5.84	334	18	1.60%	13	13	7.4	7020.34	7018.1	7015.70	7015.22	7012.9	7010.30
P19	I09	J11	2.22	15.3	13	2.22	15.3	5.86	48	18	1.00%	11	13	7.4	7020.73	7019.7	7016.20	7020.34	7018.9	7015.70
P30	J16	EJ16				31.18	24.3	4.69	153	48	1.00%	145	148	12	7005.99	7003.8	6998.36	7006.30	7002.2	6996.80
P32	EI16	EJ16	1.13	12.7	7	2.71	12.9	6.30	100	30	1.60%	52	17	4.0	7009.12	7004.1	7002.70	7006.30	7004.2	7001.10
P31	EI15	EI16	1.58	12.6	10	1.58	12.6	6.35	108	24	1.10%	24	10	6.9	7009.20	7005.5	7004.37	7009.12	7004.4	7003.20
P33	EJ16	EJ17				33.89	24.5	4.67	343	48	1.30%	161	160	13	7006.30	7001.9	6996.50	6999.14	6997.7	6992.20
P34	EJ17	EJ18				33.89	25.0	4.63	120	48	0.50%	102	158	13	6999.14	6997.4	6992.00	6997.94	6995.9	6991.40
P35	EI17	EJ18	1.81	15.8	11	1.81	15.8	5.78	12	24	1.30%	26	11	3.4	6998.25	6996.1	6992.91	6997.94	6996.1	6992.75
P36	EI18	EJ18	1.21	12.5	8	1.21	12.5	6.37	32	24	0.50%	16	7.8	2.5	6998.25	6996.1	6992.91	6997.94	6996.1	6992.75
P37	EJ18	EJ19				36.91	25.1	4.61	342	54	0.50%	139	171	11	6997.94	6995.9	6990.40	6999.33	6993.3	6988.69
P38	EJ19	OS1				36.91	25.7	4.56	96	54	2.10%	287	170	14	6999.33	6992.2	6988.40	6999.00	6990.9	6986.36
P53	I21	J25A	3.38	17.0	19	3.38	17.0	5.60	183	24	1.00%	23	19	8.1	7056.10	7052.7	7051.10	7054.38	7050.8	7049.20
P48	I20	J22	2.37	12.8	15	2.37	12.8	6.31	65	18	1.00%	11	15	8.5	7057.79	7055.9	7053.25	7057.29	7054.6	7052.60
P50	J23	J24				2.37	13.4	6.20	234	18	3.80%	21	15	12	7044.71	7041.9	7040.45	7036.79	7033.1	7031.50
P54	J25A	I22				3.38	17.4	5.54	344	24	3.30%	41	19	12	7054.38	7050.8	7049.20	7045.74	7039.9	7037.80
P55	I22	J25B	1.11	9.1	8	4.49	17.9	5.47	178	24	5.00%	50	25	13	7045.74	7039.6	7037.80	7035.00	7031.9	7028.95
P56	J25B	J26				4.49	18.1	5.44	100	24	1.00%	23	25	7.8	7035.00	7031.5	7028.95	7034.44	7030.3	7027.95
P52	J24	J26				4.96	16.0	5.75	105	24	2.90%	39	29	12	7036.79	7032.8	7031.00	7034.44	7030.1	7027.95
P51	I23	J24	2.59	15.9	15	2.59	15.9	5.76	32	24	1.10%	24	15	4.8	7036.38	7033.4	7031.35	7036.79	7033.3	7031.00
P57	J26	J27				9.45	18.3	5.41	216	30	4.10%	83	52	16	7034.44	7029.8	7027.45	7024.54	7020.0	7018.55
P59	CB04	J27	1.28	13.1	8	1.28	13.1	6.25	51	18	1.40%	12	8.1	6.3	7023.00	7021.4	7020.25	7024.54	7021.0	7019.55

Label	Upstrm Node	Dnstrm Node	Intlet CA (acres)	Inlet Tc (min)	Inlet Flow (ft³/s)	System CA (acres)	System Flow Time (min)	System Intensity (in/hr)	Length (ft)	Section Size (in)	Slope (%)	Capacity (Full Flow) (ft³/s)	System Flow (ft³/s)	Velocity (Ave) (ft/s)	Elevation Ground (Upstrm) (ft)	Hydraulic Grade Line (Upstrm) (ft)	Invert (Upstrm) (ft)	Elevation Ground (Dnstrm) (ft)	Hydraulic Grade Line (Dnstrm) (ft)	Invert (Dnstrm) (ft)
P58	CB03	J27	2.01	15.0	12	2.01	15.0	5.91	71	18	1.00%	10	12	6.8	7023.00	7021.9	7020.25	7024.54	7021.0	7019.55
P60	J27	J28				12.74	18.5	5.38	158	42	3.10%	177	69	14	7024.54	7020.2	7017.55	7020.13	7015.7	7012.65
P62	I25	J28	2.02	18.3	11	2.02	18.3	5.41	33	18	1.70%	14	11	6.2	7019.71	7017.1	7015.20	7020.13	7016.7	7014.65
P61	I24	J28	1.81	14.2	11	1.81	14.2	6.05	53	18	1.00%	11	11	6.3	7019.71	7017.3	7015.20	7020.13	7016.7	7014.65
P63	J28	J29				16.57	18.7	5.35	264	42	3.40%	186	89	16	7020.13	7015.6	7012.65	7011.65	7006.9	7003.60
P65	I27	J29	1.47	14.9	9	3.36	14.9	5.93	192	24	3.10%	40	20	9.8	7017.49	7012.6	7011.00	7011.65	7008.3	7005.10
P64	I26	I27	1.89	14.8	11	1.89	14.8	5.95	35	18	4.20%	22	11	9.7	7017.49	7014.3	7013.00	7017.49	7012.4	7011.50
P66	J29	J30				19.93	19.0	5.32	90	42	1.80%	134	107	13	7011.65	7006.7	7003.60	7009.38	7005.4	7002.00
P67	I28	J30	1.86	9.5	13	1.86	9.5	7.06	33	18	1.40%	12	13	7.5	7008.96	7007.5	7004.45	7009.38	7007.0	7004.00
P68	J30	J31				21.79	19.1	5.30	169	42	2.00%	141	116	15	7009.38	7005.2	7002.00	7006.72	7001.2	6998.70
P69	I29	J31	3.39	17.0	19	3.39	17.0	5.60	28	24	5.90%	55	19	6.8	7006.86	7003.4	7001.85	7006.72	7003.1	7000.20
P70	J31	J32				25.18	19.3	5.28	249	48	1.40%	172	134	14	7006.72	7001.7	6998.20	7003.17	6998.3	6994.65
P71	I30	J32	1.73	12.8	11	1.73	12.8	6.31	45	18	2.40%	16	11	6.2	7002.77	7000.2	6998.25	7003.17	6999.7	6997.15
P72	J32	J33				26.91	19.6	5.24	303	48	3.10%	251	142	17	7003.17	6998.2	6994.65	6993.93	6990.2	6985.40
P73	I31	J33	3.16	14.5	19	3.16	14.5	6.00	25	24	6.80%	59	19	6.1	6994.14	6992.1	6989.10	6993.93	6992.0	6987.40
P74	J33	J34				30.07	19.9	5.20	48	48	3.10%	254	158	13	6993.93	6990.0	6985.40	6994.04	6989.4	6983.90
P75	J34	J35				30.07	19.9	5.19	387	48	2.60%	230	157	15	6994.04	6987.6	6983.90	6984.19	6980.3	6974.00
P77	I33	J35	2.05	17.9	11	2.05	17.9	5.47	24	18	9.90%	33	11	8.2	6984.42	6980.2	6978.90	6984.19	6979.0	6976.50
P78	J35	I34				33.98	20.4	5.14	5	54	3.00%	343	176	11	6984.19	6978.8	6973.50	6984.42	6978.7	6973.35
P79	I34	OS3	3.34	20.2	17	37.32	20.4	5.14	209	54	0.60%	158	193	12	6984.42	6978.5	6973.35	6977.00	6976.5	6972.00
P76	I32	J35	1.86	15.2	11	1.86	15.2	5.88	312	24	1.60%	29	11	5.1	6986.06	6982.2	6981.05	6984.19	6980.3	6976.00
P80	I40	I41	3.09	16.0	18	3.09	16.0	5.75	35	18	1.00%	10	18	10	7033.44	7031.1	7028.90	7033.44	7030.1	7028.55
P81	I41	J36	1.42	16.1	8	4.51	16.1	5.73	193	24	2.60%	37	26	10	7033.44	7029.8	7028.05	7028.50	7026.0	7023.00
P82	J36	OS5				4.51	16.4	5.68	114	24	1.00%	23	26	8.2	7028.50	7025.3	7023.00	7025.00	7023.8	7021.80
P83	I42	I43	2.59	10.3	18	2.59	10.3	6.86	35	18	6.70%	27	18	13	7006.70	7002.2	7000.70	7006.70	6999.4	6998.35
P84	I43	J37	2.1	16.7	12	4.69	16.7	5.64	188	24	2.70%	37	27	12	7006.70	6999.65	6997.85	6997.36	6994.0	6992.75
P91	EI04	EJ04	2.89	13.7	18	26.92	47.5	3.01	296	42	1.00%	100	82	11	6987.67	6983.7	6980.90	6985.47	6981.4	6977.95
P92	EI05	EJ04	2.82	17.0	16	2.82	17.0	5.60	24	18	3.60%	20	16	9.0	6985.37	6982.5	6980.80	6985.47	6982.0	6979.95
P93	EJ04	EJ06				29.74	47.9	2.98	226	42	1.10%	105	89	11	6985.47	6980.9	6977.95	6983.66	6979.1	6975.50
P96	EJ05	EJ06				10.67	25.5	4.57	56	36	1.80%	90	49	7.1	6983.04	6979.5	6977.00	6983.66	6979.4	6976.00
P94	EI06	EJ05	6.2	21.8	31	6.20	21.8	4.97	25	24	1.00%	23	31	9.9	6983.27	6980.7	6978.25	6983.04	6980.2	6978.00
P97	EJ06	EOS2				40.41	48.3	2.97	165	48	1.50%	177	121	13	6983.66	6978.3	6975.00	6978.00	6976.5	6972.50
P85	J37	J38				4.69	17.0	5.60	490	30	1.00%	41	26	8.9	6997.36	6994.0	6992.25	6992.38	6989.0	6987.25
P87	DP13	I44	15.73	47.1	48	15.73	47.1	3.03	33	42	1.20%	110	48	8.8	6991.80	6987.3	6985.10	6991.47	6987.0	6984.70
P88	I44	J39	2.49	9.6	18	18.22	47.2	3.02	14	42	1.10%	105	56	7.4	6991.47	6987.0	6984.70	6991.41	6987.3	6984.55
P86	J38	J39				4.69	17.9	5.47	124	30	1.40%	48	26	8.1	6992.38	6989.0	6987.25	6991.41	6988.0	6985.55
P95	EI07	EJ05	4.47	25.5	21	4.47	25.5	4.57	5	24	5.30%	52	21	6.6	6983.27	6980.2	6978.25	6983.04	6980.2	6978.00
P89	J39	I45				22.91	47.2	3.02	34	42	1.00%	103	70	9.8	6991.41	6987.2	6984.55	6991.47	6987.0	6984.20
P90	I45	EI04	1.12	11.2	8	24.03	47.3	3.02	165	42	2.00%	142	73	12.8	6991.47	6986.9	6984.20	6987.67	6983.9	6980.90
P27	J15	J16				26.57	24.2	4.71	85	48	1.00%	143	126	10.0	7006.80	7004.5	6999.20	7005.99	7003.8	6998.36
P39	CB02	J17	2.72	14.2	17	2.72	14.2	6.05	180	24	1.00%	23	17	7.3	7035.50	7033.7	7032.25	7036.59	7032.4	7030.45
P40	J17	J18				2.72	14.6	5.98	116	24	1.00%	23	16	7.6	7036.59	7031.9	7030.45	7036.00	7030.9	7029.30
P41	I17	J18	1.79	13.9	11	1.79	13.9	6.10	5	18	1.90%	15	11	7.4	7036.22	7031.2	7029.90	7036.00	7030.9	7029.80
P42	J18	J19				4.51	14.9	5.93	38	30	1.00%	42	27	7.2	7036.00	7030.6	7028.80	7035.92	7030.5	7028.40
P43	J19	J20				4.51	15.0	5.92	107	30	1.00%	42	27	8.6	7035.92	7030.2	7028.40	7034.26	7029.1	7027.30
P44	J20	J21				4.51	15.2	5.88	489	30	0.70%	35	27	6.9	7034.26	7029.1	7027.30	7029.57	7026.6	7023.80
P45	I18	J21	2.13	19.4	11	2.13	19.4	5.26	5	18	9.60%	33	11	8.7	7029.79	7026.5	7025.25	7029.57	7025.7	7024.80
P46	J21	I19				6.64	19.4	5.26	25	30	1.20%	45	35	8.3	7029.57	7025.8	7023.80	7029.79	7025.8	7023.50
P47	I19	OS2	1.16	19.5	6	7.80	19.5	5.25	159	30	2.20%	61	41	11.8	7029.79	7025.7	7023.50	7025.00	7022.5	7020.00
P98	I35	I36	2.37	21.6	12	2.37	21.6	4.99	53	18	1.00%	11	12	6.9	6998.91	6995.9	6994.40	6998.91	6995.2	6993.85
P99	I36	OS4	0.79	8.7	6	3.16	21.7	4.98	52	24	1.10%	23	16	5.5	6998.91	6994.8	6993.35	6996.00	6994.8	6992.80
P49	J22	J23				2.37	12.9	6.29	330	18	3.70%	20	15	12.1	7057.29	7054.0	7052.60	7044.71	7041.9	7040.45

Appendix B - HEC-HMS Data

Input Data

The Enclaves at Stonebridge Filing 4

BASIN	AREA (acre)	AREA (mi^2)	CURVE NO.	PERCENT IMPERV.	LAG TIME (min)	
HISTORIC						
OS01	998	1.5594	62.9	0%	35.5	◆◆
OS02	142	0.2219	64.5	13%	25.5	◆◆
OS03	127	0.1984	63.2	8%	23.6	◆◆
OS04	87	0.1359	61.0	0%	21.4	◆◆
HB01	15	0.0234	61.0	0%	12.6	◆◆
HB02	68	0.1063	61.0	0%	16.2	◆◆
HB03	81	0.1266	61.0	0%	13.2	◆◆
HB04	39	0.0609	61.0	0%	14.4	◆◆
HB05	88	0.1375	61.0	0%	15.6	◆◆
HB06	105	0.1641	61.0	0%	18.0	◆◆
HB07	20	0.0313	61.0	0%	10.2	◆◆
HB08	86	0.1344	61.0	0%	21.6	◆◆
HB09	195	0.3047	61.0	0%	33.0	◆◆
HB10	195	0.3047	61.0	0%	24.0	◆◆
HB12	51	0.0797	61.0	0%	18.0	◆◆
B-11	72	0.1125	61.0	0%	25.8	◆◆
B-13	180	0.2813	61.0	0%	33.0	◆◆
B-14	259	0.4039	61.0	0%	34.2	◆◆
B-15	48	0.0750	61.0	0%	27.0	◆◆
OS05	37	0.0578	61.0	0%	15.2	◆◆
OS06	84	0.1313	61.0	0%	18.7	◆◆
OS07	21	0.0328	63.1	7%	15.4	◆◆
OS08	26	0.0406	65.7	17%	15.9	◆◆
OS09	99	0.1547	65.0	0%	29.5	◆◆
OS10	152	0.2375	65.0	0%	27.9	◆◆
OS11	64	0.1000	64.1	3%	30.0	◆◆
HG01	35	0.0547	61.0	0%	19.6	◆◆
HG02	58	0.0906	61.0	0%	25.4	◆◆
HG03	117	0.1828	61.1	0%	33.8	◆◆
HG04	57	0.0891	61.0	0%	30.7	◆◆
HG05	72	0.1125	61.0	0%	31.8	◆◆
HG06A	88	0.1375	61.0	0%	43.2	◆◆
HG06B	66	0.1031	61.0	0%	49.5	◆◆
HG07	63	0.0984	61.0	0%	28.3	◆◆
HG08	85	0.1328	61.0	0%	22.9	◆◆
HG09	114	0.1781	61.0	0%	35.6	◆◆
HG10	88	0.1375	61.0	0%	61.4	◆◆
HG11	131	0.2047	61.0	0%	40.4	◆◆
HG12	83	0.1297	61.0	0%	32.0	◆◆
HG13	54	0.0844	63.1	7%	21.2	◆◆
HG14	147	0.2297	61.0	0%	45.1	◆◆
HG15	164	0.2563	61.0	0%	65.1	◆◆
HG17	85	0.1328	61.9	2%	29.9	◆◆
HG18	21	0.0328	61.0	0%	14.1	◆◆
HG19	3	0.0047	61.0	0%	6.1	◆◆
HG20	1	0.0016	61.0	0%	6.9	◆◆
HG21	14	0.0219	61.0	0%	13.8	◆◆
HH01	63	0.0984	61.0	0%	16.6	◆◆

✧	From Meridian Ranch Drainage Reports (Windingwalk Rational Calcs., September 2017)
◆	From Retrofit Drainage Analysis For Bennett Regional Detention Pond, Jun 2014)
◆◆	From Approved Meridian Ranch MDDP, Aug 2015
✧✧	From Approved Meridian Ranch Final Drainage Reports (Stonebridge Filing 2, Oct 2016)
■	From Estates Filing 2 Final Drainage Report, July 2013
■■	From Estates Filing 3 Final Drainage Report, Nov 2015
❖	From Meridian Ranch Filing 11b Approved Final Drainage Report, Nov 2014
❖❖	From Meridian Ranch Filing 3 Approved Final Drainage Report, Aug 2012
●	From Meridian Ranch Filing 7 Approved Final Drainage Report, Aug 2012
●●	From Meridian Ranch Filing 8 Approved Final Drainage Report, Feb 2015
✓	From Meridian Ranch Filing 9 Approved Final Drainage Report, July 2015
✓✓	From Stonebridge Filing 3 Approved Final Drainage Report, April 2017
◆◆◆	From Approved Meridian Ranch MDDP, Dec 2017

Input Data

The Enclaves at Stonebridge Filing 4

BASIN	AREA		CURVE NO.	PERCENT IMPERV.	LAG TIME (min)	
	(acre)	(mi^2)				
INTERIM						
OS01	998	1.559	62.9	7%	35.5	◆◆
OS02	142	0.222	64.5	8%	25.5	◆◆
OS03	127	0.198	63.2	5%	23.6	◆◆
OS04	87	0.136	61.0	0%	21.4	◆◆
DB01	46	0.072	69.7	24%	13.7	◆◆
DB02	33	0.052	69.0	22%	10.5	◆◆
DB03	45	0.070	65.8	13%	15.0	◆◆
DB04	27	0.042	66.8	16%	15.3	◆◆
DB05	25	0.038	68.0	20%	19.1	◆◆
DB06	14	0.022	84.0	63%	14.6	◆◆
DB07	16	0.025	70.0	25%	11.7	◆◆
DB08	19	0.030	64.9	10%	11.9	◆◆
DB09	12	0.019	75.0	40%	9.6	◆◆
DB10	23	0.036	75.0	40%	13.7	◆◆
DB11	62	0.097	72.0	31%	18.4	◆◆
DB12	29	0.045	78.2	43%	12.7	◆◆
DB13	45	0.070	73.9	33%	18.6	◆◆
DB14	36	0.056	78.0	43%	14.6	◆◆
DB15	79	0.123	67.1	17%	21.8	◆◆
DB16	37	0.058	78.5	47%	16.4	◆◆
DB17	3	0.005	98.0	100%	7.4	◆◆
DB18	22	0.035	80.0	47%	13.4	◆◆
DB19	18	0.028	72.6	29%	16.2	◆◆
DB20	9	0.015	78.7	46%	15.2	◆◆
DB21	33	0.052	65.6	11%	13.6	◆◆
DB22	33	0.052	80.0	48%	14.8	◆◆
DB23	11	0.017	91.6	81%	11.3	◆◆
DB24	34	0.053	78.5	43%	13.3	◆◆
DB25	14	0.021	80.0	47%	9.7	◆◆
DB26	44	0.069	85.8	72%	16.1	✧✧
DB27	33	0.051	78.1	42%	21.9	✧✧
DB28	**47**	**0.074**	**70.7**	**24%**	**17.6**	**✧✧**
DB29	109	0.170	68.5	22%	23.9	✧✧
FB01	**24**	**0.037**	**77.7**	**41%**	**14.2**	
FB02	**32**	**0.050**	**79.1**	**45%**	**22.8**	
FB03	**5**	**0.008**	**90.1**	**78%**	**9.0**	
WH-24	85	0.133	79.0	46%	16.0	◆
WH-26	54	0.084	62.0	2%	25.1	◆
WH-27	14	0.022	62.0	2%	8.6	◆
WH-28	26	0.040	78.3	44%	17.7	◆
WH-29	32	0.050	78.0	43%	16.6	◆
WH-30	10	0.016	68.6	19%	6.0	◆
WH-31	26	0.041	80.0	47%	13.2	◆
WH-32	29	0.046	62.0	2%	6.0	◆
WH-33	4	0.006	80.0	47%	13.0	◆
WH-34	29	0.045	75.0	N/A	14.4	◆
WH-35	99	0.155	68.0	N/A	15.0	◆
WH-36	48	0.075	63.0	N/A	15.6	◆

BASIN	AREA		CURVE NO.	PERCENT IMPERV.	LAG TIME (min)	
	(acre)	(mi^2)				
FUTURE						
OS01	998	1.559	62.9	0%	35.5	◆◆
OS02	142	0.222	64.5	13%	25.5	◆◆
OS03	127	0.198	63.2	8%	23.6	◆◆
OS04	87	0.136	61.0	0%	21.4	◆◆
DB01	46	0.072	69.7	24%	13.7	◆◆
DB02	33	0.052	69.0	22%	10.5	◆◆
DB03	45	0.070	65.8	13%	15.0	◆◆
DB04	27	0.042	66.8	16%	15.3	◆◆
DB05	25	0.038	68.0	20%	19.1	◆◆
DB06	14	0.022	84.0	63%	14.6	◆◆
DB07	16	0.025	70.0	25%	11.7	◆◆
DB08	19	0.030	64.9	10%	11.9	◆◆
DB09	12	0.019	75.0	40%	9.6	◆◆
DB10	23	0.036	75.0	40%	13.7	◆◆
DB11	62	0.097	72.0	31%	18.4	◆◆
DB12	29	0.045	78.2	43%	12.7	◆◆
DB13	45	0.070	73.9	33%	18.6	◆◆
DB14	36	0.056	78.0	43%	14.6	◆◆
DB15	79	0.123	67.1	17%	21.8	◆◆
DB16	37	0.058	78.5	47%	16.4	◆◆
DB17	3	0.005	98.0	100%	7.4	◆◆
DB18	22	0.035	80.0	47%	13.4	◆◆
DB19	18	0.028	72.6	29%	16.2	◆◆
DB20	9	0.015	78.7	46%	15.2	◆◆
DB21	33	0.052	65.6	11%	13.6	◆◆
DB22	33	0.052	80.0	48%	14.8	◆◆
DB23	11	0.017	91.6	81%	11.3	◆◆
DB24	34	0.053	78.5	43%	13.3	◆◆
DB25	14	0.021	80.0	47%	9.7	◆◆
DB26	44	0.069	85.8	72%	16.1	✧✧
DB27	33	0.051	78.1	42%	21.9	✧✧
DB28	**47**	**0.074**	**70.7**	**24%**	**17.6**	**◆◆◆**
DB29	109	0.170	68.5	22%	23.9	✧✧
FB01	**24**	**0.037**	**77.7**	**41%**	**14.2**	**◆◆◆**
FB02	**32**	**0.050**	**79.1**	**45%**	**22.8**	**◆◆◆**
FB03	**5**	**0.008**	**90.1**	**78%**	**9.0**	**◆◆◆**
WH-24	85	0.133	79.0	46%	16.0	◆
WH-26	54	0.084	62.0	2%	25.1	◆
WH-27	14	0.022	62.0	2%	8.6	◆
WH-28	26	0.040	78.3	44%	17.7	◆
WH-29	32	0.050	78.0	43%	16.6	◆
WH-30	10	0.016	68.6	19%	6.0	◆
WH-31	26	0.041	80.0	47%	13.2	◆
WH-32	29	0.046	62.0	2%	6.0	◆
WH-33	4	0.006	80.0	47%	13.0	◆
WH-34	29	0.045	75.0	N/A	14.4	◆
WH-35	99	0.155	68.0	N/A	15.0	◆
WH-36	48	0.075	63.0	N/A	15.6	◆

BASIN	AREA		CURVE NO.	PERCENT IMPERV.	LAG TIME (min)	
	(acre)	(mi^2)				
INTERIM						
OS05	37	0.058	61.0	0%	15.2	
OS06	84	0.131	61.0	0%	18.7	
OS07	21	0.033	63.1	5%	15.4	
OS08	26	0.041	65.7	10%	15.9	
OS09	99	0.155	65.0	0%	29.5	
FG01	72	0.113	63.4	6%	33.8	■■
FG02	25	0.039	64.6	10%	16.1	
FG03	13	0.020	68.0	20%	11.6	■■
FG04	11	0.017	68.0	20%	7.6	■■
FG05	59	0.092	66.9	17%	28.7	■
FG06	12	0.019	68.0	20%	15.3	
FG08A	48	0.075	76.8	43%	13.3	✓
FG08B	40	0.063	76.7	40%	16.6	✓
FG09	31	0.048	71.7	27%	20.8	●●
HG10	30	0.047	63.2	6%	23.1	
FG11	40	0.063	78.2	44%	23.2	●
FG12	21	0.033	80.0	47%	16.1	❖❖
FG13	42	0.066	66.9	14%	29.6	
HG15	19	0.030	62.1	3%	35.0	
FG15a	10	0.016	78.7	44%	11.2	❖
FG16	50	0.077	78.8	45%	13.0	❖
FG17a	44	0.069	76.5	39%	14.4	✓✓
FG17b	14	0.021	79.9	47%	11.4	✓✓
FG17c	20	0.031	65.2	10%	11.8	✓✓
FG18	**41**	**0.064**	**73.5**	**31%**	**29.9**	✧
FG19	34	0.053	80.3	48%	15.3	✓✓
FG19a	5	0.008	75.2	36%	16.4	
FG20	7	0.011	92.9	86%	10.1	
FG21	42	0.066	66.9	17%	22.0	
FG22	41	0.064	66.9	16%	27.4	
FG23	52	0.081	66.5	16%	26.5	
FG24	67	0.104	64.9	11%	22.7	
FG25	14	0.022	70.8	26%	26.6	
FG26	52	0.081	72.5	29%	24.8	
FG27a	17	0.026	65.5	12%	31.4	
FG27b	33	0.051	77.2	41%	24.3	
FG28	13	0.020	65.6	11%	17.5	
FG29	66	0.103	61.3	1%	23.3	
HG30	118	0.184	61.0	0%	65.1	
FG31	59	0.092	80.0	52%	24.0	◆◆
FG32	26	0.040	80.0	52%	13.6	
FG33	19	0.030	71.2	27%	12.7	
FG34	59	0.092	63.7	7%	22.7	
FG35	36	0.057	62.7	5%	20.7	
FG36	18	0.028	61.0	0%	24.9	
FG37	51	0.080	61.0	0%	21.8	
FH01	**86**	**0.134**	**76.2**	**38%**	**23.4**	
FH02	**6**	**0.009**	**71.3**	**25%**	**14.6**	
FH03	5	0.008	80.7	52%	14.4	

BASIN	AREA		CURVE NO.	PERCENT IMPERV.	LAG TIME (min)	
	(acre)	(mi^2)				
FUTURE						
OS05	37	0.058	61.0	0%	15.2	
OS06	84	0.131	61.0	0%	18.7	
OS07	21	0.033	63.1	7%	15.4	
OS08	26	0.041	65.7	17%	15.9	
OS09	99	0.155	65.0	0%	29.5	
FG01	72	0.113	63.4	6%	33.8	■■
FG02	25	0.039	64.6	10%	16.1	
FG03	13	0.020	68.0	20%	11.6	■■
FG04	11	0.017	68.0	20%	7.6	■■
FG05	59	0.092	66.9	17%	28.7	■
FG06	12	0.019	68.0	20%	15.3	
FG08A	48	0.075	76.8	43%	13.3	✓
FG08B	40	0.063	76.7	40%	16.6	✓
FG09	31	0.048	71.7	27%	20.8	●●
FG10	43	0.067	72.7	29%	41.8	◆◆◆
FG11	40	0.063	78.2	44%	23.2	●
FG12	21	0.033	80.0	47%	16.1	❖❖
FG13	42	0.066	66.9	14%	29.6	
FG14	21	0.033	77.5	42%	20.9	
FG15	65	0.102	72.9	30%	25.9	◆◆◆
FG15a	10	0.016	78.7	44%	11.2	❖
FG16	50	0.077	78.8	45%	13.0	❖
FG17a	44	0.069	76.5	39%	14.4	✓✓
FG17b	14	0.021	79.9	47%	11.4	✓✓
FG17c	20	0.031	65.2	10%	11.8	✓✓
FG18	**41**	**0.064**	**73.5**	**31%**	**29.9**	✧
FG19	34	0.053	80.3	48%	15.3	✓✓
FG19a	4	0.007	71.4	26%	0.0	
FG20	7	0.011	92.9	86%	10.1	
FG21	42	0.066	66.9	17%	22.0	
FG22	41	0.064	66.9	16%	27.4	
FG23	52	0.081	66.5	16%	26.5	
FG24	67	0.104	64.9	11%	22.7	
FG25	14	0.022	70.8	26%	26.6	
FG26	52	0.081	72.5	29%	24.8	
FG27a	17	0.026	65.5	12%	31.4	
FG27b	33	0.051	77.2	41%	24.3	
FG28	13	0.020	65.6	11%	17.5	
FG29	66	0.103	61.3	1%	23.3	
FG30	26	0.040	80.0	52%	10.4	
FG31	59	0.092	80.0	52%	24.0	◆◆
FG32	26	0.040	80.0	52%	13.6	
FG33	19	0.030	71.2	27%	12.7	
FG34	59	0.092	63.7	7%	22.7	
FG35	36	0.057	62.7	5%	20.7	
FG36	18	0.028	61.0	0%	24.9	
FG37	51	0.080	61.0	0%	21.8	
FH01	**86**	**0.134**	**76.2**	**38%**	**23.4**	◆◆◆
FH02	**6**	**0.009**	**71.3**	**25%**	**14.6**	◆◆◆
FH03	5	0.008	80.7	52%	14.4	

NOAA Atlas 14, Volume 8, Version 2
Location name: Peyton, Colorado, USA*
Latitude: 38.9783°, Longitude: -104.6842°
Elevation: 7054.14 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Deborah Martin, Sandra Pavlovic, Ishani Roy, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Michael Yekta, Geoffery Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF tabular | PF graphical | Maps & aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.239 (0.190-0.301)	0.291 (0.232-0.367)	0.381 (0.302-0.482)	0.460 (0.363-0.595)	0.576 (0.442-0.764)	0.670 (0.501-0.899)	0.770 (0.556-1.05)	0.878 (0.606-1.23)	1.02 (0.690-1.45)	1.14 (0.757-1.65)
10-min	0.349 (0.278-0.441)	0.426 (0.339-0.539)	0.558 (0.443-0.706)	0.674 (0.532-0.867)	0.843 (0.647-1.12)	0.982 (0.734-1.32)	1.13 (0.814-1.55)	1.28 (0.886-1.80)	1.50 (0.996-2.16)	1.67 (1.08-2.44)
15-min	0.426 (0.340-0.538)	0.519 (0.413-0.656)	0.680 (0.540-0.861)	0.822 (0.646-1.04)	1.03 (0.789-1.36)	1.20 (0.895-1.61)	1.37 (0.989-1.89)	1.56 (1.08-2.20)	1.82 (1.22-2.64)	2.03 (1.31-2.97)
30-min	0.598 (0.486-0.758)	0.741 (0.590-0.936)	0.969 (0.768-1.23)	1.17 (0.923-1.49)	1.46 (1.12-1.94)	1.70 (1.27-2.28)	1.95 (1.41-2.66)	2.21 (1.53-3.12)	2.58 (1.72-3.73)	2.87 (1.86-4.20)
60-min	0.778 (0.620-0.982)	0.934 (0.744-1.18)	1.21 (0.962-1.54)	1.47 (1.16-1.86)	1.84 (1.42-2.46)	2.16 (1.62-2.91)	2.50 (1.81-3.44)	2.87 (1.89-4.05)	3.38 (2.26-4.81)	3.80 (2.46-5.56)
2-hr	0.948 (0.762-1.18)	1.13 (0.905-1.41)	1.46 (1.16-1.83)	1.76 (1.40-2.22)	2.23 (1.73-2.86)	2.62 (1.98-3.51)	3.05 (2.23-4.16)	3.52 (2.47-4.85)	4.19 (2.82-5.84)	4.73 (3.09-6.67)
3-hr	1.04 (0.839-1.29)	1.22 (0.986-1.52)	1.57 (1.26-1.96)	1.90 (1.51-2.36)	2.41 (1.90-3.21)	2.86 (2.18-3.83)	3.35 (2.47-4.58)	3.90 (2.75-5.47)	4.68 (3.16-6.75)	5.33 (3.50-7.71)
6-hr	1.21 (0.980-1.49)	1.40 (1.14-1.73)	1.78 (1.44-2.21)	2.16 (1.74-2.68)	2.76 (2.19-3.65)	3.29 (2.53-4.36)	3.88 (2.86-5.26)	4.53 (3.23-6.34)	5.46 (3.76-7.86)	6.28 (4.17-9.04)
12-hr	1.39 (1.14-1.70)	1.62 (1.33-1.98)	2.06 (1.69-2.53)	2.48 (2.02-3.08)	3.16 (2.53-4.14)	3.78 (2.92-4.96)	4.42 (3.31-5.97)	5.15 (3.70-7.14)	6.22 (4.30-8.85)	7.10 (4.75-10.1)
24-hr	1.61 (1.33-1.96)	1.88 (1.56-2.29)	2.39 (1.97-2.92)	2.88 (2.35-3.52)	3.63 (2.91-4.69)	4.27 (3.34-5.66)	4.98 (3.76-6.86)	5.75 (4.17-7.90)	6.87 (4.76-9.70)	7.79 (5.25-11.1)

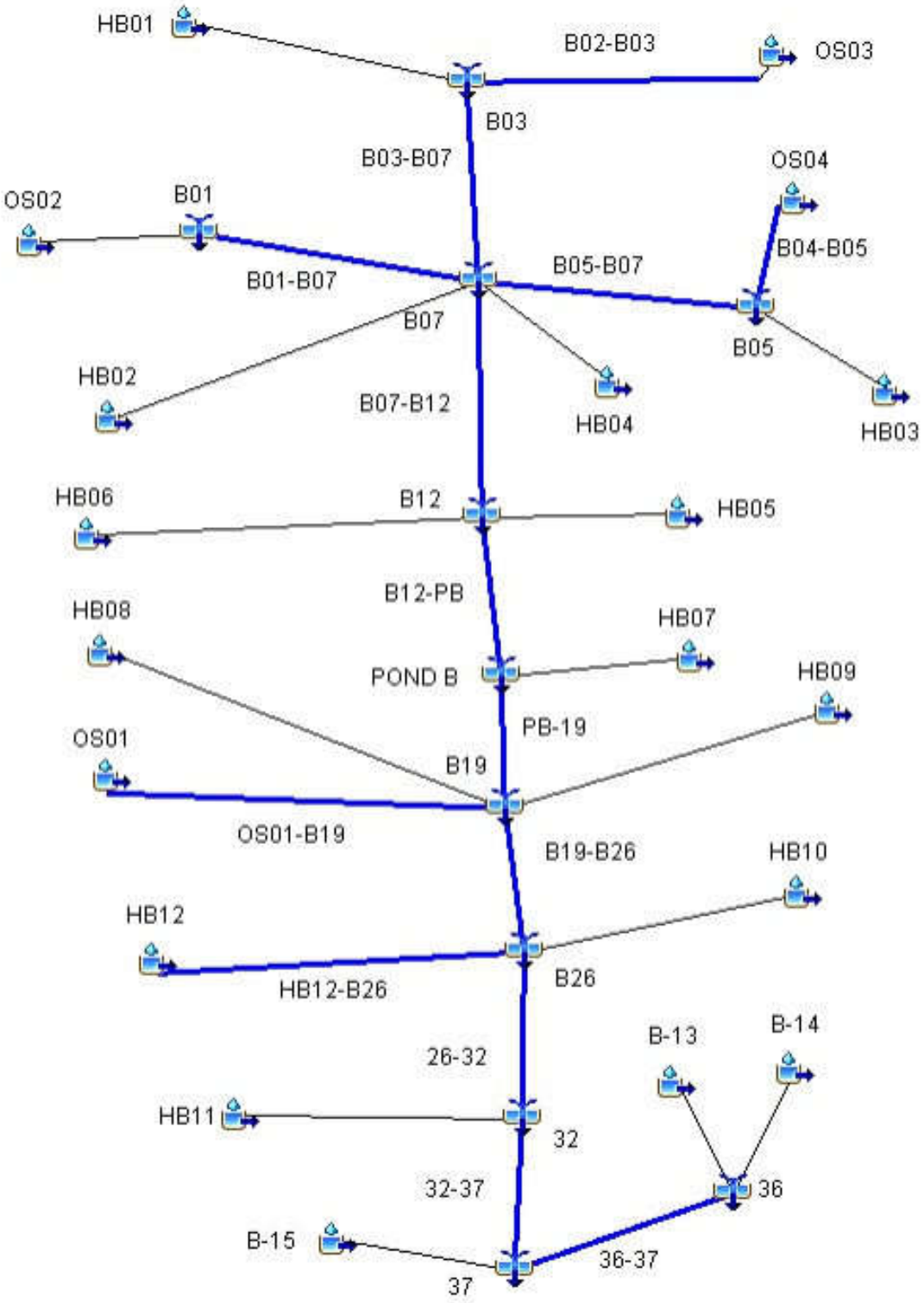
HISTORIC 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
OS02	0.2219	140	01Jul2015, 12:18	19
B01	0.2219	140	01Jul2015, 12:18	19
B01-B07	0.2219	139	01Jul2015, 12:24	19
OS03	0.1984	123	01Jul2015, 12:18	16
B02-B03	0.1984	119	01Jul2015, 12:24	16
HB01	0.0234	18	01Jul2015, 12:06	2
B03	0.2218	131	01Jul2015, 12:18	17
B03-B07	0.2218	129	01Jul2015, 12:24	17
OS04	0.1359	77	01Jul2015, 12:18	10
B04-B05	0.1359	76	01Jul2015, 12:24	10
HB03	0.1266	94	01Jul2015, 12:06	9
B05	0.2625	137	01Jul2015, 12:18	19
B05-B07	0.2625	137	01Jul2015, 12:18	19
HB02	0.1063	71	01Jul2015, 12:12	8
HB04	0.0609	43	01Jul2015, 12:12	4
B07	0.8734	490	01Jul2015, 12:18	67
B07-B12	0.8734	486	01Jul2015, 12:24	66
HB05	0.1375	94	01Jul2015, 12:12	10
HB06	0.1641	104	01Jul2015, 12:12	12
B12	1.1750	636	01Jul2015, 12:18	88
B12-PB	1.1750	629	01Jul2015, 12:24	88
HB07	0.0313	27	01Jul2015, 12:06	2
POND B	1.2063	639	01Jul2015, 12:24	90
PB-19	1.2063	636	01Jul2015, 12:24	89
OS01	1.5594	726	01Jul2015, 12:30	122
OS01-B19	1.5594	720	01Jul2015, 12:36	121
HB08	0.1344	76	01Jul2015, 12:18	10
HB09	0.3047	132	01Jul2015, 12:30	22
B19	3.2048	1490	01Jul2015, 12:30	241
B19-B26	3.2048	1475	01Jul2015, 12:30	241
HB10	**0.3047**	**162**	**01Jul2015, 12:18**	**22**
HB12	0.0797	51	01Jul2015, 12:12	6
HB12-B26	0.0797	49	01Jul2015, 12:18	6
B26	3.5892	1651	01Jul2015, 12:30	269
26-32	3.5892	1633	01Jul2015, 12:36	267
HB11	**0.1125**	**57**	**01Jul2015, 12:24**	**8**
32	3.7017	1678	01Jul2015, 12:36	275
32-37	3.7017	1667	01Jul2015, 12:36	273
B-14	0.4039	171	01Jul2015, 12:30	29
B-13	0.2813	122	01Jul2015, 12:30	20
36	0.6852	293	01Jul2015, 12:30	49
36-37	0.6852	290	01Jul2015, 12:36	49
B-15	0.0750	37	01Jul2015, 12:24	5
37	4.4619	1988	01Jul2015, 12:36	327

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
HG07	0.0984	47	01Jul2015, 12:24	7
HG07-G11	0.0984	47	01Jul2015, 12:30	7
HG08	0.1328	73	01Jul2015, 12:18	10
G11	0.2312	115	01Jul2015, 12:24	17
G11-G12	0.2312	114	01Jul2015, 12:30	16
HG09	0.1781	73	01Jul2015, 12:30	13
G12	0.4093	187	01Jul2015, 12:30	29
G12-H08	0.4093	183	01Jul2015, 12:36	28
HG10	**0.1375**	**39**	**01Jul2015, 13:06**	**10**
H08	**0.5468**	**216**	**01Jul2015, 12:42**	**38**
HG11	**0.2047**	**77**	**01Jul2015, 12:36**	**15**
H09	**0.2047**	**77**	**01Jul2015, 12:36**	**15**
HH01	**0.0984**	**65**	**01Jul2015, 12:12**	**7**
H12	**0.0984**	**65**	**01Jul2015, 12:12**	**7**
HG12	**0.1297**	**57**	**01Jul2015, 12:30**	**9**
H10	**0.1297**	**57**	**01Jul2015, 12:30**	**9**

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

BENNETT HISTORIC



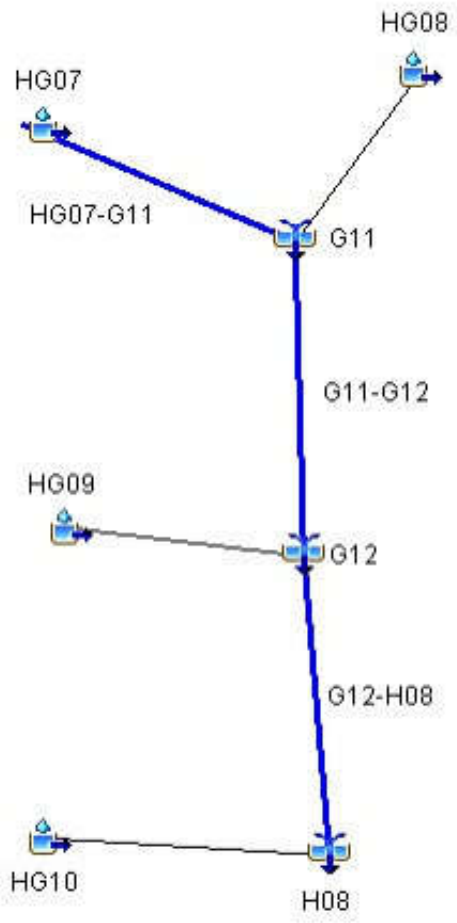
HISTORIC 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{50} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{50} (AC. FT.)
OS02	0.2219	96	01Jul2015, 12:24	14
B01	0.2219	96	01Jul2015, 12:24	14
B01-B07	0.2219	96	01Jul2015, 12:24	13
OS03	0.1984	83	01Jul2015, 12:18	11
B02-B03	0.1984	81	01Jul2015, 12:24	11
HB01	0.0234	12	01Jul2015, 12:06	1
B03	0.2218	88	01Jul2015, 12:18	12
B03-B07	0.2218	88	01Jul2015, 12:24	12
OS04	0.1359	51	01Jul2015, 12:18	7
B04-B05	0.1359	50	01Jul2015, 12:24	7
HB03	0.1266	61	01Jul2015, 12:06	6
B05	0.2625	87	01Jul2015, 12:18	13
B05-B07	0.2625	85	01Jul2015, 12:18	13
HB02	0.1063	47	01Jul2015, 12:12	5
HB04	0.0609	28	01Jul2015, 12:12	3
B07	0.8734	321	01Jul2015, 12:18	47
B07-B12	0.8734	319	01Jul2015, 12:24	47
HB05	0.1375	62	01Jul2015, 12:12	7
HB06	0.1641	68	01Jul2015, 12:12	8
B12	1.1750	415	01Jul2015, 12:24	62
B12-PB	1.1750	413	01Jul2015, 12:24	62
HB07	0.0313	18	01Jul2015, 12:06	2
POND B	1.2063	420	01Jul2015, 12:24	64
PB-19	1.2063	416	01Jul2015, 12:30	63
OS01	1.5594	488	01Jul2015, 12:36	87
OS01-B19	1.5594	487	01Jul2015, 12:42	86
HB08	0.1344	50	01Jul2015, 12:18	7
HB09	0.3047	86	01Jul2015, 12:30	15
B19	3.2048	990	01Jul2015, 12:36	171
B19-B26	3.2048	987	01Jul2015, 12:36	171
HB10	**0.3047**	**105**	**01Jul2015, 12:18**	**15**
HB12	0.0797	33	01Jul2015, 12:12	4
HB12-B26	0.0797	33	01Jul2015, 12:18	4
B26	3.5892	1086	01Jul2015, 12:36	190
26-32	3.5892	1081	01Jul2015, 12:36	189
HB11	**0.1125**	**37**	**01Jul2015, 12:24**	**6**
32	3.7017	1112	01Jul2015, 12:36	194
32-37	3.7017	1104	01Jul2015, 12:42	193
B-14	0.4039	111	01Jul2015, 12:30	20
B-13	0.2813	80	01Jul2015, 12:30	14
36	0.6852	191	01Jul2015, 12:30	34
36-37	0.6852	190	01Jul2015, 12:36	34
B-15	0.0750	24	01Jul2015, 12:24	4
37	4.4619	1306	01Jul2015, 12:42	231

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{50} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{50} (AC. FT.)
HG07	0.0984	31	01Jul2015, 12:24	5
HG07-G11	0.0984	31	01Jul2015, 12:30	5
HG08	0.1328	48	01Jul2015, 12:18	7
G11	0.2312	75	01Jul2015, 12:24	12
G11-G12	0.2312	75	01Jul2015, 12:30	11
HG09	0.1781	48	01Jul2015, 12:36	9
G12	0.4093	122	01Jul2015, 12:30	20
G12-H08	0.4093	121	01Jul2015, 12:42	20
HG10	**0.1375**	**26**	**01Jul2015, 13:06**	**7**
H08	**0.5468**	**142**	**01Jul2015, 12:42**	**27**
HG11	**0.2047**	**51**	**01Jul2015, 12:42**	**10**
H09	**0.2047**	**51**	**01Jul2015, 12:42**	**10**
HH01	**0.0984**	**43**	**01Jul2015, 12:12**	**5**
H12	**0.0984**	**43**	**01Jul2015, 12:12**	**5**
HG12	**0.1297**	**38**	**01Jul2015, 12:30**	**7**
H10	**0.1297**	**38**	**01Jul2015, 12:30**	**7**

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

GIECK. HISTORIC



HISTORIC 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{25} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{25} (AC. FT.)
OS02	0.2219	62	01Jul2015, 12:24	9.3
B01	0.2219	62	01Jul2015, 12:24	9.3
B01-B07	0.2219	61	01Jul2015, 12:24	9.2
OS03	0.1984	51	01Jul2015, 12:18	7.7
B02-B03	0.1984	51	01Jul2015, 12:24	7.6
HB01	0.0234	7	01Jul2015, 12:06	0.8
B03	0.2218	55	01Jul2015, 12:24	8.4
B03-B07	0.2218	54	01Jul2015, 12:24	8.4
OS04	0.1359	30	01Jul2015, 12:18	4.5
B04-B05	0.1359	30	01Jul2015, 12:30	4.4
HB03	0.1266	36	01Jul2015, 12:12	4.2
B05	0.2625	50	01Jul2015, 12:24	8.7
B05-B07	0.2625	49	01Jul2015, 12:24	8.7
HB02	0.1063	28	01Jul2015, 12:12	3.6
HB04	0.0609	17	01Jul2015, 12:12	2.0
B07	0.8734	195	01Jul2015, 12:24	31.8
B07-B12	0.8734	193	01Jul2015, 12:30	31.5
HB05	0.1375	37	01Jul2015, 12:12	4.6
HB06	0.1641	40	01Jul2015, 12:12	5.5
B12	1.1750	243	01Jul2015, 12:24	41.6
B12-PB	1.1750	242	01Jul2015, 12:30	41.5
HB07	0.0313	11	01Jul2015, 12:06	1.0
POND B	1.2063	245	01Jul2015, 12:30	42.6
PB-19	1.2063	244	01Jul2015, 12:36	42.2
OS01	1.5594	303	01Jul2015, 12:36	58.6
OS01-B19	1.5594	301	01Jul2015, 12:42	57.8
HB08	0.1344	30	01Jul2015, 12:18	4.5
HB09	0.3047	51	01Jul2015, 12:36	10.1
B19	3.2048	602	01Jul2015, 12:36	114.5
B19-B26	3.2048	599	01Jul2015, 12:42	114.4
HB10	**0.3047**	**63**	**01Jul2015, 12:24**	**10.1**
HB12	0.0797	19	01Jul2015, 12:12	2.7
HB12-B26	0.0797	19	01Jul2015, 12:18	2.6
B26	3.5892	657	01Jul2015, 12:36	127.1
26-32	3.5892	656	01Jul2015, 12:42	126.0
HB11	**0.1125**	**22**	**01Jul2015, 12:24**	**3.7**
32	3.7017	672	01Jul2015, 12:42	129.8
32-37	3.7017	667	01Jul2015, 12:48	128.7
B-14	0.4039	67	01Jul2015, 12:36	13.3
B-13	0.2813	47	01Jul2015, 12:36	9.3
36	0.6852	114	01Jul2015, 12:36	22.6
36-37	0.6852	113	01Jul2015, 12:36	22.5
B-15	0.0750	14	01Jul2015, 12:24	2.5
37	4.4619	782	01Jul2015, 12:48	153.7

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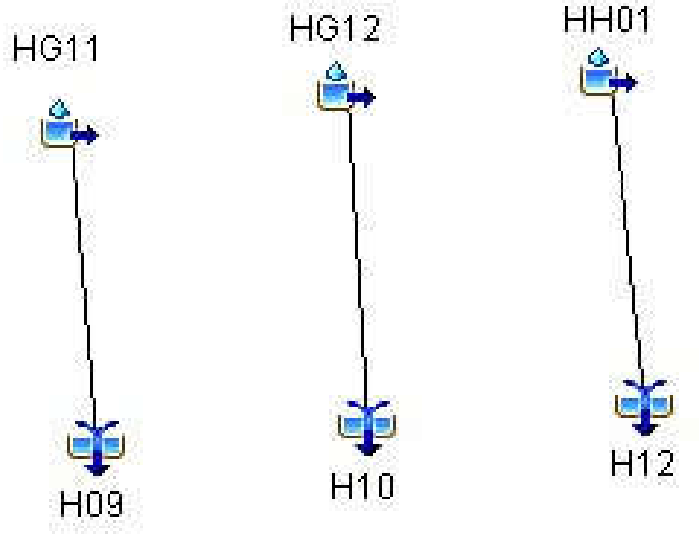
HISTORIC 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{25} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{25} (AC. FT.)
HG07	0.0984	18	01Jul2015, 12:30	3.3
HG07-G11	0.0984	18	01Jul2015, 12:30	3.2
HG08	0.1328	28	01Jul2015, 12:18	4.4
G11	0.2312	44	01Jul2015, 12:24	7.6
G11-G12	0.2312	44	01Jul2015, 12:30	7.5
HG09	0.1781	29	01Jul2015, 12:36	5.9
G12	0.4093	72	01Jul2015, 12:36	13.4
G12-H08	0.4093	71	01Jul2015, 12:48	13.0
HG10	**0.1375**	**16**	**01Jul2015, 13:06**	**4.5**
H08	**0.5468**	**85**	**01Jul2015, 12:48**	**17.5**
HG11	**0.2047**	**30**	**01Jul2015, 12:42**	**6.7**
H09	**0.2047**	**30**	**01Jul2015, 12:42**	**6.7**
HH01	**0.0984**	**25**	**01Jul2015, 12:12**	**3.3**
H12	**0.0984**	**25**	**01Jul2015, 12:12**	**3.3**
HG12	**0.1297**	**22**	**01Jul2015, 12:30**	**4.3**
H10	**0.1297**	**22**	**01Jul2015, 12:30**	**4.3**

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

MISC. HISTORIC



HISTORIC 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{10} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{10} (AC. FT.)
OS02	0.2219	28	01Jul2015, 12:24	5.1
B01	0.2219	28	01Jul2015, 12:24	5.1
B01-B07	0.2219	28	01Jul2015, 12:30	5.0
OS03	0.1984	22	01Jul2015, 12:24	4.1
B02-B03	0.1984	22	01Jul2015, 12:30	4.0
HB01	0.0234	3	01Jul2015, 12:12	0.4
B03	0.2218	23	01Jul2015, 12:24	4.4
B03-B07	0.2218	23	01Jul2015, 12:30	4.4
OS04	0.1359	11	01Jul2015, 12:24	2.3
B04-B05	0.1359	11	01Jul2015, 12:36	2.2
HB03	0.1266	14	01Jul2015, 12:12	2.1
B05	0.2625	19	01Jul2015, 12:30	4.4
B05-B07	0.2625	19	01Jul2015, 12:36	4.4
HB02	0.1063	10	01Jul2015, 12:18	1.8
HB04	0.0609	6	01Jul2015, 12:12	1.0
B07	0.8734	80	01Jul2015, 12:30	16.6
B07-B12	0.8734	79	01Jul2015, 12:36	16.4
HB05	0.1375	14	01Jul2015, 12:12	2.3
HB06	0.1641	15	01Jul2015, 12:18	2.8
B12	1.1750	97	01Jul2015, 12:36	21.5
B12-PB	1.1750	97	01Jul2015, 12:36	21.4
HB07	0.0313	4	01Jul2015, 12:06	0.5
POND B	1.2063	98	01Jul2015, 12:36	21.9
PB-19	1.2063	97	01Jul2015, 12:48	21.6
OS01	1.5594	130	01Jul2015, 12:36	30.9
OS01-B19	1.5594	130	01Jul2015, 12:48	30.3
HB08	0.1344	11	01Jul2015, 12:24	2.3
HB09	0.3047	20	01Jul2015, 12:36	5.1
B19	3.2048	253	01Jul2015, 12:48	59.3
B19-B26	3.2048	252	01Jul2015, 12:48	59.2
HB10	**0.3047**	**24**	**01Jul2015, 12:24**	**5.1**
HB12	0.0797	7	01Jul2015, 12:18	1.3
HB12-B26	0.0797	7	01Jul2015, 12:24	1.3
B26	3.5892	274	01Jul2015, 12:48	65.6
26-32	3.5892	273	01Jul2015, 12:54	65.0
HB11	**0.1125**	**9**	**01Jul2015, 12:30**	**1.9**
32	3.7017	279	01Jul2015, 12:54	66.8
32-37	3.7017	277	01Jul2015, 13:00	66.1
B-14	0.4039	26	01Jul2015, 12:42	6.7
B-13	0.2813	19	01Jul2015, 12:36	4.7
36	0.6852	45	01Jul2015, 12:36	11.4
36-37	0.6852	45	01Jul2015, 12:42	11.3
B-15	0.0750	6	01Jul2015, 12:30	1.3
37	4.4619	320	01Jul2015, 12:54	78.7

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{10} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{10} (AC. FT.)
HG07	0.0984	7	01Jul2015, 12:30	1.6
HG07-G11	0.0984	7	01Jul2015, 12:36	1.6
HG08	0.1328	11	01Jul2015, 12:24	2.2
G11	0.2312	17	01Jul2015, 12:30	3.9
G11-G12	0.2312	17	01Jul2015, 12:42	3.8
HG09	0.1781	11	01Jul2015, 12:42	3.0
G12	0.4093	28	01Jul2015, 12:42	6.8
G12-H08	0.4093	28	01Jul2015, 13:00	6.5
HG10	**0.1375**	**7**	**01Jul2015, 13:18**	**2.2**
H08	**0.5468**	**34**	**01Jul2015, 13:00**	**8.8**
HG11	**0.2047**	**12**	**01Jul2015, 12:48**	**3.4**
H09	**0.2047**	**12**	**01Jul2015, 12:48**	**3.4**
HH01	**0.0984**	**9**	**01Jul2015, 12:18**	**1.7**
H12	**0.0984**	**9**	**01Jul2015, 12:18**	**1.7**
HG12	**0.1297**	**9**	**01Jul2015, 12:36**	**2.2**
H10	**0.1297**	**9**	**01Jul2015, 12:36**	**2.2**

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_5 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_5 (AC. FT.)
OS02	0.2219	12.1	01Jul2015, 12:30	2.8
B01	0.2219	12.1	01Jul2015, 12:30	2.8
B01-B07	0.2219	12.1	01Jul2015, 12:36	2.8
OS03	0.1984	8.7	01Jul2015, 12:30	2.2
B02-B03	0.1984	8.7	01Jul2015, 12:30	2.2
HB01	0.0234	0.8	01Jul2015, 12:12	0.2
B03	0.2218	9.3	01Jul2015, 12:30	2.4
B03-B07	0.2218	9.3	01Jul2015, 12:36	2.4
OS04	0.1359	3.8	01Jul2015, 12:30	1.2
B04-B05	0.1359	3.7	01Jul2015, 12:48	1.1
HB03	0.1266	4.2	01Jul2015, 12:18	1.1
B05	0.2625	6.6	01Jul2015, 12:42	2.2
B05-B07	0.2625	6.5	01Jul2015, 12:48	2.2
HB02	0.1063	3.3	01Jul2015, 12:18	0.9
HB04	0.0609	2	01Jul2015, 12:18	0.5
B07	0.8734	30.7	01Jul2015, 12:36	8.9
B07-B12	0.8734	30.7	01Jul2015, 12:48	8.7
HB05	0.1375	4.3	01Jul2015, 12:18	1.2
HB06	0.1641	4.9	01Jul2015, 12:24	1.4
B12	1.175	37.5	01Jul2015, 12:48	11.3
B12-PB	1.175	37.2	01Jul2015, 12:48	11.3
HB07	0.0313	1.2	01Jul2015, 12:12	0.3
POND B	1.2063	37.8	01Jul2015, 12:48	11.5
PB-19	1.2063	37.7	01Jul2015, 13:00	11.3
OS01	1.5594	53.3	01Jul2015, 12:48	16.6
OS01-B19	1.5594	53.1	01Jul2015, 13:00	16.3
HB08	0.1344	3.7	01Jul2015, 12:30	1.2
HB09	0.3047	7.2	01Jul2015, 12:48	2.6
B19	3.2048	100.4	01Jul2015, 13:00	31.3
B19-B26	3.2048	100	01Jul2015, 13:00	31.2
HB10	**0.3047**	**8.1**	**01Jul2015, 12:30**	**2.6**
HB12	0.0797	2.4	01Jul2015, 12:24	0.7
HB12-B26	0.0797	2.3	01Jul2015, 12:30	0.7
B26	3.5892	108.4	01Jul2015, 13:00	34.5
26-32	3.5892	107.8	01Jul2015, 13:06	34
HB11	**0.1125**	**2.9**	**01Jul2015, 12:36**	**1**
32	3.7017	110.2	01Jul2015, 13:06	35
32-37	3.7017	109.3	01Jul2015, 13:18	34.4
B-14	0.4039	9.4	01Jul2015, 12:48	3.4
B-13	0.2813	6.6	01Jul2015, 12:48	2.4
36	0.6852	16	01Jul2015, 12:48	5.8
36-37	0.6852	16	01Jul2015, 12:54	5.8
B-15	0.075	1.9	01Jul2015, 12:36	0.6
37	4.4619	125.5	01Jul2015, 13:12	40.8

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_5 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_5 (AC. FT.)
HG07	0.0984	2.4	01Jul2015, 12:42	0.8
HG07-G11	0.0984	2.4	01Jul2015, 12:48	0.8
HG08	0.1328	3.6	01Jul2015, 12:30	1.1
G11	0.2312	5.7	01Jul2015, 12:42	2
G11-G12	0.2312	5.6	01Jul2015, 12:54	1.9
HG09	0.1781	4.1	01Jul2015, 12:48	1.5
G12	0.4093	9.7	01Jul2015, 12:54	3.4
G12-H08	0.4093	9.7	01Jul2015, 13:18	3.3
HG10	**0.1375**	**2.6**	**01Jul2015, 13:30**	**1.1**
H08	**0.5468**	**12.1**	**01Jul2015, 13:18**	**4.4**
HG11	**0.2047**	**4.5**	**01Jul2015, 13:00**	**1.7**
H09	**0.2047**	**4.5**	**01Jul2015, 13:00**	**1.7**
HH01	**0.0984**	**3**	**01Jul2015, 12:18**	**0.9**
H12	**0.0984**	**3**	**01Jul2015, 12:18**	**0.9**
HG12	**0.1297**	**3.1**	**01Jul2015, 12:42**	**1.1**
H10	**0.1297**	**3.1**	**01Jul2015, 12:42**	**1.1**

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_2 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_2 (AC. FT.)
OS02	0.2219	2.50	01Jul2015, 12:48	1.1
B01	0.2219	2.50	01Jul2015, 12:48	1.1
B01-B07	0.2219	2.50	01Jul2015, 13:00	1.1
OS03	0.1984	1.60	01Jul2015, 13:06	0.8
B02-B03	0.1984	1.60	01Jul2015, 13:12	0.8
HB01	0.0234	0.10	01Jul2015, 13:12	0.1
B03	0.2218	1.70	01Jul2015, 13:12	0.9
B03-B07	0.2218	1.70	01Jul2015, 13:18	0.8
OS04	0.1359	0.60	01Jul2015, 13:30	0.4
B04-B05	0.1359	0.60	01Jul2015, 14:00	0.3
HB03	0.1266	0.50	01Jul2015, 13:12	0.3
B05	0.2625	1.10	01Jul2015, 13:42	0.7
B05-B07	0.2625	1.10	01Jul2015, 13:48	0.7
HB02	0.1063	0.40	01Jul2015, 13:24	0.3
HB04	0.0609	0.30	01Jul2015, 13:18	0.2
B07	0.8734	5.60	01Jul2015, 13:30	3.1
B07-B12	0.8734	5.60	01Jul2015, 13:48	3.0
HB05	0.1375	0.60	01Jul2015, 13:18	0.4
HB06	0.1641	0.70	01Jul2015, 13:24	0.4
B12	1.1750	6.80	01Jul2015, 13:42	3.8
B12-PB	1.1750	6.80	01Jul2015, 13:48	3.8
HB07	0.0313	0.10	01Jul2015, 13:06	0.1
POND B	1.2063	6.90	01Jul2015, 13:48	3.9
PB-19	1.2063	6.90	01Jul2015, 14:06	3.7
OS01	1.5594	10.90	01Jul2015, 13:24	5.9
OS01-B19	1.5594	10.90	01Jul2015, 13:48	5.7
HB08	0.1344	0.60	01Jul2015, 13:30	0.4
HB09	0.3047	1.20	01Jul2015, 13:54	0.8
B19	3.2048	19.40	01Jul2015, 13:48	10.6
B19-B26	3.2048	19.40	01Jul2015, 13:54	10.5
HB10	**0.3047**	**1.30**	**01Jul2015, 13:36**	**0.8**
HB12	0.0797	0.30	01Jul2015, 13:24	0.2
HB12-B26	0.0797	0.30	01Jul2015, 13:42	0.2
B26	3.5892	21.00	01Jul2015, 13:54	11.6
26-32	3.5892	21.00	01Jul2015, 14:06	11.2
HB11	**0.1125**	**0.50**	**01Jul2015, 13:42**	**0.3**
32	3.7017	21.40	01Jul2015, 14:06	11.5
32-37	3.7017	21.40	01Jul2015, 14:18	11.2
B-14	0.4039	1.60	01Jul2015, 13:54	1.1
B-13	0.2813	1.10	01Jul2015, 13:54	0.7
36	0.6852	2.70	01Jul2015, 13:54	1.8
36-37	0.6852	2.70	01Jul2015, 14:06	1.8
B-15	0.0750	0.30	01Jul2015, 13:42	0.2
37	4.4619	24.40	01Jul2015, 14:18	13.2

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

HISTORIC 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_2 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_2 (AC. FT.)
HG07	0.0984	0.40	01Jul2015, 13:42	0.3
HG07-G11	0.0984	0.40	01Jul2015, 14:00	0.3
HG08	0.1328	0.50	01Jul2015, 13:36	0.4
G11	0.2312	0.90	01Jul2015, 13:48	0.6
G11-G12	0.2312	0.90	01Jul2015, 14:12	0.6
HG09	0.1781	0.70	01Jul2015, 13:54	0.5
G12	0.4093	1.60	01Jul2015, 14:06	1.0
G12-H08	0.4093	1.60	01Jul2015, 14:54	0.9
HG10	**0.1375**	**0.50**	**01Jul2015, 14:42**	**0.3**
H08	**0.5468**	**2.10**	**01Jul2015, 14:48**	**1.3**
HG11	**0.2047**	**0.80**	**01Jul2015, 14:06**	**0.5**
H09	**0.2047**	**0.80**	**01Jul2015, 14:06**	**0.5**
HH01	**0.0984**	**0.40**	**01Jul2015, 13:24**	**0.3**
H12	**0.0984**	**0.40**	**01Jul2015, 13:24**	**0.3**
HG12	**0.1297**	**0.50**	**01Jul2015, 13:48**	**0.3**
H10	**0.1297**	**0.50**	**01Jul2015, 13:48**	**0.3**

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
OS01	1.5594	726	01Jul2015, 12:30	122
DB16	0.0578	85	01Jul2015, 12:12	8
B10	1.6172	765	01Jul2015, 12:30	130
B10-B11	1.6172	763	01Jul2015, 12:30	130
DB17	0.0048	15	01Jul2015, 12:00	1
B11	1.6220	765	01Jul2015, 12:30	131
B11-POND C	1.6220	759	01Jul2015, 12:36	131
DB21	0.0519	49	01Jul2015, 12:06	5
DB18	0.0346	60	01Jul2015, 12:06	5
DB19	0.0281	34	01Jul2015, 12:12	3
DB20	0.0147	23	01Jul2015, 12:06	2
POND C	1.7513	727	01Jul2015, 12:48	141
POND C-B16	1.7513	725	01Jul2015, 12:48	141
DB25	0.0211	40	01Jul2015, 12:06	3
B16	1.7724	730	01Jul2015, 12:48	144
B16-B17	1.7724	724	01Jul2015, 12:48	144
DB26	0.0682	124	01Jul2015, 12:06	12
B17	1.8406	751	01Jul2015, 12:48	156
B17-B26	1.8406	748	01Jul2015, 12:54	155
OS03	0.1984	123	01Jul2015, 12:18	16
DB01	0.0719	83	01Jul2015, 12:06	8
B01	0.2703	190	01Jul2015, 12:12	23
B01-B02	0.2703	184	01Jul2015, 12:18	23
OS02	0.2219	140	01Jul2015, 12:18	19
DB02	0.0516	66	01Jul2015, 12:06	5
B02	0.5438	358	01Jul2015, 12:12	48
B02-POND A	0.5438	357	01Jul2015, 12:18	47
OS04	0.1359	77	01Jul2015, 12:18	10
DB03	0.0703	63	01Jul2015, 12:12	6
B03	0.2062	137	01Jul2015, 12:12	16
B03-B04	0.2062	135	01Jul2015, 12:18	16
DB04	0.0422	40	01Jul2015, 12:12	4
DB05	0.0384	35	01Jul2015, 12:12	4
B04	0.2868	201	01Jul2015, 12:18	24
B04-B05	0.2868	201	01Jul2015, 12:18	24
DB06	0.0219	41	01Jul2015, 12:06	4
B05	0.3087	232	01Jul2015, 12:12	28
B05-POND A	0.3087	230	01Jul2015, 12:18	28
DB07	0.0254	33	01Jul2015, 12:06	3
DB08	0.0297	30	01Jul2015, 12:06	3
POND A	0.9076	523	01Jul2015, 12:24	75
POND A-B06	0.9076	523	01Jul2015, 12:30	75
DB09	0.0189	31	01Jul2015, 12:06	2
B06	0.9265	530	01Jul2015, 12:30	77

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
B06-B07	0.9265	530	01Jul2015, 12:30	77
DB11	0.0969	107	01Jul2015, 12:12	11
DB10	0.0364	52	01Jul2015, 12:06	5
B07	1.0598	609	01Jul2015, 12:30	92
B07-B09	1.0598	608	01Jul2015, 12:30	92
DB12	0.0453	76	01Jul2015, 12:06	7
B09	1.1051	632	01Jul2015, 12:30	99
B09-POND B	1.1051	631	01Jul2015, 12:30	99
DB15	0.1234	98	01Jul2015, 12:18	12
DB13	0.0703	84	01Jul2015, 12:12	9
DB14	0.0556	86	01Jul2015, 12:06	8
POND B	1.3544	669	01Jul2015, 12:42	126
POND B-B12	1.3544	669	01Jul2015, 12:42	126
DB22	0.0516	84	01Jul2015, 12:06	8
DB23	0.0172	42	01Jul2015, 12:06	4
B12	1.4232	698	01Jul2015, 12:36	138
B12-B14	1.4232	697	01Jul2015, 12:42	137
DB24	0.0531	88	01Jul2015, 12:06	8
B14	1.4763	719	01Jul2015, 12:36	145
B14-B15	1.4763	716	01Jul2015, 12:36	145
DB28	**0.0741**	**79**	**01Jul2015, 12:12**	**8**
B15	1.5504	750	01Jul2015, 12:36	153
B15-B18	1.5504	748	01Jul2015, 12:42	152
DB29	0.1697	138	01Jul2015, 12:18	17
DB27	0.0508	63	01Jul2015, 12:12	7
B26	3.6115	1570	01Jul2015, 12:48	332
B26-27	3.6115	1567	01Jul2015, 12:48	331
FB-02	0.0500	63	01Jul2015, 12:18	7
FB-01	0.0373	58	01Jul2015, 12:06	5
FB01-27a	0.0373	56	01Jul2015, 12:06	5
B19	0.0873	117	01Jul2015, 12:12	13
B19-27	0.0873	115	01Jul2015, 12:12	13
FB-03	0.0078	19	01Jul2015, 12:00	2
27	3.7066	1607	01Jul2015, 12:48	345
27-32	3.7066	1605	01Jul2015, 12:48	345
WH-24	0.1325	199	01Jul2015, 12:12	20
WH-26	0.0839	46	01Jul2015, 12:18	6
WH-27	0.0217	20	01Jul2015, 12:06	2
30	0.2381	252	01Jul2015, 12:12	28
30-31	0.2381	251	01Jul2015, 12:12	28
WH-28	0.0398	57	01Jul2015, 12:12	6
31	0.2779	308	01Jul2015, 12:12	33
31-32	0.2779	301	01Jul2015, 12:12	33
WH-29	0.0495	71	01Jul2015, 12:12	7
WH-31	0.0406	71	01Jul2015, 12:06	6
WH-30	0.0159	24	01Jul2015, 12:00	2
32	4.0905	1744	01Jul2015, 12:42	393
WH32	0.0458	49	01Jul2015, 12:00	4

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
BEN POND	4.1363	1365	01Jul2015, 13:18	376
WH-33	0.0064	11	01Jul2015, 12:06	1
33	4.1427	1366	01Jul2015, 13:18	377
33-37	4.1427	1363	01Jul2015, 13:18	375
WH35	0.1550	155	01Jul2015, 12:12	15
WH34	0.0450	63	01Jul2015, 12:06	6
B34-36	0.0450	61	01Jul2015, 12:12	6
36	0.2000	216	01Jul2015, 12:12	21
36-37	0.2000	214	01Jul2015, 12:12	21
WH36	0.0750	58	01Jul2015, 12:12	6
37	4.4177	1404	01Jul2015, 13:18	402
FG08A	0.0750	117	01Jul2015, 12:06	10
FG08A-G05	0.0750	111	01Jul2015, 12:12	10
FG08B	0.0630	87	01Jul2015, 12:12	9
FG08B-G05	0.0630	85	01Jul2015, 12:12	9
FG11	0.0625	76	01Jul2015, 12:18	9
FG09	0.0484	49	01Jul2015, 12:12	6
FG09-G05	0.0484	48	01Jul2015, 12:18	6
HG10	0.0467	29	01Jul2015, 12:18	4
G05	0.2956	344	01Jul2015, 12:12	37
FG13	0.0661	44	01Jul2015, 12:24	6
FG12	0.0328	51	01Jul2015, 12:12	5
POND D	0.3945	107	01Jul2015, 13:00	39
POND D-G17	0.3945	107	01Jul2015, 13:00	39
HG15	0.0297	13	01Jul2015, 12:30	2
FG15a	0.0156	28	01Jul2015, 12:06	2
G17	0.4398	119	01Jul2015, 12:54	43
G17-G18	0.4398	119	01Jul2015, 12:54	43
FG16	0.0773	127	01Jul2015, 12:06	11
G18	0.5171	167	01Jul2015, 12:06	54
G18-POND E	0.5171	161	01Jul2015, 12:06	54
HG30	0.1844	50	01Jul2015, 13:06	13
FG30-PONDHS	0.1844	50	01Jul2015, 13:12	13
FG31	0.0922	118	01Jul2015, 12:18	14
POND HS	0.2766	102	01Jul2015, 12:36	27
FG17a	0.0694	108	01Jul2015, 12:06	10
FG17a-POND E	0.0694	106	01Jul2015, 12:06	10
FG18	**0.0644**	**57**	**01Jul2015, 12:24**	**8**
FG18-POND E	0.0644	57	01Jul2015, 12:24	8
FG19	0.0527	85	01Jul2015, 12:06	8
FG17c	0.0313	32	01Jul2015, 12:06	3
FG17b	0.0214	40	01Jul2015, 12:06	3
POND E	**1.0329**	**199**	**01Jul2015, 13:48**	**89**
H08	**1.0329**	**174**	**01Jul2015, 13:48**	**78**
H09	**0.0000**	**25**	**01Jul2015, 13:48**	**11**
FH01	**0.1348**	**153**	**01Jul2015, 12:18**	**18**
POND H	**0.1348**	**57**	**01Jul2015, 12:54**	**15**
FH02	0.0091	11	01Jul2015, 12:06	1
FH03	0.0081	14	01Jul2015, 12:06	1
H12	0.1520	62	01Jul2015, 12:48	18

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{50} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{50} (AC. FT.)
OS01	1.5594	488	01Jul2015, 12:36	87
DB16	0.0578	66	01Jul2015, 12:12	7
B10	1.6172	516	01Jul2015, 12:30	93
B10-B11	1.6172	514	01Jul2015, 12:30	93
DB17	0.0048	13	01Jul2015, 12:00	1
B11	1.6220	516	01Jul2015, 12:30	94
B11-POND C	1.6220	515	01Jul2015, 12:36	94
DB21	0.0519	34	01Jul2015, 12:06	3
DB18	0.0346	47	01Jul2015, 12:06	4
DB19	0.0281	25	01Jul2015, 12:12	3
DB20	0.0147	18	01Jul2015, 12:06	2
POND C	1.7513	492	01Jul2015, 12:48	101
POND C-B16	1.7513	488	01Jul2015, 12:48	101
DB25	0.0211	32	01Jul2015, 12:06	3
B16	1.7724	492	01Jul2015, 12:48	103
B16-B17	1.7724	492	01Jul2015, 12:54	103
DB26	0.0682	101	01Jul2015, 12:12	10
B17	1.8406	511	01Jul2015, 12:54	113
B17-B26	1.8406	508	01Jul2015, 12:54	112
OS03	0.1984	83	01Jul2015, 12:18	11
DB01	0.0719	61	01Jul2015, 12:06	6
B01	0.2703	132	01Jul2015, 12:12	17
B01-B02	0.2703	129	01Jul2015, 12:18	17
OS02	0.2219	96	01Jul2015, 12:24	14
DB02	0.0516	48	01Jul2015, 12:06	4
B02	0.5438	249	01Jul2015, 12:18	34
B02-POND A	0.5438	248	01Jul2015, 12:18	34
OS04	0.1359	51	01Jul2015, 12:18	7
DB03	0.0703	45	01Jul2015, 12:12	5
B03	0.2062	92	01Jul2015, 12:12	11
B03-B04	0.2062	92	01Jul2015, 12:18	11
DB04	0.0422	28	01Jul2015, 12:12	3
DB05	0.0384	25	01Jul2015, 12:12	3
B04	0.2868	139	01Jul2015, 12:18	17
B04-B05	0.2868	139	01Jul2015, 12:18	17
DB06	0.0219	33	01Jul2015, 12:06	3
B05	0.3087	162	01Jul2015, 12:18	20
B05-POND A	0.3087	162	01Jul2015, 12:18	20
DB07	0.0254	24	01Jul2015, 12:06	2
DB08	0.0297	21	01Jul2015, 12:06	2
POND A	0.9076	365	01Jul2015, 12:30	53
POND A-B06	0.9076	364	01Jul2015, 12:30	53
DB09	0.0189	24	01Jul2015, 12:06	2
B06	0.9265	370	01Jul2015, 12:30	55

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
B06-B07	0.9265	363	01Jul2015, 12:36	54
DB11	0.0969	80	01Jul2015, 12:12	9
DB10	0.0364	40	01Jul2015, 12:06	4
B07	1.0598	421	01Jul2015, 12:30	67
B07-B09	1.0598	416	01Jul2015, 12:36	66
DB12	0.0453	59	01Jul2015, 12:06	5
B09	1.1051	431	01Jul2015, 12:36	71
B09-POND B	1.1051	430	01Jul2015, 12:36	71
DB15	0.1234	70	01Jul2015, 12:18	9
DB13	0.0703	63	01Jul2015, 12:12	7
DB14	0.0556	66	01Jul2015, 12:06	6
POND B	1.3544	486	01Jul2015, 12:42	92
POND B-B12	1.3544	483	01Jul2015, 12:42	92
DB22	0.0516	66	01Jul2015, 12:06	6
DB23	0.0172	36	01Jul2015, 12:06	3
B12	1.4232	505	01Jul2015, 12:42	101
B12-B14	1.4232	502	01Jul2015, 12:42	101
DB24	0.0531	69	01Jul2015, 12:06	6
B14	1.4763	517	01Jul2015, 12:42	107
B14-B15	1.4763	514	01Jul2015, 12:42	107
DB28	**0.0741**	**59**	**01Jul2015, 12:12**	**6**
B15	1.5504	534	01Jul2015, 12:42	113
B15-B18	1.5504	532	01Jul2015, 12:48	112
DB29	0.1697	100	01Jul2015, 12:18	13
DB27	0.0508	49	01Jul2015, 12:18	6
B26	3.6115	1090	01Jul2015, 12:54	243
B26-27	3.6115	1090	01Jul2015, 12:54	242
FB-02	0.0500	50	01Jul2015, 12:18	6
FB-01	0.0373	45	01Jul2015, 12:06	4
FB01-27a	0.0373	43	01Jul2015, 12:06	4
B19	0.0873	91	01Jul2015, 12:12	10
B19-27	0.0873	90	01Jul2015, 12:12	10
FB-03	0.0078	16	01Jul2015, 12:00	1
27	3.7066	1118	01Jul2015, 12:54	253
27-32	3.7066	1116	01Jul2015, 12:54	253
WH-24	0.1325	156	01Jul2015, 12:12	15
WH-26	0.0839	31	01Jul2015, 12:24	5
WH-27	0.0217	14	01Jul2015, 12:06	1
30	0.2381	191	01Jul2015, 12:12	21
30-31	0.2381	190	01Jul2015, 12:12	21
WH-28	0.0398	44	01Jul2015, 12:12	5
31	0.2779	234	01Jul2015, 12:12	25
31-32	0.2779	227	01Jul2015, 12:12	25
WH-29	0.0495	56	01Jul2015, 12:12	6
WH-31	0.0406	56	01Jul2015, 12:06	5
WH-30	0.0159	18	01Jul2015, 12:00	1
32	4.0905	1205	01Jul2015, 12:54	290
WH32	0.0458	33	01Jul2015, 12:00	3

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
BEN POND	4.1363	950	01Jul2015, 13:18	275
WH-33	0.0064	9	01Jul2015, 12:06	1
33	4.1427	951	01Jul2015, 13:18	276
33-37	4.1427	948	01Jul2015, 13:24	274
WH35	0.1550	112	01Jul2015, 12:12	11
WH34	0.0450	48	01Jul2015, 12:06	5
B34-36	0.0450	46	01Jul2015, 12:12	5
36	0.2000	159	01Jul2015, 12:12	16
36-37	0.2000	156	01Jul2015, 12:12	16
WH36	0.0750	39	01Jul2015, 12:12	4
37	4.4177	977	01Jul2015, 13:24	294
FG08A	0.0750	91	01Jul2015, 12:06	8
FG08A-G05	0.0750	86	01Jul2015, 12:12	8
FG08B	0.0630	67	01Jul2015, 12:12	7
FG08B-G05	0.0630	66	01Jul2015, 12:12	7
FG11	0.0625	59	01Jul2015, 12:18	7
FG09	0.0484	36	01Jul2015, 12:12	4
FG09-G05	0.0484	36	01Jul2015, 12:18	4
HG10	0.0467	20	01Jul2015, 12:18	3
G05	0.2956	261	01Jul2015, 12:12	29
FG13	0.0661	31	01Jul2015, 12:24	5
FG12	0.0328	40	01Jul2015, 12:12	4
POND D	0.3945	70	01Jul2015, 13:12	29
POND D-G17	0.3945	69	01Jul2015, 13:12	29
HG15	0.0297	9	01Jul2015, 12:36	2
FG15a	0.0156	22	01Jul2015, 12:06	2
G17	0.4398	77	01Jul2015, 13:06	32
G17-G18	0.4398	77	01Jul2015, 13:06	32
FG16	0.0773	98	01Jul2015, 12:06	9
G18	0.5171	126	01Jul2015, 12:06	40
G18-POND E	0.5171	121	01Jul2015, 12:06	40
HG30	0.1844	33	01Jul2015, 13:12	9
FG30-PONDHS	0.1844	33	01Jul2015, 13:18	9
FG31	0.0922	92	01Jul2015, 12:18	11
POND HS	0.2766	62	01Jul2015, 12:48	20
FG17a	0.0694	84	01Jul2015, 12:06	8
FG17a-POND E	0.0694	82	01Jul2015, 12:06	8
FG18	**0.0644**	**43**	**01Jul2015, 12:24**	**6**
FG18-POND E	0.0644	42	01Jul2015, 12:24	6
FG19	0.0527	67	01Jul2015, 12:06	6
FG17c	0.0313	22	01Jul2015, 12:06	2
FG17b	0.0214	31	01Jul2015, 12:06	3
POND E	**1.0329**	**119**	**01Jul2015, 14:24**	**62**
H08	**1.0329**	**107**	**01Jul2015, 14:24**	**54**
H09	**0.0000**	**12**	**01Jul2015, 14:24**	**8**
FH01	**0.1348**	**117**	**01Jul2015, 12:18**	**14**
POND H	**0.1348**	**32**	**01Jul2015, 13:06**	**11**
FH02	0.0091	8	01Jul2015, 12:06	1
FH03	0.0081	11	01Jul2015, 12:06	1
H12	0.1520	35	01Jul2015, 13:00	13

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{25} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{25} (AC. FT.)
OS01	1.5594	303	01Jul2015, 12:36	59
DB16	0.0578	50	01Jul2015, 12:12	5
B10	1.6172	322	01Jul2015, 12:36	64
B10-B11	1.6172	322	01Jul2015, 12:36	64
DB17	0.0048	11	01Jul2015, 12:00	1
B11	1.6220	323	01Jul2015, 12:36	64
B11-POND C	1.6220	321	01Jul2015, 12:36	64
DB21	0.0519	22	01Jul2015, 12:06	2
DB18	0.0346	36	01Jul2015, 12:06	3
DB19	0.0281	18	01Jul2015, 12:12	2
DB20	0.0147	13	01Jul2015, 12:06	1
POND C	1.7513	302	01Jul2015, 12:54	69
POND C-B16	1.7513	300	01Jul2015, 12:54	68
DB25	0.0211	25	01Jul2015, 12:06	2
B16	1.7724	303	01Jul2015, 12:54	70
B16-B17	1.7724	302	01Jul2015, 13:00	70
DB26	0.0682	80	01Jul2015, 12:12	8
B17	1.8406	315	01Jul2015, 13:00	78
B17-B26	1.8406	315	01Jul2015, 13:00	77
OS03	0.1984	51	01Jul2015, 12:18	8
DB01	0.0719	42	01Jul2015, 12:06	4
B01	0.2703	85	01Jul2015, 12:12	12
B01-B02	0.2703	83	01Jul2015, 12:18	12
OS02	0.2219	62	01Jul2015, 12:24	9
DB02	0.0516	34	01Jul2015, 12:06	3
B02	0.5438	161	01Jul2015, 12:18	24
B02-POND A	0.5438	160	01Jul2015, 12:18	24
OS04	0.1359	30	01Jul2015, 12:18	5
DB03	0.0703	30	01Jul2015, 12:12	3
B03	0.2062	57	01Jul2015, 12:12	8
B03-B04	0.2062	56	01Jul2015, 12:18	8
DB04	0.0422	19	01Jul2015, 12:12	2
DB05	0.0384	17	01Jul2015, 12:12	2
B04	0.2868	88	01Jul2015, 12:18	12
B04-B05	0.2868	88	01Jul2015, 12:18	12
DB06	0.0219	26	01Jul2015, 12:06	2
B05	0.3087	107	01Jul2015, 12:18	14
B05-POND A	0.3087	106	01Jul2015, 12:18	14
DB07	0.0254	17	01Jul2015, 12:06	2
DB08	0.0297	13	01Jul2015, 12:06	1
POND A	0.9076	210	01Jul2015, 12:36	35
POND A-B06	0.9076	209	01Jul2015, 12:36	35
DB09	0.0189	18	01Jul2015, 12:06	1
B06	0.9265	213	01Jul2015, 12:36	37

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
B06-B07	0.9265	211	01Jul2015, 12:42	36
DB11	0.0969	57	01Jul2015, 12:12	6
DB10	0.0364	29	01Jul2015, 12:06	3
B07	1.0598	241	01Jul2015, 12:36	45
B07-B09	1.0598	241	01Jul2015, 12:42	45
DB12	0.0453	45	01Jul2015, 12:06	4
B09	1.1051	250	01Jul2015, 12:42	49
B09-POND B	1.1051	249	01Jul2015, 12:42	49
DB15	0.1234	47	01Jul2015, 12:18	6
DB13	0.0703	46	01Jul2015, 12:12	5
DB14	0.0556	50	01Jul2015, 12:06	5
POND B	1.3544	282	01Jul2015, 12:48	64
POND B-B12	1.3544	279	01Jul2015, 12:54	64
DB22	0.0516	50	01Jul2015, 12:06	5
DB23	0.0172	29	01Jul2015, 12:06	3
B12	1.4232	294	01Jul2015, 12:48	71
B12-B14	1.4232	293	01Jul2015, 12:54	71
DB24	0.0531	52	01Jul2015, 12:06	5
B14	1.4763	301	01Jul2015, 12:54	76
B14-B15	1.4763	301	01Jul2015, 12:54	75
DB28	**0.0741**	**41**	**01Jul2015, 12:12**	**4**
B15	1.5504	312	01Jul2015, 12:54	80
B15-B18	1.5504	311	01Jul2015, 13:00	79
DB29	0.1697	67	01Jul2015, 12:18	9
DB27	0.0508	37	01Jul2015, 12:18	4
B26	3.6115	661	01Jul2015, 13:00	170
B26-27	3.6115	658	01Jul2015, 13:00	169
FB-02	0.0500	38	01Jul2015, 12:18	4
FB-01	0.0373	34	01Jul2015, 12:06	3
FB01-27a	0.0373	32	01Jul2015, 12:12	3
B19	0.0873	69	01Jul2015, 12:12	8
B19-27	0.0873	67	01Jul2015, 12:12	8
FB-03	0.0078	13	01Jul2015, 12:00	1
27	3.7066	677	01Jul2015, 13:00	178
27-32	3.7066	674	01Jul2015, 13:00	177
WH-24	0.1325	119	01Jul2015, 12:12	12
WH-26	0.0839	19	01Jul2015, 12:24	3
WH-27	0.0217	9	01Jul2015, 12:06	1
30	0.2381	139	01Jul2015, 12:12	16
30-31	0.2381	138	01Jul2015, 12:12	16
WH-28	0.0398	33	01Jul2015, 12:12	3
31	0.2779	171	01Jul2015, 12:12	19
31-32	0.2779	165	01Jul2015, 12:12	19
WH-29	0.0495	42	01Jul2015, 12:12	4
WH-31	0.0406	43	01Jul2015, 12:06	4
WH-30	0.0159	12	01Jul2015, 12:00	1
32	4.0905	733	01Jul2015, 13:00	205
WH32	0.0458	20	01Jul2015, 12:00	2

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
B06-B07	0.9265	211	01Jul2015, 12:42	36
DB11	0.0969	57	01Jul2015, 12:12	6
DB10	0.0364	29	01Jul2015, 12:06	3
B07	1.0598	241	01Jul2015, 12:36	45
B07-B09	1.0598	241	01Jul2015, 12:42	45
DB12	0.0453	45	01Jul2015, 12:06	4
B09	1.1051	250	01Jul2015, 12:42	49
B09-POND B	1.1051	249	01Jul2015, 12:42	49
DB15	0.1234	47	01Jul2015, 12:18	6
DB13	0.0703	46	01Jul2015, 12:12	5
DB14	0.0556	50	01Jul2015, 12:06	5
POND B	1.3544	282	01Jul2015, 12:48	64
POND B-B12	1.3544	279	01Jul2015, 12:54	64
DB22	0.0516	50	01Jul2015, 12:06	5
DB23	0.0172	29	01Jul2015, 12:06	3
B12	1.4232	294	01Jul2015, 12:48	71
B12-B14	1.4232	293	01Jul2015, 12:54	71
DB24	0.0531	52	01Jul2015, 12:06	5
B14	1.4763	301	01Jul2015, 12:54	76
B14-B15	1.4763	301	01Jul2015, 12:54	75
DB28	**0.0741**	**41**	**01Jul2015, 12:12**	**4**
B15	1.5504	312	01Jul2015, 12:54	80
B15-B18	1.5504	311	01Jul2015, 13:00	79
DB29	0.1697	67	01Jul2015, 12:18	9
DB27	0.0508	37	01Jul2015, 12:18	4
B26	3.6115	661	01Jul2015, 13:00	170
B26-27	3.6115	658	01Jul2015, 13:00	169
FB-02	0.0500	38	01Jul2015, 12:18	4
FB-01	0.0373	34	01Jul2015, 12:06	3
FB01-27a	0.0373	32	01Jul2015, 12:12	3
B19	0.0873	69	01Jul2015, 12:12	8
B19-27	0.0873	67	01Jul2015, 12:12	8
FB-03	0.0078	13	01Jul2015, 12:00	1
27	3.7066	677	01Jul2015, 13:00	178
27-32	3.7066	674	01Jul2015, 13:00	177
WH-24	0.1325	119	01Jul2015, 12:12	12
WH-26	0.0839	19	01Jul2015, 12:24	3
WH-27	0.0217	9	01Jul2015, 12:06	1
30	0.2381	139	01Jul2015, 12:12	16
30-31	0.2381	138	01Jul2015, 12:12	16
WH-28	0.0398	33	01Jul2015, 12:12	3
31	0.2779	171	01Jul2015, 12:12	19
31-32	0.2779	165	01Jul2015, 12:12	19
WH-29	0.0495	42	01Jul2015, 12:12	4
WH-31	0.0406	43	01Jul2015, 12:06	4
WH-30	0.0159	12	01Jul2015, 12:00	1
32	4.0905	733	01Jul2015, 13:00	205
WH32	0.0458	20	01Jul2015, 12:00	2

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{10} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{10} (AC. FT.)
OS01	1.5594	130	01Jul2015, 12:36	31
DB16	0.0578	32	01Jul2015, 12:12	3
B10	1.6172	143	01Jul2015, 12:36	34
B10-B11	1.6172	142	01Jul2015, 12:36	34
DB17	0.0048	8	01Jul2015, 12:00	1
B11	1.6220	143	01Jul2015, 12:36	35
B11-POND C	1.6220	143	01Jul2015, 12:42	35
DB21	0.0519	11	01Jul2015, 12:12	1
DB18	0.0346	24	01Jul2015, 12:06	2
DB19	0.0281	11	01Jul2015, 12:12	1
DB20	0.0147	9	01Jul2015, 12:12	1
POND C	1.7513	126	01Jul2015, 13:06	36
POND C-B16	1.7513	126	01Jul2015, 13:06	36
DB25	0.0211	16	01Jul2015, 12:06	1
B16	1.7724	128	01Jul2015, 13:06	37
B16-B17	1.7724	127	01Jul2015, 13:12	37
DB26	0.0682	57	01Jul2015, 12:12	6
B17	1.8406	135	01Jul2015, 13:12	43
B17-B26	1.8406	135	01Jul2015, 13:12	42
OS03	0.1984	22	01Jul2015, 12:24	4
DB01	0.0719	23	01Jul2015, 12:12	2
B01	0.2703	39	01Jul2015, 12:12	7
B01-B02	0.2703	39	01Jul2015, 12:18	7
OS02	0.2219	28	01Jul2015, 12:24	5
DB02	0.0516	18	01Jul2015, 12:06	2
B02	0.5438	75	01Jul2015, 12:18	13
B02-POND A	0.5438	74	01Jul2015, 12:18	13
OS04	0.1359	11	01Jul2015, 12:24	2
DB03	0.0703	14	01Jul2015, 12:12	2
B03	0.2062	24	01Jul2015, 12:18	4
B03-B04	0.2062	24	01Jul2015, 12:24	4
DB04	0.0422	10	01Jul2015, 12:12	1
DB05	0.0384	9	01Jul2015, 12:18	1
B04	0.2868	39	01Jul2015, 12:18	6
B04-B05	0.2868	38	01Jul2015, 12:18	6
DB06	0.0219	18	01Jul2015, 12:06	2
B05	0.3087	51	01Jul2015, 12:18	8
B05-POND A	0.3087	50	01Jul2015, 12:18	8
DB07	0.0254	9	01Jul2015, 12:06	1
DB08	0.0297	6	01Jul2015, 12:06	1
POND A	0.9076	69	01Jul2015, 12:54	18
POND A-B06	0.9076	68	01Jul2015, 12:54	18
DB09	0.0189	11	01Jul2015, 12:06	1
B06	0.9265	70	01Jul2015, 12:54	18

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
B06-B07	0.9265	69	01Jul2015, 13:00	18
DB11	0.0969	32	01Jul2015, 12:12	4
DB10	0.0364	18	01Jul2015, 12:06	2
B07	1.0598	81	01Jul2015, 13:00	24
B07-B09	1.0598	81	01Jul2015, 13:06	24
DB12	0.0453	29	01Jul2015, 12:06	3
B09	1.1051	85	01Jul2015, 13:06	26
B09-POND B	1.1051	85	01Jul2015, 13:06	26
DB15	0.1234	23	01Jul2015, 12:18	3
DB13	0.0703	27	01Jul2015, 12:12	3
DB14	0.0556	32	01Jul2015, 12:06	3
POND B	1.3544	119	01Jul2015, 12:24	35
POND B-B12	1.3544	119	01Jul2015, 12:30	35
DB22	0.0516	33	01Jul2015, 12:06	3
DB23	0.0172	22	01Jul2015, 12:06	2
B12	1.4232	140	01Jul2015, 12:24	40
B12-B14	1.4232	139	01Jul2015, 12:30	40
DB24	0.0531	33	01Jul2015, 12:06	3
B14	1.4763	152	01Jul2015, 12:24	43
B14-B15	1.4763	151	01Jul2015, 12:30	43
DB28	**0.0741**	**23**	**01Jul2015, 12:12**	**3**
B15	1.5504	168	01Jul2015, 12:24	46
B15-B18	1.5504	166	01Jul2015, 12:30	45
DB29	0.1697	35	01Jul2015, 12:24	5
DB27	0.0508	24	01Jul2015, 12:18	3
B26	3.6115	273	01Jul2015, 12:24	95
B26-27	3.6115	267	01Jul2015, 12:30	95
FB-02	0.0500	24	01Jul2015, 12:18	3
FB-01	0.0373	21	01Jul2015, 12:06	2
FB01-27a	0.0373	21	01Jul2015, 12:12	2
B19	0.0873	44	01Jul2015, 12:12	5
B19-27	0.0873	43	01Jul2015, 12:12	5
FB-03	0.0078	10	01Jul2015, 12:06	1
27	3.7066	304	01Jul2015, 12:24	101
27-32	3.7066	300	01Jul2015, 12:30	100
WH-24	0.1325	77	01Jul2015, 12:12	8
WH-26	0.0839	8	01Jul2015, 12:24	2
WH-27	0.0217	4	01Jul2015, 12:06	0
30	0.2381	85	01Jul2015, 12:12	10
30-31	0.2381	84	01Jul2015, 12:12	10
WH-28	0.0398	21	01Jul2015, 12:12	2
31	0.2779	105	01Jul2015, 12:12	12
31-32	0.2779	100	01Jul2015, 12:18	12
WH-29	0.0495	27	01Jul2015, 12:12	3
WH-31	0.0406	28	01Jul2015, 12:06	3
WH-30	0.0159	6	01Jul2015, 12:00	1
32	4.0905	411	01Jul2015, 12:24	118
WH32	0.0458	8	01Jul2015, 12:00	1

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
BEN POND	4.1363	235	01Jul2015, 14:00	110
WH-33	0.0064	4	01Jul2015, 12:06	0
33	4.1427	236	01Jul2015, 14:00	111
33-37	4.1427	236	01Jul2015, 14:06	110
WH35	0.1550	40	01Jul2015, 12:12	5
WH34	0.0450	21	01Jul2015, 12:06	2
B34-36	0.0450	21	01Jul2015, 12:12	2
36	0.2000	61	01Jul2015, 12:12	7
36-37	0.2000	59	01Jul2015, 12:18	7
WH36	0.0750	10	01Jul2015, 12:12	2
37	4.4177	245	01Jul2015, 14:06	118
FG08A	0.0750	42	01Jul2015, 12:06	4
FG08A-G05	0.0750	41	01Jul2015, 12:12	4
FG08B	0.0630	31	01Jul2015, 12:12	3
FG08B-G05	0.0630	30	01Jul2015, 12:12	3
FG11	0.0625	29	01Jul2015, 12:18	4
FG09	0.0484	15	01Jul2015, 12:18	2
FG09-G05	0.0484	14	01Jul2015, 12:18	2
HG10	0.0467	5	01Jul2015, 12:24	1
G05	0.2956	115	01Jul2015, 12:12	13
FG13	0.0661	10	01Jul2015, 12:30	2
FG12	0.0328	20	01Jul2015, 12:12	2
POND D	0.3945	16	01Jul2015, 14:24	12
POND D-G17	0.3945	16	01Jul2015, 14:24	12
HG15	0.0297	2	01Jul2015, 12:42	1
FG15a	0.0156	11	01Jul2015, 12:06	1
G17	0.4398	17	01Jul2015, 13:36	14
G17-G18	0.4398	17	01Jul2015, 13:36	14
FG16	0.0773	47	01Jul2015, 12:06	4
G18	0.5171	59	01Jul2015, 12:06	18
G18-POND E	0.5171	56	01Jul2015, 12:12	18
HG30	0.1844	8	01Jul2015, 13:24	3
FG30-PONDHS	0.1844	8	01Jul2015, 13:36	3
FG31	0.0922	46	01Jul2015, 12:18	6
POND HS	0.2766	27	01Jul2015, 12:42	9
FG17a	0.0694	40	01Jul2015, 12:06	4
FG17a-POND E	0.0694	39	01Jul2015, 12:12	4
FG18	**0.0644**	**18**	**01Jul2015, 12:24**	**3**
FG18-POND E	0.0644	18	01Jul2015, 12:30	3
FG19	0.0527	33	01Jul2015, 12:12	3
FG17c	0.0313	7	01Jul2015, 12:06	1
FG17b	0.0214	16	01Jul2015, 12:06	1
POND E	**1.0329**	**25**	**01Jul2015, 18:30**	**20**
H08	**1.0329**	**19**	**01Jul2015, 18:30**	**15**
H09	**0.0000**	**5**	**01Jul2015, 18:30**	**5**
FH01	**0.1348**	**54**	**01Jul2015, 12:18**	**7**
POND H	**0.1348**	**8**	**01Jul2015, 13:54**	**5**
FH02	0.0091	3	01Jul2015, 12:12	0
FH03	0.0081	6	01Jul2015, 12:06	1
H12	0.1520	10	01Jul2015, 12:12	6

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_5 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_5 (AC. FT.)
OS01	1.5594	53	01Jul2015, 12:48	17
DB16	0.0578	22	01Jul2015, 12:12	2
B10	1.6172	60	01Jul2015, 12:42	19
B10-B11	1.6172	60	01Jul2015, 12:42	19
DB17	0.0048	7	01Jul2015, 12:00	1
B11	1.6220	61	01Jul2015, 12:42	19
B11-POND C	1.6220	61	01Jul2015, 12:48	19
DB21	0.0519	5	01Jul2015, 12:12	1
DB18	0.0346	16	01Jul2015, 12:06	2
DB19	0.0281	6	01Jul2015, 12:12	1
DB20	0.0147	6	01Jul2015, 12:12	1
POND C	1.7513	50	01Jul2015, 13:30	19
POND C-B16	1.7513	50	01Jul2015, 13:30	19
DB25	0.0211	11	01Jul2015, 12:06	1
B16	1.7724	51	01Jul2015, 13:30	20
B16-B17	1.7724	51	01Jul2015, 13:36	20
DB26	0.0682	42	01Jul2015, 12:12	4
B17	1.8406	55	01Jul2015, 13:36	24
B17-B26	1.8406	55	01Jul2015, 13:42	24
OS03	0.1984	9	01Jul2015, 12:30	2
DB01	0.0719	12	01Jul2015, 12:12	2
B01	0.2703	18	01Jul2015, 12:12	4
B01-B02	0.2703	18	01Jul2015, 12:18	4
OS02	0.2219	12	01Jul2015, 12:30	3
DB02	0.0516	10	01Jul2015, 12:06	1
B02	0.5438	34	01Jul2015, 12:18	8
B02-POND A	0.5438	34	01Jul2015, 12:24	8
OS04	0.1359	4	01Jul2015, 12:30	1
DB03	0.0703	7	01Jul2015, 12:12	1
B03	0.2062	9	01Jul2015, 12:18	2
B03-B04	0.2062	9	01Jul2015, 12:30	2
DB04	0.0422	5	01Jul2015, 12:12	1
DB05	0.0384	4	01Jul2015, 12:18	1
B04	0.2868	17	01Jul2015, 12:24	4
B04-B05	0.2868	16	01Jul2015, 12:24	4
DB06	0.0219	13	01Jul2015, 12:06	1
B05	0.3087	24	01Jul2015, 12:18	5
B05-POND A	0.3087	23	01Jul2015, 12:24	5
DB07	0.0254	5	01Jul2015, 12:06	1
DB08	0.0297	3	01Jul2015, 12:12	0
POND A	0.9076	18	01Jul2015, 14:06	8
POND A-B06	0.9076	18	01Jul2015, 14:06	8
DB09	0.0189	7	01Jul2015, 12:06	1
B06	0.9265	18	01Jul2015, 14:06	9

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
B06-B07	0.9265	18	01Jul2015, 14:18	9
DB11	0.0969	18	01Jul2015, 12:12	2
DB10	0.0364	11	01Jul2015, 12:06	1
B07	1.0598	32	01Jul2015, 12:18	12
B07-B09	1.0598	31	01Jul2015, 12:24	12
DB12	0.0453	19	01Jul2015, 12:06	2
B09	1.1051	43	01Jul2015, 12:18	14
B09-POND B	1.1051	42	01Jul2015, 12:18	14
DB15	0.1234	11	01Jul2015, 12:24	2
DB13	0.0703	16	01Jul2015, 12:12	2
DB14	0.0556	21	01Jul2015, 12:12	2
POND B	1.3544	67	01Jul2015, 12:30	20
POND B-B12	1.3544	66	01Jul2015, 12:30	20
DB22	0.0516	22	01Jul2015, 12:12	2
DB23	0.0172	17	01Jul2015, 12:06	1
B12	1.4232	80	01Jul2015, 12:30	23
B12-B14	1.4232	80	01Jul2015, 12:30	23
DB24	0.0531	22	01Jul2015, 12:06	2
B14	1.4763	89	01Jul2015, 12:24	25
B14-B15	1.4763	89	01Jul2015, 12:24	25
DB28	**0.0741**	**13**	**01Jul2015, 12:12**	**2**
B15	1.5504	99	01Jul2015, 12:24	27
B15-B18	1.5504	99	01Jul2015, 12:30	26
DB29	0.1697	18	01Jul2015, 12:24	3
DB27	0.0508	16	01Jul2015, 12:18	2
B26	3.6115	169	01Jul2015, 12:24	55
B26-27	3.6115	166	01Jul2015, 12:30	55
FB-02	0.0500	16	01Jul2015, 12:18	2
FB-01	0.0373	14	01Jul2015, 12:06	1
FB01-27a	0.0373	14	01Jul2015, 12:12	1
B19	0.0873	29	01Jul2015, 12:12	3
B19-27	0.0873	28	01Jul2015, 12:18	3
FB-03	0.0078	8	01Jul2015, 12:06	1
27	3.7066	189	01Jul2015, 12:30	59
27-32	3.7066	186	01Jul2015, 12:30	58
WH-24	0.1325	52	01Jul2015, 12:12	5
WH-26	0.0839	3	01Jul2015, 12:30	1
WH-27	0.0217	1	01Jul2015, 12:06	0
30	0.2381	55	01Jul2015, 12:12	6
30-31	0.2381	53	01Jul2015, 12:12	6
WH-28	0.0398	14	01Jul2015, 12:12	2
31	0.2779	68	01Jul2015, 12:12	8
31-32	0.2779	65	01Jul2015, 12:18	8
WH-29	0.0495	18	01Jul2015, 12:12	2
WH-31	0.0406	19	01Jul2015, 12:06	2
WH-30	0.0159	3	01Jul2015, 12:00	0
32	4.0905	249	01Jul2015, 12:30	70
WH32	0.0458	3	01Jul2015, 12:06	1

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
BEN POND	4.1363	95	01Jul2015, 14:30	64
WH-33	0.0064	3	01Jul2015, 12:06	0
33	4.1427	95	01Jul2015, 14:30	65
33-37	4.1427	95	01Jul2015, 14:42	64
WH35	0.1550	21	01Jul2015, 12:12	3
WH34	0.0450	13	01Jul2015, 12:12	1
B34-36	0.0450	13	01Jul2015, 12:12	1
36	0.2000	34	01Jul2015, 12:12	4
36-37	0.2000	33	01Jul2015, 12:18	4
WH36	0.0750	4	01Jul2015, 12:18	1
37	4.4177	100	01Jul2015, 14:24	69
FG08A	0.0750	27	01Jul2015, 12:06	3
FG08A-G05	0.0750	27	01Jul2015, 12:12	3
FG08B	0.0630	20	01Jul2015, 12:12	2
FG08B-G05	0.0630	20	01Jul2015, 12:18	2
FG11	0.0625	19	01Jul2015, 12:18	2
FG09	0.0484	8	01Jul2015, 12:18	1
FG09-G05	0.0484	8	01Jul2015, 12:18	1
HG10	0.0467	2	01Jul2015, 12:24	1
G05	0.2956	72	01Jul2015, 12:18	9
FG13	0.0661	5	01Jul2015, 12:30	1
FG12	0.0328	14	01Jul2015, 12:12	1
POND D	0.3945	9	01Jul2015, 14:48	7
POND D-G17	0.3945	9	01Jul2015, 14:54	7
HG15	0.0297	1	01Jul2015, 12:48	0
FG15a	0.0156	7	01Jul2015, 12:06	1
G17	0.4398	10	01Jul2015, 14:30	8
G17-G18	0.4398	10	01Jul2015, 14:36	8
FG16	0.0773	31	01Jul2015, 12:06	3
G18	0.5171	39	01Jul2015, 12:06	11
G18-POND E	0.5171	37	01Jul2015, 12:12	11
HG30	0.1844	3	01Jul2015, 13:36	2
FG30-PONDHS	0.1844	3	01Jul2015, 13:48	2
FG31	0.0922	31	01Jul2015, 12:18	4
POND HS	0.2766	19	01Jul2015, 12:42	5
FG17a	0.0694	26	01Jul2015, 12:12	3
FG17a-POND E	0.0694	26	01Jul2015, 12:12	3
FG18	**0.0644**	**11**	**01Jul2015, 12:30**	**2**
FG18-POND E	0.0644	11	01Jul2015, 12:30	2
FG19	0.0527	23	01Jul2015, 12:12	2
FG17c	0.0313	3	01Jul2015, 12:12	0
FG17b	0.0214	11	01Jul2015, 12:06	1
POND E	**1.0329**	**12**	**01Jul2015, 21:12**	**10**
H08	**1.0329**	**9**	**01Jul2015, 21:12**	**7**
H09	**0.0000**	**4**	**01Jul2015, 21:12**	**3**
FH01	**0.1348**	**34**	**01Jul2015, 12:18**	**5**
POND H	**0.1348**	**3**	**01Jul2015, 15:24**	**3**
FH02	0.0091	2	01Jul2015, 12:12	0
FH03	0.0081	4	01Jul2015, 12:06	0
H12	0.1520	6	01Jul2015, 12:12	3

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_2 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_2 (AC. FT.)
OS01	1.5594	11	01Jul2015, 13:24	6
DB16	0.0578	12	01Jul2015, 12:12	1
B10	1.6172	13	01Jul2015, 13:18	7
B10-B11	1.6172	13	01Jul2015, 13:18	7
DB17	0.0048	5	01Jul2015, 12:00	0
B11	1.6220	15	01Jul2015, 12:12	8
B11-POND C	1.6220	14	01Jul2015, 12:24	8
DB21	0.0519	1	01Jul2015, 12:18	0
DB18	0.0346	9	01Jul2015, 12:06	1
DB19	0.0281	3	01Jul2015, 12:12	0
DB20	0.0147	3	01Jul2015, 12:12	0
POND C	1.7513	11	01Jul2015, 15:00	6
POND C-B16	1.7513	11	01Jul2015, 15:06	6
DB25	0.0211	7	01Jul2015, 12:06	1
B16	1.7724	11	01Jul2015, 15:06	7
B16-B17	1.7724	11	01Jul2015, 15:18	7
DB26	0.0682	27	01Jul2015, 12:12	3
B17	1.8406	31	01Jul2015, 12:12	9
B17-B26	1.8406	30	01Jul2015, 12:18	9
OS03	0.1984	2	01Jul2015, 13:06	1
DB01	0.0719	4	01Jul2015, 12:12	1
B01	0.2703	5	01Jul2015, 12:12	2
B01-B02	0.2703	5	01Jul2015, 12:18	2
OS02	0.2219	3	01Jul2015, 12:48	1
DB02	0.0516	3	01Jul2015, 12:06	1
B02	0.5438	8	01Jul2015, 12:18	3
B02-POND A	0.5438	8	01Jul2015, 12:24	3
OS04	0.1359	1	01Jul2015, 13:30	0
DB03	0.0703	1	01Jul2015, 12:18	0
B03	0.2062	2	01Jul2015, 12:54	1
B03-B04	0.2062	2	01Jul2015, 13:12	1
DB04	0.0422	1	01Jul2015, 12:18	0
DB05	0.0384	1	01Jul2015, 12:24	0
B04	0.2868	3	01Jul2015, 12:36	1
B04-B05	0.2868	3	01Jul2015, 12:36	1
DB06	0.0219	8	01Jul2015, 12:06	1
B05	0.3087	10	01Jul2015, 12:12	2
B05-POND A	0.3087	9	01Jul2015, 12:12	2
DB07	0.0254	2	01Jul2015, 12:12	0
DB08	0.0297	0	01Jul2015, 12:18	0
POND A	0.9076	2	02Jul2015, 00:00	1
POND A-B06	0.9076	2	02Jul2015, 00:00	1
DB09	0.0189	3	01Jul2015, 12:06	0
B06	0.9265	3	01Jul2015, 12:06	1

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
B06-B07	0.9265	3	01Jul2015, 12:24	1
DB11	0.0969	8	01Jul2015, 12:18	1
DB10	0.0364	5	01Jul2015, 12:12	1
B07	1.0598	13	01Jul2015, 12:24	3
B07-B09	1.0598	13	01Jul2015, 12:30	3
DB12	0.0453	10	01Jul2015, 12:06	1
B09	1.1051	18	01Jul2015, 12:18	4
B09-POND B	1.1051	18	01Jul2015, 12:24	4
DB15	0.1234	3	01Jul2015, 12:30	1
DB13	0.0703	7	01Jul2015, 12:18	1
DB14	0.0556	11	01Jul2015, 12:12	1
POND B	1.3544	29	01Jul2015, 12:36	7
POND B-B12	1.3544	28	01Jul2015, 12:36	7
DB22	0.0516	13	01Jul2015, 12:12	1
DB23	0.0172	12	01Jul2015, 12:06	1
B12	1.4232	36	01Jul2015, 12:30	10
B12-B14	1.4232	36	01Jul2015, 12:30	10
DB24	0.0531	12	01Jul2015, 12:06	1
B14	1.4763	44	01Jul2015, 12:18	11
B14-B15	1.4763	43	01Jul2015, 12:18	11
DB28	**0.0741**	**5**	**01Jul2015, 12:18**	**1**
B15	1.5504	48	01Jul2015, 12:18	12
B15-B18	1.5504	47	01Jul2015, 12:30	11
DB29	0.1697	6	01Jul2015, 12:30	2
DB27	0.0508	8	01Jul2015, 12:18	1
B26	3.6115	83	01Jul2015, 12:30	23
B26-27	3.6115	82	01Jul2015, 12:36	23
FB-02	0.0500	9	01Jul2015, 12:18	1
FB-01	0.0373	7	01Jul2015, 12:12	1
FB01-27a	0.0373	7	01Jul2015, 12:12	1
B19	0.0873	15	01Jul2015, 12:12	2
B19-27	0.0873	15	01Jul2015, 12:18	2
FB-03	0.0078	5	01Jul2015, 12:06	0
27	3.7066	92	01Jul2015, 12:36	25
27-32	3.7066	91	01Jul2015, 12:36	25
WH-24	0.1325	29	01Jul2015, 12:12	3
WH-26	0.0839	1	01Jul2015, 13:18	0
WH-27	0.0217	0	01Jul2015, 12:48	0
30	0.2381	29	01Jul2015, 12:12	4
30-31	0.2381	28	01Jul2015, 12:12	4
WH-28	0.0398	8	01Jul2015, 12:12	1
31	0.2779	35	01Jul2015, 12:12	4
31-32	0.2779	35	01Jul2015, 12:18	4
WH-29	0.0495	10	01Jul2015, 12:12	1
WH-31	0.0406	11	01Jul2015, 12:06	1
WH-30	0.0159	1	01Jul2015, 12:06	0
32	4.0905	120	01Jul2015, 12:36	32
WH32	0.0458	0	01Jul2015, 12:48	0

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

INTERIM 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC.
BEN POND	4.1363	45	01Jul2015, 13:48	27
WH-33	0.0064	2	01Jul2015, 12:06	0
33	4.1427	45	01Jul2015, 13:48	27
33-37	4.1427	45	01Jul2015, 14:00	27
WH35	0.1550	6	01Jul2015, 12:18	1
WH34	0.0450	6	01Jul2015, 12:12	1
B34-36	0.0450	6	01Jul2015, 12:12	1
36	0.2000	12	01Jul2015, 12:12	2
36-37	0.2000	12	01Jul2015, 12:24	2
WH36	0.0750	1	01Jul2015, 12:54	0
37	4.4177	49	01Jul2015, 13:54	29
FG08A	0.0750	14	01Jul2015, 12:12	2
FG08A-G05	0.0750	14	01Jul2015, 12:12	2
FG08B	0.0630	10	01Jul2015, 12:12	1
FG08B-G05	0.0630	10	01Jul2015, 12:18	1
FG11	0.0625	10	01Jul2015, 12:18	1
FG09	0.0484	3	01Jul2015, 12:18	1
FG09-G05	0.0484	3	01Jul2015, 12:24	1
HG10	0.0467	0	01Jul2015, 13:00	0
G05	0.2956	36	01Jul2015, 12:18	5
FG13	0.0661	1	01Jul2015, 12:42	1
FG12	0.0328	8	01Jul2015, 12:12	1
POND D	0.3945	3	01Jul2015, 20:06	3
POND D-G17	0.3945	3	01Jul2015, 20:06	3
HG15	0.0297	0	01Jul2015, 13:36	0
FG15a	0.0156	4	01Jul2015, 12:06	0
G17	0.4398	4	01Jul2015, 12:06	4
G17-G18	0.4398	4	01Jul2015, 12:12	3
FG16	0.0773	16	01Jul2015, 12:06	2
G18	0.5171	20	01Jul2015, 12:06	5
G18-POND E	0.5171	20	01Jul2015, 12:12	5
HG30	0.1844	1	01Jul2015, 14:48	1
FG30-PONDHS	0.1844	1	01Jul2015, 15:12	0
FG31	0.0922	18	01Jul2015, 12:18	2
POND HS	0.2766	10	01Jul2015, 12:42	3
FG17a	0.0694	14	01Jul2015, 12:12	2
FG17a-POND E	0.0694	14	01Jul2015, 12:12	2
FG18	**0.0644**	**5**	**01Jul2015, 12:30**	**1**
FG18-POND E	0.0644	5	01Jul2015, 12:30	1
FG19	0.0527	13	01Jul2015, 12:12	1
FG17c	0.0313	1	01Jul2015, 12:18	0
FG17b	0.0214	6	01Jul2015, 12:06	1
POND E	**1.0329**	**6**	**02Jul2015, 00:00**	**5**
H08	**1.0329**	**3**	**02Jul2015, 00:00**	**3**
H09	**0.0000**	**2**	**02Jul2015, 00:00**	**2**
FH01	**0.1348**	**17**	**01Jul2015, 12:18**	**3**
POND H	**0.1348**	**1**	**01Jul2015, 18:42**	**1**
FH02	0.0091	1	01Jul2015, 12:12	0
FH03	0.0081	2	01Jul2015, 12:12	0
H12	0.1520	4	01Jul2015, 12:12	2

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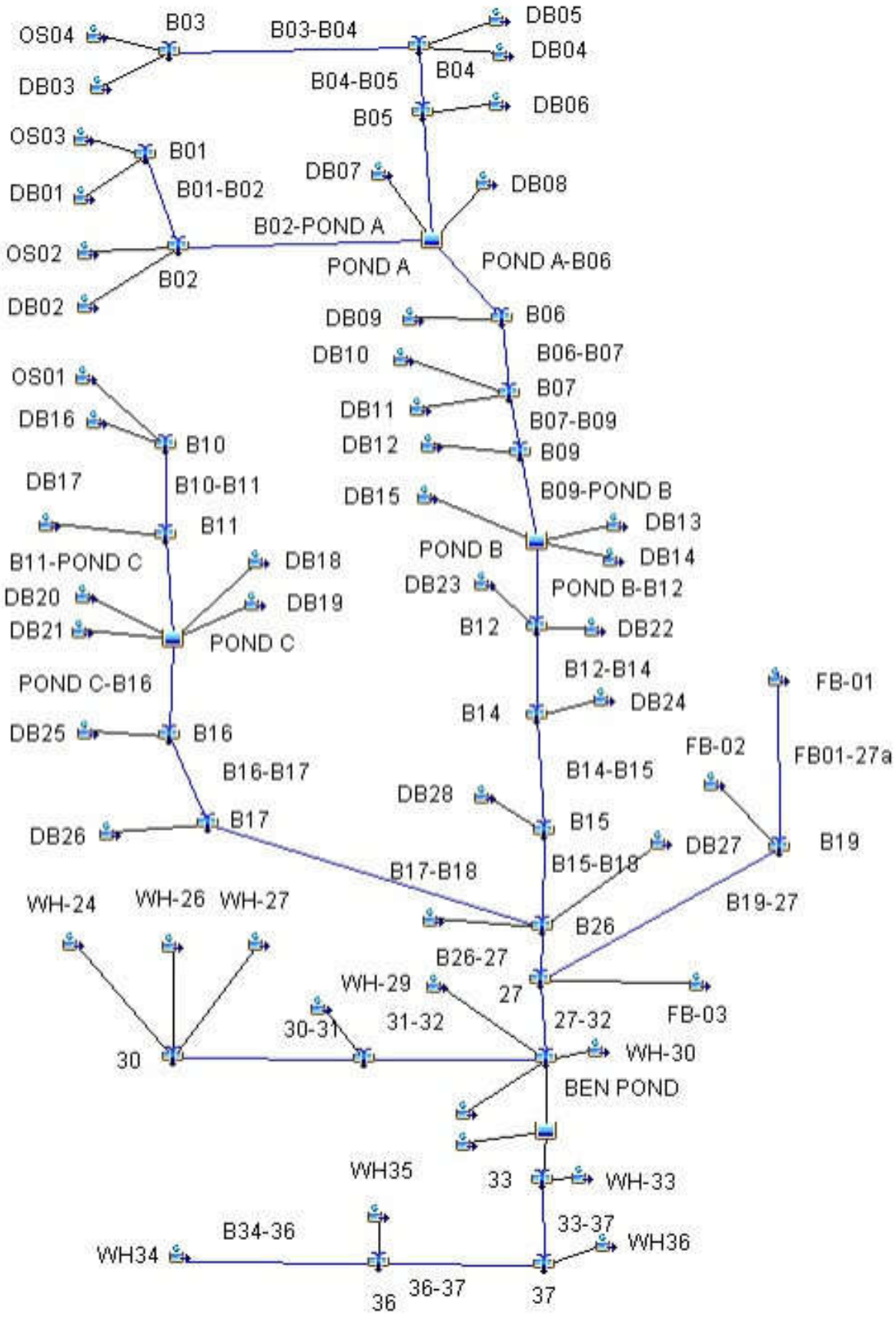
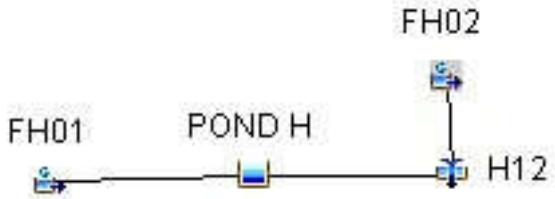
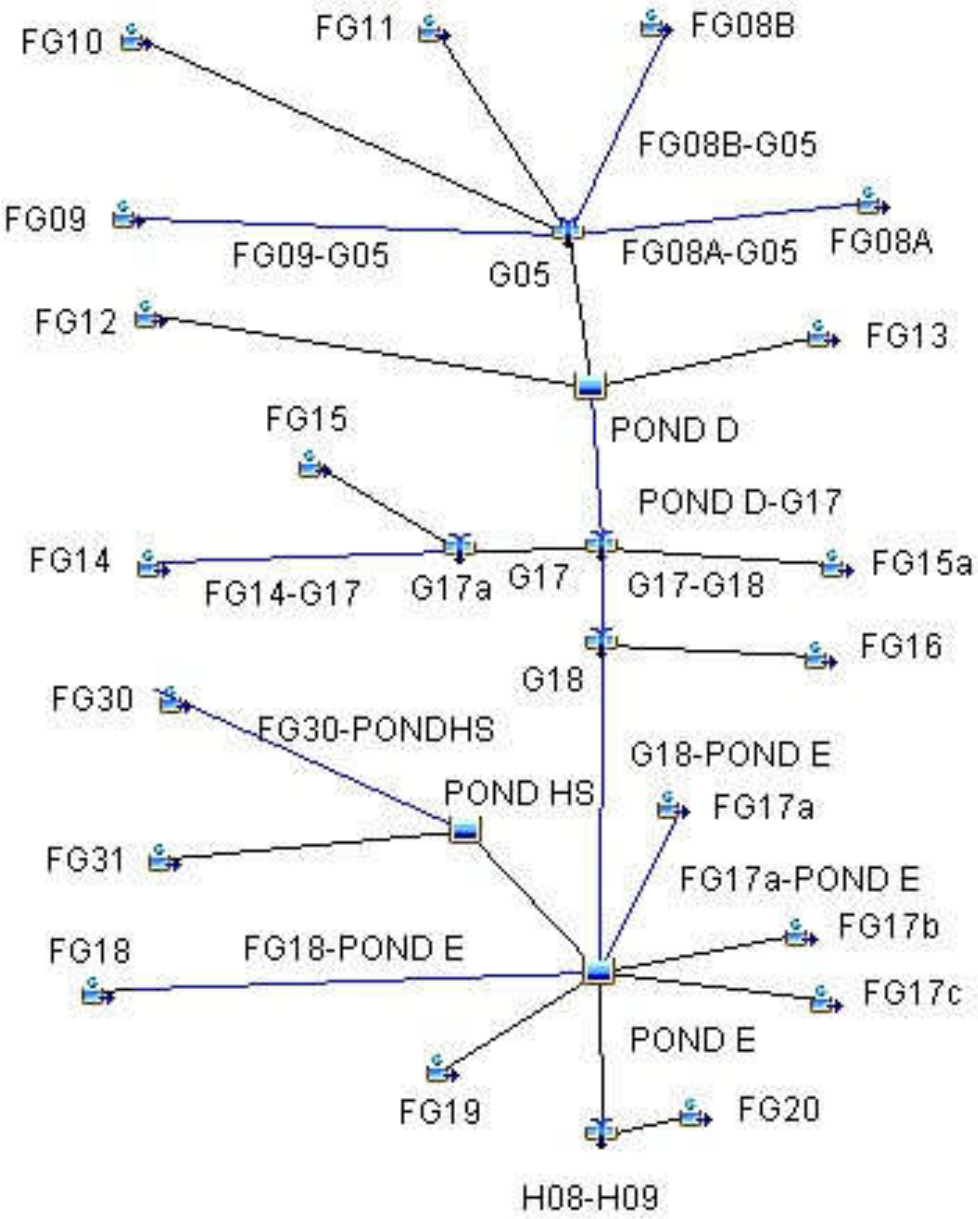
BENNETT INTERIM CONDITIONS



HAEGLER INTERIM CONDITIONS



GIECK INTERIM CONDITIONS



FUTURE 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
OS01	1.5594	726	01Jul2015, 12:30	122
DB16	0.0578	85	01Jul2015, 12:12	8
B10	1.6172	765	01Jul2015, 12:30	130
B10-B11	1.6172	763	01Jul2015, 12:30	130
DB17	0.0048	15	01Jul2015, 12:00	1
B11	1.6220	765	01Jul2015, 12:30	131
B11-POND C	1.6220	759	01Jul2015, 12:36	131
DB21	0.0519	49	01Jul2015, 12:06	5
DB18	0.0346	60	01Jul2015, 12:06	5
DB19	0.0281	34	01Jul2015, 12:12	3
DB20	0.0147	23	01Jul2015, 12:06	2
POND C	1.7513	727	01Jul2015, 12:48	141
POND C-B16	1.7513	725	01Jul2015, 12:48	141
DB25	0.0211	40	01Jul2015, 12:06	3
B16	1.7724	730	01Jul2015, 12:48	144
B16-B17	1.7724	724	01Jul2015, 12:48	144
DB26	0.0682	124	01Jul2015, 12:06	12
B17	1.8406	751	01Jul2015, 12:48	156
B17-B26	1.8406	748	01Jul2015, 12:54	155
OS03	0.1984	123	01Jul2015, 12:18	16
DB01	0.0719	83	01Jul2015, 12:06	8
B01	0.2703	190	01Jul2015, 12:12	23
B01-B02	0.2703	184	01Jul2015, 12:18	23
OS02	0.2219	140	01Jul2015, 12:18	19
DB02	0.0516	66	01Jul2015, 12:06	5
B02	0.5438	358	01Jul2015, 12:12	48
B02-POND A	0.5438	357	01Jul2015, 12:18	47
OS04	0.1359	77	01Jul2015, 12:18	10
DB03	0.0703	63	01Jul2015, 12:12	6
B03	0.2062	137	01Jul2015, 12:12	16
B03-B04	0.2062	135	01Jul2015, 12:18	16
DB04	0.0422	40	01Jul2015, 12:12	4
DB05	0.0384	35	01Jul2015, 12:12	4
B04	0.2868	201	01Jul2015, 12:18	24
B04-B05	0.2868	201	01Jul2015, 12:18	24
DB06	0.0219	41	01Jul2015, 12:06	4
B05	0.3087	232	01Jul2015, 12:12	28
B05-POND A	0.3087	230	01Jul2015, 12:18	28
DB07	0.0254	33	01Jul2015, 12:06	3
DB08	0.0297	30	01Jul2015, 12:06	3
POND A	0.9076	523	01Jul2015, 12:24	75
POND A-B06	0.9076	523	01Jul2015, 12:30	75
DB09	0.0189	31	01Jul2015, 12:06	2
B06	0.9265	530	01Jul2015, 12:30	77
B06-B07	0.9265	530	01Jul2015, 12:30	77
DB11	0.0969	107	01Jul2015, 12:12	11
DB10	0.0364	52	01Jul2015, 12:06	5
B07	1.0598	609	01Jul2015, 12:30	92
B07-B09	1.0598	608	01Jul2015, 12:30	92

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
DB12	0.0453	76	01Jul2015, 12:06	7
B09	1.1051	632	01Jul2015, 12:30	99
B09-POND B	1.1051	631	01Jul2015, 12:30	99
DB15	0.1234	98	01Jul2015, 12:18	12
DB13	0.0703	84	01Jul2015, 12:12	9
DB14	0.0556	86	01Jul2015, 12:06	8
POND B	1.3544	669	01Jul2015, 12:42	126
POND B-B12	1.3544	669	01Jul2015, 12:42	126
DB22	0.0516	84	01Jul2015, 12:06	8
DB23	0.0172	42	01Jul2015, 12:06	4
B12	1.4232	698	01Jul2015, 12:36	138
B12-B14	1.4232	697	01Jul2015, 12:42	137
DB24	0.0531	88	01Jul2015, 12:06	8
B14	1.4763	719	01Jul2015, 12:36	145
B14-B15	1.4763	716	01Jul2015, 12:36	145
DB28	**0.0741**	**79**	**01Jul2015, 12:12**	**8**
B15	1.5504	750	01Jul2015, 12:36	153
B15-B26	1.5504	748	01Jul2015, 12:42	152
DB29	0.1697	138	01Jul2015, 12:18	17
DB27	0.0508	63	01Jul2015, 12:12	7
B26	3.6115	1570	01Jul2015, 12:48	332
B26-27	3.6115	1567	01Jul2015, 12:48	331
FB-02	0.0500	63	01Jul2015, 12:18	7
FB-01	0.0373	58	01Jul2015, 12:06	5
FB01-B19	0.0373	56	01Jul2015, 12:06	5
B19	0.0873	117	01Jul2015, 12:12	13
B19-27	0.0873	115	01Jul2015, 12:12	13
FB-03	0.0078	19	01Jul2015, 12:00	2
27	3.7066	1607	01Jul2015, 12:48	345
27-32	3.7066	1605	01Jul2015, 12:48	345
WH-24	0.1325	199	01Jul2015, 12:12	20
WH-26	0.0839	46	01Jul2015, 12:18	6
WH-27	0.0217	20	01Jul2015, 12:06	2
30	0.2381	252	01Jul2015, 12:12	28
30-31	0.2381	251	01Jul2015, 12:12	28
WH-28	0.0398	57	01Jul2015, 12:12	6
31	0.2779	308	01Jul2015, 12:12	33
31-32	0.2779	301	01Jul2015, 12:12	33
WH-29	0.0495	71	01Jul2015, 12:12	7
WH-31	0.0406	71	01Jul2015, 12:06	6
WH-30	0.0159	24	01Jul2015, 12:00	2
32	4.0905	1744	01Jul2015, 12:42	393
WH32	0.0458	49	01Jul2015, 12:00	4
BEN POND	4.1363	1365	01Jul2015, 13:18	376
WH-33	0.0064	11	01Jul2015, 12:06	1
33	4.1427	1366	01Jul2015, 13:18	377
33-37	4.1427	1363	01Jul2015, 13:18	375
WH35	0.1550	155	01Jul2015, 12:12	15
WH34	0.0450	63	01Jul2015, 12:06	6

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 100-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{100} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{100} (AC. FT.)
B34-36	0.0450	61	01Jul2015, 12:12	6
36	0.2000	216	01Jul2015, 12:12	21
36-37	0.2000	214	01Jul2015, 12:12	21
WH36	0.0750	58	01Jul2015, 12:12	6
37	4.4177	1404	01Jul2015, 13:18	402
FG08A	0.0750	117	01Jul2015, 12:06	10
FG08A-G05	0.0750	111	01Jul2015, 12:12	10
FG10	0.0669	46	01Jul2015, 12:36	8
FG08B	0.0630	87	01Jul2015, 12:12	9
FG08B-G05	0.0630	85	01Jul2015, 12:12	9
FG11	0.0625	76	01Jul2015, 12:18	9
FG09	0.0484	49	01Jul2015, 12:12	6
FG09-G05	0.0484	48	01Jul2015, 12:18	6
G05	0.3158	342	01Jul2015, 12:12	41
FG13	0.0661	44	01Jul2015, 12:24	6
FG14	0.0331	42	01Jul2015, 12:12	5
FG12	0.0328	51	01Jul2015, 12:12	5
POND D	0.4478	131	01Jul2015, 13:06	47
POND D-G17	0.4478	131	01Jul2015, 13:06	47
FG15	0.1017	95	01Jul2015, 12:18	12
G17a	0.1017	95	01Jul2015, 12:18	12
FG15a	0.0156	28	01Jul2015, 12:06	2
G17	0.5651	184	01Jul2015, 12:30	61
G17-G18	0.5651	184	01Jul2015, 12:36	61
FG16	0.0773	127	01Jul2015, 12:06	11
G18	0.6424	235	01Jul2015, 12:12	72
G18-POND E	0.6424	233	01Jul2015, 12:12	72
FG31	0.0922	118	01Jul2015, 12:18	14
FG30	0.0400	76	01Jul2015, 12:06	6
FG30-PONDHS	0.0400	74	01Jul2015, 12:12	6
POND HS	0.1322	156	01Jul2015, 12:24	20
FG17a	0.0694	102	01Jul2015, 12:06	9
FG17a-POND E	0.0694	100	01Jul2015, 12:06	9
FG18	**0.0644**	**57**	**01Jul2015, 12:24**	**8**
FG18-POND E	0.0644	57	01Jul2015, 12:24	8
FG19	0.0527	85	01Jul2015, 12:06	8
FG17c	0.0313	32	01Jul2015, 12:06	3
FG17b	0.0214	40	01Jul2015, 12:06	3
POND E	**1.0138**	**240**	**01Jul2015, 13:30**	**99**
H08	**1.0138**	**204**	**01Jul2015, 13:30**	**87**
H09	**0.0000**	**36**	**01Jul2015, 13:30**	**13**
FH01	**0.1344**	**152**	**01Jul2015, 12:18**	**18**
POND H	**0.1344**	**57**	**01Jul2015, 12:54**	**15**
FH02	0.0091	11	01Jul2015, 12:06	1
FH03	0.0081	14	01Jul2015, 12:06	1
H12	0.1516	62	01Jul2015, 12:48	17

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{50} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{50} (AC. FT.)
OS01	1.5594	488	01Jul2015, 12:36	87
DB16	0.0578	66	01Jul2015, 12:12	7
B10	1.6172	516	01Jul2015, 12:30	93
B10-B11	1.6172	514	01Jul2015, 12:30	93
DB17	0.0048	13	01Jul2015, 12:00	1
B11	1.6220	516	01Jul2015, 12:30	94
B11-POND C	1.6220	515	01Jul2015, 12:36	94
DB21	0.0519	34	01Jul2015, 12:06	3
DB18	0.0346	47	01Jul2015, 12:06	4
DB19	0.0281	25	01Jul2015, 12:12	3
DB20	0.0147	18	01Jul2015, 12:06	2
POND C	1.7513	492	01Jul2015, 12:48	101
POND C-B16	1.7513	488	01Jul2015, 12:48	101
DB25	0.0211	32	01Jul2015, 12:06	3
B16	1.7724	492	01Jul2015, 12:48	103
B16-B17	1.7724	492	01Jul2015, 12:54	103
DB26	0.0682	101	01Jul2015, 12:12	10
B17	1.8406	511	01Jul2015, 12:54	113
B17-B26	1.8406	508	01Jul2015, 12:54	112
OS03	0.1984	83	01Jul2015, 12:18	11
DB01	0.0719	61	01Jul2015, 12:06	6
B01	0.2703	132	01Jul2015, 12:12	17
B01-B02	0.2703	129	01Jul2015, 12:18	17
OS02	0.2219	96	01Jul2015, 12:24	14
DB02	0.0516	48	01Jul2015, 12:06	4
B02	0.5438	249	01Jul2015, 12:18	34
B02-POND A	0.5438	248	01Jul2015, 12:18	34
OS04	0.1359	51	01Jul2015, 12:18	7
DB03	0.0703	45	01Jul2015, 12:12	5
B03	0.2062	92	01Jul2015, 12:12	11
B03-B04	0.2062	92	01Jul2015, 12:18	11
DB04	0.0422	28	01Jul2015, 12:12	3
DB05	0.0384	25	01Jul2015, 12:12	3
B04	0.2868	139	01Jul2015, 12:18	17
B04-B05	0.2868	139	01Jul2015, 12:18	17
DB06	0.0219	33	01Jul2015, 12:06	3
B05	0.3087	162	01Jul2015, 12:18	20
B05-POND A	0.3087	162	01Jul2015, 12:18	20
DB07	0.0254	24	01Jul2015, 12:06	2
DB08	0.0297	21	01Jul2015, 12:06	2
POND A	0.9076	365	01Jul2015, 12:30	53
POND A-B06	0.9076	364	01Jul2015, 12:30	53
DB09	0.0189	24	01Jul2015, 12:06	2
B06	0.9265	370	01Jul2015, 12:30	55
B06-B07	0.9265	363	01Jul2015, 12:36	54
DB11	0.0969	80	01Jul2015, 12:12	9
DB10	0.0364	40	01Jul2015, 12:06	4
B07	1.0598	421	01Jul2015, 12:30	67
B07-B09	1.0598	416	01Jul2015, 12:36	66

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{50} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{50} (AC. FT.)
DB12	0.0453	59	01Jul2015, 12:06	5
B09	1.1051	431	01Jul2015, 12:36	71
B09-POND B	1.1051	430	01Jul2015, 12:36	71
DB15	0.1234	70	01Jul2015, 12:18	9
DB13	0.0703	63	01Jul2015, 12:12	7
DB14	0.0556	66	01Jul2015, 12:06	6
POND B	1.3544	486	01Jul2015, 12:42	92
POND B-B12	1.3544	483	01Jul2015, 12:42	92
DB22	0.0516	66	01Jul2015, 12:06	6
DB23	0.0172	36	01Jul2015, 12:06	3
B12	1.4232	505	01Jul2015, 12:42	101
B12-B14	1.4232	502	01Jul2015, 12:42	101
DB24	0.0531	69	01Jul2015, 12:06	6
B14	1.4763	517	01Jul2015, 12:42	107
B14-B15	1.4763	514	01Jul2015, 12:42	107
DB28	**0.0741**	**59**	**01Jul2015, 12:12**	**6**
B15	1.5504	534	01Jul2015, 12:42	113
B15-B26	1.5504	532	01Jul2015, 12:48	112
DB29	0.1697	100	01Jul2015, 12:18	13
DB27	0.0508	49	01Jul2015, 12:18	6
B26	3.6115	1090	01Jul2015, 12:54	243
B26-27	3.6115	1090	01Jul2015, 12:54	242
FB-02	0.0500	50	01Jul2015, 12:18	6
FB-01	0.0373	45	01Jul2015, 12:06	4
FB01-B19	0.0373	43	01Jul2015, 12:06	4
B19	0.0873	91	01Jul2015, 12:12	10
B19-27	0.0873	90	01Jul2015, 12:12	10
FB-03	0.0078	16	01Jul2015, 12:00	1
27	3.7066	1118	01Jul2015, 12:54	253
27-32	3.7066	1116	01Jul2015, 12:54	253
WH-24	0.1325	156	01Jul2015, 12:12	15
WH-26	0.0839	31	01Jul2015, 12:24	5
WH-27	0.0217	14	01Jul2015, 12:06	1
30	0.2381	191	01Jul2015, 12:12	21
30-31	0.2381	190	01Jul2015, 12:12	21
WH-28	0.0398	44	01Jul2015, 12:12	5
31	0.2779	234	01Jul2015, 12:12	25
31-32	0.2779	227	01Jul2015, 12:12	25
WH-29	0.0495	56	01Jul2015, 12:12	6
WH-31	0.0406	56	01Jul2015, 12:06	5
WH-30	0.0159	18	01Jul2015, 12:00	1
32	4.0905	1205	01Jul2015, 12:54	290
WH32	0.0458	33	01Jul2015, 12:00	3
BEN POND	4.1363	950	01Jul2015, 13:18	275
WH-33	0.0064	9	01Jul2015, 12:06	1
33	4.1427	951	01Jul2015, 13:18	276
33-37	4.1427	948	01Jul2015, 13:24	274
WH35	0.1550	112	01Jul2015, 12:12	11
WH34	0.0450	48	01Jul2015, 12:06	5

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 50-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{50} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{50} (AC. FT.)
B34-36	0.0450	46	01Jul2015, 12:12	5
36	0.2000	159	01Jul2015, 12:12	16
36-37	0.2000	156	01Jul2015, 12:12	16
WH36	0.0750	39	01Jul2015, 12:12	4
37	4.4177	977	01Jul2015, 13:24	294
FG08A	0.0750	91	01Jul2015, 12:06	8
FG08A-G05	0.0750	86	01Jul2015, 12:12	8
FG10	0.0669	34	01Jul2015, 12:36	6
FG08B	0.0630	67	01Jul2015, 12:12	7
FG08B-G05	0.0630	66	01Jul2015, 12:12	7
FG11	0.0625	59	01Jul2015, 12:18	7
FG09	0.0484	36	01Jul2015, 12:12	4
FG09-G05	0.0484	36	01Jul2015, 12:18	4
G05	0.3158	262	01Jul2015, 12:12	32
FG13	0.0661	31	01Jul2015, 12:24	5
FG14	0.0331	32	01Jul2015, 12:12	4
FG12	0.0328	40	01Jul2015, 12:12	4
POND D	0.4478	89	01Jul2015, 13:12	35
POND D-G17	0.4478	89	01Jul2015, 13:12	35
FG15	0.1017	71	01Jul2015, 12:18	9
G17a	0.1017	71	01Jul2015, 12:18	9
FG15a	0.0156	22	01Jul2015, 12:06	2
G17	0.5651	121	01Jul2015, 12:42	46
G17-G18	0.5651	121	01Jul2015, 12:42	46
FG16	0.0773	98	01Jul2015, 12:06	9
G18	0.6424	177	01Jul2015, 12:12	54
G18-POND E	0.6424	176	01Jul2015, 12:12	54
FG31	0.0922	92	01Jul2015, 12:18	11
FG30	0.0400	60	01Jul2015, 12:06	5
FG30-PONDHS	0.0400	59	01Jul2015, 12:12	5
POND HS	0.1322	107	01Jul2015, 12:30	16
FG17a	0.0694	79	01Jul2015, 12:06	7
FG17a-POND E	0.0694	77	01Jul2015, 12:06	7
FG18	**0.0644**	**43**	**01Jul2015, 12:24**	**6**
FG18-POND E	0.0644	42	01Jul2015, 12:24	6
FG19	0.0527	67	01Jul2015, 12:06	6
FG17c	0.0313	22	01Jul2015, 12:06	2
FG17b	0.0214	31	01Jul2015, 12:06	3
POND E	**1.0138**	**151**	**01Jul2015, 14:00**	**71**
H08	**1.0138**	**136**	**01Jul2015, 14:00**	**62**
H09	**0.0000**	**16**	**01Jul2015, 14:00**	**9**
FH01	**0.1344**	**117**	**01Jul2015, 12:18**	**14**
POND H	**0.1344**	**32**	**01Jul2015, 13:06**	**11**
FH02	0.0091	8	01Jul2015, 12:06	1
FH03	0.0081	11	01Jul2015, 12:06	1
H12	0.1516	35	01Jul2015, 13:00	13

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{25} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{25} (AC. FT.)
OS01	1.5594	303	01Jul2015, 12:36	58.6
DB16	0.0578	50	01Jul2015, 12:12	5.0
B10	1.6172	322	01Jul2015, 12:36	63.6
B10-B11	1.6172	322	01Jul2015, 12:36	63.5
DB17	0.0048	11	01Jul2015, 12:00	0.9
B11	1.6220	323	01Jul2015, 12:36	64.4
B11-POND C	1.6220	321	01Jul2015, 12:36	64.0
DB21	0.0519	22	01Jul2015, 12:06	2.3
DB18	0.0346	36	01Jul2015, 12:06	3.2
DB19	0.0281	18	01Jul2015, 12:12	1.9
DB20	0.0147	13	01Jul2015, 12:06	1.3
POND C	1.7513	302	01Jul2015, 12:54	68.6
POND C-B16	1.7513	300	01Jul2015, 12:54	68.4
DB25	0.0211	25	01Jul2015, 12:06	2.0
B16	1.7724	303	01Jul2015, 12:54	70.3
B16-B17	1.7724	302	01Jul2015, 13:00	69.9
DB26	0.0682	80	01Jul2015, 12:12	8.0
B17	1.8406	315	01Jul2015, 13:00	77.8
B17-B26	1.8406	315	01Jul2015, 13:00	77.4
OS03	0.1984	51	01Jul2015, 12:18	7.7
DB01	0.0719	42	01Jul2015, 12:06	4.1
B01	0.2703	85	01Jul2015, 12:12	11.7
B01-B02	0.2703	83	01Jul2015, 12:18	11.7
OS02	0.2219	62	01Jul2015, 12:24	9.3
DB02	0.0516	34	01Jul2015, 12:06	2.8
B02	0.5438	161	01Jul2015, 12:18	23.8
B02-POND A	0.5438	160	01Jul2015, 12:18	23.8
OS04	0.1359	30	01Jul2015, 12:18	4.5
DB03	0.0703	30	01Jul2015, 12:12	3.2
B03	0.2062	57	01Jul2015, 12:12	7.7
B03-B04	0.2062	56	01Jul2015, 12:18	7.7
DB04	0.0422	19	01Jul2015, 12:12	2.0
DB05	0.0384	17	01Jul2015, 12:12	2.0
B04	0.2868	88	01Jul2015, 12:18	11.7
B04-B05	0.2868	88	01Jul2015, 12:18	11.7
DB06	0.0219	26	01Jul2015, 12:06	2.4
B05	0.3087	107	01Jul2015, 12:18	14.1
B05-POND A	0.3087	106	01Jul2015, 12:18	14.0
DB07	0.0254	17	01Jul2015, 12:06	1.5
DB08	0.0297	13	01Jul2015, 12:06	1.3
POND A	0.9076	210	01Jul2015, 12:36	35.3
POND A-B06	0.9076	209	01Jul2015, 12:36	35.3
DB09	0.0189	18	01Jul2015, 12:06	1.4
B06	0.9265	213	01Jul2015, 12:36	36.7
B06-B07	0.9265	211	01Jul2015, 12:42	36.4
DB11	0.0969	57	01Jul2015, 12:12	6.2
DB10	0.0364	29	01Jul2015, 12:06	2.7
B07	1.0598	241	01Jul2015, 12:36	45.2
B07-B09	1.0598	241	01Jul2015, 12:42	44.9

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{25} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{25} (AC. FT.)
DB12	0.0453	45	01Jul2015, 12:06	3.9
B09	1.1051	250	01Jul2015, 12:42	48.8
B09-POND B	1.1051	249	01Jul2015, 12:42	48.8
DB15	0.1234	47	01Jul2015, 12:18	6.0
DB13	0.0703	46	01Jul2015, 12:12	4.9
DB14	0.0556	50	01Jul2015, 12:06	4.7
POND B	1.3544	282	01Jul2015, 12:48	64.0
POND B-B12	1.3544	279	01Jul2015, 12:54	63.9
DB22	0.0516	50	01Jul2015, 12:06	4.8
DB23	0.0172	29	01Jul2015, 12:06	2.5
B12	1.4232	294	01Jul2015, 12:48	71.1
B12-B14	1.4232	293	01Jul2015, 12:54	70.9
DB24	0.0531	52	01Jul2015, 12:06	4.6
B14	1.4763	301	01Jul2015, 12:54	75.5
B14-B15	1.4763	301	01Jul2015, 12:54	75.4
DB28	**0.0741**	**41**	**01Jul2015, 12:12**	**4.4**
B15	1.5504	312	01Jul2015, 12:54	79.8
B15-B26	1.5504	311	01Jul2015, 13:00	78.9
DB29	0.1697	67	01Jul2015, 12:18	9.0
DB27	0.0508	37	01Jul2015, 12:18	4.3
B26	3.6115	661	01Jul2015, 13:00	169.7
B26-27	3.6115	658	01Jul2015, 13:00	169.0
FB-02	0.0500	38	01Jul2015, 12:18	4.4
FB-01	0.0373	34	01Jul2015, 12:06	3.1
FB01-B19	0.0373	32	01Jul2015, 12:12	3.1
B19	0.0873	69	01Jul2015, 12:12	7.5
B19-27	0.0873	67	01Jul2015, 12:12	7.5
FB-03	0.0078	13	01Jul2015, 12:00	1.1
27	3.7066	677	01Jul2015, 13:00	177.6
27-32	3.7066	674	01Jul2015, 13:00	177.2
WH-24	0.1325	119	01Jul2015, 12:12	11.7
WH-26	0.0839	19	01Jul2015, 12:24	3.0
WH-27	0.0217	9	01Jul2015, 12:06	0.8
30	0.2381	139	01Jul2015, 12:12	15.5
30-31	0.2381	138	01Jul2015, 12:12	15.5
WH-28	0.0398	33	01Jul2015, 12:12	3.4
31	0.2779	171	01Jul2015, 12:12	18.9
31-32	0.2779	165	01Jul2015, 12:12	18.8
WH-29	0.0495	42	01Jul2015, 12:12	4.2
WH-31	0.0406	43	01Jul2015, 12:06	3.8
WH-30	0.0159	12	01Jul2015, 12:00	0.9
32	4.0905	733	01Jul2015, 13:00	204.8
WH32	0.0458	20	01Jul2015, 12:00	1.6
BEN POND	4.1363	571	01Jul2015, 13:30	193.5
WH-33	0.0064	7	01Jul2015, 12:06	0.6
33	4.1427	572	01Jul2015, 13:30	194.1
33-37	4.1427	571	01Jul2015, 13:36	192.6
WH35	0.1550	77	01Jul2015, 12:12	8.0
WH34	0.0450	35	01Jul2015, 12:06	3.3

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 25-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{25} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{25} (AC. FT.)
B34-36	0.0450	34	01Jul2015, 12:12	3.3
36	0.2000	111	01Jul2015, 12:12	11.3
36-37	0.2000	108	01Jul2015, 12:12	11.3
WH36	0.0750	25	01Jul2015, 12:12	2.9
37	4.4177	590	01Jul2015, 13:36	206.7
FG08A	0.0750	67	01Jul2015, 12:06	6.0
FG08A-G05	0.0750	65	01Jul2015, 12:12	6.0
FG10	0.0669	24	01Jul2015, 12:36	4.4
FG08B	0.0630	50	01Jul2015, 12:12	5.0
FG08B-G05	0.0630	49	01Jul2015, 12:12	5.0
FG11	0.0625	45	01Jul2015, 12:18	5.3
FG09	0.0484	26	01Jul2015, 12:18	3.0
FG09-G05	0.0484	25	01Jul2015, 12:18	3.0
G05	0.3158	192	01Jul2015, 12:12	23.7
FG13	0.0661	20	01Jul2015, 12:24	3.2
FG14	0.0331	24	01Jul2015, 12:12	2.7
FG12	0.0328	31	01Jul2015, 12:12	3.0
POND D	0.4478	51	01Jul2015, 13:30	24.6
POND D-G17	0.4478	51	01Jul2015, 13:30	24.6
FG15	0.1017	51	01Jul2015, 12:18	6.8
G17a	0.1017	51	01Jul2015, 12:18	6.8
FG15a	0.0156	17	01Jul2015, 12:06	1.4
G17	0.5651	72	01Jul2015, 12:24	32.7
G17-G18	0.5651	72	01Jul2015, 12:24	32.6
FG16	0.0773	74	01Jul2015, 12:06	6.5
G18	0.6424	127	01Jul2015, 12:12	39.1
G18-POND E	0.6424	126	01Jul2015, 12:12	39.1
FG31	0.0922	71	01Jul2015, 12:18	8.5
FG30	0.0400	46	01Jul2015, 12:06	3.7
FG30-PONDHS	0.0400	45	01Jul2015, 12:12	3.7
POND HS	0.1322	60	01Jul2015, 12:36	12.1
FG17a	0.0694	58	01Jul2015, 12:06	5.5
FG17a-POND E	0.0694	57	01Jul2015, 12:12	5.5
FG18	**0.0644**	**31**	**01Jul2015, 12:24**	**4.4**
FG18-POND E	0.0644	30	01Jul2015, 12:24	4.4
FG19	0.0527	51	01Jul2015, 12:06	4.9
FG17c	0.0313	15	01Jul2015, 12:06	1.4
FG17b	0.0214	24	01Jul2015, 12:06	2.0
POND E	**1.0138**	**81**	**01Jul2015, 14:36**	**47.1**
H08	**1.0138**	**73**	**01Jul2015, 14:36**	**40.3**
H09	**0.0000**	**8**	**01Jul2015, 14:36**	**6.8**
FH01	**0.1344**	**87**	**01Jul2015, 12:18**	**10.5**
POND H	**0.1344**	**18**	**01Jul2015, 13:18**	**7.9**
FH02	0.0091	6	01Jul2015, 12:12	0.6
FH03	0.0081	8	01Jul2015, 12:06	0.8
H12	0.1516	20	01Jul2015, 13:12	9.2

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{10} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{10} (AC. FT.)
OS01	1.5594	130	01Jul2015, 12:36	30.9
DB16	0.0578	32	01Jul2015, 12:12	3.3
B10	1.6172	143	01Jul2015, 12:36	34.1
B10-B11	1.6172	142	01Jul2015, 12:36	34.1
DB17	0.0048	8	01Jul2015, 12:00	0.7
B11	1.6220	143	01Jul2015, 12:36	34.8
B11-POND C	1.6220	143	01Jul2015, 12:42	34.5
DB21	0.0519	11	01Jul2015, 12:12	1.3
DB18	0.0346	24	01Jul2015, 12:06	2.1
DB19	0.0281	11	01Jul2015, 12:12	1.1
DB20	0.0147	9	01Jul2015, 12:12	0.8
POND C	1.7513	126	01Jul2015, 13:06	36.3
POND C-B16	1.7513	126	01Jul2015, 13:06	36.1
DB25	0.0211	16	01Jul2015, 12:06	1.3
B16	1.7724	128	01Jul2015, 13:06	37.4
B16-B17	1.7724	127	01Jul2015, 13:12	37.1
DB26	0.0682	57	01Jul2015, 12:12	5.6
B17	1.8406	135	01Jul2015, 13:12	42.7
B17-B26	1.8406	135	01Jul2015, 13:12	42.4
OS03	0.1984	22	01Jul2015, 12:24	4.1
DB01	0.0719	23	01Jul2015, 12:12	2.4
B01	0.2703	39	01Jul2015, 12:12	6.5
B01-B02	0.2703	39	01Jul2015, 12:18	6.5
OS02	0.2219	28	01Jul2015, 12:24	5.1
DB02	0.0516	18	01Jul2015, 12:06	1.7
B02	0.5438	75	01Jul2015, 12:18	13.2
B02-POND A	0.5438	74	01Jul2015, 12:18	13.1
OS04	0.1359	11	01Jul2015, 12:24	2.3
DB03	0.0703	14	01Jul2015, 12:12	1.8
B03	0.2062	24	01Jul2015, 12:18	4.1
B03-B04	0.2062	24	01Jul2015, 12:24	4.0
DB04	0.0422	10	01Jul2015, 12:12	1.2
DB05	0.0384	9	01Jul2015, 12:18	1.1
B04	0.2868	39	01Jul2015, 12:18	6.3
B04-B05	0.2868	38	01Jul2015, 12:18	6.3
DB06	0.0219	18	01Jul2015, 12:06	1.6
B05	0.3087	51	01Jul2015, 12:18	8.0
B05-POND A	0.3087	50	01Jul2015, 12:18	8.0
DB07	0.0254	9	01Jul2015, 12:06	0.9
DB08	0.0297	6	01Jul2015, 12:06	0.7
POND A	0.9076	69	01Jul2015, 12:54	17.6
POND A-B06	0.9076	68	01Jul2015, 12:54	17.6
DB09	0.0189	11	01Jul2015, 12:06	0.9
B06	0.9265	70	01Jul2015, 12:54	18.4
B06-B07	0.9265	69	01Jul2015, 13:00	18.2
DB11	0.0969	32	01Jul2015, 12:12	3.8
DB10	0.0364	18	01Jul2015, 12:06	1.7
B07	1.0598	81	01Jul2015, 13:00	23.7
B07-B09	1.0598	81	01Jul2015, 13:06	23.5

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{10} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{10} (AC. FT.)
DB12	0.0453	29	01Jul2015, 12:06	2.5
B09	1.1051	85	01Jul2015, 13:06	26.0
B09-POND B	1.1051	85	01Jul2015, 13:06	26.0
DB15	0.1234	23	01Jul2015, 12:18	3.4
DB13	0.0703	27	01Jul2015, 12:12	3.1
DB14	0.0556	32	01Jul2015, 12:06	3.1
POND B	1.3544	119	01Jul2015, 12:24	35.3
POND B-B12	1.3544	119	01Jul2015, 12:30	35.2
DB22	0.0516	33	01Jul2015, 12:06	3.2
DB23	0.0172	22	01Jul2015, 12:06	1.8
B12	1.4232	140	01Jul2015, 12:24	40.2
B12-B14	1.4232	139	01Jul2015, 12:30	40.0
DB24	0.0531	33	01Jul2015, 12:06	3.0
B14	1.4763	152	01Jul2015, 12:24	43.0
B14-B15	1.4763	151	01Jul2015, 12:30	43.0
DB28	**0.0741**	**23**	**01Jul2015, 12:12**	**2.7**
B15	1.5504	168	01Jul2015, 12:24	45.6
B15-B26	1.5504	166	01Jul2015, 12:30	44.9
DB29	0.1697	35	01Jul2015, 12:24	5.2
DB27	0.0508	24	01Jul2015, 12:18	2.8
B26	3.6115	273	01Jul2015, 12:24	95.4
B26-27	3.6115	267	01Jul2015, 12:30	94.8
FB-02	0.0500	24	01Jul2015, 12:18	2.9
FB-01	0.0373	21	01Jul2015, 12:06	2.0
FB01-B19	0.0373	21	01Jul2015, 12:12	2.0
B19	0.0873	44	01Jul2015, 12:12	5.0
B19-27	0.0873	43	01Jul2015, 12:12	5.0
FB-03	0.0078	10	01Jul2015, 12:06	0.8
27	3.7066	304	01Jul2015, 12:24	100.5
27-32	3.7066	300	01Jul2015, 12:30	100.2
WH-24	0.1325	77	01Jul2015, 12:12	7.7
WH-26	0.0839	8	01Jul2015, 12:24	1.5
WH-27	0.0217	4	01Jul2015, 12:06	0.4
30	0.2381	85	01Jul2015, 12:12	9.7
30-31	0.2381	84	01Jul2015, 12:12	9.7
WH-28	0.0398	21	01Jul2015, 12:12	2.2
31	0.2779	105	01Jul2015, 12:12	11.9
31-32	0.2779	100	01Jul2015, 12:18	11.9
WH-29	0.0495	27	01Jul2015, 12:12	2.7
WH-31	0.0406	28	01Jul2015, 12:06	2.5
WH-30	0.0159	6	01Jul2015, 12:00	0.5
32	4.0905	411	01Jul2015, 12:24	117.8
WH32	0.0458	8	01Jul2015, 12:00	0.9
BEN POND	4.1363	235	01Jul2015, 14:00	110.4
WH-33	0.0064	4	01Jul2015, 12:06	0.4
33	4.1427	236	01Jul2015, 14:00	110.8
33-37	4.1427	236	01Jul2015, 14:06	109.7
WH35	0.1550	40	01Jul2015, 12:12	4.6
WH34	0.0450	21	01Jul2015, 12:06	2.1

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 10-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_{10} (CFS)	TIME OF PEAK	TOTAL VOLUME Q_{10} (AC. FT.)
B34-36	0.0450	21	01Jul2015, 12:12	2.1
36	0.2000	61	01Jul2015, 12:12	6.7
36-37	0.2000	59	01Jul2015, 12:18	6.7
WH36	0.0750	10	01Jul2015, 12:12	1.5
37	4.4177	245	01Jul2015, 14:06	117.9
FG08A	0.0750	42	01Jul2015, 12:06	3.9
FG08A-G05	0.0750	41	01Jul2015, 12:12	3.9
FG10	0.0669	14	01Jul2015, 12:42	2.7
FG08B	0.0630	31	01Jul2015, 12:12	3.2
FG08B-G05	0.0630	30	01Jul2015, 12:12	3.2
FG11	0.0625	29	01Jul2015, 12:18	3.5
FG09	0.0484	15	01Jul2015, 12:18	1.8
FG09-G05	0.0484	14	01Jul2015, 12:18	1.8
G05	0.3158	117	01Jul2015, 12:18	15.1
FG13	0.0661	10	01Jul2015, 12:30	1.8
FG14	0.0331	15	01Jul2015, 12:18	1.8
FG12	0.0328	20	01Jul2015, 12:12	2.0
POND D	0.4478	19	01Jul2015, 14:30	15.0
POND D-G17	0.4478	19	01Jul2015, 14:30	15.0
FG15	0.1017	29	01Jul2015, 12:24	4.2
G17a	0.1017	29	01Jul2015, 12:24	4.2
FG15a	0.0156	11	01Jul2015, 12:06	0.9
G17	0.5651	40	01Jul2015, 12:24	20.0
G17-G18	0.5651	40	01Jul2015, 12:30	20.0
FG16	0.0773	47	01Jul2015, 12:06	4.2
G18	0.6424	77	01Jul2015, 12:12	24.2
G18-POND E	0.6424	77	01Jul2015, 12:12	24.2
FG31	0.0922	46	01Jul2015, 12:18	5.7
FG30	0.0400	31	01Jul2015, 12:06	2.5
FG30-PONDHS	0.0400	29	01Jul2015, 12:12	2.4
POND HS	0.1322	37	01Jul2015, 12:42	8.1
FG17a	0.0694	36	01Jul2015, 12:06	3.5
FG17a-POND E	0.0694	36	01Jul2015, 12:12	3.5
FG18	**0.0644**	**18**	**01Jul2015, 12:24**	**2.7**
FG18-POND E	0.0644	18	01Jul2015, 12:30	2.7
FG19	0.0527	33	01Jul2015, 12:12	3.3
FG17c	0.0313	7	01Jul2015, 12:06	0.8
FG17b	0.0214	16	01Jul2015, 12:06	1.3
POND E	**1.0138**	**30**	**01Jul2015, 17:42**	**24.6**
H08	**1.0138**	**24**	**01Jul2015, 17:42**	**19.2**
H09	**0.0000**	**6**	**01Jul2015, 17:42**	**5.4**
FH01	**0.1344**	**53**	**01Jul2015, 12:18**	**6.7**
POND H	**0.1344**	**8**	**01Jul2015, 13:54**	**4.6**
FH02	0.0091	3	01Jul2015, 12:12	0.3
FH03	0.0081	6	01Jul2015, 12:06	0.5
H12	0.1516	10	01Jul2015, 12:12	5.5

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_5 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_5 (AC. FT.)
OS01	1.5594	53	01Jul2015, 12:48	16.6
DB16	0.0578	22	01Jul2015, 12:12	2.3
B10	1.6172	60	01Jul2015, 12:42	18.9
B10-B11	1.6172	60	01Jul2015, 12:42	18.9
DB17	0.0048	7	01Jul2015, 12:00	0.6
B11	1.6220	61	01Jul2015, 12:42	19.4
B11-POND C	1.6220	61	01Jul2015, 12:48	19.2
DB21	0.0519	5	01Jul2015, 12:12	0.7
DB18	0.0346	16	01Jul2015, 12:06	1.5
DB19	0.0281	6	01Jul2015, 12:12	0.7
DB20	0.0147	6	01Jul2015, 12:12	0.6
POND C	1.7513	50	01Jul2015, 13:30	19.3
POND C-B16	1.7513	50	01Jul2015, 13:30	19.2
DB25	0.0211	11	01Jul2015, 12:06	0.9
B16	1.7724	51	01Jul2015, 13:30	20.1
B16-B17	1.7724	51	01Jul2015, 13:36	19.9
DB26	0.0682	42	01Jul2015, 12:12	4.1
B17	1.8406	55	01Jul2015, 13:36	24.0
B17-B26	1.8406	55	01Jul2015, 13:42	23.8
OS03	0.1984	9	01Jul2015, 12:30	2.2
DB01	0.0719	12	01Jul2015, 12:12	1.5
B01	0.2703	18	01Jul2015, 12:12	3.7
B01-B02	0.2703	18	01Jul2015, 12:18	3.7
OS02	0.2219	12	01Jul2015, 12:30	2.8
DB02	0.0516	10	01Jul2015, 12:06	1.0
B02	0.5438	34	01Jul2015, 12:18	7.5
B02-POND A	0.5438	34	01Jul2015, 12:24	7.5
OS04	0.1359	4	01Jul2015, 12:30	1.2
DB03	0.0703	7	01Jul2015, 12:12	1.0
B03	0.2062	9	01Jul2015, 12:18	2.2
B03-B04	0.2062	9	01Jul2015, 12:30	2.2
DB04	0.0422	5	01Jul2015, 12:12	0.7
DB05	0.0384	4	01Jul2015, 12:18	0.7
B04	0.2868	17	01Jul2015, 12:24	3.5
B04-B05	0.2868	16	01Jul2015, 12:24	3.5
DB06	0.0219	13	01Jul2015, 12:06	1.2
B05	0.3087	24	01Jul2015, 12:18	4.7
B05-POND A	0.3087	23	01Jul2015, 12:24	4.7
DB07	0.0254	5	01Jul2015, 12:06	0.5
DB08	0.0297	3	01Jul2015, 12:12	0.4
POND A	0.9076	18	01Jul2015, 14:06	8.2
POND A-B06	0.9076	18	01Jul2015, 14:06	8.2
DB09	0.0189	7	01Jul2015, 12:06	0.6
B06	0.9265	18	01Jul2015, 14:06	8.8
B06-B07	0.9265	18	01Jul2015, 14:18	8.6
DB11	0.0969	18	01Jul2015, 12:12	2.4
DB10	0.0364	11	01Jul2015, 12:06	1.1
B07	1.0598	32	01Jul2015, 12:18	12.1
B07-B09	1.0598	31	01Jul2015, 12:24	12.0

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FUTURE 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_5 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_5 (AC. FT.)
DB12	0.0453	19	01Jul2015, 12:06	1.7
B09	1.1051	43	01Jul2015, 12:18	13.7
B09-POND B	1.1051	42	01Jul2015, 12:18	13.7
DB15	0.1234	11	01Jul2015, 12:24	2.0
DB13	0.0703	16	01Jul2015, 12:12	2.0
DB14	0.0556	21	01Jul2015, 12:12	2.1
POND B	1.3544	67	01Jul2015, 12:30	19.6
POND B-B12	1.3544	66	01Jul2015, 12:30	19.6
DB22	0.0516	22	01Jul2015, 12:12	2.2
DB23	0.0172	17	01Jul2015, 12:06	1.4
B12	1.4232	80	01Jul2015, 12:30	23.2
B12-B14	1.4232	80	01Jul2015, 12:30	23.1
DB24	0.0531	22	01Jul2015, 12:06	2.1
B14	1.4763	89	01Jul2015, 12:24	25.2
B14-B15	1.4763	89	01Jul2015, 12:24	25.1
DB28	**0.0741**	**13**	**01Jul2015, 12:12**	**1.7**
B15	1.5504	99	01Jul2015, 12:24	26.8
B15-B26	1.5504	99	01Jul2015, 12:30	26.2
DB29	0.1697	18	01Jul2015, 12:24	3.2
DB27	0.0508	16	01Jul2015, 12:18	1.9
B26	3.6115	169	01Jul2015, 12:24	55.1
B26-27	3.6115	166	01Jul2015, 12:30	54.7
FB-02	0.0500	16	01Jul2015, 12:18	2.0
FB-01	0.0373	14	01Jul2015, 12:06	1.4
FB01-B19	0.0373	14	01Jul2015, 12:12	1.4
B19	0.0873	29	01Jul2015, 12:12	3.4
B19-27	0.0873	28	01Jul2015, 12:18	3.4
FB-03	0.0078	8	01Jul2015, 12:06	0.6
27	3.7066	189	01Jul2015, 12:30	58.7
27-32	3.7066	186	01Jul2015, 12:30	58.4
WH-24	0.1325	52	01Jul2015, 12:12	5.4
WH-26	0.0839	3	01Jul2015, 12:30	0.8
WH-27	0.0217	1	01Jul2015, 12:06	0.2
30	0.2381	55	01Jul2015, 12:12	6.4
30-31	0.2381	53	01Jul2015, 12:12	6.4
WH-28	0.0398	14	01Jul2015, 12:12	1.5
31	0.2779	68	01Jul2015, 12:12	7.9
31-32	0.2779	65	01Jul2015, 12:18	7.9
WH-29	0.0495	18	01Jul2015, 12:12	1.9
WH-31	0.0406	19	01Jul2015, 12:06	1.8
WH-30	0.0159	3	01Jul2015, 12:00	0.3
32	4.0905	249	01Jul2015, 12:30	70.2
WH32	0.0458	3	01Jul2015, 12:06	0.5
BEN POND	4.1363	95	01Jul2015, 14:30	64.4
WH-33	0.0064	3	01Jul2015, 12:06	0.3
33	4.1427	95	01Jul2015, 14:30	64.7
33-37	4.1427	95	01Jul2015, 14:42	63.9
WH35	0.1550	21	01Jul2015, 12:12	2.8
WH34	0.0450	13	01Jul2015, 12:12	1.4

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 5-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_5 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_5 (AC. FT.)
B34-36	0.0450	13	01Jul2015, 12:12	1.4
36	0.2000	34	01Jul2015, 12:12	4.2
36-37	0.2000	33	01Jul2015, 12:18	4.2
WH36	0.0750	4	01Jul2015, 12:18	0.8
37	4.4177	100	01Jul2015, 14:24	68.8
FG08A	0.0750	27	01Jul2015, 12:06	2.6
FG08A-G05	0.0750	27	01Jul2015, 12:12	2.6
FG10	0.0669	8	01Jul2015, 12:42	1.7
FG08B	0.0630	20	01Jul2015, 12:12	2.2
FG08B-G05	0.0630	20	01Jul2015, 12:18	2.2
FG11	0.0625	19	01Jul2015, 12:18	2.4
FG09	0.0484	8	01Jul2015, 12:18	1.2
FG09-G05	0.0484	8	01Jul2015, 12:18	1.2
G05	0.3158	75	01Jul2015, 12:18	10.1
FG13	0.0661	5	01Jul2015, 12:30	1.1
FG14	0.0331	10	01Jul2015, 12:18	1.2
FG12	0.0328	14	01Jul2015, 12:12	1.4
POND D	0.4478	12	01Jul2015, 14:42	9.3
POND D-G17	0.4478	12	01Jul2015, 14:42	9.3
FG15	0.1017	18	01Jul2015, 12:24	2.7
G17a	0.1017	18	01Jul2015, 12:24	2.7
FG15a	0.0156	7	01Jul2015, 12:06	0.6
G17	0.5651	23	01Jul2015, 12:18	12.6
G17-G18	0.5651	23	01Jul2015, 12:24	12.6
FG16	0.0773	31	01Jul2015, 12:06	2.9
G18	0.6424	49	01Jul2015, 12:12	15.5
G18-POND E	0.6424	48	01Jul2015, 12:12	15.5
FG31	0.0922	31	01Jul2015, 12:18	4.0
FG30	0.0400	21	01Jul2015, 12:06	1.7
FG30-PONDHS	0.0400	20	01Jul2015, 12:12	1.7
POND HS	0.1322	27	01Jul2015, 12:36	5.7
FG17a	0.0694	23	01Jul2015, 12:12	2.4
FG17a-POND E	0.0694	23	01Jul2015, 12:12	2.4
FG18	**0.0644**	**11**	**01Jul2015, 12:30**	**1.8**
FG18-POND E	0.0644	11	01Jul2015, 12:30	1.8
FG19	0.0527	23	01Jul2015, 12:12	2.3
FG17c	0.0313	3	01Jul2015, 12:12	0.4
FG17b	0.0214	11	01Jul2015, 12:06	0.9
POND E	**1.0138**	**16**	**01Jul2015, 20:06**	**13.1**
H08	**1.0138**	**12**	**01Jul2015, 20:06**	**9.3**
H09	**0.0000**	**4**	**01Jul2015, 20:06**	**3.8**
FH01	**0.1344**	**34**	**01Jul2015, 12:18**	**4.5**
POND H	**0.1344**	**3**	**01Jul2015, 15:24**	**2.6**
FH02	0.0091	2	01Jul2015, 12:12	0.2
FH03	0.0081	4	01Jul2015, 12:06	0.4
H12	0.1516	6	01Jul2015, 12:12	3.2

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_2 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_2 (AC. FT.)
OS01	1.5594	10.9	01Jul2015, 13:24	5.9
DB16	0.0578	11.8	01Jul2015, 12:12	1.3
B10	1.6172	13.0	01Jul2015, 13:18	7.3
B10-B11	1.6172	13.0	01Jul2015, 13:18	7.2
DB17	0.0048	5.3	01Jul2015, 12:00	0.4
B11	1.6220	14.5	01Jul2015, 12:12	7.7
B11-POND C	1.6220	14.1	01Jul2015, 12:24	7.5
DB21	0.0519	1.0	01Jul2015, 12:18	0.3
DB18	0.0346	9.0	01Jul2015, 12:06	0.9
DB19	0.0281	2.6	01Jul2015, 12:12	0.4
DB20	0.0147	3.2	01Jul2015, 12:12	0.3
POND C	1.7513	10.9	01Jul2015, 15:00	6.3
POND C-B16	1.7513	10.9	01Jul2015, 15:06	6.2
DB25	0.0211	6.6	01Jul2015, 12:06	0.5
B16	1.7724	11.2	01Jul2015, 15:06	6.7
B16-B17	1.7724	11.2	01Jul2015, 15:18	6.6
DB26	0.0682	27.1	01Jul2015, 12:12	2.7
B17	1.8406	30.6	01Jul2015, 12:12	9.3
B17-B26	1.8406	30.2	01Jul2015, 12:18	9.1
OS03	0.1984	1.6	01Jul2015, 13:06	0.8
DB01	0.0719	4.3	01Jul2015, 12:12	0.7
B01	0.2703	4.6	01Jul2015, 12:12	1.5
B01-B02	0.2703	4.6	01Jul2015, 12:18	1.5
OS02	0.2219	2.5	01Jul2015, 12:48	1.1
DB02	0.0516	2.9	01Jul2015, 12:06	0.5
B02	0.5438	8.1	01Jul2015, 12:18	3.1
B02-POND A	0.5438	8.1	01Jul2015, 12:24	3.1
OS04	0.1359	0.6	01Jul2015, 13:30	0.4
DB03	0.0703	1.4	01Jul2015, 12:18	0.4
B03	0.2062	1.5	01Jul2015, 12:54	0.8
B03-B04	0.2062	1.5	01Jul2015, 13:12	0.8
DB04	0.0422	1.1	01Jul2015, 12:18	0.3
DB05	0.0384	1.3	01Jul2015, 12:24	0.3
B04	0.2868	3.4	01Jul2015, 12:36	1.4
B04-B05	0.2868	3.3	01Jul2015, 12:36	1.4
DB06	0.0219	7.8	01Jul2015, 12:06	0.8
B05	0.3087	9.6	01Jul2015, 12:12	2.2
B05-POND A	0.3087	9.4	01Jul2015, 12:12	2.1
DB07	0.0254	1.7	01Jul2015, 12:12	0.3
DB08	0.0297	0.4	01Jul2015, 12:18	0.2
POND A	0.9076	1.5	02Jul2015, 00:00	1.1
POND A-B06	0.9076	1.5	02Jul2015, 00:00	1.1
DB09	0.0189	3.4	01Jul2015, 12:06	0.3
B06	0.9265	3.4	01Jul2015, 12:06	1.4
B06-B07	0.9265	3.2	01Jul2015, 12:24	1.4
DB11	0.0969	7.6	01Jul2015, 12:18	1.2
DB10	0.0364	5.3	01Jul2015, 12:12	0.6
B07	1.0598	13.4	01Jul2015, 12:24	3.2
B07-B09	1.0598	12.7	01Jul2015, 12:30	3.2

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

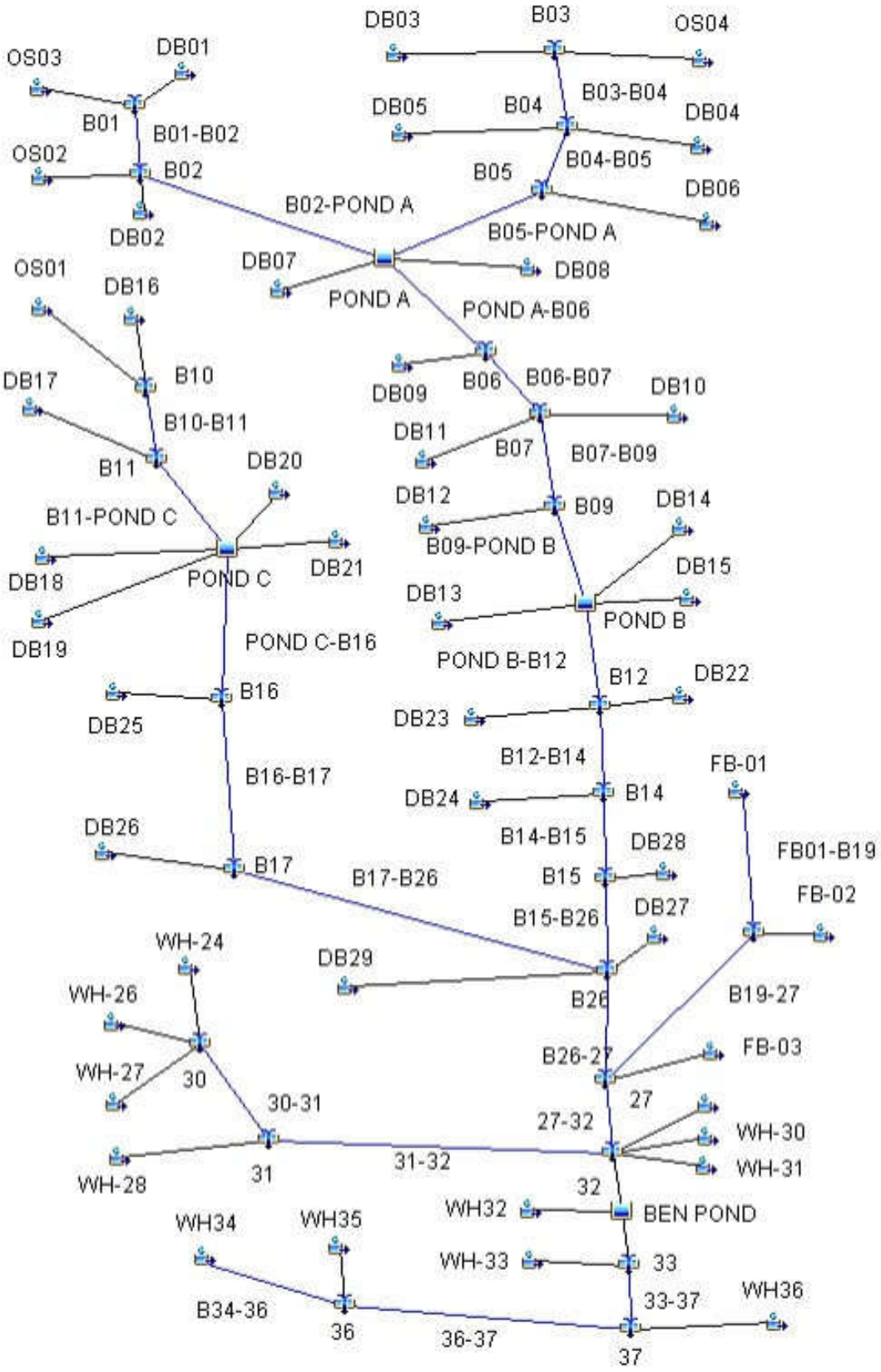
FUTURE 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_2 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_2 (AC. FT.)
DB12	0.0453	10.1	01Jul2015, 12:06	1.0
B09	1.1051	17.5	01Jul2015, 12:18	4.2
B09-POND B	1.1051	17.5	01Jul2015, 12:24	4.2
DB15	0.1234	3.1	01Jul2015, 12:30	0.9
DB13	0.0703	7.4	01Jul2015, 12:18	1.1
DB14	0.0556	11.3	01Jul2015, 12:12	1.2
POND B	1.3544	28.5	01Jul2015, 12:36	7.3
POND B-B12	1.3544	28.3	01Jul2015, 12:36	7.3
DB22	0.0516	12.8	01Jul2015, 12:12	1.3
DB23	0.0172	12.3	01Jul2015, 12:06	1.0
B12	1.4232	36.4	01Jul2015, 12:30	9.6
B12-B14	1.4232	36.2	01Jul2015, 12:30	9.5
DB24	0.0531	11.8	01Jul2015, 12:06	1.2
B14	1.4763	43.7	01Jul2015, 12:18	10.8
B14-B15	1.4763	43.4	01Jul2015, 12:18	10.7
DB28	**0.0741**	**4.7**	**01Jul2015, 12:18**	**0.8**
B15	1.5504	48.0	01Jul2015, 12:18	11.5
B15-B26	1.5504	47.3	01Jul2015, 12:30	11.2
DB29	0.1697	5.8	01Jul2015, 12:30	1.5
DB27	0.0508	8.3	01Jul2015, 12:18	1.1
B26	3.6115	82.7	01Jul2015, 12:30	23.0
B26-27	3.6115	81.5	01Jul2015, 12:36	22.7
FB-02	0.0500	8.9	01Jul2015, 12:18	1.2
FB-01	0.0373	7.4	01Jul2015, 12:12	0.8
FB01-B19	0.0373	7.3	01Jul2015, 12:12	0.8
B19	0.0873	15.4	01Jul2015, 12:12	2.0
B19-27	0.0873	15.4	01Jul2015, 12:18	2.0
FB-03	0.0078	5.2	01Jul2015, 12:06	0.4
27	3.7066	92.1	01Jul2015, 12:36	25.1
27-32	3.7066	91.2	01Jul2015, 12:36	24.9
WH-24	0.1325	28.8	01Jul2015, 12:12	3.2
WH-26	0.0839	0.5	01Jul2015, 13:18	0.3
WH-27	0.0217	0.1	01Jul2015, 12:48	0.1
30	0.2381	28.9	01Jul2015, 12:12	3.5
30-31	0.2381	27.6	01Jul2015, 12:12	3.5
WH-28	0.0398	7.6	01Jul2015, 12:12	0.9
31	0.2779	35.2	01Jul2015, 12:12	4.4
31-32	0.2779	34.7	01Jul2015, 12:18	4.4
WH-29	0.0495	9.5	01Jul2015, 12:12	1.1
WH-31	0.0406	10.7	01Jul2015, 12:06	1.1
WH-30	0.0159	1.0	01Jul2015, 12:06	0.1
32	4.0905	119.9	01Jul2015, 12:36	31.6
WH32	0.0458	0.3	01Jul2015, 12:48	0.2
BEN POND	4.1363	45.3	01Jul2015, 13:48	27.2
WH-33	0.0064	1.7	01Jul2015, 12:06	0.2
33	4.1427	45.4	01Jul2015, 13:48	27.4
33-37	4.1427	45.4	01Jul2015, 14:00	26.9
WH35	0.1550	5.8	01Jul2015, 12:18	1.3
WH34	0.0450	6.4	01Jul2015, 12:12	0.8

Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

FUTURE 2-YEAR				
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q_2 (CFS)	TIME OF PEAK	TOTAL VOLUME Q_2 (AC. FT.)
B34-36	0.0450	6.1	01Jul2015, 12:12	0.8
36	0.2000	11.8	01Jul2015, 12:12	2.0
36-37	0.2000	11.7	01Jul2015, 12:24	2.0
WH36	0.0750	0.6	01Jul2015, 12:54	0.3
37	4.4177	48.7	01Jul2015, 13:54	29.2
FG08A	0.0750	13.6	01Jul2015, 12:12	1.5
FG08A-G05	0.0750	13.6	01Jul2015, 12:12	1.5
FG10	0.0669	3.6	01Jul2015, 12:48	0.9
FG08B	0.0630	10.3	01Jul2015, 12:12	1.3
FG08B-G05	0.0630	10.1	01Jul2015, 12:18	1.2
FG11	0.0625	10.0	01Jul2015, 12:18	1.4
FG09	0.0484	3.3	01Jul2015, 12:18	0.6
FG09-G05	0.0484	3.3	01Jul2015, 12:24	0.6
G05	0.3158	37.9	01Jul2015, 12:18	5.6
FG13	0.0661	1.4	01Jul2015, 12:42	0.5
FG14	0.0331	5.2	01Jul2015, 12:18	0.7
FG12	0.0328	7.9	01Jul2015, 12:12	0.9
POND D	0.4478	4.5	01Jul2015, 17:48	4.1
POND D-G17	0.4478	4.5	01Jul2015, 17:54	4.1
FG15	0.1017	7.5	01Jul2015, 12:24	1.4
G17a	0.1017	7.5	01Jul2015, 12:24	1.4
FG15a	0.0156	4.0	01Jul2015, 12:06	0.4
G17	0.5651	10.8	01Jul2015, 12:24	5.9
G17-G18	0.5651	10.7	01Jul2015, 12:30	5.9
FG16	0.0773	16.1	01Jul2015, 12:06	1.7
G18	0.6424	24.4	01Jul2015, 12:12	7.6
G18-POND E	0.6424	23.9	01Jul2015, 12:12	7.6
FG31	0.0922	17.5	01Jul2015, 12:18	2.4
FG30	0.0400	12.2	01Jul2015, 12:06	1.0
FG30-PONDHS	0.0400	11.3	01Jul2015, 12:18	1.0
POND HS	0.1322	15.1	01Jul2015, 12:42	3.4
FG17a	0.0694	11.9	01Jul2015, 12:12	1.4
FG17a-POND E	0.0694	11.8	01Jul2015, 12:12	1.4
FG18	**0.0644**	**4.8**	**01Jul2015, 12:30**	**0.9**
FG18-POND E	0.0644	4.7	01Jul2015, 12:30	0.9
FG19	0.0527	13.3	01Jul2015, 12:12	1.4
FG17c	0.0313	0.5	01Jul2015, 12:18	0.2
FG17b	0.0214	6.2	01Jul2015, 12:06	0.6
POND E	**1.0138**	**6.6**	**02Jul2015, 00:00**	**6.1**
H08	**1.0138**	**4.1**	**02Jul2015, 00:00**	**3.7**
H09	**0.0000**	**2.5**	**02Jul2015, 00:00**	**2.4**
FH01	**0.1344**	**16.6**	**01Jul2015, 12:18**	**2.5**
POND H	**0.1344**	**1.2**	**01Jul2015, 18:36**	**1.4**
FH02	0.0091	0.7	01Jul2015, 12:12	0.1
FH03	0.0081	2.2	01Jul2015, 12:12	0.2
H12	0.1516	3.5	01Jul2015, 12:12	1.7

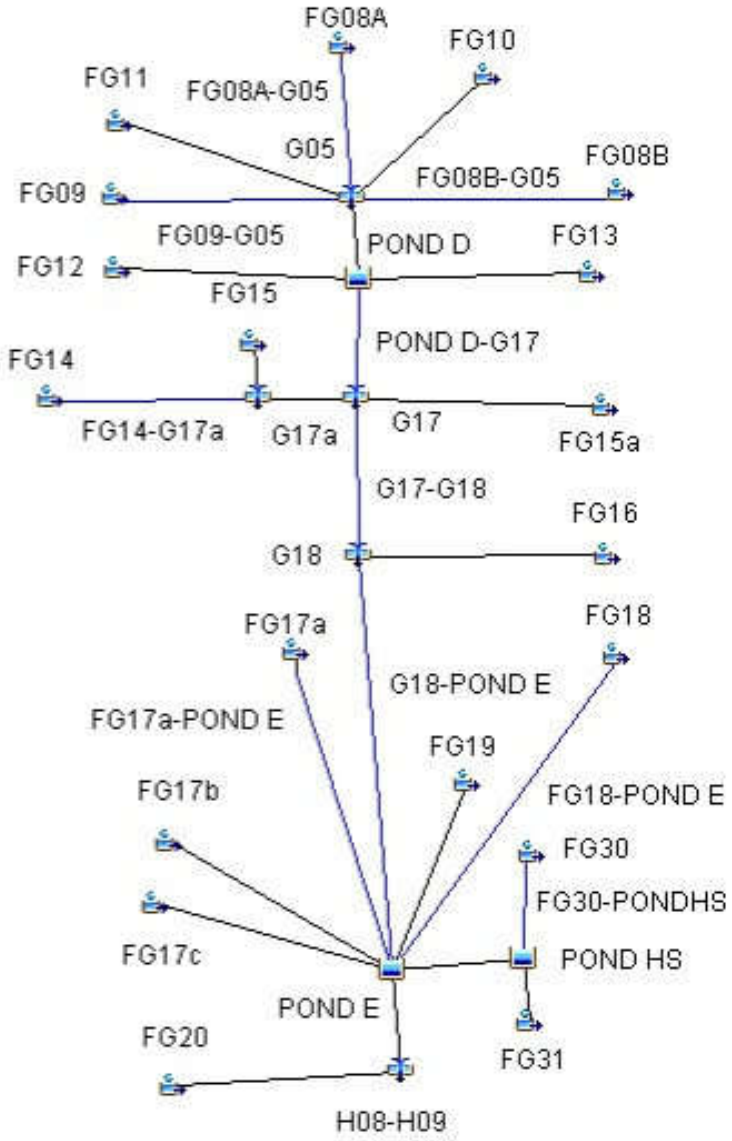
Highlighted green rows reference Drainage Elements associated with the Enclaves Development, Highlighted yellow rows reference key design points (Typical all charts this section)

BENNETT FUTURE CONDITIONS



HAEGLER FUTURE CONDITIONS

GIECK FUTURE CONDITIONS



Appendix C - Detention Pond Information

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Proposed Detention Pond H-FUTURE & INTERIM

Gieck Basin - El Paso County, Colorado

Data for spillway and embankment:

embankment length =	500
embankment elev =	6976
spillway length =	50
spillway elevation =	6974.5
100 year storage elev.=	6973.4
100 year storage vol.=	7.7
100 year discharge=	57
5 year storage elev.=	6971.7
5 year storage vol.=	2.8
5 year discharge=	3.1
WQCV storage elev.=	6970.3
WQCV storage vol.=	0.5
1/2 WQCV storage elev.=	6969.9
1/2 WQCV storage vol.=	0.25

Data for outlet pipe and grate:

Type		H or V	Dimensions Width (ft.)	X Height (ft.)	Dia.(in)		(sqft)		Bottom
Rectangular	Orifice 1:	V	0.0195	1.33		Area =	0.026	Invert Elev =	6968.5
Rectangular	Orifice 2:	V	4.5000	1.40		Area =	6.300	Invert Elev =	6971.50
None Selected	Orifice 3:	V				Area =	0.000	Invert Elev =	
Circular	Orifice 4:	H			6	Area =	0.196	Invert Elev =	6970

Stand Pipe Dimensions

Rec Grate		9	x	4.5	Elev =	6972.90
Circ. Grate			dia.		Elev =	6972.90

Outlet Culvert Dimensions

	Width (ft.)		Height (ft.)	Dia. (ft.)	Type
Outlet Culvert		x		3.5	**Circular**
Area	9.6		TOP		
Outlet I. E.	6968.5		6972.38		
Wall Thick.	4.5	in.			

50 year storage elev.=	6973.1
50 year discharge=	32
25 year storage elev.=	6972.6
25 year discharge=	18
10 year storage elev.=	6972.1
10 year discharge=	7.8
2 year storage elev.=	6971.2
2 year discharge=	1.20

STAGE		STORAGE				DISCHARGE										
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)	PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**	1	2	OUTFLOW	FLOW
6968.5	0	0	0.00	0.0	0.0			-	-	-	-	-	-		-	-
6969	0.5	477	0.01	0.00	0.003	-	-	0.02	-	-	-	-	1		0.02	0.02
6969.5	1	11450	0.26	0.07	0.07	-	-	0.06	-	-	-	-	5		0.06	0.06
6970	1.5	22422	0.51	0.26	0.27	-	-	0.11	-	-	-	-	10		0.1	0.11
6970.25	1.75	33514	0.77	0.16	0.43	-	-	0.13	-	-	0.5	-	14		0.6	0.60
6970.5	2	44606	1.02	0.78	0.78	-	-	0.14	-	-	0.7	-	18		0.8	0.81
6971	2.5	67898	1.56	1.04	1.30	-	-	0.17	-	-	0.9	-	27		1.1	1.1
6971.5	3	92319	2.12	0.92	2.22	-	-	0.19	-	-	1.2	-	36		1.3	1.3
6971.75	3.25	104529	2.40	0.56	2.79	-	-	0.20	1.7	-	1.3	-	42		3.1	3.1
6972	3.5	116739	2.68	1.20	3.42	-	-	0.21	4.8	-	1.3	-	47		6.3	6.3
6972.5	4	125636	2.88	1.39	4.81	-	-	0.23	13.5	-	1.5	-	58		15	15
6973	4.5	134533	3.09	1.49	6.31	-	-	0.25	24.8	-	1.6	2	70		28	28
6973.5	5	141972	3.26	1.59	7.89	-	-	0.26	34.6	-	1.8	25	79		62	62
6974	5.5	149410	3.43	1.67	9.57	-	-	0.28	40.7	-	1.9	62	86		86	86
6975	6.5	165140	3.79	3.61	13.18	53.0	53.0	0.30	50.8	-	2.1	164	98		98	151
6976	7.5	192114	4.41	4.10	17.28	275.6	275.6	0.33	59.1	-	2.3	295	110		110	385

Notes:
1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

FUTURE POND H

WQCV Control Riser Calculations

TRIBUTARY AREA		86	acres
DRAIN TIME		40	hr
	a	1	
IMPERVIOUSNESS RATIO	*i*	0.38	
DEPTH OF OUTLET		1.8	
WQCV		0.17	inches
WQCV DESIGN VOL		**0.5**	ac-ft
	K_{40}	0.34	
AREA PER RISER[1]	a	3.46	in^2
No. of Columns		1	
No. of Holes		3	per column
Area per Hole		1.15	in^2
Hole size		1 1/4	in
Steel Plate Thickness		1/4	in

[1] AREA PER ROW PER RISER

Actual area per row per hole:	1.23 in^2
Actual area per riser:	3.7 in^2
Actual area per riser:	0.026 ft^2

TABLE SB-2

Hole Dia (in)		Area per Row (in^2)					
Holes per Row		1	2	3	4	5	6
Min steel thickness		1/4	5/16	3/8	3/8	3/8	1/2
1/4	0.2500	0.05	0.10	0.15	0.20	0.25	0.29
5/16	0.3125	0.08	0.15	0.23	0.31	0.38	0.46
3/8	0.3750	0.11	0.22	0.33	0.44	0.55	0.66
7/16	0.4375	0.15	0.30	0.45	0.60	0.75	0.90
1/2	0.5000	0.20	0.39	0.59	0.79	0.98	1.18
9/16	0.5625	0.25	0.50	0.75	0.99	1.24	1.49
5/8	0.6250	0.31	0.61	0.92	1.23	1.53	1.84
11/16	0.6875	0.37	0.74	1.11	1.48	1.86	2.23
3/4	0.7500	0.44	0.88	1.33	1.77	2.21	2.65
7/8	0.8750	0.60	1.20	1.80	2.41	3.01	3.61
1	1.0000	0.79	1.57	2.36	3.14	3.93	4.71
1 1/8	1.1250	0.99	1.99	2.98	3.98	4.97	5.96
1 1/4	1.2500	1.23	2.45	3.68	4.91	6.14	7.36
1 3/8	1.3750	1.48	2.97	4.45	5.94	7.42	8.91
1 1/2	1.5000	1.77	3.53	5.30	7.07	8.84	10.60
1 5/8	1.6250	2.07	4.15	6.22	8.30	10.37	12.44
1 3/4	1.7500	2.41	4.81	7.22	9.62	12.03	14.43
1 7/8	1.8750	2.76	5.52	8.28	11.04	13.81	16.57
2	2.0000	3.14	6.28	9.42	12.57	15.71	18.85

n = Number of columns of perforations

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Existing Detention Pond E- FINAL INTERIM (TOTAL FLOWS)

Gieck Basin - El Paso County, Colorado

embankment length =	1860
embankment elev =	6976
spillway length =	200
spillway elevation =	6974.5
100 year storage elev.=	6973.3
100 year storage vol.=	39.5
100 year discharge=	199
5 year storage elev.=	6971.2
5 year storage vol.=	16.1
5 year discharge=	12
WQCV storage elev.=	6968.9
WQCV storage vol.=	1.5
WQCV depth =	1.9
1/2 WQCV storage elev.=	6968.3
1/2 WQCV storage vol.=	0.8

50 year storage elev.=	6972.8
50 year storage vol.=	33.5
50 year discharge=	119
25 year storage elev.=	6972.3
25 year storage vol.=	27.9
25 year discharge=	61
10 year storage elev.=	6971.7
10 year storage vol.=	21.5
10 year discharge=	25
2 year storage elev.=	6970.3
2 year storage vol.=	8.9
2 year discharge=	5.6

STAGE		STORAGE				TOTAL DISCHARGE											
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)		PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**		1	2	OUTFLOW	FLOW
6967	0	1808	0.04	0.0	0.00			-	-	-	-	-	-	1.4	-	-	-
6967.5	0.5	16136.5	0.37	0.1	0.10	-	-	0.0	-	-	-	-	-	13	-	0.03	0.03
6968	1	30465	0.70	0.3	0.37	-	-	0.1	-	-	-	-	-	26	-	0.11	0.11
6968.5	1.5	81028.5	1.86	0.6	1.01	-	-	0.2	-	-	-	-	-	47	-	0.23	0.23
6969	2	131592	3.02	1.2	2.23	-	-	0.4	-	-	-	-	-	77	-	0.4	0.37
6969.5	2.5	201294.5	4.62	1.9	4.14	-	-	0.5	-	3.0	-	-	-	110	-	3.5	3.5
6970	3	270997	6.22	4.6	6.85	-	-	0.6	-	4.3	-	-	-	146	-	5	4.9
6970.5	3.5	329360	7.56	3.4	10.30	-	-	0.6	0.2	5.3	-	-	-	183	-	6	6.1
6970.75	3.75	358540.75	8.23	2.0	12.27			0.7	1.2	5.7	-	-	-	203	-	8	7.6
6971	4	387722	8.90	7.6	14.41	-	-	0.7	3.1	6.1	-	-	-	218	-	10	10
6971.25	4.25	408751	9.38	2.3	16.70	-	-	0.7	5.5	6.5	0.2	-	-	236	-	13	13
6971.5	4.5	429780	9.87	4.7	19.10	-	-	0.7	7.9	6.8	3.0	-	-	252	-	18	18
6971.75	4.75	450809	10.35	2.5	21.63	-	-	0.8	9.8	7.1	7.3	-	-	266	-	25	25
6972	5	471838	10.83	5.2	24.28	-	-	0.8	11.6	7.5	12.9	2.4	-	280	-	35	35
6972.25	5.25	482595.75	11.08	2.7	27.02	-	-	0.8	12.9	7.8	16.9	15.5	-	292	-	54	54
6972.5	5.5	493354	11.33	5.5	29.82	-	-	0.8	14.1	8.1	20.2	34.9	-	304	-	78	78
6973	6	514869	11.82	5.8	35.60	-	-	0.9	16.2	8.6	29.5	86.5	-	327	-	142	142
6973.25	6.25	518272	11.90	3.0	38.57	-	-	0.9	17.2	8.9	35.0	121.5	-	338	-	183	183
6973.5	6.5	521675	11.98	5.9	41.55	-	-	0.9	18.1	9.1	40.8	162.7	-	349	-	232	232
6974	7	528481	12.13	12.0	47.58	-	-	1.0	19.8	9.6	53.4	259.0	-	369	-	307	307
6976	9	553685	12.71	24.8	72.42	-	1,102	1.1	25.4	11.4	82.8	729.0	-	443	-	443	1,545

Notes:
1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Existing Detention Pond E-FINAL INTERIM (H08)

Gieck Basin - El Paso County, Colorado

Data for spillway and embankment:

embankment length =	1860
embankment elev =	6976
spillway length =	200
spillway elevation =	6974
100 year storage elev.=	6973.3
100 year storage vol.=	39.5
100 year discharge=	174
5 year storage elev.=	6971.19
5 year storage vol.=	16.1
5 year discharge=	8.6
WQCV storage elev.=	6968.9
WQCV storage vol.=	1.5
1/2 WQCV storage elev.=	6968.3
1/2 WQCV storage vol.=	0.8

Data for outlet pipe and grate:

Type		H or V	Dimensions Width (ft.)	X Height (ft.)	Dia.(in)		(sqft)		
Rectangular	Orifice 1:	V	0.0248	1.65		Area =	0.041	Invert Elev =	6967.18
Rectangular	Orifice 2:	V	2	0.8		Area =	1.600	Invert Elev =	6970.40
Circular	Orifice 3:	H			10	Area =	0.545	Invert Elev =	6969.00
Rectangular	Orifice 4:	V	6	0.7		Area =	4.200	Invert Elev =	6971.20

Stand Pipe Dimensions

Rec Grate		11	x	7	Elev =	6971.90
Circ. Grate			dia.		Elev =	6971.90

Outlet Culvert Dimensions

	Width (ft.)		Height (ft.)	Dia. (ft.)	Type
Outlet Culvert		x		3.5	**Circular**
Area	9.6		TOP		
Outlet I. E.	6966.8		6970.58		
Wall Thick.	4	in.			

50 year storage elev.=	6972.8
50 year discharge=	107
25 year storage elev.=	6972.3
25 year discharge=	54
10 year storage elev.=	6971.7
10 year discharge=	19
2 year storage elev.=	6970.3
2 year discharge=	3

STAGE		STORAGE				DISCHARGE										
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)	PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**	1	2	OUTFLOW	FLOW
6967	0	1808	0.04	0.0	0.0			-	-	-	-	-	1		-	-
6967.5	0.5	16136.5	0.37	0.1	0.1			0.0	-	-	-	-	8		0.01	0.01
6968	1	30465	0.70	0.3	0.4			0.1	-	-	-	-	18		0.06	0.06
6968.5	1.5	81028.5	1.86	0.6	1.0			0.1	-	-	-	-	30		0.11	0.11
6969	2	131592	3.02	1.2	2.2			0.2	-	-	-	-	52		0.2	0.18
6969.5	2.5	201294.5	4.62	1.9	4.1			0.2	-	1.9	-	-	75		2.1	2.1
6970	3	270997	6.22	4.6	6.9			0.3	-	2.6	-	-	97		2.9	2.9
6970.5	3.5	329359.5	7.56	3.4	10			0.3	0.2	3.2	-	-	122		3.7	3.7
6970.75	3.75	358540.75	8.23	2.0	12.3			0.3	1.2	3.5	-	-	135		5	5.0
6971	4	387722	8.90	7.6	14			0.3	2.8	3.7	-	-	146		7	6.8
6971.25	4.25	408751	9.38	2.3	17			0.4	4.7	3.9	0.2	-	157		9	9.2
6971.5	4.5	429780	9.87	4.7	19			0.4	6.4	4.2	3.0	-	167		14	14
6971.75	4.75	450809	10.35	2.5	22			0.4	7.5	4.4	7.3	-	176		20	20
6972	5	471838	10.83	5.2	24			0.4	8.4	4.5	12.9	2	185		29	29
6972.25	5.25	482595.75	11.08	2.7	27			0.4	9.3	4.7	16.9	16	193		47	47
6972.5	5.5	493354	11.33	5.5	30			0.4	10.0	4.9	19.7	35	201		70	70
6973	6	514869	11.82	5.8	36			0.4	11.4	5.3	24.4	87	217		128	128
6973.25	6.25	518272	11.90	3.0	39			0.5	12.1	5.4	26.4	118	224		162	162
6973.5	6.5	521675	11.98	5.9	42			0.5	12.7	5.6	28.2	152	231		199	199
6974	7	528481	12.13	12.0	48			0.5	13.8	5.9	31.7	228	244		244	244
6976	9	553685	12.71	24.8	72			0.6	17.6	6.9	42.7	623	291		291	291

Notes:
1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Existing Detention Pond E-FINAL INTERIM (H09)

Gieck Basin - El Paso County, Colorado

Data for spillway and embankment:

embankment length =	1860
embankment elev =	6976
spillway length =	200
spillway elevation =	6974.5
100 year storage elev.=	6973.3
100 year storage vol.=	39.5
100 year discharge=	25
5 year storage elev.=	6971.19
5 year storage vol.=	16.1
5 year discharge=	3.5
WQCV storage elev.=	6968.9
WQCV storage vol.=	1.5
1/2 WQCV storage elev.=	6968.3
1/2 WQCV storage vol.=	0.8

Data for outlet pipe and grate:

Type		H or V	Dimensions Width (ft.)	X Height (ft.)	Dia.(in)		(sqft)		
Rectangular	Orifice 1:	V	0.0248	1.65		Area =	0.041	Invert Elev =	6967.18
Rectangular	Orifice 2:	V	0.75	1		Area =	0.750	Invert Elev =	6970.75
Circular	Orifice 3:	H			8	Area =	0.349	Invert Elev =	6969.00
Rectangular	Orifice 4:	V	3.5	1.25		Area =	4.375	Invert Elev =	6971.75

Stand Pipe Dimensions

Rec Grate		4.25	x	3	Elev =	6973.00
Circ. Grate			dia.		Elev =	6973.00

Outlet Culvert Dimensions

	Width (ft.)		Height (ft.)	Dia. (ft.)	Type
Outlet Culvert		x		3.5	**Circular**
Area	9.6		TOP		
Outlet I. E.	6966.8		6970.7		
Wall Thick.	5	in.			

50 year storage elev.=	6972.82
50 year discharge=	12
25 year storage elev.=	6972.33
25 year discharge=	7.4
10 year storage elev.=	6971.74
10 year discharge=	5.4
2 year storage elev.=	6970.30
2 year discharge=	2.2

STAGE		STORAGE				DISCHARGE									
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)	PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**	1	2	OUTFLOW	FLOW
6967	0	1808	0.04	0.0	0.0			-	-	-	-	-	0.5		-	-
6967.5	0.5	16136.5	0.37	0.1	0.1			0.0	-	-	-	-	5.0		0.01	0.01
6968	1	30465	0.70	0.3	0.4			0.1	-	-	-	-	8.8		0.06	0.06
6968.5	1.5	81028.5	1.86	0.6	1.0			0.1	-	-	-	-	17.0		0.11	0.11
6969	2	131592	3.02	1.2	2.2			0.2	-	-	-	-	25.8		0.2	0.18
6969.5	2.5	201294.5	4.62	1.9	4.1			0.2	-	1.2	-	-	35.0		1.4	1.4
6970	3	270997	6.22	4.6	6.9			0.3	-	1.7	-	-	48.4		2.0	2.0
6970.5	3.5	329359.5	7.56	3.4	10.3			0.3	-	2.1	-	-	60.7		2.4	2.4
6970.75	3.75	358540.75	8.23	2.0	12.3			0.3	-	2.2	-	-	68.0		2.6	2.6
6971	4	387722	8.90	7.6	14.4			0.3	0.3	2.4	-	-	72.6		3.0	3.0
6971.25	4.25	408751	9.38	2.3	16.7			0.4	0.8	2.5	-	-	78.9		3.7	3.7
6971.5	4.5	429780	9.87	4.7	19.1			0.4	1.5	2.7	-	-	84.7		4.5	4.5
6971.75	4.75	450809	10.35	2.5	21.6			0.4	2.3	2.8	-	-	90.1		5.4	5.4
6972	5	471838	10.83	5.2	24.3			0.4	3.1	2.9	-	-	94.8		6.4	6.4
6972.25	5.25	482595.75	11.08	2.7	27.0			0.4	3.6	3.0	-	-	98.7		7.0	7.0
6972.5	5.5	493354	11.33	5.5	29.8			0.4	4.0	3.1	0.5	-	102.7		8	8.1
6973	6	514869	11.82	5.8	35.6			0.4	4.8	3.4	5.2	-	110.5		14	14
6973.25	6.25	518272	11.90	3.0	38.6			0.5	5.1	3.5	8.6	4	114.3		21	21
6973.5	6.5	521675	11.98	5.9	41.6			0.5	5.4	3.6	12.5	11	118.1		33	33
6974	7	528481	12.13	12.0	47.6			0.5	6.0	3.8	21.8	31	125.3		63	63
6976	9	553685	12.71	24.8	72.4			0.6	7.9	4.4	40.1	106	151.4		151	151

Notes:
1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Existing Detention Pond E- FINAL FUTURE (TOTAL FLOWS)

Gieck Basin - El Paso County, Colorado

embankment length =	1860
embankment elev =	6976
spillway length =	200
spillway elevation =	6974.5
100 year storage elev.=	6973.6
100 year storage vol.=	42.2
100 year discharge=	240
5 year storage elev.=	6971.4
5 year storage vol.=	18.0
5 year discharge=	16
WQCV storage elev.=	6968.9
WQCV storage vol.=	1.5
WQCV depth =	1.9
1/2 WQCV storage elev.=	6968.3
1/2 WQCV storage vol.=	0.8

50 year storage elev.=	6973.1
50 year storage vol.=	36.3
50 year discharge=	151
25 year storage elev.=	6972.5
25 year storage vol.=	30.1
25 year discharge=	81
10 year storage elev.=	6971.9
10 year storage vol.=	23.0
10 year discharge=	30
2 year storage elev.=	6970.6
2 year storage vol.=	11.0
2 year discharge=	6.6

STAGE		STORAGE				TOTAL DISCHARGE											
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)		PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**		1	2	OUTFLOW	FLOW
6967	0	1808	0.04	0.0	0.00			-	-	-	-	-	-	1.4	-	-	-
6967.5	0.5	16136.5	0.37	0.1	0.10	-	-	0.0	-	-	-	-	-	13	-	0.03	0.03
6968	1	30465	0.70	0.3	0.37	-	-	0.1	-	-	-	-	-	26	-	0.11	0.11
6968.5	1.5	81028.5	1.86	0.6	1.01	-	-	0.2	-	-	-	-	-	47	-	0.23	0.23
6969	2	131592	3.02	1.2	2.23	-	-	0.4	-	-	-	-	-	77	-	0.4	0.37
6969.5	2.5	201294.5	4.62	1.9	4.14	-	-	0.5	-	3.0	-	-	-	110	-	3.5	3.5
6970	3	270997	6.22	4.6	6.85	-	-	0.6	-	4	-	-	-	146	-	5	4.9
6970.5	3.5	329360	7.56	3.4	10.30	-	-	0.6	0.2	5	-	-	-	183	-	6	6.1
6970.75	3.75	358540.75	8.23	2.0	12.27			0.7	1.2	6	-	-	-	203	-	8	7.6
6971	4	387722	8.90	7.6	14.41	-	-	0.7	3.1	6	-	-	-	218	-	10	9.8
6971.25	4.25	408751	9.38	2.3	16.70	-	-	0.7	5.5	6	0.20	-	-	236	-	13	13
6971.5	4.5	429780	9.87	4.7	19.10	-	-	0.7	8	7	3.0	-	-	252	-	18	18
6971.75	4.75	450809	10.35	2.5	21.63	-	-	0.8	10	7	7.3	-	-	266	-	25	25
6972	5	471838	10.83	5.2	24.28	-	-	0.8	12	7	13	2.4	-	280	-	35	35
6972.25	5.25	482595.75	11.08	2.7	27.02	-	-	0.8	13	8	17	16	-	292	-	54	54
6972.5	5.5	493354	11.33	5.5	29.82	-	-	0.8	14	8	20	35	-	304	-	78	78
6973	6	514869	11.82	5.8	35.60	-	-	0.9	16	9	30	87	-	327	-	142	142
6973.25	6.25	518272	11.90	3.0	38.57	-	-	0.9	17	9	35	121	-	338	-	183	183
6973.5	6.5	521675	11.98	5.9	41.55	-	-	0.9	18	9	41	163	-	349	-	232	232
6974	7	528481	12.13	12.0	47.58	-	-	1.0	20	10	53	259	-	369	-	307	307
6976	9	553685	12.71	24.8	72.42	-	1,102	1.1	25	11	83	729	-	443	-	443	1,545

Notes:

1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Existing Detention Pond E-FINAL FUTURE (H08)

Gieck Basin - El Paso County, Colorado

Data for spillway and embankment:

embankment length =	1860
embankment elev =	6976
spillway length =	200
spillway elevation =	6974
100 year storage elev.=	6973.6
100 year storage vol.=	42.2
100 year discharge=	204
5 year storage elev.=	6971.4
5 year storage vol.=	18.0
5 year discharge=	12
WQCV storage elev.=	6968.9
WQCV storage vol.=	1.5
1/2 WQCV storage elev.=	6968.3
1/2 WQCV storage vol.=	0.8

Data for outlet pipe and grate:

Type		H or V	Dimensions Width (ft.)	X Height (ft.)	Dia.(in)		(sqft)		
Rectangular	Orifice 1:	V	0.0248	1.65		Area =	0.041	Invert Elev =	6967.18
Rectangular	Orifice 2:	V	2	0.8		Area =	1.600	Invert Elev =	6970.40
Circular	Orifice 3:	H			10	Area =	0.545	Invert Elev =	6969.00
Rectangular	Orifice 4:	V	6	0.7		Area =	4.200	Invert Elev =	6971.20

Stand Pipe Dimensions

Rec Grate		11	x	7	Elev =	6971.90
Circ. Grate			dia.		Elev =	6971.90

Outlet Culvert Dimensions

	Width (ft.)		Height (ft.)	Dia. (ft.)	Type
Outlet Culvert		x		3.5	**Circular**
Area	9.6		TOP		
Outlet I. E.	6966.8		6970.58		
Wall Thick.	4	in.			

50 year storage elev.=	6973.1
50 year discharge=	136
25 year storage elev.=	6972.5
25 year discharge=	73
10 year storage elev.=	6971.9
10 year discharge=	24
2 year storage elev.=	6970.6
2 year discharge=	4.2

STAGE		STORAGE				DISCHARGE										
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)	PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**	1	2	OUTFLOW	FLOW
6967	0	1808	0.04	0.0	0.0			-	-	-	-	-	0.91		-	-
6967.5	0.5	16136.5	0.37	0.1	0.1			0.0	-	-	-	-	8.0		0.01	0.01
6968	1	30465	0.70	0.3	0.4			0.1	-	-	-	-	18		0.06	0.06
6968.5	1.5	81028.5	1.86	0.6	1.0			0.1	-	-	-	-	30		0.11	0.11
6969	2	131592	3.02	1.2	2.2			0.2	-	-	-	-	52		0.2	0.2
6969.5	2.5	201294.5	4.62	1.9	4.1			0.2	-	1.9	-	-	75		2.1	2.1
6970	3	270997	6.22	4.6	6.9			0.3	-	2.6	-	-	97		2.9	2.9
6970.5	3.5	329359.5	7.56	3.4	10			0.3	0.2	3.2	-	-	122		3.7	3.7
6970.75	3.75	358540.75	8.23	2.0	12.3			0.3	1.2	3.5	-	-	135		5	5.0
6971	4	387722	8.90	7.6	14			0.3	2.8	3.7	-	-	146		7	6.8
6971.25	4.25	408751	9.38	2.3	17			0.4	4.7	3.9	0.2	-	157		9	9.2
6971.5	4.5	429780	9.87	4.7	19			0.4	6.4	4	3.0	-	167		14	14
6971.75	4.75	450809	10.35	2.5	22			0.4	7.5	4	7.3	-	176		20	20
6972	5	471838	10.83	5.2	24			0.4	8	5	13	2	185		29	29
6972.25	5.25	482595.75	11.08	2.7	27			0.4	9	5	17	16	193		47	47
6972.5	5.5	493354	11.33	5.5	30			0.4	10	5	20	35	201		70	70
6973	6	514869	11.82	5.8	36			0.4	11	5	24	87	217		128	128
6973.25	6.25	518272	11.90	3.0	39			0.5	12	5	26	118	224		162	162
6973.5	6.5	521675	11.98	5.9	42			0.5	13	6	28	152	231		199	199
6974	7	528481	12.13	12.0	48			0.5	14	6	32	228	244		244	244
6976	9	553685	12.71	24.8	72			0.6	18	7	43	623	291		291	291

Notes:
1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

STAGE/STORAGE/DISCHARGE CURVES FOR DETENTION POND ANALYSIS

Meridian Ranch Existing Detention Pond E-FINAL FUTURE (H09)

Gieck Basin - El Paso County, Colorado

Data for spillway and embankment:

embankment length =	1860
embankment elev =	6976
spillway length =	200
spillway elevation =	6974.5
100 year storage elev.=	6973.6
100 year storage vol.=	42.2
100 year discharge=	36
5 year storage elev.=	6971.4
5 year storage vol.=	18.0
5 year discharge=	4.2
WQCV storage elev.=	6968.9
WQCV storage vol.=	1.5
1/2 WQCV storage elev.=	6968.3
1/2 WQCV storage vol.=	0.8

Data for outlet pipe and grate:

Type		H or V	Dimensions Width (ft.)	X Height (ft.)	Dia.(in)		(sqft)		
Rectangular	Orifice 1:	V	0.0248	1.65		Area =	0.041	Invert Elev =	6967.18
Rectangular	Orifice 2:	V	0.75	1		Area =	0.750	Invert Elev =	6970.75
Circular	Orifice 3:	H			8	Area =	0.349	Invert Elev =	6969.00
Rectangular	Orifice 4:	V	3.5	1.25		Area =	4.375	Invert Elev =	6971.75

Stand Pipe Dimensions

Rec Grate		4.25	x	3	Elev =	6973.00
Circ. Grate			dia.		Elev =	6973.00

Outlet Culvert Dimensions

	Width (ft.)		Height (ft.)	Dia. (ft.)	Type
Outlet Culvert		x		3.5	**Circular**
Area	9.6		TOP		
Outlet I. E.	6966.8		6970.7		
Wall Thick.	5	in.			

50 year storage elev.=	6973.1
50 year discharge=	16
25 year storage elev.=	6972.5
25 year discharge=	8.4
10 year storage elev.=	6971.9
10 year discharge=	6.0
2 year storage elev.=	6970.6
2 year discharge=	2.4

STAGE		STORAGE				DISCHARGE										
ELEV	HEIGHT	AREA		VOLUME		TOP OF	SPILLWAY	ORIFICE (max outflow)				GRATE (max outflow)	PIPE		REALIZED CULVERT	TOTAL
		sqft	acre	acft	cum acft	BANK		1	2	3	4	**Rectangular**	1	2	OUTFLOW	FLOW
6967	0	1808	0.04	0.0	0.0			-	-	-	-	-	0.45		-	-
6967.5	0.5	16136.5	0.37	0.1	0.1			0.0	-	-	-	-	5.0		0.01	0.01
6968	1	30465	0.70	0.3	0.4			0.1	-	-	-	-	8.8		0.06	0.06
6968.5	1.5	81028.5	1.86	0.6	1.0			0.1	-	-	-	-	17		0.11	0.11
6969	2	131592	3.02	1.2	2.2			0.2	-	-	-	-	26		0.2	0.18
6969.5	2.5	201294.5	4.62	1.9	4.1			0.2	-	1.2	-	-	35		1.4	1.4
6970	3	270997	6.22	4.6	6.9			0.3	-	1.7	-	-	48		2.0	2.0
6970.5	3.5	329359.5	7.56	3.4	10.3			0.3	-	2.1	-	-	61		2.4	2.4
6970.75	3.75	358540.75	8.23	2.0	12.3			0.3	-	2.2	-	-	68		2.6	2.6
6971	4	387722	8.90	7.6	14.4			0.3	0.3	2.4	-	-	73		3.0	3.0
6971.25	4.25	408751	9.38	2.3	16.7			0.4	0.8	2.5	-	-	79		3.7	3.7
6971.5	4.5	429780	9.87	4.7	19.1			0.4	1.5	2.7	-	-	85		4.5	4.5
6971.75	4.75	450809	10.35	2.5	21.6			0.4	2.3	2.8	-	-	90		5.4	5.4
6972	5	471838	10.83	5.2	24.3			0.4	3.1	2.9	-	-	95		6.4	6.4
6972.25	5.25	482595.75	11.08	2.7	27.0			0.4	3.6	3.0	-	-	99		7.0	7.0
6972.5	5.5	493354	11.33	5.5	29.8			0.4	4.0	3.1	0.5	-	103		8	8.1
6973	6	514869	11.82	5.8	35.6			0.4	4.8	3.4	5.2	-	111		14	14
6973.25	6.25	518272	11.90	3.0	38.6			0.5	5.1	3.5	8.6	4	114		21	21
6973.5	6.5	521675	11.98	5.9	41.6			0.5	5.4	3.6	13	11	118		33	33
6974	7	528481	12.13	12.0	47.6			0.5	6.0	3.8	22	31	125		63	63
6976	9	553685	12.71	24.8	72.4			0.6	7.9	4.4	40	106	151		151	151

Notes:
1) Top-of-bank and spillway flows are weir equations from section 11.3.1 in the DCM. Q=CLH^1.5 (C=3.0)
2) Orifice flows are also from section 11.3.1. Q=CA(2gH)^.5 (C=.6)
3) Grate flows are determined from equations 7-2 and 7-3. Weir Flow Q=(3PH^1.5)/F, Orifice Flow Q=4.815*AH^0.5)
4) Pipe flows use the lesser of: 1) Inlet control equations 27 & 28, page 146 of HDS No. 5 - or - 2) Allowable Pipe Flow equation on page 11-9 of the DCM. Use Table 9, page 147-148, HDS No. 5 for formulas 26 & 27.

FUTURE POND E

WQCV Control Riser Calculations

TRIBUTARY AREA		290	acres
DRAIN TIME		40	hr
	a	1	
IMPERVIOUSNESS RATIO	*i*	0.36	
DEPTH OF OUTLET		2.0	
WQCV		0.17	inches
WQCV DESIGN VOL		**1.5**	ac-ft
	K_{40}	0.39	
AREA PER RISER[1]	a	5.69	in^2
No. of Columns		1	
No. of Holes		4	per column
Area per Hole		1.42	in^2
Hole size		1 3/8	in
Steel Plate Thickness		1/4	in

[1] AREA PER ROW PER RISER

Actual area per row per hole:	1.48	in^2
Actual area per riser:	5.9	in^2
Actual area per riser:	0.041	ft^2

TABLE SB-2

Hole Dia (in)		Area per Row (in^2)					
Holes per Row		1	2	3	4	5	6
Min steel thickness		1/4	5/16	3/8	3/8	3/8	1/2
1/4	0.2500	0.05	0.10	0.15	0.20	0.25	0.29
5/16	0.3125	0.08	0.15	0.23	0.31	0.38	0.46
3/8	0.3750	0.11	0.22	0.33	0.44	0.55	0.66
7/16	0.4375	0.15	0.30	0.45	0.60	0.75	0.90
1/2	0.5000	0.20	0.39	0.59	0.79	0.98	1.18
9/16	0.5625	0.25	0.50	0.75	0.99	1.24	1.49
5/8	0.6250	0.31	0.61	0.92	1.23	1.53	1.84
11/16	0.6875	0.37	0.74	1.11	1.48	1.86	2.23
3/4	0.7500	0.44	0.88	1.33	1.77	2.21	2.65
7/8	0.8750	0.60	1.20	1.80	2.41	3.01	3.61
1	1.0000	0.79	1.57	2.36	3.14	3.93	4.71
1 1/8	1.1250	0.99	1.99	2.98	3.98	4.97	5.96
1 1/4	1.2500	1.23	2.45	3.68	4.91	6.14	7.36
1 3/8	1.3750	1.48	2.97	4.45	5.94	7.42	8.91
1 1/2	1.5000	1.77	3.53	5.30	7.07	8.84	10.60
1 5/8	1.6250	2.07	4.15	6.22	8.30	10.37	12.44
1 3/4	1.7500	2.41	4.81	7.22	9.62	12.03	14.43
1 7/8	1.8750	2.76	5.52	8.28	11.04	13.81	16.57
2	2.0000	3.14	6.28	9.42	12.57	15.71	18.85

n = Number of columns of perforations

ENCLAVES at STONEBRIDGE FILING 4

Simulation Run: S4-100 YR Reservoir: POND E INTERIM CONDITION

Start of Run:	01Jul2015, 00:00	Basin Model:	Stone 4
End of Run:	02Jul2015, 00:00	Meteorologic Model:	SCS TYPE IIA 100YR
Compute Time:	16Jul2018 15:09:33	Control Specifications:	24 HR-2 MIN.

Volume Units: AC-FT

Computed Results:

Peak Inflow:	484 (CFS)	Date/Time of Peak Inflow:	01Jul2015, 12:12
Peak Outflow:	199 (CFS)	Date/Time of Peak Outflow:	01Jul2015, 13:48
Total Inflow :	112.6 (AC-FT)	Peak Storage:	39.5 (AC-FT)
Total Outflow:	88.6 (AC-FT)	Peak Elevation:	6973.3 (FT)

Simulation Run: S4-005 YR Reservoir: POND E

Start of Run:	01Jul2015, 00:00	Basin Model:	Stone 4
End of Run:	02Jul2015, 00:00	Meteorologic Model:	SCS TYPE IIA 005YR
Compute Time:	16Jul2018 15:33:57	Control Specifications:	24 HR-2 MIN.

Volume Units: AC-FT

Computed Results:

Peak Inflow:	114 (CFS)	Date/Time of Peak Inflow:	01Jul2015, 12:12
Peak Outflow:	12 (CFS)	Date/Time of Peak Outflow:	01Jul2015, 21:12
Total Inflow :	24.6 (AC-FT)	Peak Storage:	16.1 (AC-FT)
Total Outflow:	10.1 (AC-FT)	Peak Elevation:	6971.2 (FT)

ENCLAVES at STONEBRIDGE FILING 4

Simulation Run: F-100 YR Reservoir: POND H INTERIM & FUTURE CONDITION

Start of Run:	01Jul2015, 00:00	Basin Model:	Future SCS
End of Run:	02Jul2015, 00:00	Meteorologic Model:	SCS TYPE IIA 100YR
Compute Time:	14Mar2018 13:11:34	Control Specifications:	24 HR-2 MIN.

Volume Units: AC-FT

Computed Results:

Peak Inflow:	152(CFS)	Date/Time of Peak Inflow:	01Jul2015, 12:06
Peak Outflow:	57 (CFS)	Date/Time of Peak Outflow:	01Jul2015, 12:32
Total Inflow :	18.0 (AC-FT)	Peak Storage:	7.7 (AC-FT)
Total Outflow:	15.2 (AC-FT)	Peak Elevation:	6973.4 (FT)

Simulation Run: F-005 YR Reservoir: POND H

Start of Run:	01Jul2015, 00:00	Basin Model:	Future SCS
End of Run:	02Jul2015, 00:00	Meteorologic Model:	SCS TYPE IIA 005YR
Compute Time:	14Mar2018 13:26:34	Control Specifications:	24 HR-2 MIN.

Volume Units: AC-FT

Computed Results:

Peak Inflow:	34 (CFS)	Date/Time of Peak Inflow:	01Jul2015, 06:14
Peak Outflow:	3.0 (CFS)	Date/Time of Peak Outflow:	01Jul2015, 08:24
Total Inflow :	4.5 (AC-FT)	Peak Storage:	2.8 (AC-FT)
Total Outflow:	2.6 (AC-FT)	Peak Elevation:	6971.7 (FT)

Simulation Run: F-100 YR Reservoir: POND E FUTURE CONDITION

Start of Run:	01Jul2015, 00:00	Basin Model:	Future SCS
End of Run:	02Jul2015, 00:00	Meteorologic Model:	SCS TYPE IIA 100YR
Compute Time:	14Mar2018 13:11:34	Control Specifications:	24 HR-2 MIN.

Volume Units: AC-FT

Computed Results:

Peak Inflow:	609 (CFS)	Date/Time of Peak Inflow:	01Jul2015, 12:06
Peak Outflow:	240 (CFS)	Date/Time of Peak Outflow:	01Jul2015, 12:32
Total Inflow :	123.4 (AC-FT)	Peak Storage:	42.2 (AC-FT)
Total Outflow:	99.4 (AC-FT)	Peak Elevation:	6973.6 (FT)

Simulation Run: F-005 YR Reservoir: POND E

Start of Run:	01Jul2015, 00:00	Basin Model:	Future SCS
End of Run:	02Jul2015, 00:00	Meteorologic Model:	SCS TYPE IIA 005YR
Compute Time:	14Mar2018 13:26:34	Control Specifications:	24 HR-2 MIN.

Volume Units: AC-FT

Computed Results:

Peak Inflow:	126 (CFS)	Date/Time of Peak Inflow:	01Jul2015, 06:14
Peak Outflow:	16 (CFS)	Date/Time of Peak Outflow:	01Jul2015, 08:24
Total Inflow :	29.0 (AC-FT)	Peak Storage:	17.9 (AC-FT)
Total Outflow:	13.1 (AC-FT)	Peak Elevation:	6971.9 (FT)

Appendix D – Street Flows

Worksheet for Ramp Full Street Section

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.75	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.00
0+13	-0.25
0+14	-0.75
0+15	-0.59
0+30	-0.29
0+45	-0.59
0+46	-0.75
0+48	-0.25
0+60	0.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.00)	(0+13, -0.25)	0.030
(0+13, -0.25)	(0+15, -0.59)	0.013
(0+15, -0.59)	(0+45, -0.59)	0.015
(0+45, -0.59)	(0+48, -0.25)	0.013
(0+48, -0.25)	(0+60, 0.00)	0.030
<None>	(0+60, 0.00)	0.030

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Worksheet for Ramp Full Street Section

Results

Discharge		42.54	ft^3/s
Elevation Range	-0.75 to 0.00 ft		
Flow Area		19.32	ft^2
Wetted Perimeter		60.21	ft
Hydraulic Radius		0.32	ft
Top Width		60.00	ft
Normal Depth		0.75	ft
Critical Depth		0.66	ft
Critical Slope		0.01121	ft/ft
Velocity		2.20	ft/s
Velocity Head		0.08	ft
Specific Energy		0.83	ft
Froude Number		0.68	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.75	ft
Critical Depth	0.66	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.01121	ft/ft

Cross Section for Ramp Full Street Section

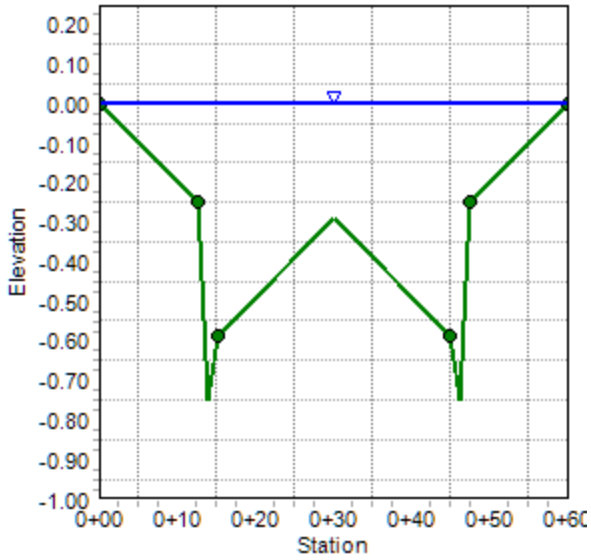
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.75	ft
Discharge	42.54	ft³/s

Cross Section Image



RESIDENTIAL STREET SECTION
RAMP CURB

5-Year Storm Event Maximum Allowable Street Flows (Maximum Flow to Top of Curb)									
Channel Slope (ft/ft)	Full Street Width					Half Street Width			
	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Top Width (ft)
0.0050	19	2.5	7.45	35.2	35.0	9.4	2.5	3.7	17.5
0.0063	21	2.8	7.45	35.2	35.0	11	2.8	3.7	17.5
0.0075	23	3.1	7.45	35.2	35.0	12	3.1	3.7	17.5
0.0088	25	3.4	7.45	35.2	35.0	12	3.3	3.7	17.5
0.0100	27	3.6	7.45	35.2	35.0	13	3.6	3.7	17.5
0.0113	28	3.8	7.45	35.2	35.0	14	3.8	3.7	17.5
0.0125	30	4.0	7.45	35.2	35.0	15	4.0	3.7	17.5
0.0138	31	4.2	7.45	35.2	35.0	16	4.2	3.7	17.5
0.0150	33	4.4	7.45	35.2	35.0	16	4.4	3.7	17.5
0.0163	34	4.6	7.45	35.2	35.0	17	4.5	3.7	17.5
0.0175	35	4.7	7.45	35.2	35.0	18	4.7	3.7	17.5
0.0188	37	4.9	7.45	35.2	35.0	18	4.9	3.7	17.5
0.0200	38	5.1	7.45	35.2	35.0	19	5.0	3.7	17.5
0.0213	39	5.2	7.45	35.2	35.0	19	5.2	3.7	17.5
0.0225	40	5.4	7.45	35.2	35.0	20	5.4	3.7	17.5
0.0238	41	5.5	7.45	35.2	35.0	20	5.5	3.7	17.5
0.0250	42	5.7	7.45	35.2	35.0	21	5.6	3.7	17.5
0.0263	43	5.8	7.45	35.2	35.0	22	5.8	3.7	17.5
0.0275	44	5.9	7.45	35.2	35.0	22	5.9	3.7	17.5
0.0288	45	6.1	7.45	35.2	35.0	23	6.0	3.7	17.5
0.0300	46	6.2	7.45	35.2	35.0	23	6.2	3.7	17.5
0.0313	47	6.3	7.45	35.2	35.0	23	6.3	3.7	17.5
0.0325	48	6.5	7.45	35.2	35.0	24	6.4	3.7	17.5
0.0338	49	6.6	7.45	35.2	35.0	24	6.6	3.7	17.5
0.0350	50	6.7	7.45	35.2	35.0	25	6.7	3.7	17.5
0.0363	51	6.8	7.45	35.2	35.0	25	6.8	3.7	17.5
0.0375	52	6.9	7.45	35.2	35.0	26	6.9	3.7	17.5
0.0388	53	7.1	7.45	35.2	35.0	26	7.0	3.7	17.5
0.0400	53	7.2	7.45	35.2	35.0	27	7.1	3.7	17.5

100-Year Storm Event Maximum Allowable Street Flows (Maximum Flow to Right-of-Way)									
Channel Slope (ft/ft)	Full Street Width					Half Street Width			
	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Top Width (ft)
0.0050	43	2.2	19.32	60.2	60.0	21	2.2	9.7	30
0.0063	48	2.5	19.32	60.2	60.0	24	2.4	9.7	30
0.0075	52	2.7	19.32	60.2	60.0	26	2.7	9.7	30
0.0088	56	2.9	19.32	60.2	60.0	28	2.9	9.7	30
0.0100	60	3.1	19.32	60.2	60.0	30	3.1	9.7	30
0.0113	64	3.3	19.32	60.2	60.0	32	3.3	9.7	30
0.0125	67	3.5	19.32	60.2	60.0	33	3.5	9.7	30
0.0138	71	3.7	19.32	60.2	60.0	35	3.6	9.7	30
0.0150	74	3.8	19.32	60.2	60.0	36	3.8	9.7	30
0.0163	77	4.0	19.32	60.2	60.0	38	3.9	9.7	30
0.0175	80	4.1	19.32	60.2	60.0	39	4.1	9.7	30
0.0188	82	4.3	19.32	60.2	60.0	41	4.2	9.7	30
0.0200	85	4.4	19.32	60.2	60.0	42	4.4	9.7	30
0.0213	88	4.5	19.32	60.2	60.0	43	4.5	9.7	30
0.0225	90	4.7	19.32	60.2	60.0	45	4.6	9.7	30
0.0238	93	4.8	19.32	60.2	60.0	46	4.8	9.7	30
0.0250	95	4.9	19.32	60.2	60.0	47	4.9	9.7	30
0.0263	97	5.0	19.32	60.2	60.0	48	5.0	9.7	30
0.0275	100	5.2	19.32	60.2	60.0	49	5.1	9.7	30
0.0288	102	5.3	19.32	60.2	60.0	50	5.2	9.7	30
0.0300	104	5.4	19.32	60.2	60.0	52	5.3	9.7	30
0.0313	106	5.5	19.32	60.2	60.0	53	5.5	9.7	30
0.0325	108	5.6	19.32	60.2	60.0	54	5.6	9.7	30
0.0338	111	5.7	19.32	60.2	60.0	55	5.7	9.7	30
0.0350	113	5.8	19.32	60.2	60.0	56	5.8	9.7	30
0.0363	115	5.9	19.32	60.2	60.0	57	5.9	9.7	30
0.0375	117	6.0	19.32	60.2	60.0	58	6.0	9.7	30
0.0388	118	6.1	19.32	60.2	60.0	59	6.1	9.7	30
0.0400	120	6.2	19.32	60.2	60.0	60	6.2	9.7	30

Street Flows Ramp Curb (Maximum Flow to Crown of Roadway)									
Channel Slope (ft/ft)	Full Street Width					Half Street Width			
	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Top Width (ft)
0.0050	13	2.2	6.05	35.0	34.8	6.7	2.2	3.0	17.4
0.0063	15	2.5	6.05	35.0	34.8	7.5	2.5	3.0	17.4
0.0075	16	2.7	6.05	35.0	34.8	8.2	2.7	3.0	17.4
0.0088	18	2.9	6.05	35.0	34.8	8.9	2.9	3.0	17.4
0.0100	19	3.1	6.05	35.0	34.8	9.5	3.1	3.0	17.4
0.0113	20	3.3	6.05	35.0	34.8	10	3.3	3.0	17.4
0.0125	21	3.5	6.05	35.0	34.8	11	3.5	3.0	17.4
0.0138	22	3.7	6.05	35.0	34.8	11	3.7	3.0	17.4
0.0150	23	3.8	6.05	35.0	34.8	12	3.8	3.0	17.4
0.0163	24	4.0	6.05	35.0	34.8	12	4.0	3.0	17.4
0.0175	25	4.1	6.05	35.0	34.8	13	4.1	3.0	17.4
0.0188	26	4.3	6.05	35.0	34.8	13	4.3	3.0	17.4
0.0200	27	4.4	6.05	35.0	34.8	13	4.4	3.0	17.4
0.0213	28	4.6	6.05	35.0	34.8	14	4.6	3.0	17.4
0.0225	28	4.7	6.05	35.0	34.8	14	4.7	3.0	17.4
0.0238	29	4.8	6.05	35.0	34.8	15	4.8	3.0	17.4
0.0250	30	5.0	6.05	35.0	34.8	15	5.0	3.0	17.4
0.0263	31	5.1	6.05	35.0	34.8	15	5.1	3.0	17.4
0.0275	31	5.2	6.05	35.0	34.8	16	5.2	3.0	17.4
0.0288	32	5.3	6.05	35.0	34.8	16	5.3	3.0	17.4
0.0300	33	5.4	6.05	35.0	34.8	16	5.4	3.0	17.4
0.0313	34	5.5	6.05	35.0	34.8	17	5.5	3.0	17.4
0.0325	34	5.7	6.05	35.0	34.8	17	5.6	3.0	17.4
0.0338	35	5.8	6.05	35.0	34.8	17	5.8	3.0	17.4
0.0350	35	5.9	6.05	35.0	34.8	18	5.9	3.0	17.4
0.0363	36	6.0	6.05	35.0	34.8	18	6.0	3.0	17.4
0.0375	37	6.1	6.05	35.0	34.8	18	6.1	3.0	17.4
0.0388	37	6.2	6.05	35.0	34.8	19	6.2	3.0	17.4
0.0400	38	6.3	6.05	35.0	34.8	19	6.3	3.0	17.4

Worksheet for Vertical Full Street Section

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.75	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.00
0+13	-0.25
0+13	-0.25
0+13	-0.75
0+15	-0.58
0+30	-0.28
0+45	-0.58
0+47	-0.75
0+47	-0.25
0+48	-0.25
0+60	0.00

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.00)	(0+13, -0.25)	0.030
(0+13, -0.25)	(0+15, -0.58)	0.013
(0+15, -0.58)	(0+45, -0.58)	0.015
(0+45, -0.58)	(0+48, -0.25)	0.013
(0+48, -0.25)	(0+60, 0.00)	0.030
<None>	(0+60, 0.00)	0.030

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method

Worksheet for Vertical Full Street Section

Options

Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge		41.33	ft^3/s
Elevation Range	-0.75 to 0.00 ft		
Flow Area		19.04	ft^2
Wetted Perimeter		61.02	ft
Hydraulic Radius		0.31	ft
Top Width		60.00	ft
Normal Depth		0.75	ft
Critical Depth		0.66	ft
Critical Slope		0.01143	ft/ft
Velocity		2.17	ft/s
Velocity Head		0.07	ft
Specific Energy		0.82	ft
Froude Number		0.68	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.75	ft
Critical Depth	0.66	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.01143	ft/ft

Cross Section for Vertical Full Street Section

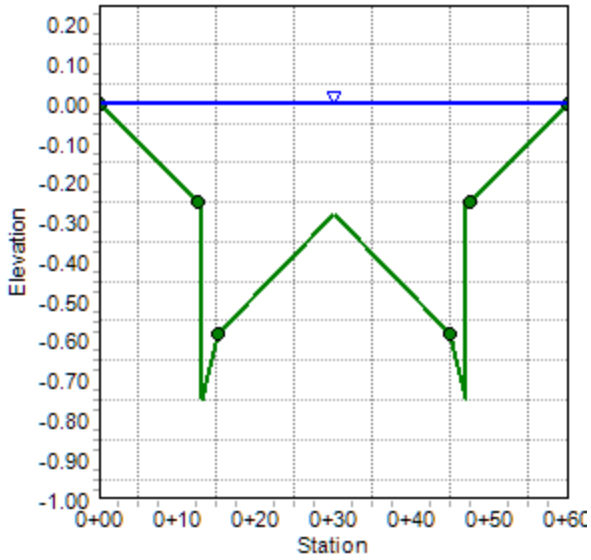
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.75	ft
Discharge	41.33	ft³/s

Cross Section Image



RESIDENTIAL STREET SECTION
VERTICAL CURB

5-Year Storm Event Maximum Allowable Street Flows
(Maximum Flow to Top of Curb)

Channel Slope (ft/ft)	Full Street Width					Half Street Width			
	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Top Width (ft)
0.0050	18	2.5	7.17	35.0	34.0	8.9	2.5	3.6	17
0.0063	20	2.8	7.17	35.0	34.0	9.9	2.8	3.6	17
0.0075	22	3.0	7.17	35.0	34.0	11	3.0	3.6	17
0.0088	23	3.3	7.17	35.0	34.0	12	3.3	3.6	17
0.0100	25	3.5	7.17	35.0	34.0	13	3.5	3.6	17
0.0113	27	3.7	7.17	35.0	34.0	13	3.7	3.6	17
0.0125	28	3.9	7.17	35.0	34.0	14	3.9	3.6	17
0.0138	29	4.1	7.17	35.0	34.0	15	4.1	3.6	17
0.0150	31	4.3	7.17	35.0	34.0	15	4.3	3.6	17
0.0163	32	4.5	7.17	35.0	34.0	16	4.5	3.6	17
0.0175	33	4.6	7.17	35.0	34.0	17	4.6	3.6	17
0.0188	34	4.8	7.17	35.0	34.0	17	4.8	3.6	17
0.0200	36	5.0	7.17	35.0	34.0	18	5.0	3.6	17
0.0213	37	5.1	7.17	35.0	34.0	18	5.1	3.6	17
0.0225	38	5.3	7.17	35.0	34.0	19	5.3	3.6	17
0.0238	39	5.4	7.17	35.0	34.0	19	5.4	3.6	17
0.0250	40	5.5	7.17	35.0	34.0	20	5.5	3.6	17
0.0263	41	5.7	7.17	35.0	34.0	20	5.7	3.6	17
0.0275	42	5.8	7.17	35.0	34.0	21	5.8	3.6	17
0.0288	43	5.9	7.17	35.0	34.0	21	5.9	3.6	17
0.0300	43	6.1	7.17	35.0	34.0	22	6.1	3.6	17
0.0313	44	6.2	7.17	35.0	34.0	22	6.2	3.6	17
0.0325	45	6.3	7.17	35.0	34.0	23	6.3	3.6	17
0.0338	46	6.4	7.17	35.0	34.0	23	6.4	3.6	17
0.0350	47	6.6	7.17	35.0	34.0	23	6.6	3.6	17
0.0363	48	6.7	7.17	35.0	34.0	24	6.7	3.6	17
0.0375	49	6.8	7.17	35.0	34.0	24	6.8	3.6	17
0.0388	49	6.9	7.17	35.0	34.0	25	6.9	3.6	17
0.0400	50	7.0	7.17	35.0	34.0	25	7.0	3.6	17

100-Year Storm Event Maximum Allowable Street Flows
(Maximum Flow to Right-of-Way)

Channel Slope (ft/ft)	Full Street Width					Half Street Width			
	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Top Width (ft)
0.0050	41	2.2	19.04	61.0	60.0	21	2.2	9.5	30
0.0063	46	2.4	19.04	61.0	60.0	23	2.4	9.5	30
0.0075	51	2.7	19.04	61.0	60.0	25	2.7	9.5	30
0.0088	55	2.9	19.04	61.0	60.0	27	2.9	9.5	30
0.0100	58	3.1	19.04	61.0	60.0	29	3.1	9.5	30
0.0113	62	3.3	19.04	61.0	60.0	31	3.2	9.5	30
0.0125	65	3.4	19.04	61.0	60.0	33	3.4	9.5	30
0.0138	69	3.6	19.04	61.0	60.0	34	3.6	9.5	30
0.0150	72	3.8	19.04	61.0	60.0	36	3.8	9.5	30
0.0163	75	3.9	19.04	61.0	60.0	37	3.9	9.5	30
0.0175	77	4.1	19.04	61.0	60.0	39	4.1	9.5	30
0.0188	80	4.2	19.04	61.0	60.0	40	4.2	9.5	30
0.0200	83	4.3	19.04	61.0	60.0	41	4.3	9.5	30
0.0213	85	4.5	19.04	61.0	60.0	42	4.5	9.5	30
0.0225	88	4.6	19.04	61.0	60.0	44	4.6	9.5	30
0.0238	90	4.7	19.04	61.0	60.0	45	4.7	9.5	30
0.0250	92	4.9	19.04	61.0	60.0	46	4.8	9.5	30
0.0263	95	5.0	19.04	61.0	60.0	47	5.0	9.5	30
0.0275	97	5.1	19.04	61.0	60.0	48	5.1	9.5	30
0.0288	99	5.2	19.04	61.0	60.0	49	5.2	9.5	30
0.0300	101	5.3	19.04	61.0	60.0	50	5.3	9.5	30
0.0313	103	5.4	19.04	61.0	60.0	51	5.4	9.5	30
0.0325	105	5.5	19.04	61.0	60.0	52	5.5	9.5	30
0.0338	107	5.6	19.04	61.0	60.0	53	5.6	9.5	30
0.0350	109	5.7	19.04	61.0	60.0	54	5.7	9.5	30
0.0363	111	5.8	19.04	61.0	60.0	55	5.8	9.5	30
0.0375	113	5.9	19.04	61.0	60.0	56	5.9	9.5	30
0.0388	115	6.0	19.04	61.0	60.0	57	6.0	9.5	30
0.0400	117	6.1	19.04	61.0	60.0	58	6.1	9.5	30

Street Flows Veritcal Curb (Maximum Flow to Crown of Roadway)									
Channel Slope (ft/ft)	Full Street Width					Half Street Width			
	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Wetted Perimeter (ft)	Top Width (ft)	Discharge (ft^3/s)	Velocity (ft/s)	Flow Area (ft^2)	Top Width (ft)
0.0050	14	2.2	6.15	35.0	34.0	6.7	2.2	3.0	17
0.0063	15	2.5	6.15	35.0	34.0	7.5	2.5	3.0	17
0.0075	17	2.7	6.15	35.0	34.0	8.2	2.7	3.0	17
0.0088	18	3.0	6.15	35.0	34.0	8.8	2.9	3.0	17
0.0100	19	3.2	6.15	35.0	34.0	9.4	3.1	3.0	17
0.0113	21	3.4	6.15	35.0	34.0	10	3.3	3.0	17
0.0125	22	3.5	6.15	35.0	34.0	11	3.5	3.0	17
0.0138	23	3.7	6.15	35.0	34.0	11	3.7	3.0	17
0.0150	24	3.9	6.15	35.0	34.0	12	3.8	3.0	17
0.0163	25	4.0	6.15	35.0	34.0	12	4.0	3.0	17
0.0175	26	4.2	6.15	35.0	34.0	12	4.1	3.0	17
0.0188	27	4.3	6.15	35.0	34.0	13	4.3	3.0	17
0.0200	28	4.5	6.15	35.0	34.0	13	4.4	3.0	17
0.0213	28	4.6	6.15	35.0	34.0	14	4.6	3.0	17
0.0225	29	4.8	6.15	35.0	34.0	14	4.7	3.0	17
0.0238	30	4.9	6.15	35.0	34.0	15	4.8	3.0	17
0.0250	31	5.0	6.15	35.0	34.0	15	4.9	3.0	17
0.0263	32	5.1	6.15	35.0	34.0	15	5.1	3.0	17
0.0275	32	5.3	6.15	35.0	34.0	16	5.2	3.0	17
0.0288	33	5.4	6.15	35.0	34.0	16	5.3	3.0	17
0.0300	34	5.5	6.15	35.0	34.0	16	5.4	3.0	17
0.0313	34	5.6	6.15	35.0	34.0	17	5.5	3.0	17
0.0325	35	5.7	6.15	35.0	34.0	17	5.6	3.0	17
0.0338	36	5.8	6.15	35.0	34.0	17	5.7	3.0	17
0.0350	36	5.9	6.15	35.0	34.0	18	5.9	3.0	17
0.0363	37	6.0	6.15	35.0	34.0	18	6.0	3.0	17
0.0375	38	6.1	6.15	35.0	34.0	18	6.1	3.0	17
0.0388	38	6.2	6.15	35.0	34.0	19	6.2	3.0	17
0.0400	39	6.3	6.15	35.0	34.0	19	6.3	3.0	17

Appendix E – Overflow Analysis

Worksheet for Sump Inlets 4 & 5

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	0.02000	ft/ft
Left Side Slope	10.00	ft/ft (H:V)
Right Side Slope	10.00	ft/ft (H:V)
Discharge	29.00	ft³/s

Results

Normal Depth	0.91	ft
Flow Area	8.21	ft²
Wetted Perimeter	18.21	ft
Hydraulic Radius	0.45	ft
Top Width	18.12	ft
Critical Depth	0.88	ft
Critical Slope	0.02364	ft/ft
Velocity	3.53	ft/s
Velocity Head	0.19	ft
Specific Energy	1.10	ft
Froude Number	0.93	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.91	ft
Critical Depth	0.88	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.02364	ft/ft

Worksheet for Sump Inlet 21

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	0.02000	ft/ft
Left Side Slope	10.00	ft/ft (H:V)
Right Side Slope	10.00	ft/ft (H:V)
Discharge	7.90	ft³/s

Results

Normal Depth	0.56	ft
Flow Area	3.10	ft²
Wetted Perimeter	11.19	ft
Hydraulic Radius	0.28	ft
Top Width	11.13	ft
Critical Depth	0.52	ft
Critical Slope	0.02812	ft/ft
Velocity	2.55	ft/s
Velocity Head	0.10	ft
Specific Energy	0.66	ft
Froude Number	0.85	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.56	ft
Critical Depth	0.52	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.02812	ft/ft

Worksheet for Sump Inlets 40 & 41

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.035	
Channel Slope	0.02000	ft/ft
Left Side Slope	10.00	ft/ft (H:V)
Right Side Slope	10.00	ft/ft (H:V)
Discharge	26.00	ft³/s

Results

Normal Depth	0.87	ft
Flow Area	7.57	ft²
Wetted Perimeter	17.49	ft
Hydraulic Radius	0.43	ft
Top Width	17.40	ft
Critical Depth	0.84	ft
Critical Slope	0.02399	ft/ft
Velocity	3.44	ft/s
Velocity Head	0.18	ft
Specific Energy	1.05	ft
Froude Number	0.92	
Flow Type	Subcritical	

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.87	ft
Critical Depth	0.84	ft
Channel Slope	0.02000	ft/ft
Critical Slope	0.02399	ft/ft

Appendix F – Soil Resource Report

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for El Paso County Area, Colorado

Windingwalk and the Enclave

November 10, 2017

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

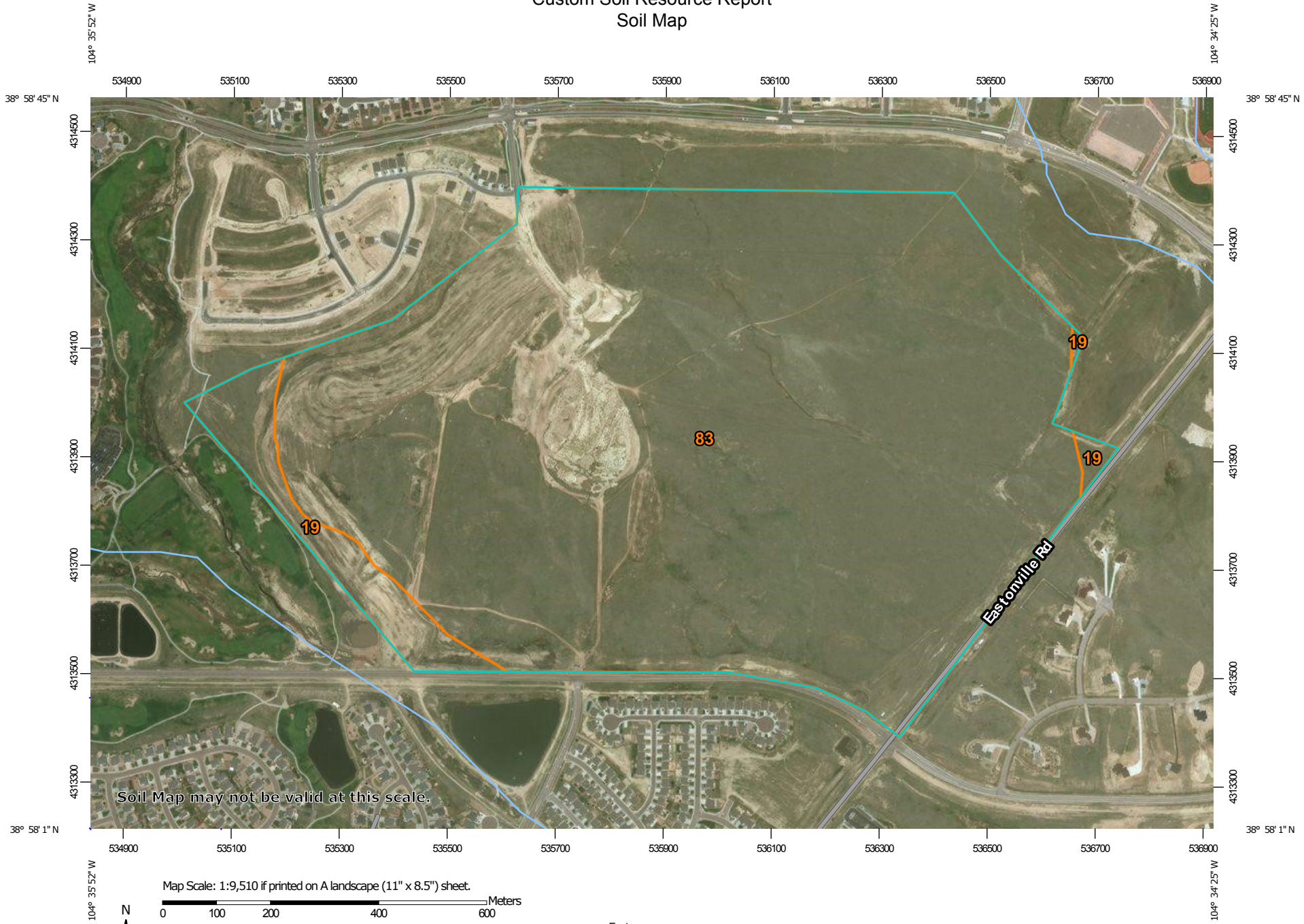
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:9,510 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 450 900 1800 2700

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 13N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 15, Oct 10, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 22, 2016—Mar 9, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
19	Columbine gravelly sandy loam, 0 to 3 percent slopes	15.8	5.5%
83	Stapleton sandy loam, 3 to 8 percent slopes	272.3	94.5%
Totals for Area of Interest		**288.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

El Paso County Area, Colorado

19—Columbine gravelly sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367p
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Columbine and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Columbine

Setting

Landform: Fan terraces, fans, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 14 inches: gravelly sandy loam
C - 14 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Gravelly Foothill (R049BY214CO)
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls

Percent of map unit:
Landform: Swales
Hydric soil rating: Yes

Other soils

Percent of map unit:

Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

83—Stapleton sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369z
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Stapleton and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stapleton

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose

Typical profile

A - 0 to 11 inches: sandy loam
Bw - 11 to 17 inches: gravelly sandy loam
C - 17 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B

Ecological site: Gravelly Foothill (R049BY214CO)
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls
Percent of map unit:
Landform: Swales
Hydric soil rating: Yes

Other soils
Percent of map unit:
Hydric soil rating: No

Pleasant
Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

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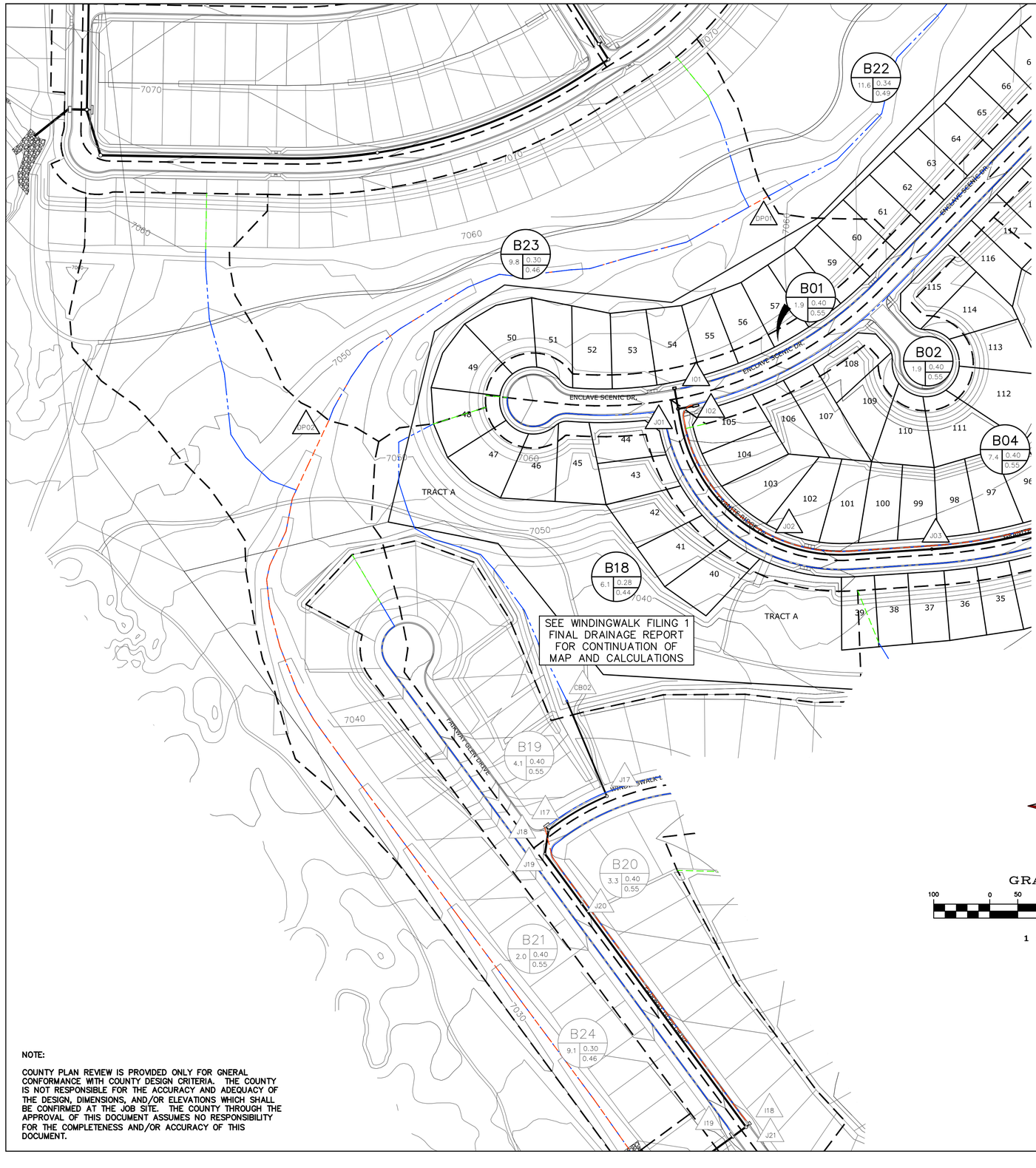

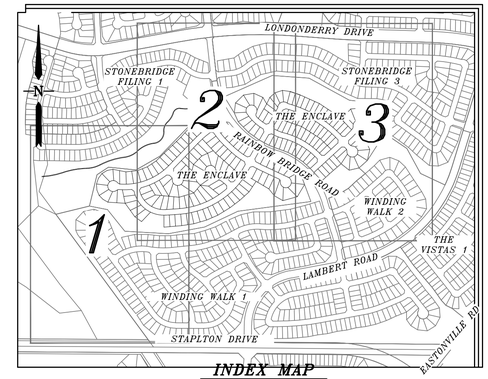

INDEX MAP

N.T.S.

DP	BASIN	AREA (AC)	Q(5) (CFS)	Q(100) (CFS)		INLET	PIPE	
I01	B01	1.89	2.6	6.0		PR 5 ' SUMP	18 "	RCP
I02	B02	1.90	2.7	6.3		PR 10 ' FLOW-BY	18 "	RCP
J01							18 "	RCP
J02							18 "	RCP
J03							24 "	RCP
I03	B03	4.40	7.2	16		PR 15 ' FORCED SUMP	18 "	RCP
J04							24 "	RCP
I04	B04	7.40	9.2	23		PR 15 ' SUMP	18 "	RCP
J05							24 "	RCP
I05	B05	2.50	3.3	7.6		PR 10 ' SUMP	24 "	RCP
J06							30 "	RCP
EX CB01	B06	5.82	6.6	17		EX Type C	36 "	RCP
EX CB02	B18	6.13	6.2	16		EX Type C	24 "	RCP
DP05	H01	0.99	1.5	3.5				
I20	H02	3.48	7.4	16		EX 15 ' FORCED SUMP	18 "	RCP
J22							18 "	RCP
J23							18 "	RCP
DP07	H06	2.52	4.3	9.9				
I22	H07	3.14	8.4	20		EX 15 ' FORCED SUMP	24 "	RCP
J24							24 "	RCP
DP06	H03	2.97	5.8	12				
I20	H04	2.37	9.0	19		PR 20 ' FORCED SUMP	24 "	RCP
J25A							24 "	RCP
I21	H05	2.04	3.5	7.9		PR 10 ' SUMP	24 "	RCP
J25B							24 "	RCP
J26							30 "	RCP
CB03	H08	4.40	4.6	12		EX Type C	18 "	RCP
CB04	H09	2.78	3.1	8.0		EX Type C	18 "	RCP
J27							42 "	RCP
I24	H10	4.98	8.2	18		EX 10 ' FORCED SUMP	18 "	RCP
I25	H11	1.98	3.8	11		EX 10 ' FORCED SUMP	18 "	RCP
J28							42 "	RCP
DP10	G01	2.70	4.6	11				
I40	G02	4.36	9.7	22		EX 10 ' SUMP	18 "	RCP
I41	G03	1.21	2.1	8.1		EX 10 ' SUMP	24 "	RCP
J33							24 "	RCP
DP12	E02	18.07	17	42				
DP13	E03	6.26	19	48			42 "	RCP
DP01	B22	11.57	13	32				
DP02	B23	9.82	18	46				
DP03	B24	9.08	19	49				
DP04	B25	1.53	30	72				

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

G01 — 2.7 — 0.40 — 0.55

BASIN DESIGNATION

SUB-WATERSHED DESIGNATION

MINOR/MAJOR STORM COEFFICIENT

BASIN AREA IN ACRES

61 — DESIGN POINT DESIGNATION

MAJOR BASIN BOUNDARY

SUB-BASIN BOUNDARY

6130 — EXISTING CONTOUR

6130 — PROPOSED COUNTOUR

PROPOSED STORM SEWER

INITIAL OVERLAND TIME (Ti)

TRAVEL TIME (Tt)

OVERLAND TIME (To)

NOTE:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GNERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

INTERSECTION OF WOODMEN RD AND MERIDIAN ROAD AT SW CORNER (BRASS CAP W/ NO. GF-9)

ELEVATION = 6874.00

FIGURE 4

No.	Revisions	Date	Init.	Appr.	Date
-					
-					
-					

TECH CONTRACTORS
12311 REX ROAD
FALCON, CO 80831
TELEPHONE: 719.495.7444
FAX: 719.495.2457

MERIDIAN RANCH

RATIONAL DRAINAGE MAP
FINAL DRAINAGE REPORT
STONEBRIDGE FLING 4

Drawn by	Checked by	Date
LCG	TAK	SEP 2018

Scale	Sheet
1" = 100'	1 of 3

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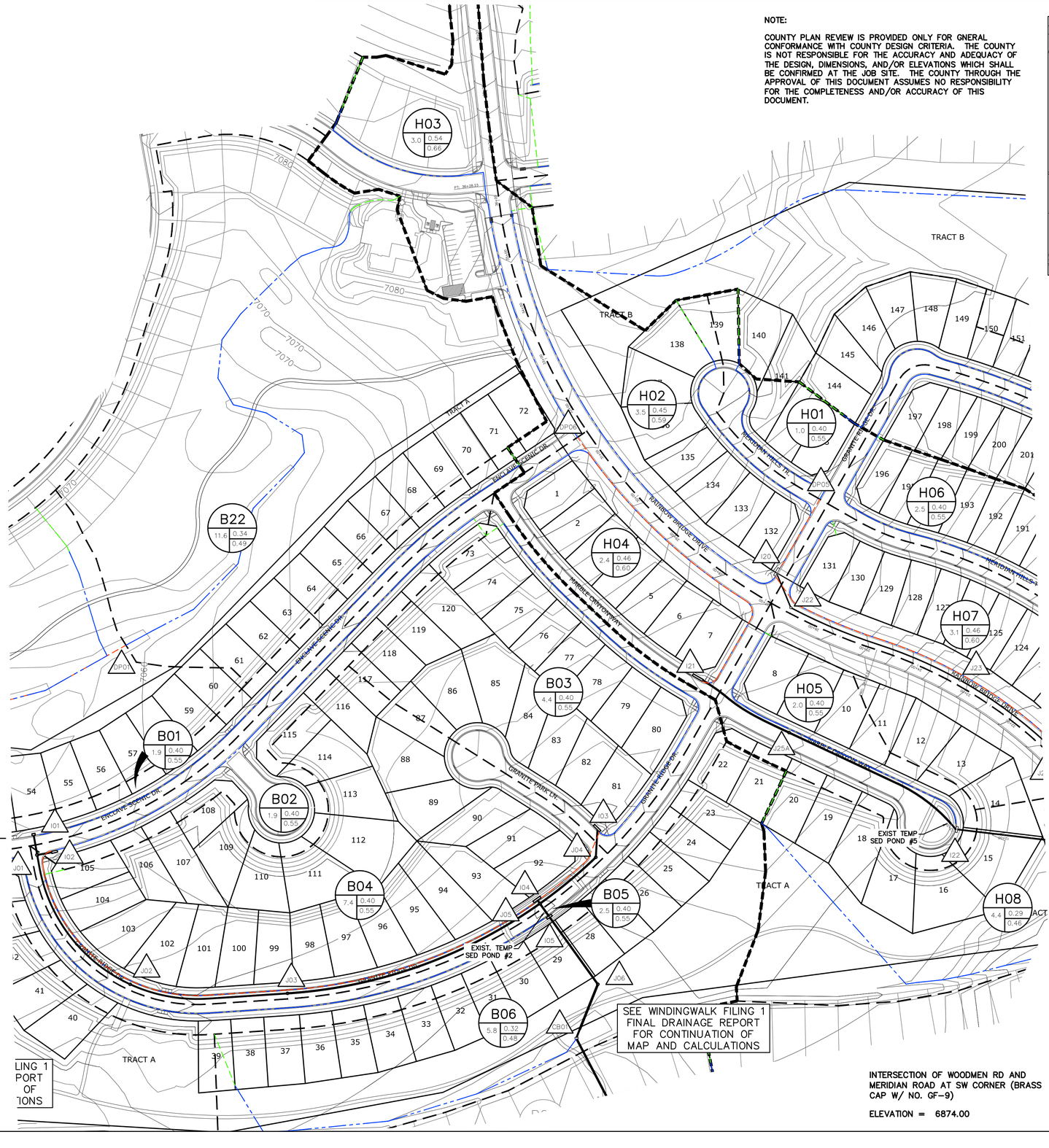

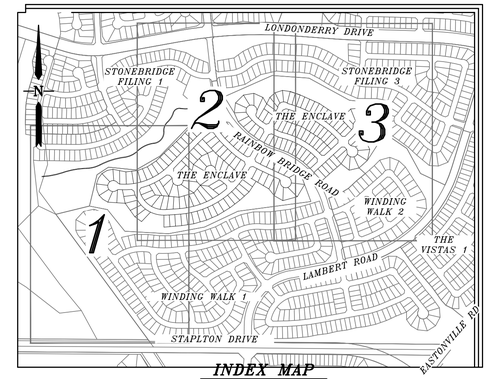

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I22	H07	3.14	8.4	20		EX 15 ' FORCED SUMP	24 " RCP
J24							24 " RCP
DP06	H03	2.97	5.8	12			
I20	H04	2.37	9.0	19		PR 20 ' FORCED SUMP	24 " RCP
J25A							24 " RCP
I21	H05	2.04	3.5	7.9		PR 10 ' SUMP	24 " RCP
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J27							42 " RCP
I24	H10	4.98	8.2	18		EX 10 ' FORCED SUMP	18 " RCP
I25	H11	1.98	3.8	11		EX 10 ' FORCED SUMP	18 " RCP
J28							42 " RCP
DP10	G01	2.70	4.6	11			
I40	G02	4.36	9.7	22		EX 10 ' SUMP	18 " RCP
I41	G03	1.21	2.1	8.1		EX 10 ' SUMP	24 " RCP
J33							24 " RCP
DP12	E02	18.07	17	42			
DP13	E03	6.26	19	48			42 " RCP
DP01	B22	11.57	13	32			
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INTERSECTION OF WOODMEN RD AND MERIDIAN ROAD AT SW CORNER (BRASS CAP W/ NO. GF-9)

ELEVATION = 6874.00

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

FIGURE 4

No.	Revisions	Date	Init.	Appr.	Date
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FINAL DRAINAGE REPORT
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Drawn by	Checked by	Date
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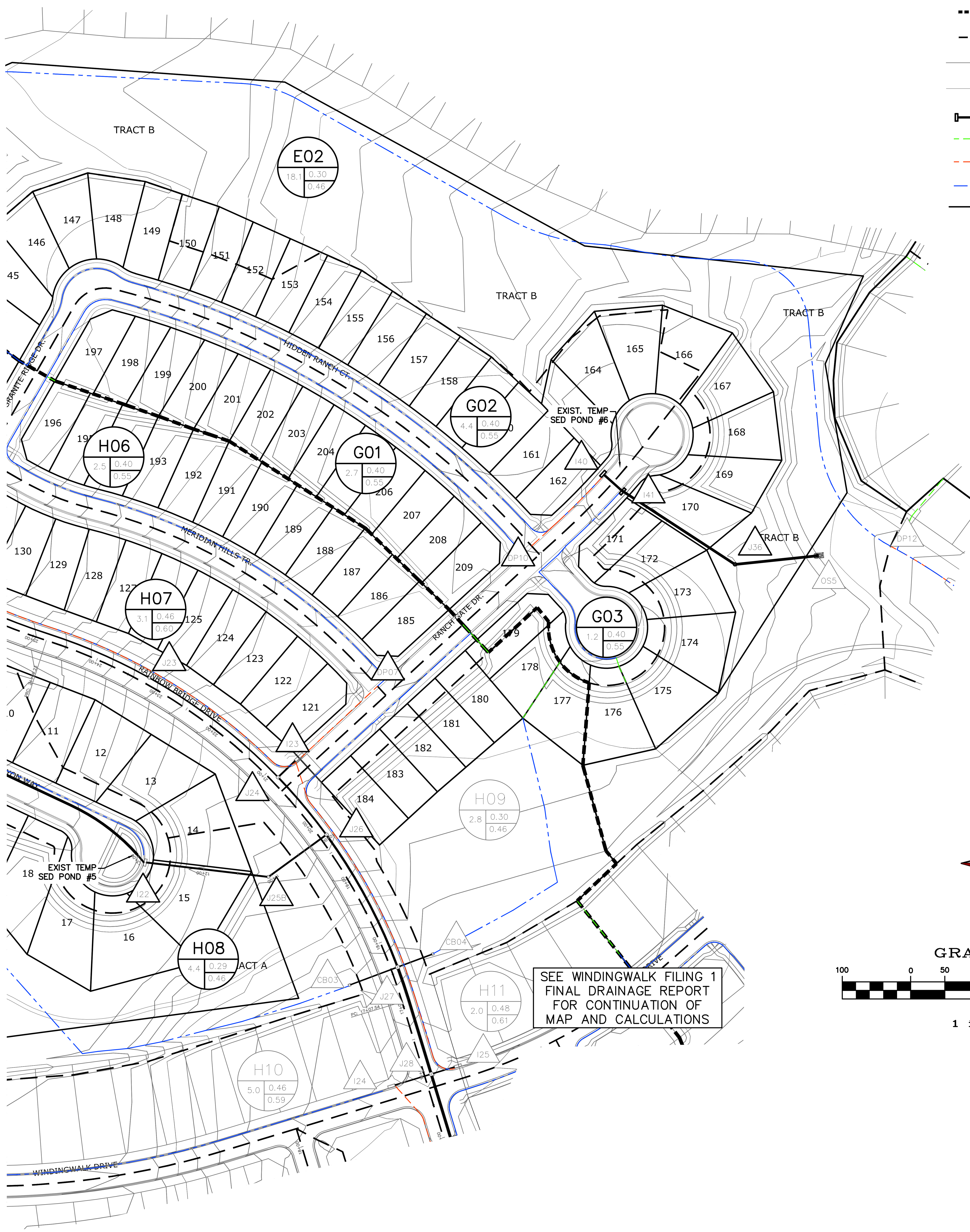

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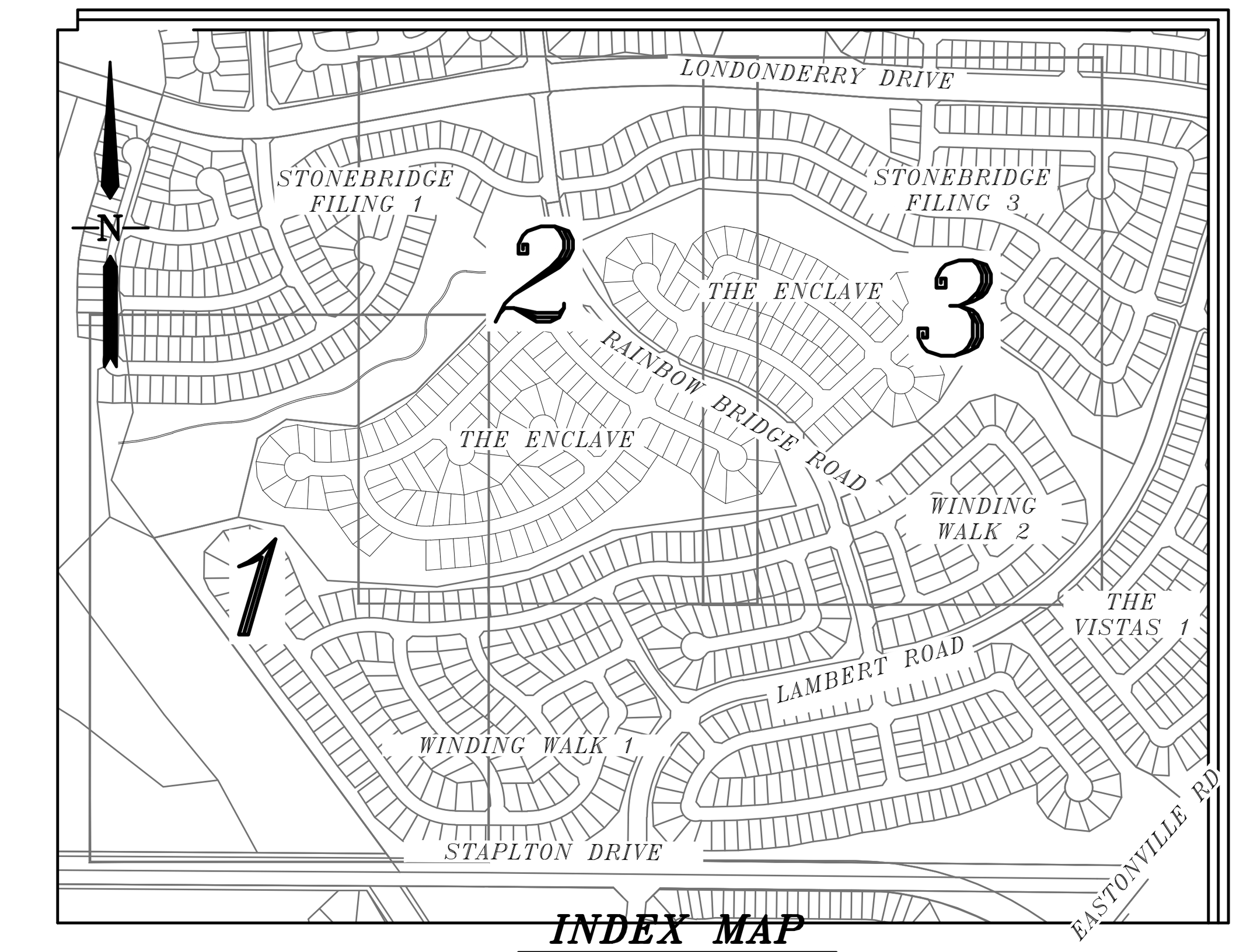
TRAVEL TIME (Tt)

OVERLAND TIME (To)



INDEX MAP

N.T.S.

DP	BASIN	AREA (AC)	Q(5) (CFS)	Q(100) (CFS)	INLET	PIPE
I01	B01	1.89	2.6	6.0	PR 5 ' SUMP	18 " RCP
I02	B02	1.90	2.7	6.3	PR 10 ' FLOW-BY	18 " RCP
J01						18 " RCP
J02						18 " RCP
J03						24 " RCP
I03	B03	4.40	7.2	16	PR 15 ' FORCED SUMP	18 " RCP
J04						24 " RCP
I04	B04	7.40	9.2	23	PR 15 ' SUMP	18 " RCP
J05						24 " RCP
I05	B05	2.50	3.3	7.6	PR 10 ' SUMP	24 " RCP
J06						30 " RCP
EX CB01	B06	5.82	6.6	17	EX Type C	36 " RCP
EX CB02	B18	6.13	6.2	16	EX Type C	24 " RCP
DP05	H01	0.99	1.5	3.5		
I20	H02	3.48	7.4	16	EX 15 ' FORCED SUMP	18 " RCP
J22						18 " RCP
J23						18 " RCP
DP07	H06	2.52	4.3	9.9		
I22	H07	3.14	8.4	20	EX 15 ' FORCED SUMP	24 " RCP
J24						24 " RCP
DP06	H03	2.97	5.8	12		
I20	H04	2.37	9.0	19	PR 20 ' FORCED SUMP	24 " RCP
J25A						24 " RCP
I21	H05	2.04	3.5	7.9	PR 10 ' SUMP	24 " RCP
J25B						24 " RCP
J26						30 " RCP
CB03	H08	4.40	4.6	12	EX Type C	18 " RCP
CB04	H09	2.78	3.1	8.0	EX Type C	18 " RCP
J27						42 " RCP
I24	H10	4.98	8.2	18	EX 10 ' FORCED SUMP	18 " RCP
I25	H11	1.98	3.8	11	EX 10 ' FORCED SUMP	18 " RCP
J28						42 " RCP
DP10	G01	2.70	4.6	11		
I40	G02	4.36	9.7	22	EX 10 ' SUMP	18 " RCP
I41	G03	1.21	2.1	8.1	EX 10 ' SUMP	24 " RCP
J33						24 " RCP
DP12	E02	18.07	17	42		
DP13	E03	6.26	19	48		42 " RCP
DP01	B22	11.57	13	32		
DP02	B23	9.82	18	46		
DP03	B24	9.08	19	49		
DP04	B25	1.53	30	72		

N

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)

1 inch = 100 ft.

INTERSECTION OF WOODMEN RD AND MERIDIAN ROAD AT SW CORNER (BRASS CAP W/ NO. GF–9)

ELEVATION = 6874.00

NOTE:

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GNERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR THE COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FIGURE 4

No.	Revisions	Date	Init.	Appr.	Date
-					
-					
-					
-					

TECH CONTRACTORS
12311 REX ROAD
FALCON, CO 80831
TELEPHONE: 719.495.7444
FAX: 719.495.2457

MERIDIAN RANCH

RATIONAL DRAINAGE MAP
FINAL DRAINAGE REPORT
STONEBRIDGE FILING 4

Drawn by LCG

Checked by TAK

Date SEP 2018

Scale 1" = 100'

3 of 3

SCS DRAINAGE MAP
STONEBRIDGE FILING 4

HISTORIC							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
OS02	0.2219	140	96	62	28	12.1	3
B01	0.2219	140	96	62	28	12.1	3
B01-B07	0.2219	139	96	61	28	12.1	3
OS03	0.1984	123	83	51	22	8.7	2
B02-B03	0.1984	119	81	51	22	8.7	2
HB01	0.0234	18	12	7	3	0.8	0
B03	0.2218	131	88	55	23	9.3	2
B03-B07	0.2218	129	88	54	23	9.3	2
OS04	0.1359	77	51	30	11	3.8	1
B04-B05	0.1359	76	50	30	11	3.7	1
HB03	0.1266	94	61	36	14	4.2	1
B05	0.2625	137	87	50	19	6.6	1
B05-B07	0.2625	137	85	49	19	6.5	1
HB02	0.1063	71	47	28	10	3.3	0
HB04	0.0609	43	28	17	6	2	0
B07	0.8734	490	321	195	80	30.7	6
B07-B12	0.8734	486	319	193	79	30.7	6
HB05	0.1375	94	62	37	14	4.3	1
HB06	0.1641	104	68	40	15	4.9	1
B12	1.175	636	415	243	97	37.5	7
B12-PB	1.175	629	413	242	97	37.2	7
HB07	0.0313	27	18	11	4	1.2	0
POND B	1.2063	639	420	245	98	37.8	7
PB-19	1.2063	636	416	244	97	37.7	7
OS01	1.5594	726	488	303	130	53.3	11
OS01-B19	1.5594	720	487	301	130	53.1	11
HB08	0.1344	76	50	30	11	3.7	1
HB09	0.3047	132	86	51	20	7.2	1
B19	3.2048	1490	990	602	253	100.4	19
B19-B26	3.2048	1475	987	599	252	100	19
HB10	**0.3047**	**162**	**105**	**63**	**24**	**8.1**	**1**
HB12	0.0797	51	33	19	7	2.4	0
HB12-B26	0.0797	49	33	19	7	2.3	0
B26	3.5892	1651	1086	657	274	108.4	21
26-32	3.5892	1633	1081	656	273	107.8	21
HB11	**0.1125**	**57**	**37**	**22**	**9**	**2.9**	**1**
32	3.7017	1678	1112	672	279	110.2	21
32-37	3.7017	1667	1104	667	277	109.3	21
B-14	0.4039	171	111	67	26	9.4	2
B-13	0.2813	122	80	47	19	6.6	1
36	0.6852	293	191	114	45	16	3
36-37	0.6852	290	190	113	45	16	3
B-15	0.075	37	24	14	6	1.9	0
37	4.4619	1988	1306	782	320	125.5	24
HG07	0.0984	47	31	18	7	2.4	0
HG07-G11	0.0984	47	31	18	7	2.4	0
HG08	0.1328	73	48	28	11	3.6	1
G11	0.2312	115	75	44	17	5.7	1
G11-G12	0.2312	114	75	44	17	5.6	1
HG09	0.1781	73	48	29	11	4.1	1
G12	0.4093	187	122	72	28	9.7	2
G12-H08	0.4093	183	121	71	28	9.7	2
HG10	0.1375	39	26	16	7	2.6	1
H08	0.5468	216	142	85	34	12.1	2
HG11	**0.2047**	**77**	**51**	**30**	**12**	**4.5**	**1**
H09	0.2047	77	51	30	12	4.5	1
HH01	**0.0984**	**65**	**43**	**25**	**9**	**3**	**0**
H12	0.0984	65	43	25	9	3	0
HG12	**0.1297**	**57**	**38**	**22**	**9**	**3.1**	**1**
H10	0.1297	57	38	22	9	3.1	1

GRAPHIC SCALE

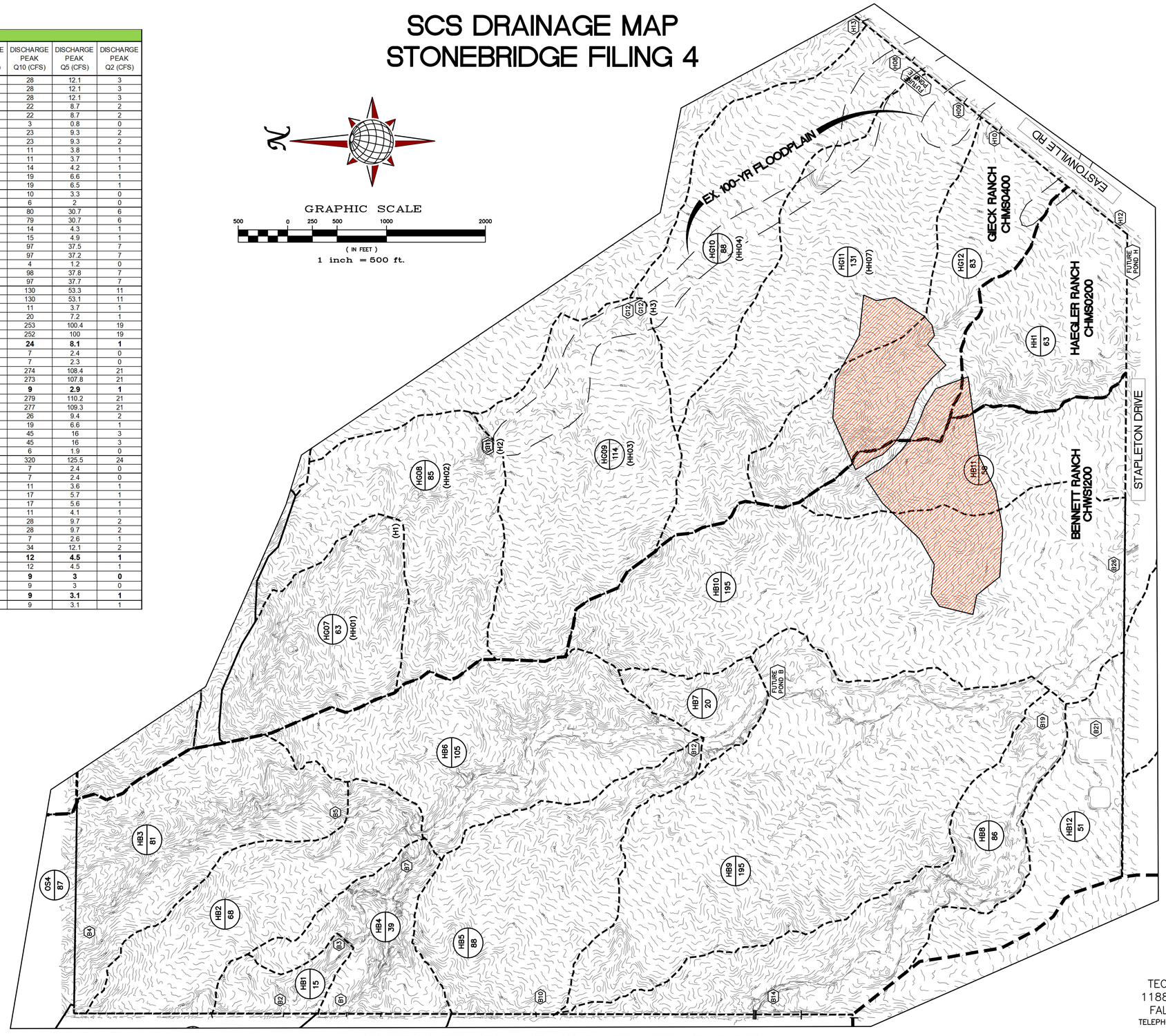
500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

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
- SITE LOCATION



TECH CONTRACTORS
11886 STAPLETON DR
FALCON, CO 80831
TELEPHONE: 719.495.7444

HISTORIC CONDITIONS

FIGURE 5

SEP 2018

SCS DRAINAGE MAP
STONEBRIDGE FILING 4

INTERIM CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
OS01	1.5594	726	488	303	130	53	11
DB16	0.0578	85	66	50	32	22	12
B10	1.6172	765	516	322	143	60	13
B10-B11	1.6172	763	514	322	142	60	13
DB17	0.0048	15	13	11	8.3	6.9	5.3
B11	1.622	765	516	323	143	61	15
B11-POND C	1.622	759	515	321	143	61	14
DB21	0.0519	49	34	22	11	4.9	1.0
DB18	0.0346	60	47	36	24	16	9.0
DB19	0.0281	34	25	18	11	6.2	2.6
DB20	0.0147	23	18	13	8.5	5.8	3.2
POND C	1.7513	727	492	302	126	50	11
POND C-B16	1.7513	725	488	300	126	50	11
DB25	0.0211	40	32	25	16	11	6.6
B16	1.7724	730	492	303	128	51	11
B16-B17	1.7724	724	492	302	127	51	11
DB26	0.0682	124	101	80	57	42	27
B17	1.8406	751	511	315	135	55	31
B17-B26	1.8406	748	508	315	135	55	30
OS03	0.1984	123	83	51	22	8.7	1.6
DB01	0.0719	83	61	42	23	12	4.3
B01	0.2703	190	132	85	39	18	4.6
B01-B02	0.2703	184	129	83	39	18	4.6
OS02	0.2219	140	96	62	28	12	2.5
DB02	0.0516	66	48	34	18	9.6	2.9
B02	0.5438	358	249	161	75	34	8.1
B02-POND A	0.5438	357	248	160	74	34	8.1
OS04	0.1359	77	51	30	11	3.8	0.6
DB03	0.0703	63	45	30	14	6.5	1.4
B03	0.2062	137	92	57	24	9.4	1.5
B03-B04	0.2062	135	92	56	24	9.1	1.5
DB04	0.0422	40	28	19	9.6	4.6	1.1
DB05	0.0384	35	25	17	8.6	4.4	1.3
B04	0.2868	201	139	88	39	16.60	3.4
B04-B05	0.2868	201	139	88	38	16.30	3.3
DB06	0.0219	41	33	26	18	12.60	7.8
B05	0.3087	232	162	107	51	23.70	9.6
B05-POND A	0.3087	230	162	106	50	23.40	9.4
DB07	0.0254	33	24	17	9.2	5.0	1.7
DB08	0.0297	30	21	13	6.0	2.6	0.4
POND A	0.9076	523	365	210	69	18	1.5
POND A-B06	0.9076	523	364	209	68	18	1.5
DB09	0.0189	31	24	18	11	7.0	3.4
B06	0.9265	530	370	213	70	18	3.4
B06-B07	0.9265	530	363	211	69	18	3.2
DB11	0.0969	107	80	57	32	18	7.6
DB10	0.0364	52	40	29	18	11	5.3
B07	1.0598	609	421	241	81	32	13
B07-B09	1.0598	608	416	241	81	31	13
DB12	0.0453	76	59	45	29	19	10
B09	1.1051	632	431	250	85	43	18
B09-POND B	1.1051	631	430	249	85	42	18
DB15	0.1234	98	70	47	23	11	3.1
DB13	0.0703	84	63	46	27	16	7.4
DB14	0.0556	86	66	50	32	21	11
POND B	1.3544	669	486	282	119	67	29
POND B-B12	1.3544	669	483	279	119	66	28
DB22	0.0516	84	66	50	33	22	13
DB23	0.0172	42	36	29	22	17	12
B12	1.4232	698	505	294	140	80	36
B12-B14	1.4232	697	502	293	139	80	36
DB24	0.0531	88	69	52	33	22	12
B14	1.4763	719	517	301	152	89	44
B14-B15	1.4763	716	514	301	151	89	43
DB28	**0.0741**	**79**	**59**	**41**	**23**	**13**	**4.7**
B15	1.5504	750	534	312	168	99	48
B15-B18	1.5504	748	532	311	166	99	47
DB29	0.1697	138	100	67	35	18	5.8
DB27	0.0508	63	49	37	24	16	8.3
B26	3.6115	1570	1090	661	273	169	83
B26-27	3.6115	1567	1090	658	267	165	82
FB-02	0.05	63	50	38	24	16	9
FB-01	0.0373	58	45	34	21	14	7
FB01-27a	0.0373	56	43	32	21	14	7
B19	0.0873	117	91	69	44	29	15
B19-27	0.0873	115	90	67	43	28	15
FB-03	0.0078	19	16	13	10	8	5
27	3.7066	1607	1118	677	304	189	92
27-32	3.7066	1605	1116	674	300	186	91
WH-24	0.1325	199	156	119	77	52	29
WH-26	0.0839	46	31	19	7.5	2.8	0.5
WH-27	0.0217	20	14	8.7	3.6	1.2	0.1
30	0.2381	252	191	139	85	55	29
30-31	0.2381	251	190	138	84	53	28
WH-28	0.0398	57	44	33	21	14	7.6
31	0.2779	308	234	171	105	68	35
31-32	0.2779	301	227	165	100	65	35
WH-29	0.0495	71	56	42	27	18	10
WH-31	0.0406	71	56	43	28	19	11
WH-30	0.0159	24	18	12	6.4	3.3	1.0
32	4.0905	1744	1205	733	411	249	120
WH32	0.0458	49	33	20	7.9	2.8	0.3
BEN POND	4.1363	1365	950	571	235	95	45
WH-33	0.0064	11	8.9	6.8	4.4	3.0	1.7
33	4.1427	1366	951	572	236	95	45
33-37	4.1427	1363	948	571	236	95	45
WH35	0.155	155	112	77	40	21	5.8
WH34	0.045	63	48	35	21	13	6.4
B34-36	0.045	61	46	34	21	13	6.1
36	0.2	216	159	111	61	34	12
36-37	0.2	214	156	108	59	33	12
WH36	0.075	58	39	25	10	3.9	0.6
37	4.4177	1404	977	590	245	100	49
FG13	0.0661	44	31	20	10	4.9	1.4
FG12	0.0328	51	40	31	20	13.9	7.9
POND D	0.3945	107	70	34	16	9.1	2.9
POND D-G17	0.3945	107	69	34	16	9.1	2.9
HG15	0.0297	13	8.8	5.4	2.2	0.9	0.2
FG15a	0.0156	28	22	17	11	7.3	4.0
G17	0.4398	119	77	38	17	9.9	4.4
G17-G18	0.4398	119	77	38	17	9.9	4.2
FG16	0.0773	127	98	74	47	31	16
G18	0.5171	167	126	93	59	39	20
G18-POND E	0.5171	161	121	89	56	37	20
HG30	0.1844	50	33	20	8.4	3.3	0.7
FG30-PONDHS	0.1844	50	33	20	8.4	3.3	0.7
FG31	0.0922	118	92	71	46	31	18
POND HS	0.2766	102	62	40	27	19	10
FG17a	0.0694	108	84	63	40	26	14
FG17a-POND E	0.0694	106	82	61	39	26	14
FG18	**0.0644**	**57**	**43**	**31**	**18**	**10.7**	**4.8**
FG18-POND E	0.0644	57	42	30	18	10.7	4.7
FG19	0.0527	85	67	51	33	23	13.3
FG17c	0.0313	32	22	15	7	2.9	0.5
FG17b	0.0214	40	31	24	16	11	6.2
POND E	**1.0329**	**199**	**119**	**61**	**25**	**12**	**5.6**
H08		**174**	**107**	**54**	**19**	**8.6**	**3.4**
H09		**25**	**12**	**7.4**	**5.4**	**3.5**	**2.2**
FH01	**0.1348**	**153**	**117**	**87**	**54**	**34**	**16.7**
POND H	**0.1348**	**57**	**32**	**18**	**7.8**	**3.0**	**1.2**
FH02	0.0091	11	8	6	3	2	1
FH03	0.0081	14	11	8.3	5.5	3.8	2.2
H12	0.152	62	35	20	9.5	6.3	3.5

GRAPHIC SCALE

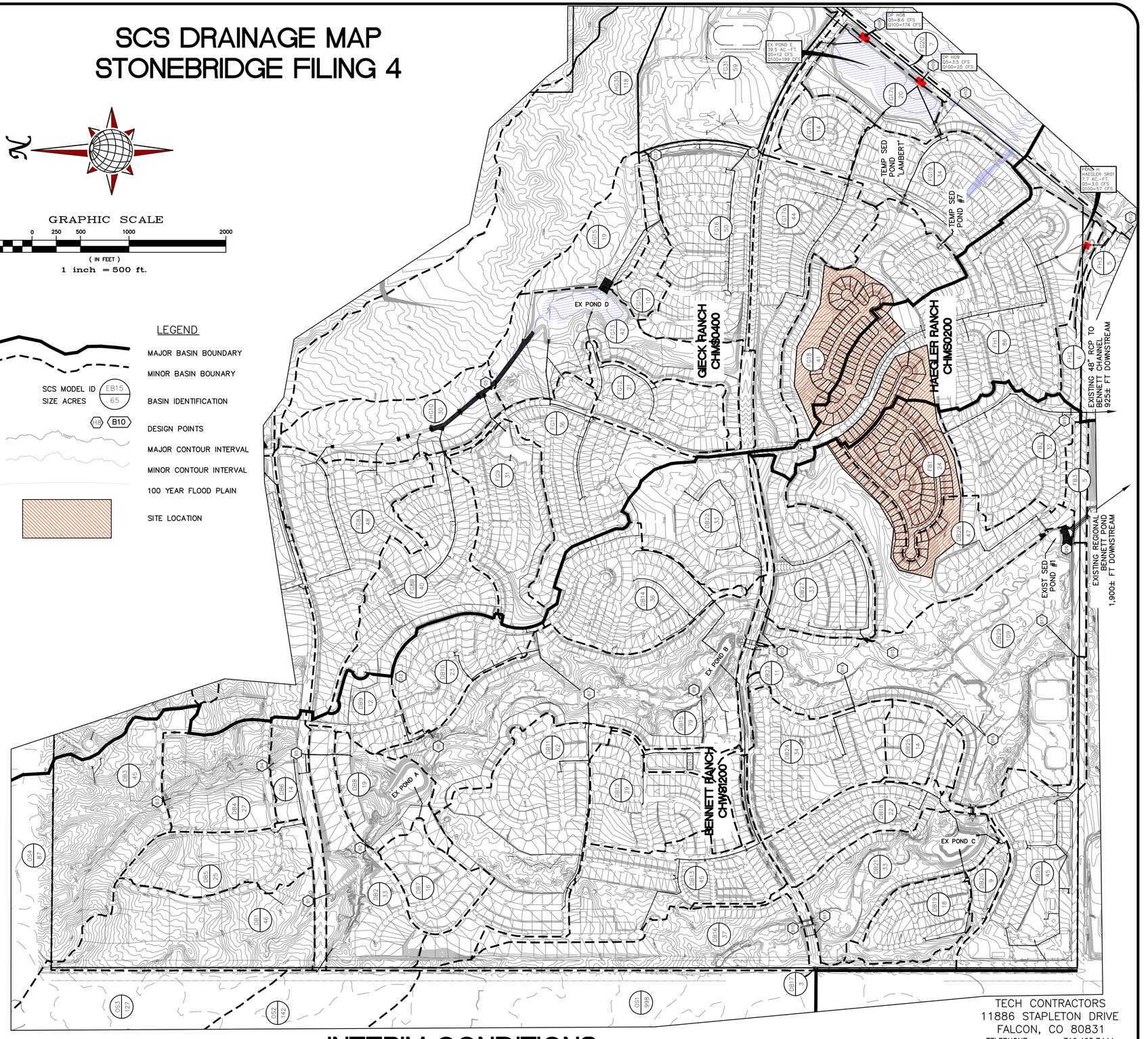
500 0 250 500 1000 2000

(IN FEET)

1 inch = 500 ft.

LEGEND

- MAJOR BASIN BOUNDARY
- MINOR BASIN BOUNARY
- SCS MODEL ID EB15 / SIZE ACRES 65 — BASIN IDENTIFICATION
- A15 B10 — DESIGN POINTS
- MAJOR CONTOUR INTERVAL
- MINOR CONTOUR INTERVAL
- 100 YEAR FLOOD PLAIN
- SITE LOCATION



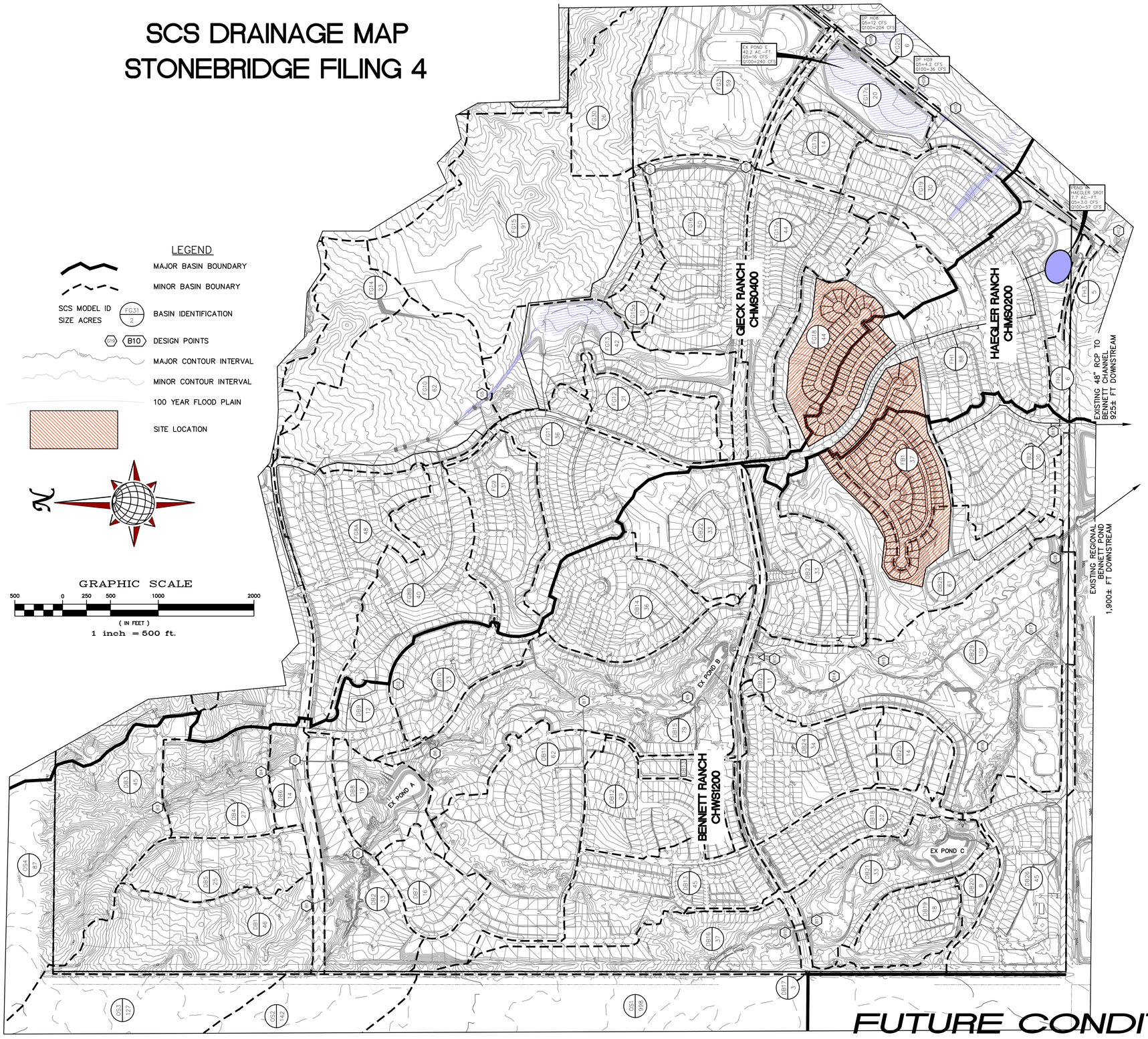
TECH CONTRACTORS
11886 STAPLETON DRIVE
FALCON, CO 80831
TELEPHONE: 719.495.7444

INTERIM CONDITIONS

FIGURE 6

SEP 2018

SCS DRAINAGE MAP
STONEBRIDGE FILING 4



FUTURE CONDITIONS

FUTURE CONDITIONS							
HYDROLOGIC ELEMENT	DRAINAGE AREA (SQ. MI.)	DISCHARGE PEAK Q100 (CFS)	DISCHARGE PEAK Q50 (CFS)	DISCHARGE PEAK Q25 (CFS)	DISCHARGE PEAK Q10 (CFS)	DISCHARGE PEAK Q5 (CFS)	DISCHARGE PEAK Q2 (CFS)
OS01	1.5594	726	488	303	130	53	11
DB16	0.0578	85	66	50	32	22	12
B10	1.6172	765	516	322	143	60	13
B10-B11	1.6172	763	514	322	142	60	13
DB17	0.0048	15	13	11	8	7	5
B11	1.6220	765	516	323	143	61	15
B11-POND C	1.6220	759	515	321	143	61	14
DB21	0.0519	49	34	22	11	5	1
DB18	0.0348	60	47	36	24	16	9
DB19	0.0281	34	25	18	11	6	3
DB20	0.0147	23	18	13	9	6	3
POND C	1.7513	727	492	302	126	50	11
POND C-B16	1.7513	725	488	300	126	50	11
DB25	0.0211	40	32	25	16	11	7
B16	1.7724	730	492	303	128	51	11
B16-B17	1.7724	724	492	302	127	51	11
DB26	0.0682	124	101	80	57	42	27
B17	1.8408	751	511	315	135	55	31
B17-B26	1.8406	748	508	315	135	55	30
OS03	0.1984	123	83	51	22	9	2
DB01	0.0719	83	61	42	23	12	4
B01	0.2703	190	132	85	39	18	5
B01-B02	0.2703	184	129	83	39	18	5
OS02	0.2219	140	96	62	28	12	3
DB02	0.0516	66	48	34	18	10	3
B02	0.5438	358	249	161	75	34	8
B02-POND A	0.5438	357	248	160	74	34	8
OS04	0.1359	77	51	30	11	4	1
DB03	0.0703	63	45	30	14	7	1
B03	0.2062	137	92	57	24	9	2
B03-B04	0.2062	135	92	56	24	9	2
DB04	0.0422	40	28	19	10	5	1
DB05	0.0384	35	25	17	9	4	1
B04	0.2868	201	139	88	39	17	3
B04-B05	0.2868	201	139	88	38	16	3
DB06	0.0219	41	33	26	18	13	7.8
B05	0.3087	232	162	107	51	24	10
B05-POND A	0.3087	230	162	106	50	23	9
DB07	0.0254	33	24	17	9	5	1.7
DB08	0.0297	30	21	13	6	3	0.4
POND A	0.9076	523	365	210	69	18	1.5
POND A-B06	0.9076	523	364	209	68	18	1.5
DB09	0.0189	31	24	18	11	7	3.4
B06	0.9265	530	370	213	70	18	3.4
B06-B07	0.9265	530	363	211	69	18	3.2
DB11	0.0969	107	80	57	32	18	7.6
DB10	0.0364	52	40	29	18	11	5.3
B07	1.0598	609	421	241	81	32	13
B07-B09	1.0598	608	416	241	81	31	13
DB12	0.0453	76	59	45	29	19	10
B09	1.1051	632	431	250	85	43	18
B09-POND B	1.1051	631	430	249	85	42	18
DB15	0.1234	98	70	47	23	11	3.1
DB13	0.0703	84	63	46	27	16	7.4
DB14	0.0556	86	66	50	32	21	11
POND B	1.3544	669	486	282	119	67	29
POND B-B12	1.3544	669	483	279	119	66	28
DB22	0.0516	84	66	50	33	22	13
DB23	0.0172	42	38	29	22	17	12
B12	1.4232	698	505	294	140	80	36
B12-B14	1.4232	697	502	293	139	80	36
DB24	0.0531	88	69	52	33	22	12
B14	1.4763	719	517	301	152	89	44
B14-B15	1.4763	716	514	301	151	89	43
DB28	**0.0741**	**79**	**59**	**41**	**23**	**13**	**4.7**
B15	1.5504	750	534	312	168	99	48
B15-B28	1.5504	748	532	311	166	99	47
DB29	0.1697	138	100	67	35	18	5.8
DB27	0.0508	63	49	37	24	16	8
B26	3.6115	1570	1090	661	273	169	83
B26-27	3.6115	1567	1090	658	267	166	82
FB-02	0.0500	63	50	38	24	16	9
FB-01	0.0373	58	45	34	21	14	7
FB01-B19	0.0373	58	43	32	21	14	7
B19	0.0873	117	91	69	44	29	15
B19-27	0.0873	115	90	67	43	28	15
FB-03	0.0078	19	16	13	10	8	5
27	3.7066	1607	1118	677	304	189	92
27-32	3.7066	1605	1116	674	300	186	91
WH-24	0.1325	199	156	119	77	52	29
WH-26	0.0839	46	31	19	7.5	2.8	0.5
WH-27	0.0217	20	14	9	3.6	1.2	0.1
30	0.2381	252	191	139	85	55	29
30-31	0.2381	251	190	138	84	53	28
WH-28	0.0398	57	44	33	21	14	7.6
31	0.2779	308	234	171	105	68	35
31-32	0.2779	301	227	165	100	65	35
WH-29	0.0495	71	56	42	27	18	10
WH-31	0.0406	71	56	43	28	19	11
WH-30	0.0159	24	18	12	6.4	3.3	1.0
32	4.0905	1744	1205	733	411	249	120
WH-32	0.0458	49	33	20	8	2.8	0.3
BEN POND	4.1363	1365	950	571	235	95	45
WH-33	0.0064	11	8.9	6.8	4.4	3.0	1.7
33	4.1427	1386	951	572	236	95	45
33-37	4.1427	1363	948	571	236	95	45
WH35	0.1550	155	112	77	40	21	5.8
WH34	0.0450	63	48	35	21	13	6.4
B34-36	0.0450	61	46	34	21	13	6.1
36	0.2000	216	159	111	61	34	12
36-37	0.2000	214	156	108	59	33	12
WH36	0.0750	58	39	25	10	3.9	0.6
37	4.4177	1404	977	590	245	100	49
FG08A	0.0750	117	91	67	42	27	14
FG08A-G05	0.0750	111	86	65	41	27	14
FG10	0.0669	46	34	24	14	8.3	3.6
FG08B	0.0630	87	67	50	31	20	10
FG08B-G05	0.0630	85	66	49	30	20	10
FG11	0.0825	76	59	45	29	19	10
FG09	0.0484	49	36	26	15	8.4	3.3
FG09-G05	0.0484	48	36	25	14	8.2	3.3
G05	0.3158	342	262	192	117	75	38
FG13	0.0861	44	31	20	10	4.9	1.4
FG14	0.0331	42	32	24	15	10	5.2
FG12	0.0328	51	40	31	20	14	7.9
POND D	0.4478	131	89	51	19	12	4.5
POND D-G17	0.4478	131	89	51	19	12	4.5
FG15	0.1017	95	71	51	29	18	7.5
G17a	0.1017	95	71	51	29	18	7.5
FG15a	0.0156	28	22	17	11	7.3	4.0
G17	0.5651	184	121	72	40	23	11
G17-G18	0.5651	184	121	72	40	23	11
FG16	0.0773	127	98	74	47	31	16
G18	0.6424	235	177	127	77	49	24
G18-POND E	0.6424	233	176	126	77	48	24
FG31	0.0922	118	92	71	46	31	18
FG30	0.0400	76	60	46	31	21	12
FG30-POND HS	0.0400	74	59	45	29	20	11
POND HS	0.1322	156	107	60	37	27	15
FG17a	0.0694	102	79	58	36	23	12
FG17a-POND E	0.0694	100	77	57	36	23	12
FG18	**0.0644**	**57**	**43**	**31**	**18**	**11**	**4.8**
FG18-POND E	0.0644	57	42	30	18	11	4.7
FG19	0.0527	85	67	51	33	23	13
FG17c	0.0313	32	22	15	6.7	2.9	0.5
FG17b	0.0214	40	31	24	16	11	6.2
POND E	**1.0138**	**240**	**151**	**81**	**30**	**16**	**7**
H08	**1.0138**	**204**	**136**	**73**	**24**	**12**	**4.1**
H09	**0.0000**	**36**	**16**	**8**	**6.0**	**4.2**	**2.5**
FH01	**0.1344**	**152**	**117**	**87**	**53**	**34**	**17**
POND H	**0.1344**	**57**	**32**	**18**	**7.8**	**3.0**	**1.2**
FH02	0.0091	11	8	6	3	2	1
FH03	0.0081	14	11	8	5.5	3.8	2.2
H12	0.1516	62	35	20	10	6.3	3.5

TECH CONTRACTORS
11886 STAPLETON DRIVE
FALCON, CO 80831
TELEPHONE: 719.495.7444

FIGURE 7

SEP 2018