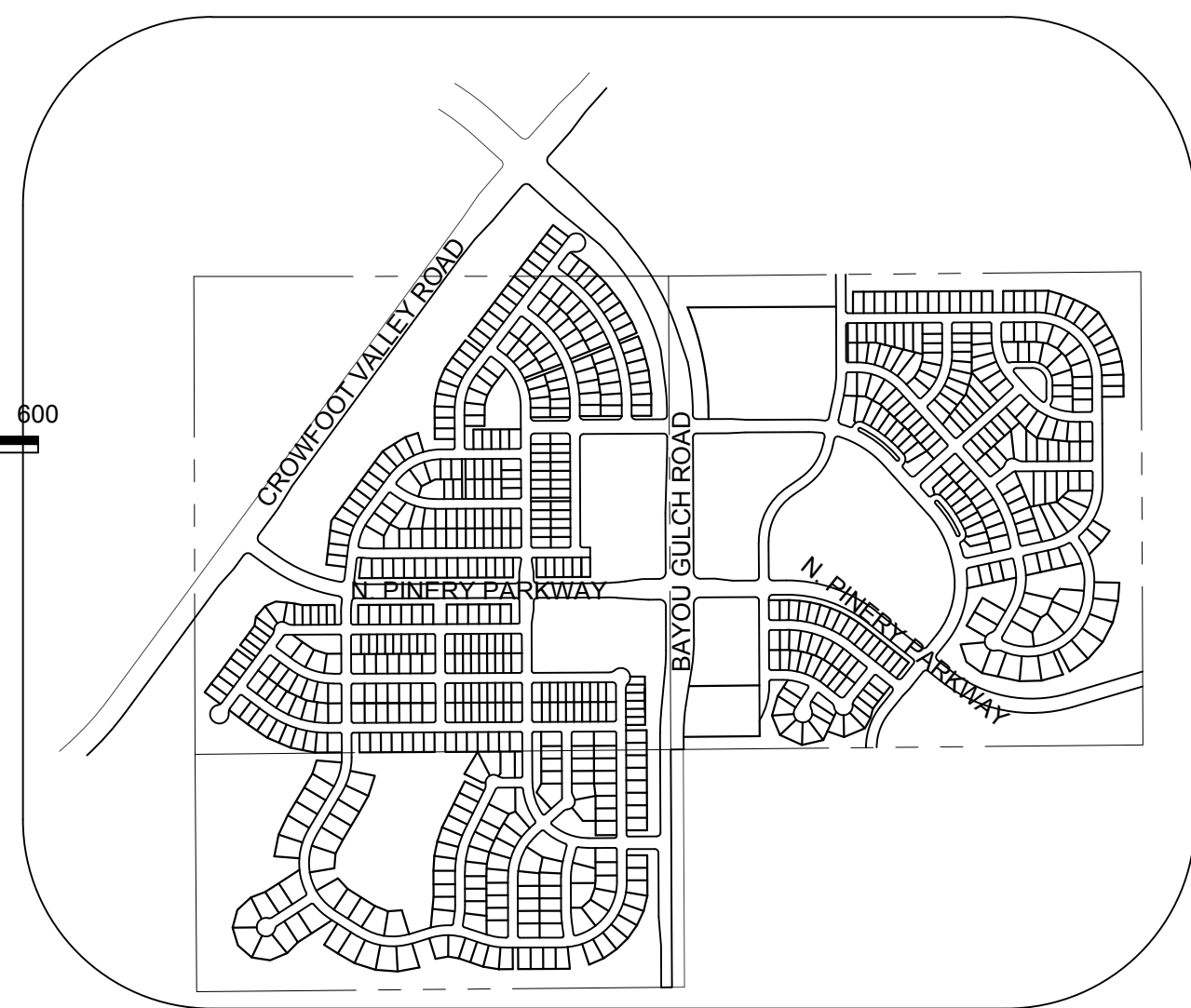
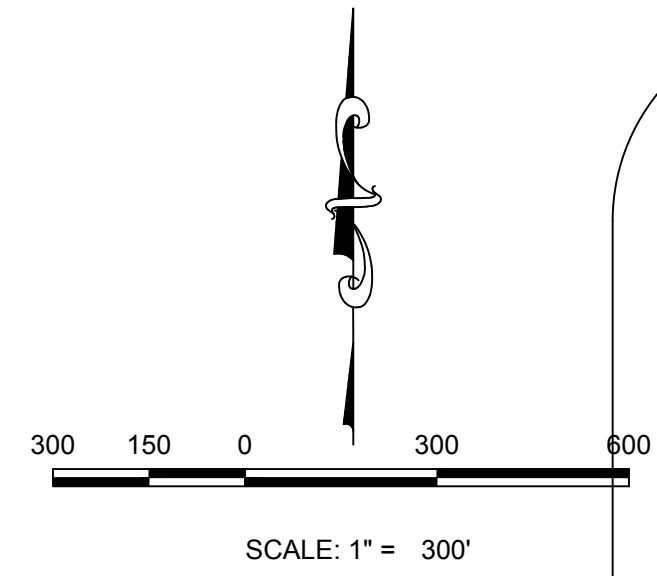
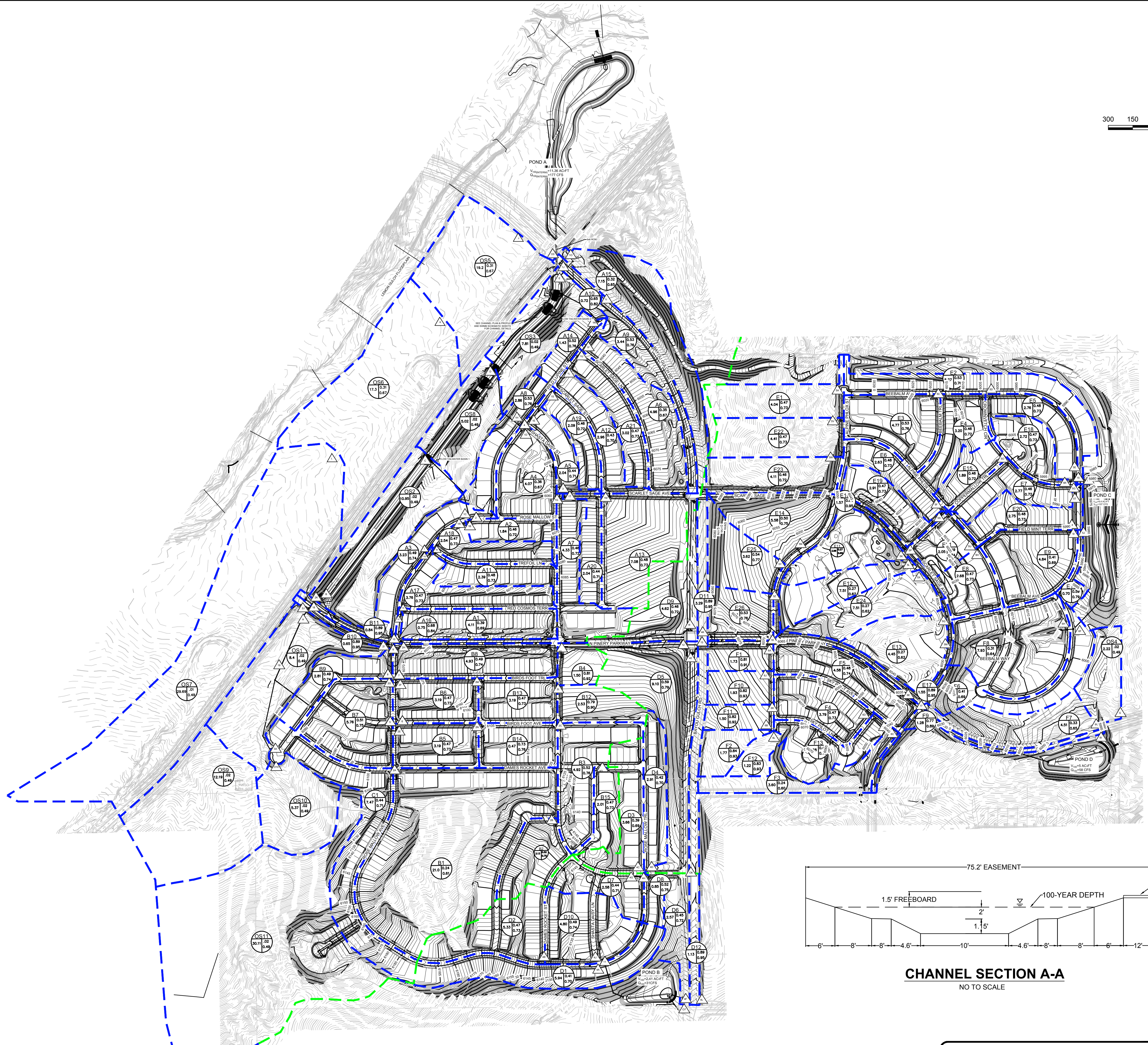


N:\PROJECTS\SSR\BENCHM\ENGINEERING\DRAINAGE\FINAL\DRAINAGE STUDIES\DRAINAGE MAPS\FINAL OVERALL DRAINAGE MAP.DWG, A5E\INDK, 10/26/2017 9:10 AM



KEYMAP
N.T.S.

LEGEND

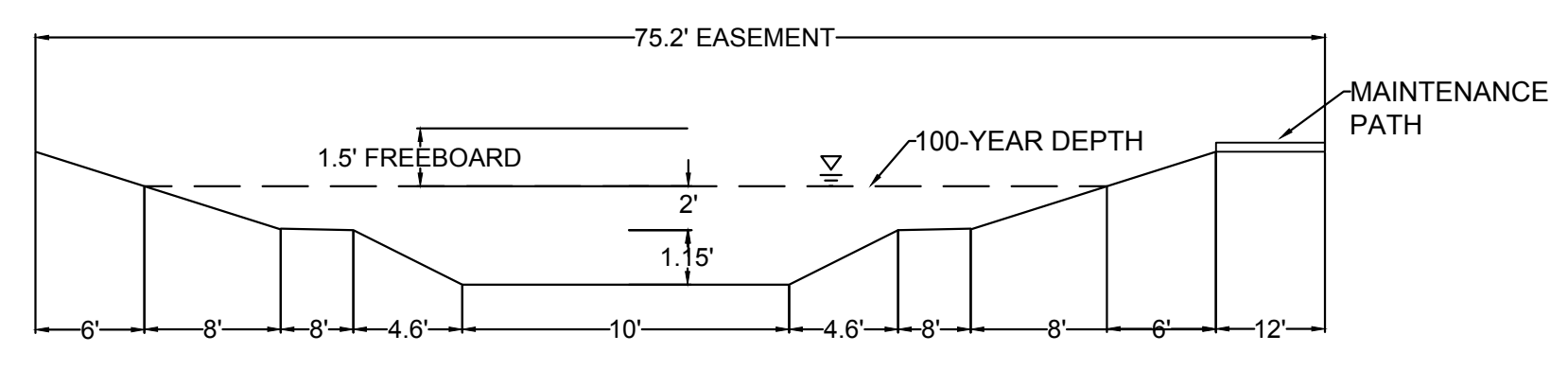
	DESIGN POINT
	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW

- NOTE:
1. THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWN'S STANDARDS AND APPROVED VARIANCES, SUBJECT TO THESE PLANS BEING STAMPED, SIGNED, AND DATED BY THE PROFESSIONAL ENGINEER OF RECORD. REVIEW BY THE TOWN DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN OR ACCURACY AND CORRECTNESS OF ENGINEERING CALCULATIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE ARE AFFIXED TO THIS DOCUMENT.
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THIS REVIEW DOES NOT CONSTITUTE APPROVAL OF ANY PRIVATE ON-SITE IMPROVEMENTS WHICH MAY BE SHOWN. CONSTRUCTION CANNOT COMMENCE UNTIL ALL REQUIRED DRAINAGE/TRAFFIC REPORT(S), FINAL DEVELOPMENT PLAN(S), SPECIAL REVIEW(S), GRADING PERMIT, AND/OR OTHER PERMITS ARE COMPLETE, APPROVED, AND ON FILE WITH THE TOWN OF PARKER.

TOWN OF PARKER, PUBLIC WORKS DIRECTOR _____ DATE _____
 TOWN OF PARKER, PUBLIC WORKS MANAGER - STORMWATER _____ DATE _____
 TOWN OF PARKER, PUBLIC WORKS MANAGER - TRANSPORTATION _____ DATE _____



CHANNEL SECTION A-A
NO TO SCALE

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCCC 1-800-922-1987
UTILITY NOTIFICATION CENTER OF COLORADO

SHEET NUMBER	DRAWN BY: AYK	CHECKED BY: JJ	DATE: MAY 2017	SCALE:	AS SHOWN	FILE NO:	8130283701
				TRAILS AT CROWFOOT FINAL DRAINAGE MAP	OVERALL DRAINAGE MAP		
				TOWN OF PARKER, PUBLIC WORKS DIRECTOR	DATE		
				TOWN OF PARKER, PUBLIC WORKS MANAGER - STORMWATER	DATE		
				TOWN OF PARKER, PUBLIC WORKS MANAGER - TRANSPORTATION	DATE		
				PREPARED UNDER THE SUPERVISION OF			
				MARK SCHEURER	COLORADO P.E. 48988		
				1A			
				Revisions	No.	Date	Appr.
				10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548			
				CVL CONSULTANTS			
				ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112			

CUMULATIVE FLOW		
Design Point	Q2	Q100
ID	(CFS)	(CFS)
1A	3.84	17.73
1B	5.04	60.61
1C	18.94	72.95
1D	19.26	82.87
1E	4.69	68.74
1F	9.74	45.15
1G	5.01	55.58
1H	22.10	94.13
1I	3.75	15.73
1J	7.60	40.45
1K	2.92	11.75
1L	3.22	13.95
1M	6.77	29.97
1N	11.20	49.77
1O	3.58	23.96
1P	5.05	21.53
1Q	6.90	27.93
1R	2.95	11.99
1S	2.51	10.32
1T	7.21	37.59
1U	6.71	27.72
1	11.54	45.92
2	15.83	42.02
3	13.13	(Not Relieved for 100 year)
4	16.64	41.99

CUMULATIVE FLOW		
Design Point	Q2	Q100
ID	(CFS)	(CFS)
6A	21.41	56.86
6B	8.28	23.93
6C	9.45	44.87
6D	4.56	18.47
6E	34.09	58.80
6F	13.68	69.19
6G	40.96	164.40
6H	10.08	51.13
6I	40.22	154.89
6J	17.19	46.79
6K	12.18	34.01
6L	3.39	9.95
6M	8.80	35.37
16	32.20	55.27
17	40.76	97.22

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q2	Q100	Street Type	Slope
(AC)	%	(CFS)	(CFS)			%
A1	4.11	43.77	3.84	17.73	Local	2.00
A2	1.84	52.16	2.22	9.10	Local	0.00
A3	3.23	48.80	3.16	13.54	Local	0.00
A4	4.07	34.03	2.78	15.39	Local	0.00
A5	2.04	49.08	2.27	9.70	Local	0.00
A6	4.96	35.28	3.58	19.32	Local	1.50
A7	4.33	51.70	5.01	20.65	Local	4.00
A8	2.86	52.68	3.45	14.07	Local	0.00
A9	3.44	50.33	3.75	15.73	Arterial	2.00
A10	0.72	61.44	1.12	4.14	Arterial	0.00
A11	2.39	53.79	2.92	11.75	Local	2.00
A12	2.96	48.02	3.22	13.95	Local	1.50
A13	7.08	46.42	6.77	29.97	Local	5.00
A14	1.43	54.86	1.94	7.68	Local	0.00
A15	7.15	26.55	3.58	23.96	Arterial	0.00
A16	0.75	76.70	1.39	4.52	Local	2.00
A17	3.76	52.91	4.19	17.02	Local	2.00
A18	2.54	52.87	2.95	11.99	Local	2.00
A19	2.09	51.95	2.51	10.32	Local	4.00
A20	2.04	49.09	2.28	9.72	Local	2.00
A21	3.02	52.59	3.69	15.04	Local	1.50

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q2	Q100	Street Type	Slope
(AC)	%	(CFS)	(CFS)			%
B1	21.00	23.33	8.48	62.92	Local	7.00
B2	3.13	51.76	3.82	15.75	Local	3.00
B3	4.92	50.31	5.58	23.45	Local	3.00
B4	1.50	91.11	4.10	12.16	Local	5.00
B5	3.19	53.20	3.88	15.72	Local	6.00
B6	3.19	53.20	3.88	15.72	Local	6.00
B7	5.76	49.66	5.79	24.54	Local	6.00
B8	4.93	46.94	4.95	21.81	Res. Blvd	0.00
B9	2.81	49.17	2.94	12.55	Local	0.00
B10	0.65	76.70	1.28	4.14	Res. Blvd	0.00
B11	0.84	76.70	1.59	5.15	Res. Blvd	0.00
B12	2.53	88.00	5.86	17.68	Local	3.00
B13	3.19	53.20	3.88	15.72	Local	2.00
B14	3.19	53.20	3.88	15.72	Local	2.00
B15	2.01	53.11	2.50	10.13	Local	1.00

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q2	Q100	Street Type	Slope
(AC)	%	(CFS)	(CFS)			%
C1	7.47	43.49	6.21	28.78	Local	0.00
D1	5.94	42.41	5.34	25.23	Local	0.00
D2	5.33	46.14	5.58	24.83	Local	5.00
D3	3.66	43.82	3.28	15.11	Local	5.00
D4	2.91	42.33	2.45	11.57	Local	3.00
D5	9.10	61.93	11.25	41.49	Arterial	0.00
D6	2.57	42.99	2.30	10.74	Arterial	6.00
D7	2.58	42.09	2.48	11.76	Local	4.00
D8	0.85	51.73	1.06	4.38	Local	5.00
D9	4.62	45.07	4.34	19.61	Arterial	0.00
D10	4.80	50.52	5.60	23.45	Local	0.00
D11	3.29	84.30	6.19	19.00	Arterial	0.00
D12	1.13	84.30	2.13	6.53	Arterial	1.50

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q2	Q100	Street Type	Slope
(AC)	%	(CFS)	(CFS)			%
E1	4.04	52.65	4.95	20.19	Local	2.70
E2	5.27	52.02	4.71	19.36	Local	0.00
E3	4.77	52.31	5.64	23.07	Local	3.00
E4	3.20	52.07	3.78	14.69	Local	4.00
E5	2.76	53.77	3.09	12.43	Local	0.00
E6	2.63	53.59	3.06	12.34	Local	1.00
E7	2.77	51.99	3.21	13.17	Local	0.00
E8	2.68	53.33	3.13	12.64	Local	2.00
E9	4.84	39.52	3.92	19.46	Local	2.00
E10	0.70	56.03	0.85	3.31	Local	1.00
E11	3.99	30.00	2.48	14.96	Local	1.00
E12	3.28	30.00	2.04	12.33	Local	6.00
E13	4.45	30.00	2.76	16.67	Local	1.00
E14	5.58	56.35	7.00	27.28	Local	0.00
E15	1.89	51.97	2.08	8.55	Local	2.00
E16	1.57	73.60	2.68	8.89	Local	6.00
E17	1.55	73.60	2.64	8.76	Local	1.00
E18	2.72	52.96	3.45	14.00	Local	1.50
E19	2.91	53.40	3.58	14.46	Local	1.20
E20	2.75	53.49	3.12	12.57	Local	2.00
E21	2.05	54.72	2.56	10.18	Local	2.00
E22	4.41	53.09	5.39	21.86	Local	2.70
E23	4.11	51.69	4.81	19.86	Local	2.70
E24	4.23	30.00	2.63	15.87	Local	2.00
E25	3.62	52.58	4.65	18.92	Local	2.00
E26	2.88	59.79	4.24	15.89	Local	2.00

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q2	Q100	Street Type	Slope
(AC)	%	(CFS)	(CFS)			%
F1	1.71	90.64	4.59	13.55	Local	2.50
F2	1.77	93.50	4.96	14.53	Local	2.50
F3	3.60	19.77	1.47	12.47	Local	1.00
F4	3.79	53.06	4.56	18.47	Local	4.00
F5	4.58	46.86	4.46	19.66	Res. Blvd	4.00
F6	4.93	38.37	3.70	18.75	Local	0.00
F7	4.51	18.05	1.68	15.41	Res. Blvd	0.00
F8	7.93	34.99	5.57	30.18	Local	0.00
F9	1.28	66.27	1.75	6.18	Res. Blvd	0.00
F10	1.93	92.20	5.30	15.64	Local	2.50
F11	1.50	91.79	4.07	12.03	Local	2.50
F12	1.22	93.17	3.39	9.95	Local	2.50
F13	3.58	52.91	4.36	17.70	Local	4.00

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q2	Q100	Street Type	Slope
(AC)	%	(CFS)	(CFS)			%
OS 10	5.37	2.00	0.30	16.40	N/A	5.00

POND A	
Description	
Drainage Area (FT)	151.23
Percent Imperviousness (%)	40.74
WQCV (AC-FT)	2.29
EURV Volume (including WQCV) (AC-FT)	6.11
EURV Water Surface (FT)	5995.27
100-YR Volume (including EURV) (AC-FT)	10.79
100-yr water surface elevation (FT)	5997.05
Emergency Spillway Crest Elevation (FT)	5997.05
100-year Peak Inflow (CFS)	268.86
100-year Peak Outflow (CFS)	177.21

POND B	
Description	
Drainage Area (FT)	23.2
Percent Imperviousness (%)	47.36
WQCV (AC-FT)	0.39
EURV Volume (including WQCV) (AC-FT)	1.10
EURV Water Surface (FT)	6092.92
100-YR Volume (including EURV) (AC-FT)	2.25
100-yr water surface elevation (FT)	6094.57
Emergency Spillway Crest Elevation (FT)	6094.57
100-year Peak Inflow (CFS)	105.30
100-year Peak Outflow (CFS)	30.56

POND C	
Description	
Drainage Area (FT)	97.79
Percent Imperviousness (%)	45.93
WQCV (AC-FT)	1.60
EURV Volume (including WQCV) (AC-FT)	4.49
EURV Water Surface (FT)	5973.31
100-YR Volume (including EURV) (AC-FT)	8.34
100-yr water surface elevation (FT)	5978.09
Emergency Spillway Crest Elevation (FT)	5978.09
100-year Peak Inflow (CFS)	314.00
100-year Peak Outflow (CFS)	106.71

POND D	
Description	
Drainage Area (FT)	52.76
Percent Imperviousness (%)	55.15
WQCV (AC-FT)	0.97
EURV Volume (including WQCV) (AC-FT)	2.954
EURV Water Surface (FT)	5991.65
100-YR Volume (including EURV) (AC-FT)	4.91
100-yr water surface elevation (FT)	5993.55
Emergency Spillway Crest Elevation (FT)	5993.55
100-year Peak Inflow (CFS)	184.40
100-year Peak Outflow (CFS)	58.28

CHANNEL DESIGN POINT SUMMARY		
Design Point	Q5	Q100
ID	(CFS)	(CFS)
A	25.46	79.96
B	45.82	142.42
C	55.04	179.59
D	68.34	229.25
E	78.47	268.86

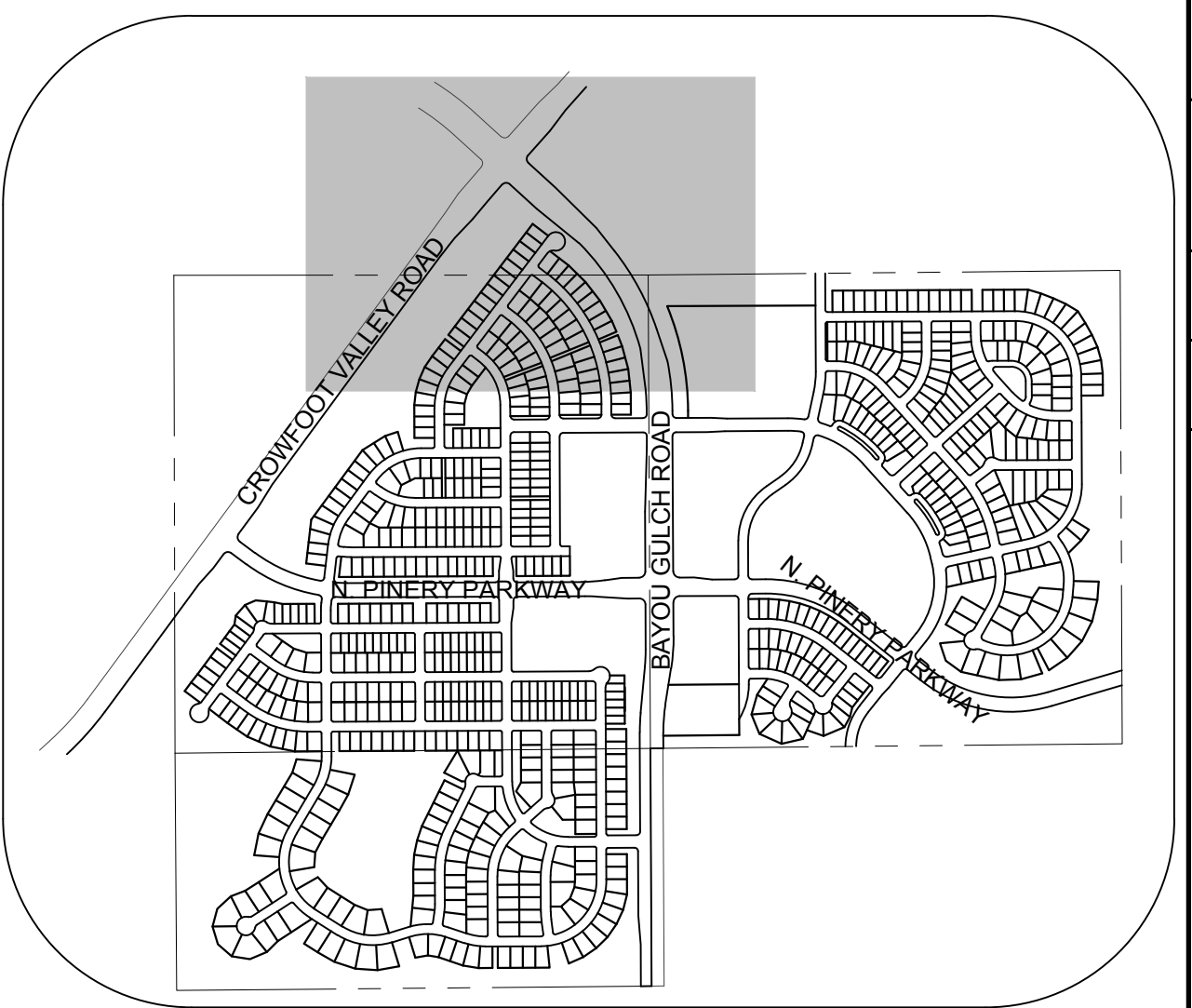
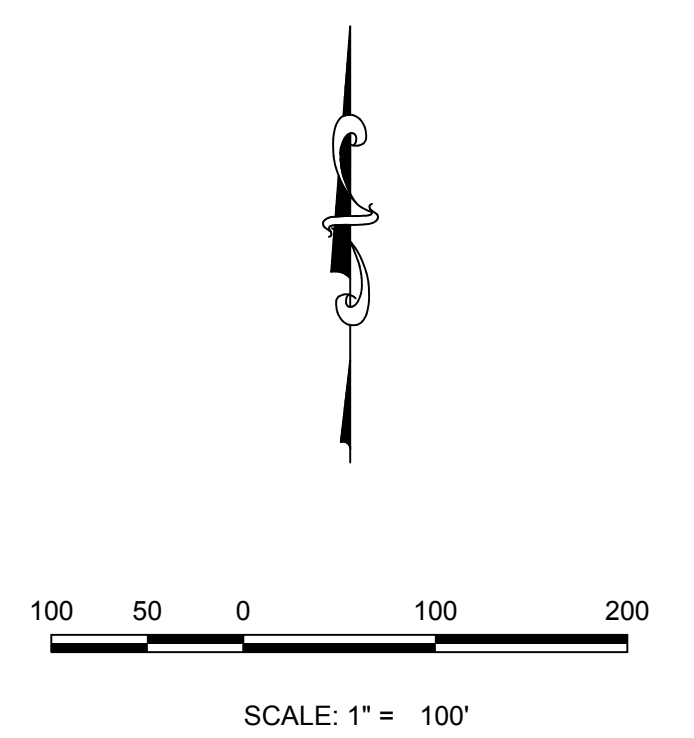
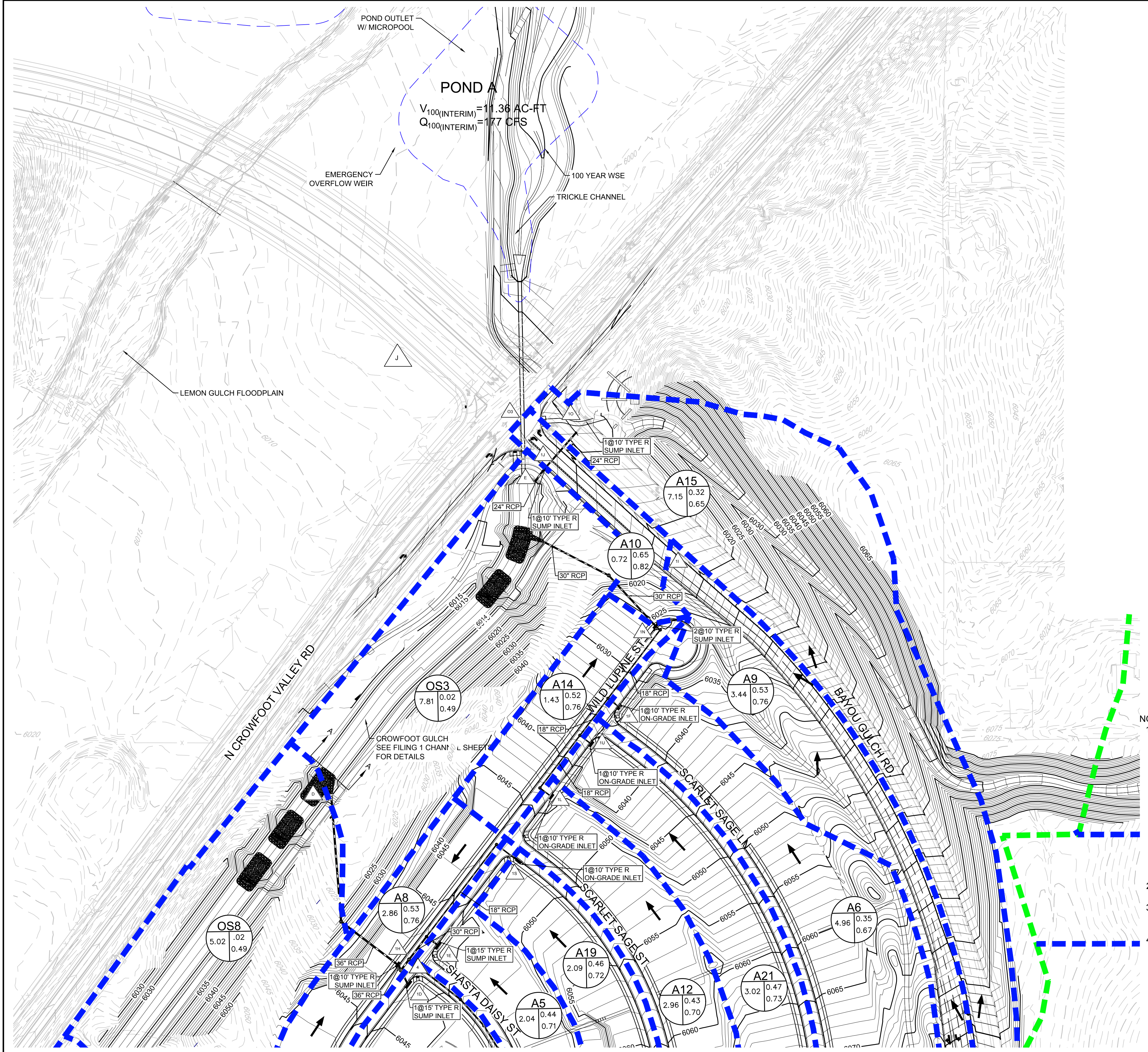
NOTE: Flows are from SWMM analysis. See drainage report for more details.

CUMULATIVE FLOW		
Design Point	Q2	Q100
ID	(CFS)	(CFS)
2A	13.11	74.41
2B	6.15	15.75
2C	5.58	33.21
2D	13.15	54.26
2E	3.88	76.36
2F	3.88	29.09
2G	5.79	24.54
2H	4.95	21.81
2I	2.94	35.69
2J	24.60	155.70
2K	25.63	158.99
2L	10.38	46.95
2M	3.88	15.72
2N	3.88	15.72
2O	2.50	10.13
5	18.73	76.25
6	7.44	(Not Relieved for 100 year)
7	7.40	(Not Relieved for 100 year)
9	19.80	84.75
10	31.82	84.62

CUMULATIVE FLOW		
Design Point	Q2	Q100
ID	(CFS)	(CFS)
3A	6.44	43.61

CUMULATIVE FLOW		
Design Point	Q2	Q100
ID	(CFS)	(CFS)
4A	18.01	80.94
4B	5.58	24.83
4C	3.28	15.11
4D	5.63	26.26
4E	13.59	54.51
4F	5.19	24.34
4G	2.48	11.76
4H	1.06	4.38
4I	4.34	19.61
4J	10.66	45.70
4K	6.19	19.00
4L	2.94	10.02
11	12.69	56.80
12	16.90	69.53
13	21.12	82.67

CUMULATIVE FLOW		
Design Point	Q2	Q100
ID	(CFS)	(CFS)
14	35.26	128.18
15	67.15	145.92
5A	14.28	56.31
5B	68.09	19.36
5C	18.85	70.87
5D	21.89	79.97
5E	26.21	83.44
5F	3.06	12.34
5G	7.82	146.09
5H	32.81	81.28



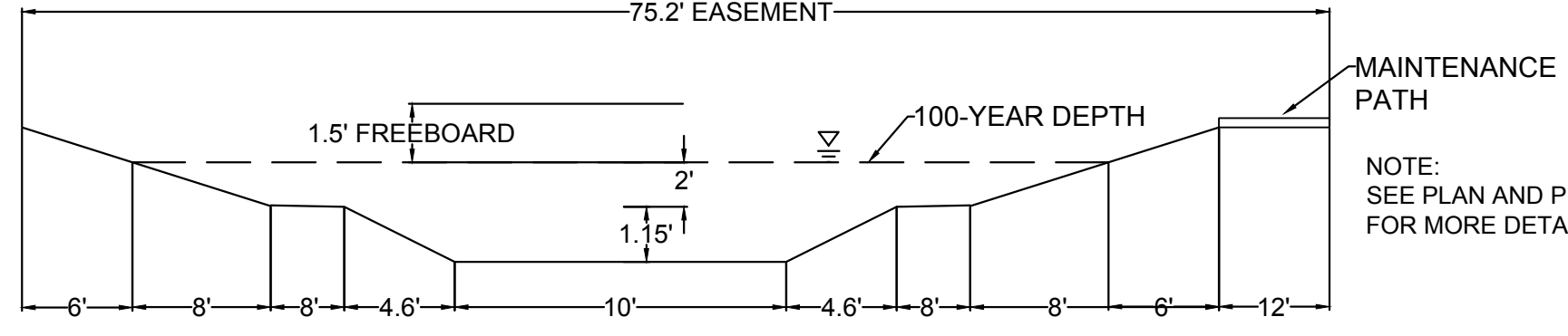
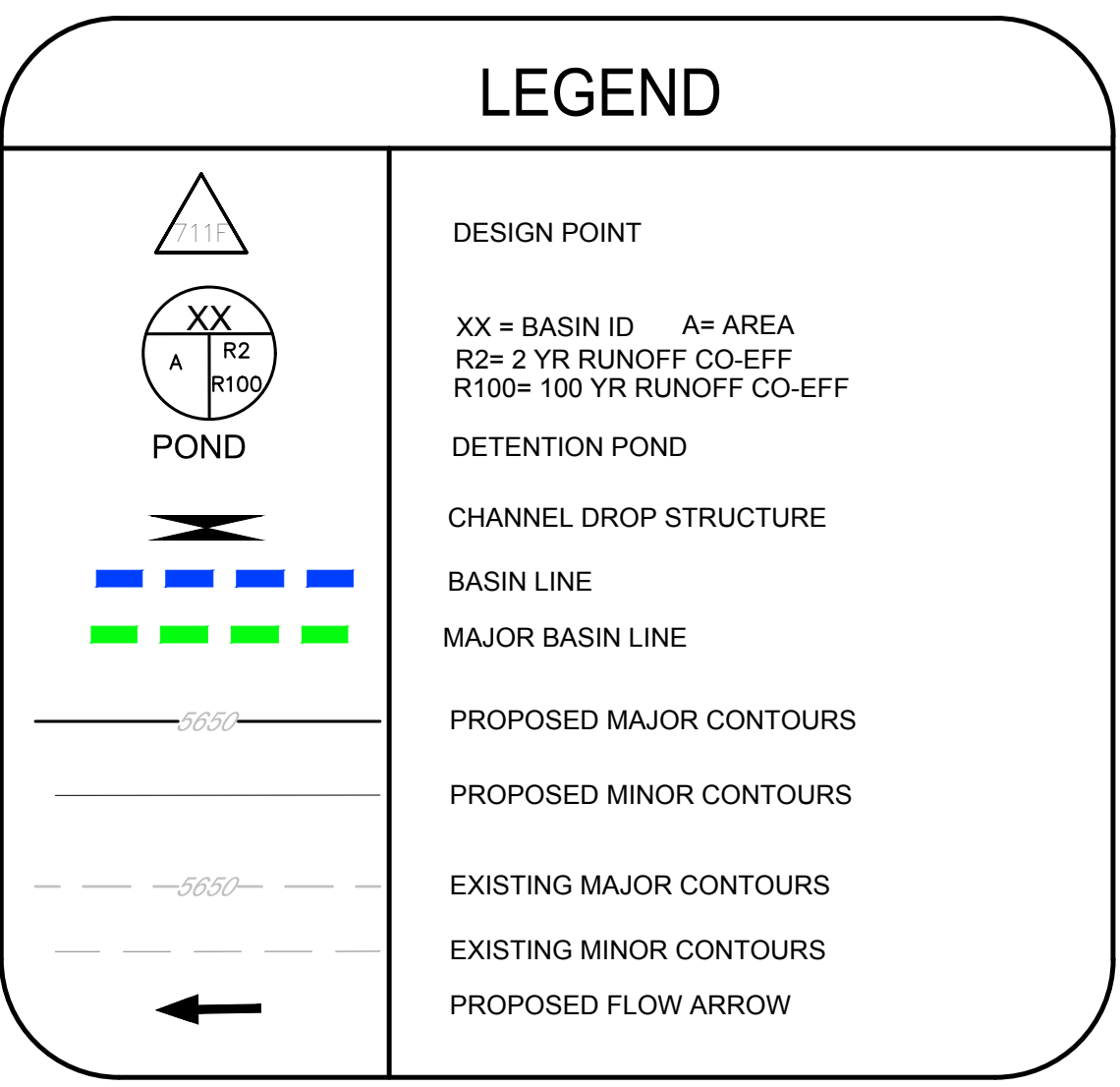
KEYMAP
N.T.S.

Note:
1) 10% slope indicates sump inlet.

BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %	
		Imperviousness %	Q ₂ (CFS)			Q ₁₀₀ (CFS)
A1	4.11	43.77	3.84	17.73	Local	2.00
A2	1.84	52.16	2.22	9.10	Local	0.00
A3	3.23	48.80	3.16	13.54	Local	0.00
A4	4.07	34.03	2.78	15.39	Local	0.00
A5	2.04	49.08	2.27	9.70	Local	0.00
A6	4.96	35.28	3.58	19.32	Local	1.50
A7	4.33	51.70	5.01	20.65	Local	4.00
A8	2.86	52.68	3.45	14.07	Local	0.00
A9	3.44	50.33	3.75	15.73	Arterial	2.00
A10	0.72	61.44	1.12	4.14	Arterial	0.00
A11	2.39	53.79	2.92	11.75	Local	2.00
A12	2.96	48.02	3.22	13.95	Local	1.50
A13	7.08	46.42	6.77	29.97	Local	5.00
A14	1.43	54.96	1.94	7.68	Local	0.00
A15	7.15	26.55	3.58	23.96	Arterial	0.00
A16	0.75	76.70	1.39	4.52	Local	2.00
A17	3.76	52.91	4.19	17.02	Local	2.00
A18	2.54	52.67	2.95	11.99	Local	2.00
A19	2.09	51.95	2.51	10.32	Local	4.00
A20	2.04	49.09	2.28	9.72	Local	2.00
A21	3.02	52.59	3.69	15.04	Local	1.50

Design Point ID	CUMULATIVE FLOW	
	Q ₂ (CFS)	Q ₁₀₀ (CFS)
1A	3.84	17.73
1B	5.04	60.61
1C	18.94	72.95
1D	19.26	82.87
1E	4.69	68.74
1F	9.74	45.15
1G	5.01	55.58
1H	22.10	94.13
1I	3.75	15.73
1J	7.60	40.45
1K	2.92	11.75
1L	3.22	13.95
1M	6.77	29.97
1N	11.20	49.77
1O	3.58	23.96
1P	5.05	21.53
1Q	6.90	27.93
1R	2.95	11.99
1S	2.51	10.32
1T	7.21	37.59
1U	6.71	27.72
1	11.54	45.92
2	15.83	42.02
3	13.13	(Not Relavant for 100 year)
4	16.64	41.99

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CHANNEL SECTION A-A
NO TO SCALE

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCCC 1-800-922-1987

PREPARED UNDER THE SUPERVISION OF
MARK SCHEURER
COLORADO P.E. 48988

10333 E. Dry Creek Rd., Suite 410
Englewood, CO 80150
Tel: (720) 482-9526
Fax: (720) 482-9548

CVL CONSULTANTS

ESX MANAGEMENT
7353 South Alton Way
CENTENNIAL, CO 80112

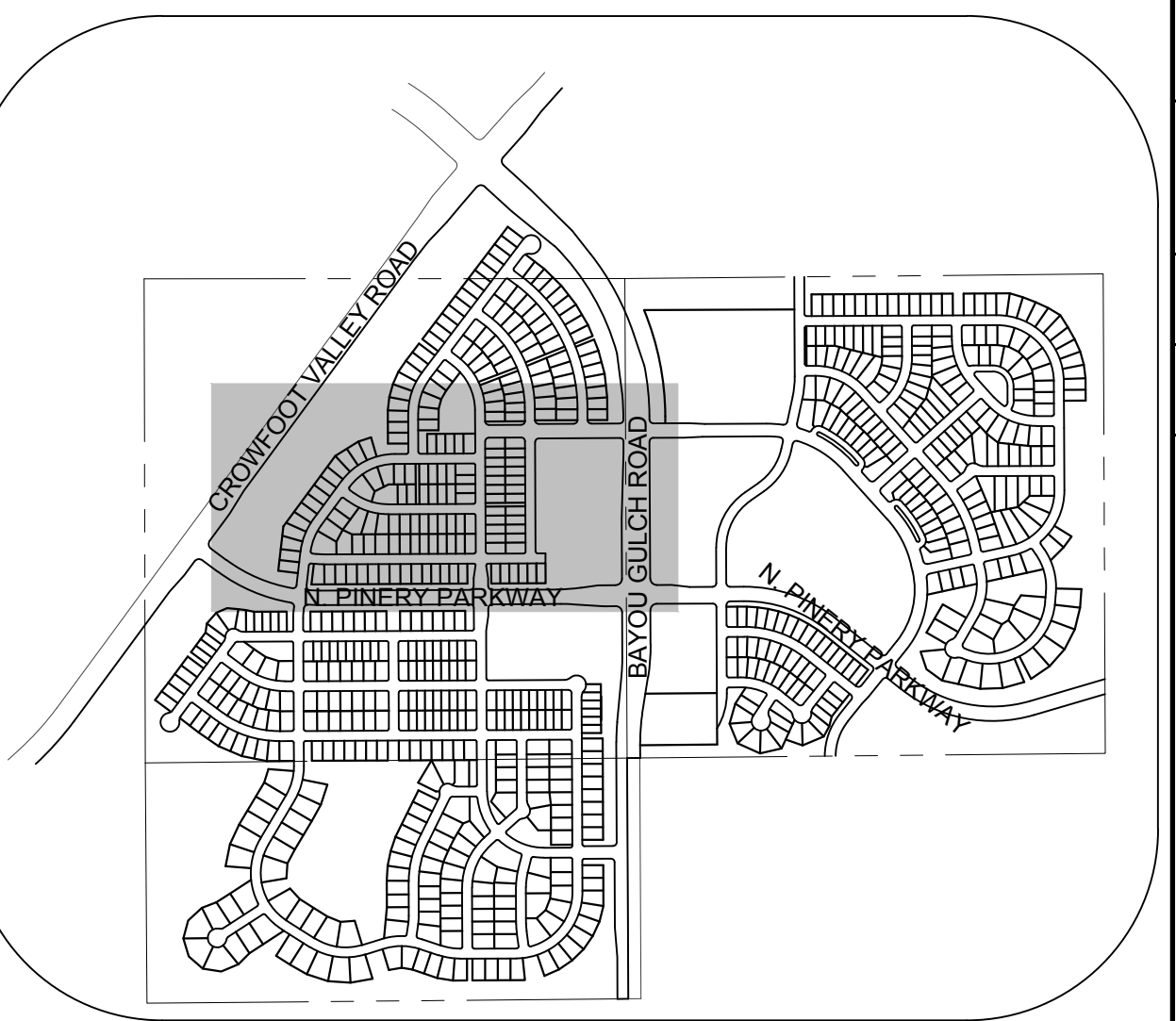
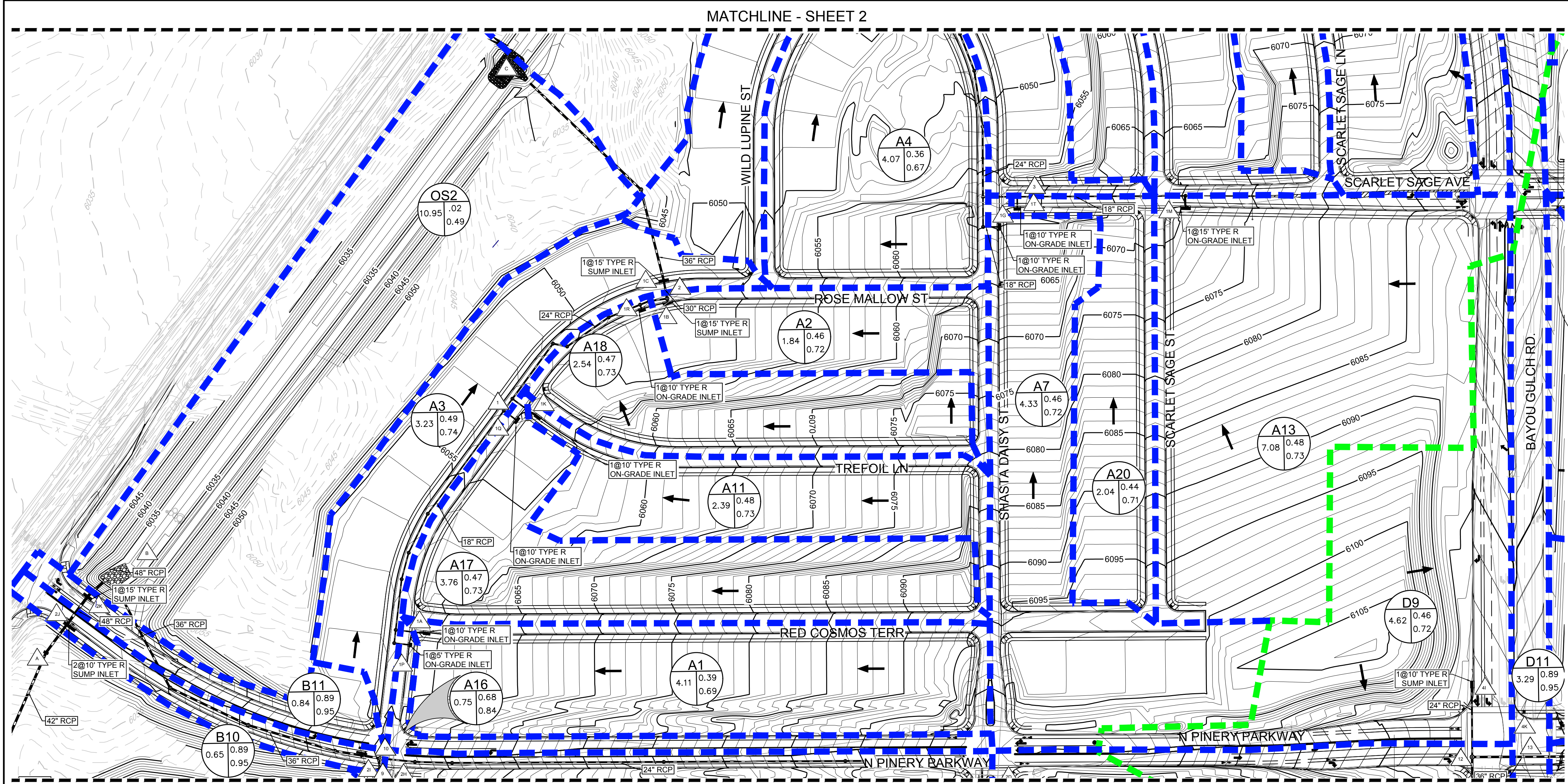
TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701

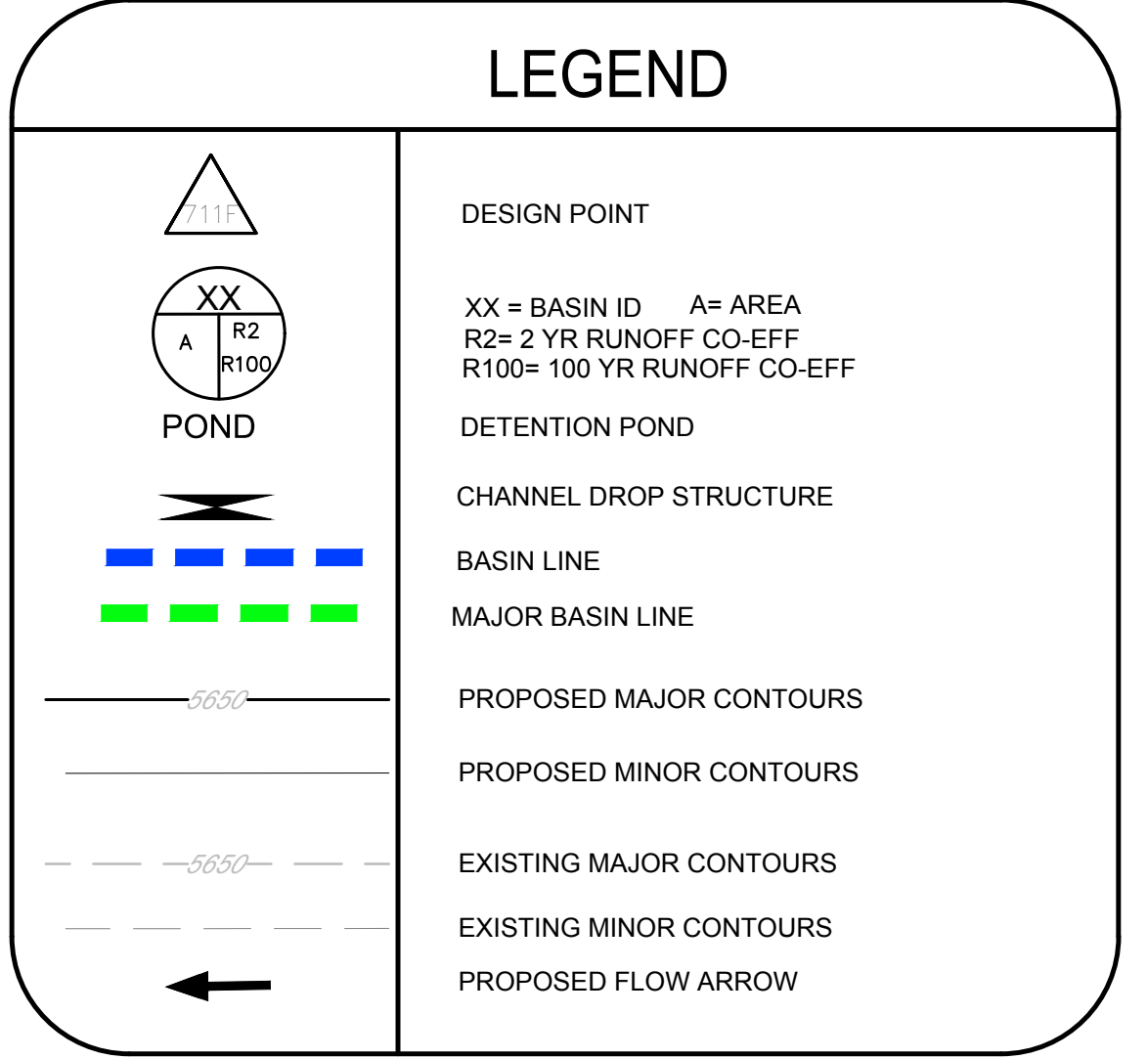
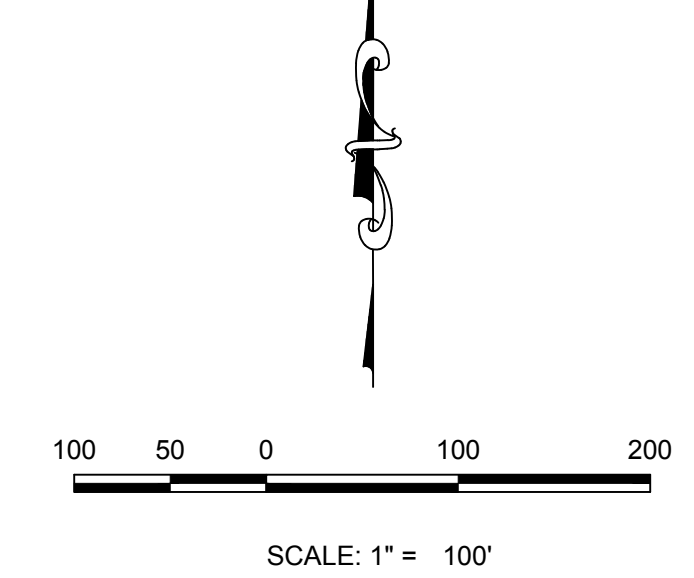
DRAWN BY: AYK
CHECKED BY: JU
DATE: MAY 2017

SHEET NUMBER **2**

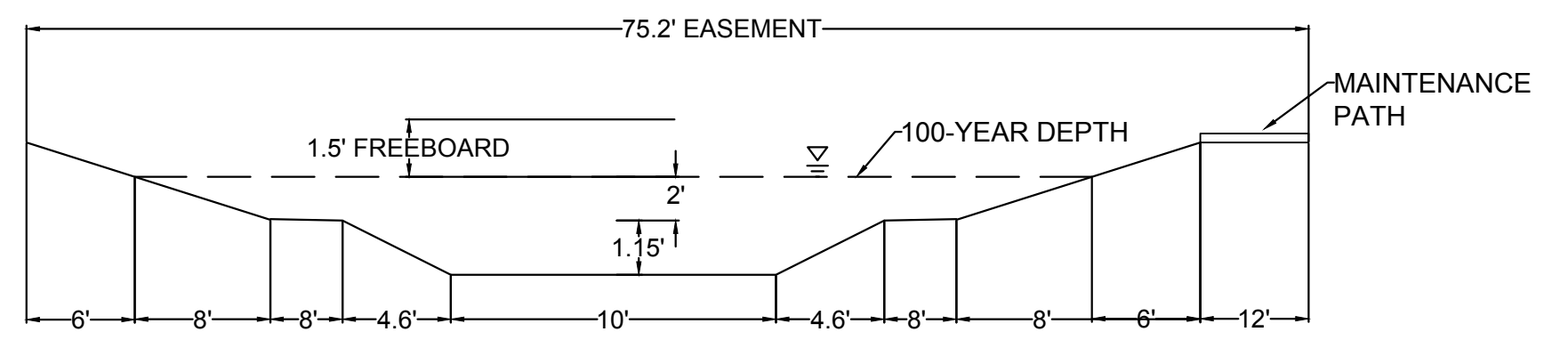
No.	Revisions	Date	Appr.	Date



KEYMAP
N.T.S.



- NOTE:
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 - PONDS ARE MAINTAINED BY METRO DISTRICT.
 - OUTLET STRUCTURE AND OVERFLOW WEIR DETAILS ARE PROVIDED WITH CIVIL PLANS.
 - DROP STRUCTURE DETAILS ARE PROVIDED IN CHANNEL PLAN AND PROFILE SHEET.



CHANNEL SECTION A-A
NO TO SCALE

Note:
1) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	Imperviousness %	DIRECT FLOW		Street Type	Slope %
			Q2 (CFS)	Q100 (CFS)		
A1	4.11	43.77	3.84	17.73	Local	2.00
A2	1.84	52.16	2.22	9.10	Local	0.00
A3	3.23	48.80	3.16	13.54	Local	0.00
A4	4.07	34.03	2.78	15.39	Local	0.00
A5	2.04	49.08	2.27	9.70	Local	0.00
A6	4.96	35.28	3.58	19.32	Local	1.50
A7	4.33	51.70	5.01	20.65	Local	4.00
A8	2.86	52.68	3.45	14.07	Local	0.00
A9	3.44	50.33	3.75	15.73	Arterial	2.00
A10	0.72	61.44	1.12	4.14	Arterial	0.00
A11	2.39	53.79	2.92	11.75	Local	2.00
A12	2.96	48.02	3.22	13.95	Local	1.50
A13	7.08	46.42	6.77	29.97	Local	5.00
A14	1.43	54.86	1.94	7.68	Local	0.00
A15	7.15	26.55	3.58	23.96	Arterial	0.00
A16	0.75	76.70	1.39	4.52	Local	2.00
A17	3.76	52.91	4.19	17.02	Local	2.00
A18	2.54	52.87	2.95	11.99	Local	2.00
A19	2.09	51.95	2.51	10.32	Local	4.00
A20	2.04	49.09	2.28	9.72	Local	2.00
A21	3.02	52.59	3.69	15.04	Local	1.50

Design Point ID	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
1A	3.84	17.73
1B	5.04	60.61
1C	18.94	72.95
1D	19.26	82.87
1E	4.69	68.74
1F	9.74	45.15
1G	5.01	55.58
1H	22.10	94.13
1I	3.75	15.73
1J	7.60	40.45
1K	2.92	11.75
1L	3.22	13.95
1M	6.77	29.97
1N	11.20	49.77
1O	3.58	23.96
1P	5.05	21.53
1Q	6.90	27.93
1R	2.95	11.99
1S	2.51	10.32
1T	7.21	37.59
1U	6.71	27.72
1	11.54	45.92
2	15.83	42.02
3	13.13	(Not Relevant for 100 year)
4	16.64	41.99

BASIN ID	AREA (AC)	Imperviousness %	DIRECT FLOW		Street Type	Slope %
			Q2 (CFS)	Q100 (CFS)		
C1	7.47	43.49	6.21	28.78	Local	0.00
D1	5.94	42.41	5.34	25.23	Local	0.00
D2	5.33	46.14	5.58	24.83	Local	5.00
D3	3.66	43.82	3.28	15.11	Local	5.00
D4	2.91	42.33	2.45	11.57	Local	3.00
D5	9.10	61.93	11.25	41.49	Arterial	0.00
D6	2.57	42.99	2.30	10.74	Arterial	6.00
D7	2.58	42.09	2.48	11.76	Local	4.00
D8	0.85	51.73	1.06	4.38	Local	5.00
D9	4.62	45.07	4.34	19.61	Arterial	0.00
D10	4.80	50.52	5.60	23.45	Local	0.00
D11	3.29	84.30	6.19	19.00	Arterial	0.00
D12	1.13	84.30	2.13	6.53	Arterial	1.50

Design Point ID	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
4A	18.01	80.94
4B	5.58	24.83
4C	3.28	15.11
4D	5.63	26.26
4E	13.59	54.51
4F	5.19	24.34
4G	2.48	11.76
4H	1.06	4.38
4I	4.34	19.61
4J	10.66	45.70
4K	6.19	19.00
4L	2.94	10.02
11	12.69	56.80
12	16.90	69.53
13	21.12	82.67

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33 TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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CVL CONSULTANTS

ESX MANAGEMENT
7353 South Alton Way
CENTENNIAL, CO 80112

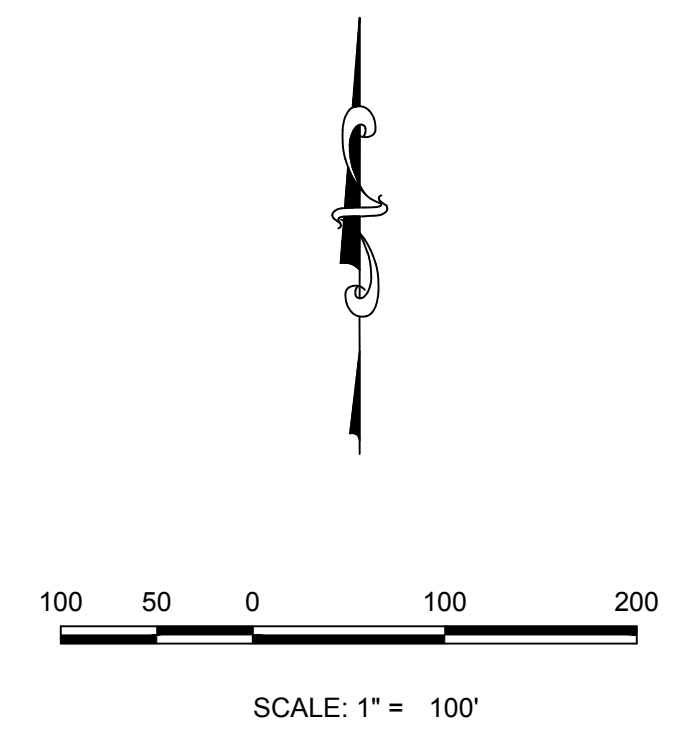
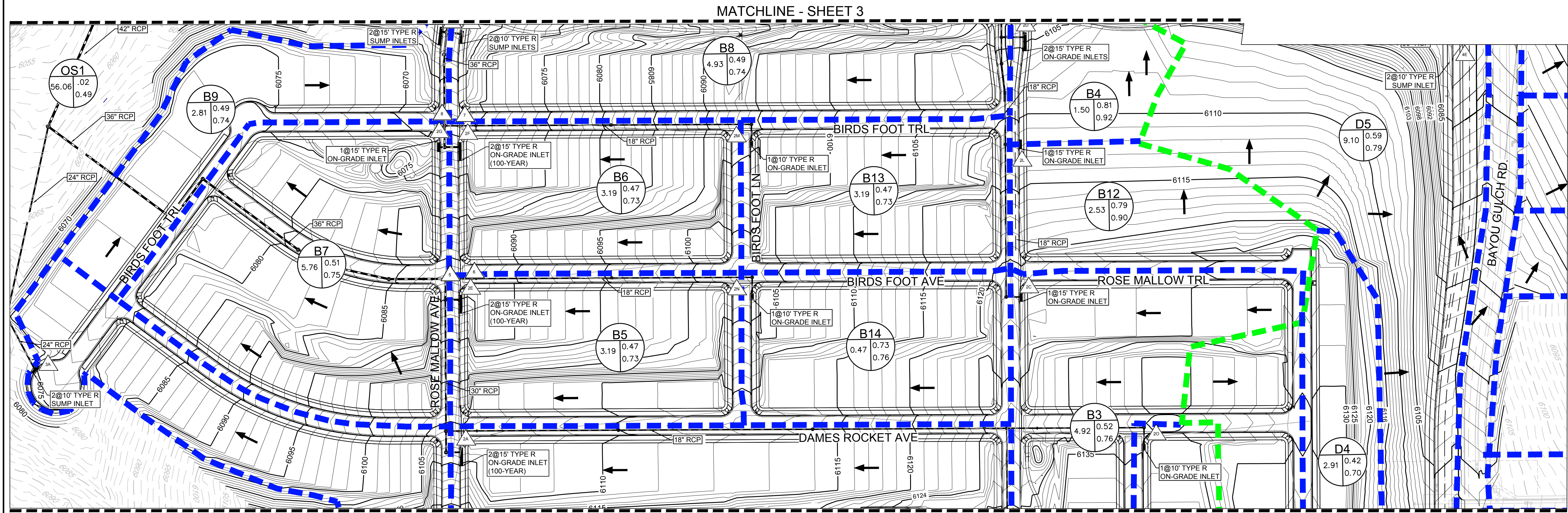
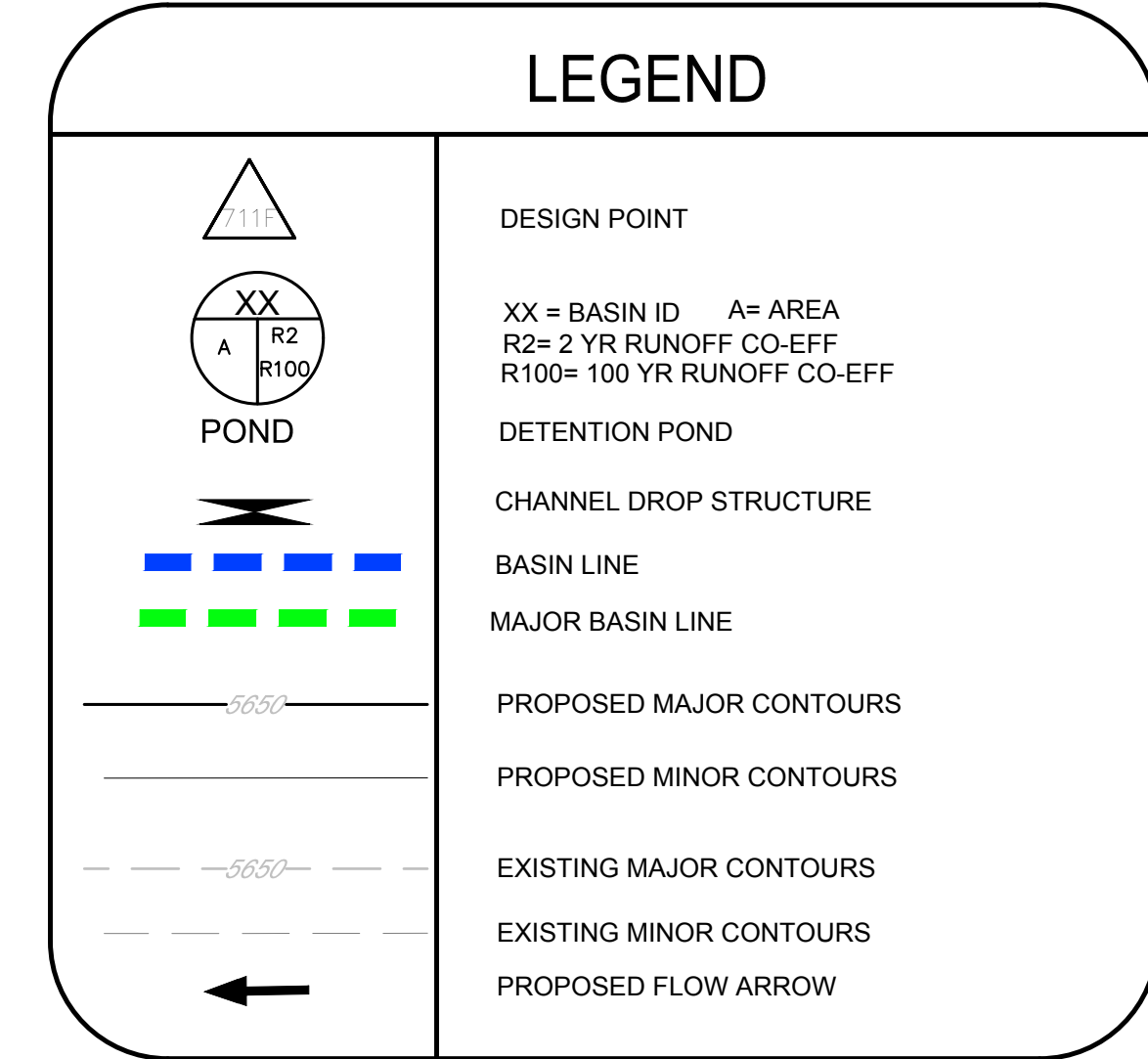
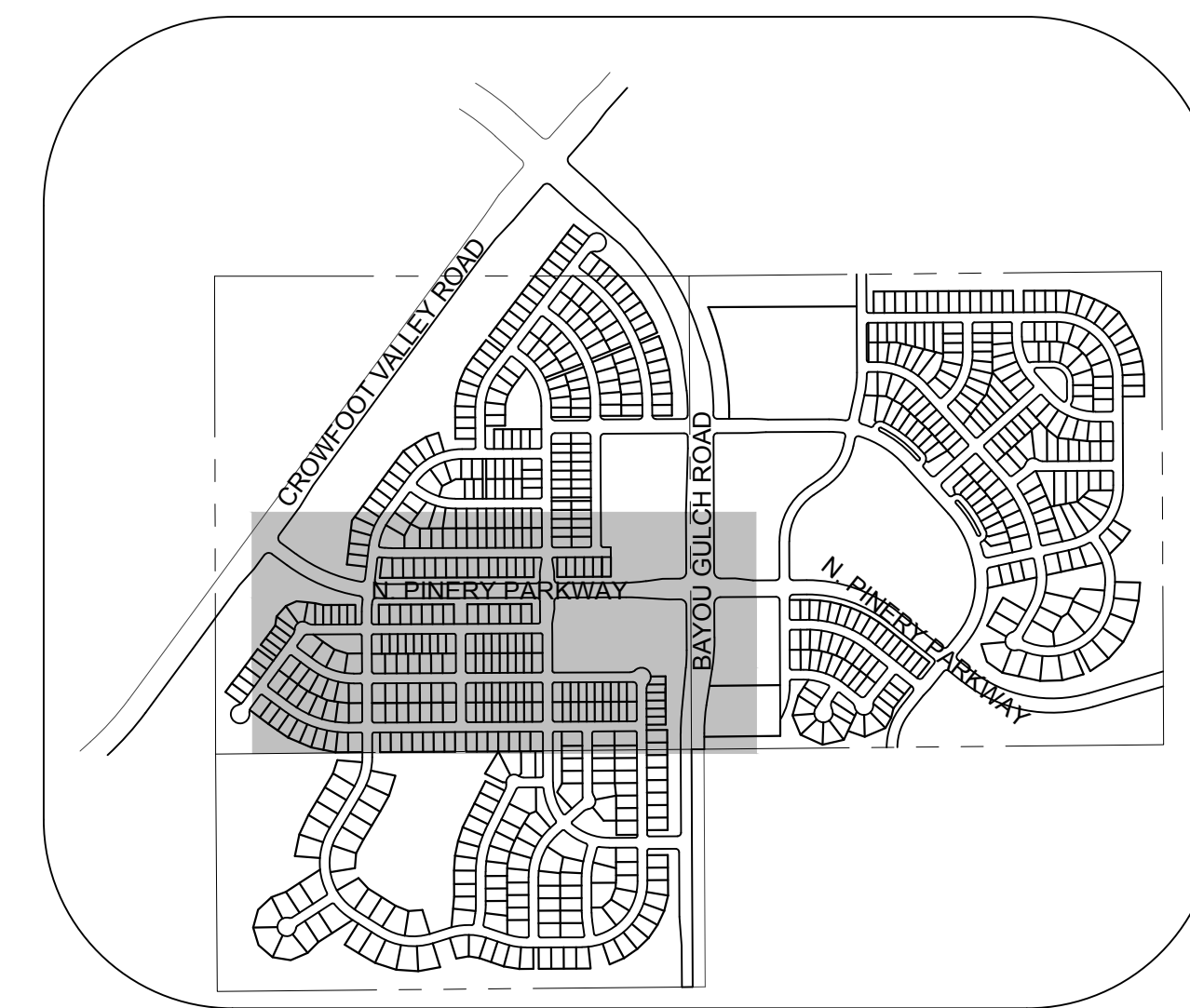
TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701

DRAWN BY: AVK
CHECKED BY: JJ
DATE: MAY 2017

SHEET NUMBER **3**

No.	Revisions	Date	Init.	Appr.	Date



Note: 1) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
B1	21.00	23.33	8.48		
B2	3.13	51.76	3.82		
B3	4.92	50.31	5.58		
B4	1.50	91.11	4.10		
B5	3.19	53.20	3.88		
B6	3.19	53.20	3.88		
B7	5.76	49.66	5.79		
B8	4.93	46.94	4.95		
B9	2.81	49.17	2.94		
B10	0.65	76.70	1.28		
B11	0.84	76.70	1.59		
B12	2.53	88.00	5.86		
B13	3.19	53.20	3.88		
B14	3.19	53.20	3.88		
B15	2.01	53.11	2.50		

Note: 1) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
C1	7.47	43.49	6.21		
D1	5.94	42.41	5.34		
D2	5.33	46.14	5.58		
D3	3.66	43.82	3.28		
D4	2.91	42.33	2.45		
D5	9.10	61.93	11.25		
D6	2.57	42.99	2.30		
D7	2.58	42.09	2.48		
D8	0.85	51.73	1.06		
D9	4.62	45.07	4.34		
D10	4.80	50.52	5.60		
D11	3.29	84.30	6.19		
D12	1.13	84.30	2.13		

Design Point	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
2A	13.11	74.41
2B	6.15	15.75
2C	5.58	33.21
2D	13.15	54.26
2E	3.88	76.36
2F	3.88	29.09
2G	5.79	24.54
2H	4.95	21.81
2I	2.94	35.69
2J	24.60	155.70
2K	25.63	158.99
2L	10.38	46.95
2M	3.88	15.72
2N	3.88	15.72
2O	2.50	10.13
3	18.73	76.25
6	7.44	(Not Relieved for 100 year)
7	7.40	(Not Relieved for 100 year)
9	19.80	84.75
10	31.82	84.62

Design Point	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
3A	6.44	43.61
4A	18.01	80.94
4B	5.58	24.83
4C	3.28	15.11
4D	5.63	26.26
4E	13.59	54.51
4F	5.19	24.34
4G	2.48	11.76
4H	1.06	4.38
4I	4.34	19.61
4J	10.66	45.70
4K	6.19	19.00
4L	2.94	10.02
11	12.69	56.80
12	16.90	69.53
13	21.12	82.67

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BENCHMARK
 DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

10333 E. Dry Creek Rd., Suite 410, Englewood, CO 80152
 Tel: (720) 482-9526 Fax: (720) 482-9548

CVL CONSULTANTS

ESX MANAGEMENT
7353 South Alton Way, CENTENNIAL, CO 80112

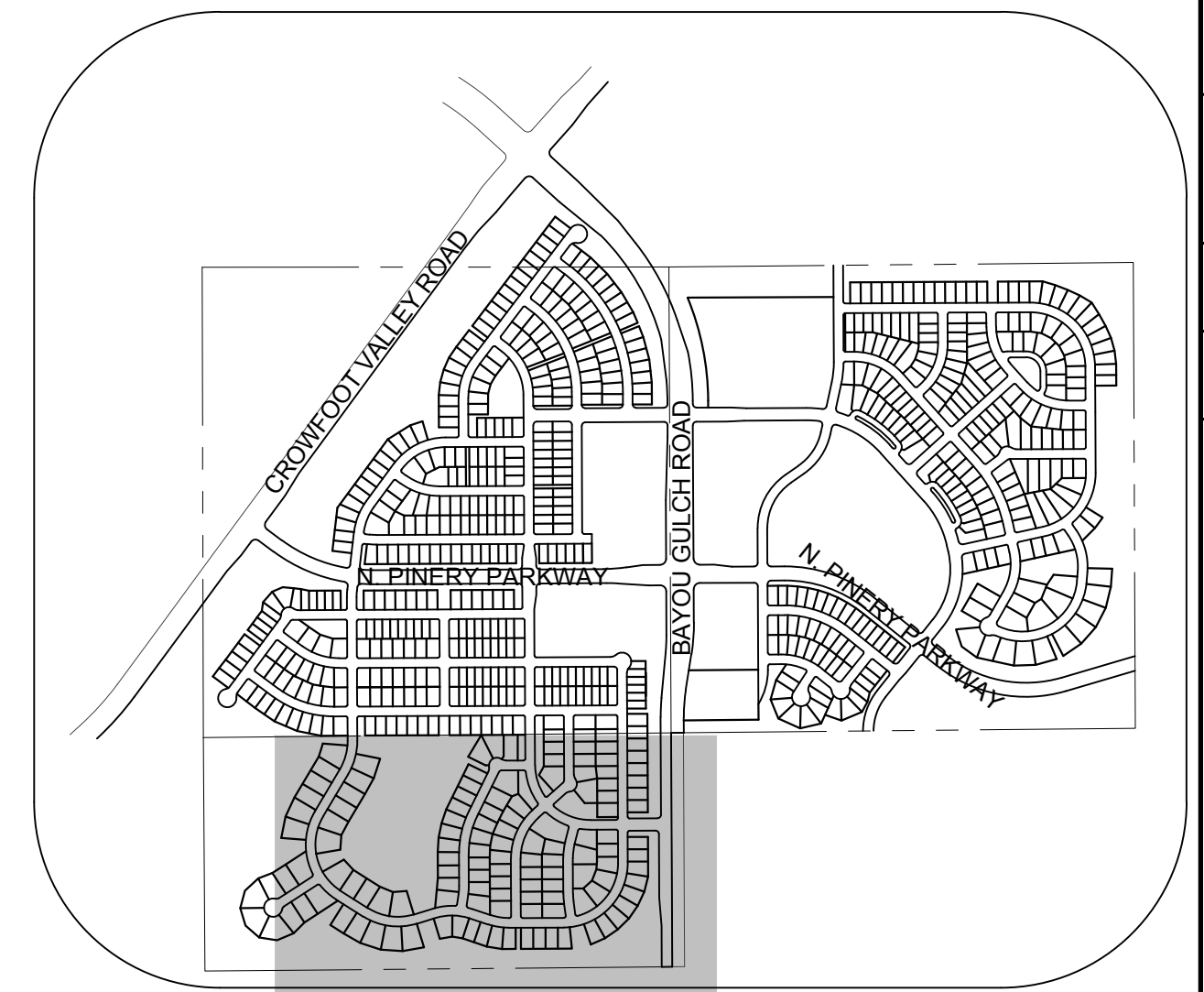
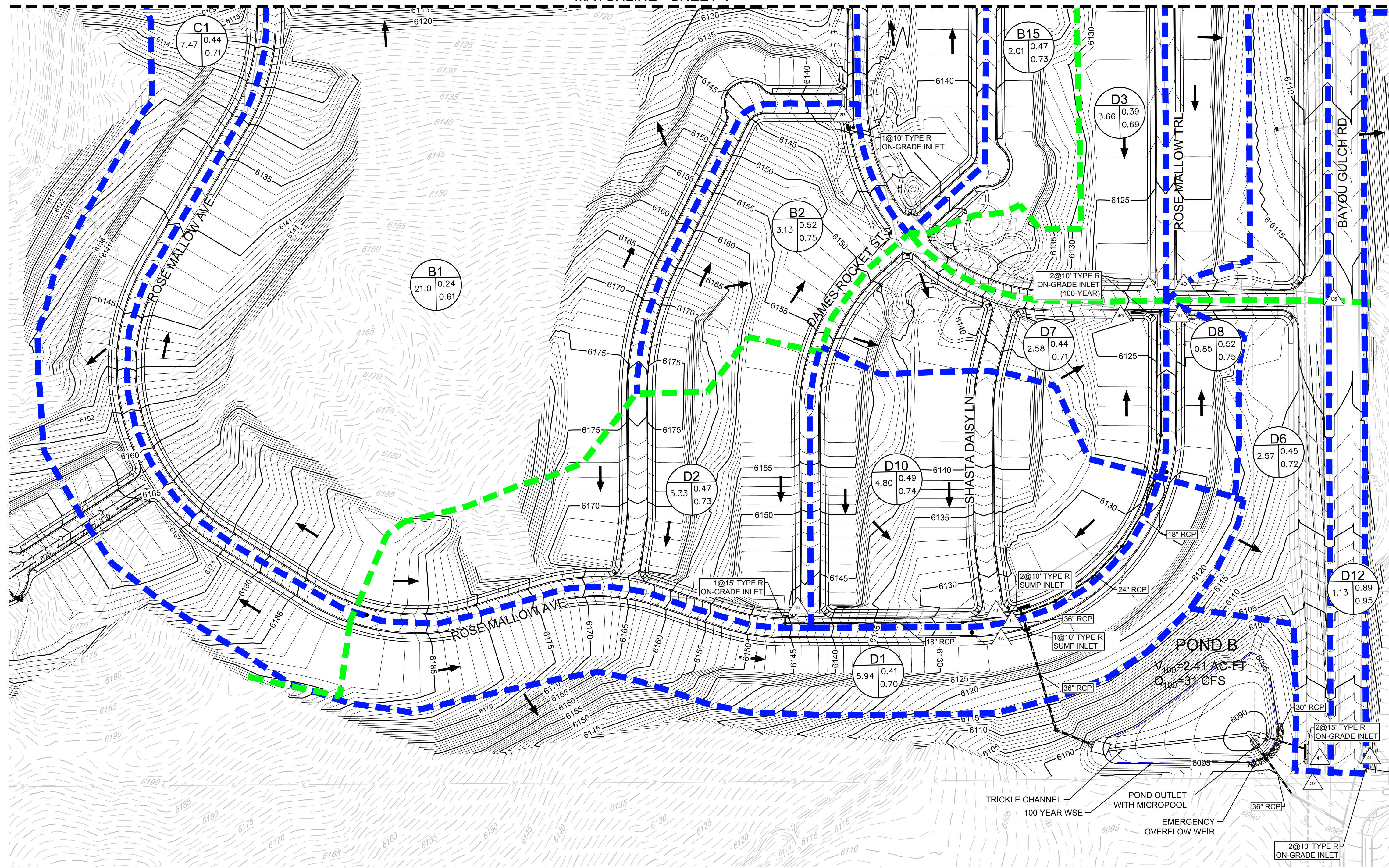
TRAILS AT CROWFOOT FINAL DRAINAGE MAP DRAINAGE MAP

SCALE: AS SHOWN
 DRAWN BY: AVK
 CHECKED BY: JJJ
 DATE: MAY 2017

FILE NO: 8130283701

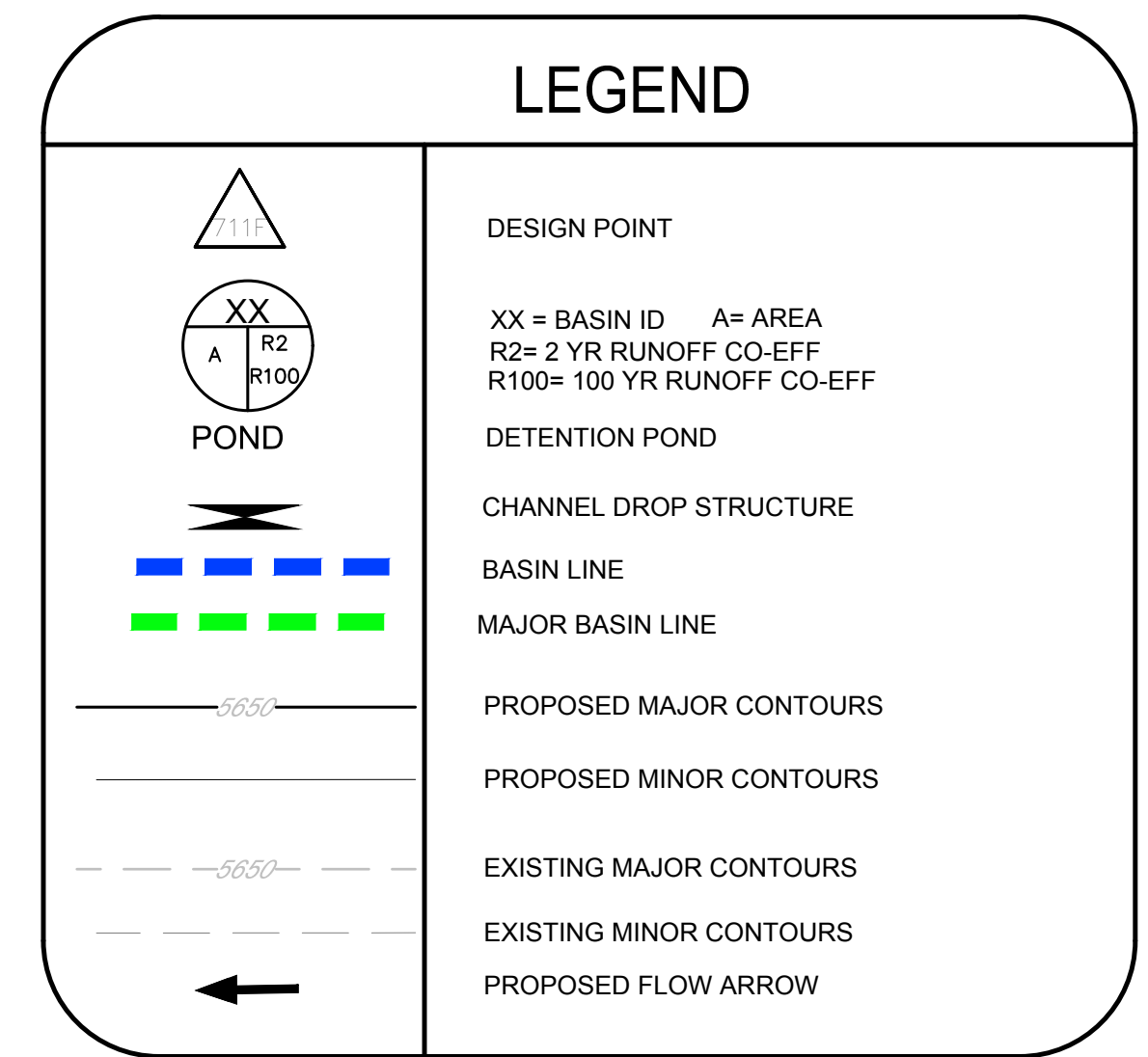
SHEET NUMBER 4

No.	Revisions	Date	Appr.	Date



KEYMAP
N.T.S.

- NOTE:
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Note: 1) 0% slope indicates sump inlet.

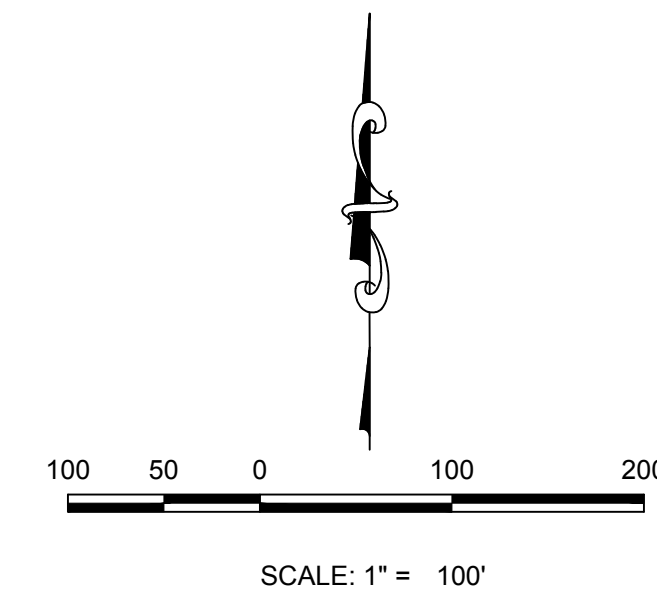
BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
B1	21.00	23.33	8.48		
B2	3.13	51.76	3.82		
B3	4.92	50.31	5.58		
B4	1.50	91.11	4.10		
B5	3.19	53.20	3.88		
B6	3.19	53.20	3.88		
B7	5.76	49.66	5.79		
B8	4.93	46.94	4.95		
B9	2.81	49.17	2.94		
B10	0.65	76.70	1.28		
B11	0.84	76.70	1.59		
B12	2.53	88.00	5.86		
B13	3.19	53.20	3.88		
B14	3.19	53.20	3.88		
B15	2.01	53.11	2.50		

Note: 1) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
C1	7.47	43.49	6.21		
D1	5.94	42.41	5.34		
D2	5.33	46.14	5.58		
D3	3.66	43.82	3.28		
D4	2.91	42.33	2.45		
D5	9.10	61.93	11.25		
D6	2.57	42.99	2.30		
D7	2.58	42.09	2.48		
D8	0.85	51.73	1.06		
D9	4.62	45.07	4.34		
D10	4.80	50.52	5.60		
D11	3.29	84.30	6.19		
D12	1.13	84.30	2.13		

Design Point ID	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
2A	13.11	74.41
2B	6.15	15.75
2C	5.58	33.21
2D	13.15	54.26
2E	3.88	76.36
2F	3.88	29.09
2G	5.79	24.54
2H	4.95	21.81
2I	2.94	35.69
2J	24.60	155.70
2K	25.63	158.99
2L	10.38	46.95
2M	3.88	15.72
2N	3.88	15.72
2O	2.50	10.13
5	18.73	76.25
6	7.44	(Not Relevant for 100 year)
7	7.40	(Not Relevant for 100 year)
9	19.80	84.75
10	31.82	84.62

Design Point ID	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
3A	6.44	43.61
4A	18.01	80.94
4B	5.58	24.83
4C	3.28	15.11
4D	5.63	26.26
4E	13.59	54.51
4F	5.19	24.34
4G	2.48	11.76
4H	1.06	4.38
4I	4.34	19.61
4J	10.66	45.70
4K	6.19	19.00
4L	2.94	10.02
11	12.69	56.80
12	16.90	69.53
13	21.12	82.67



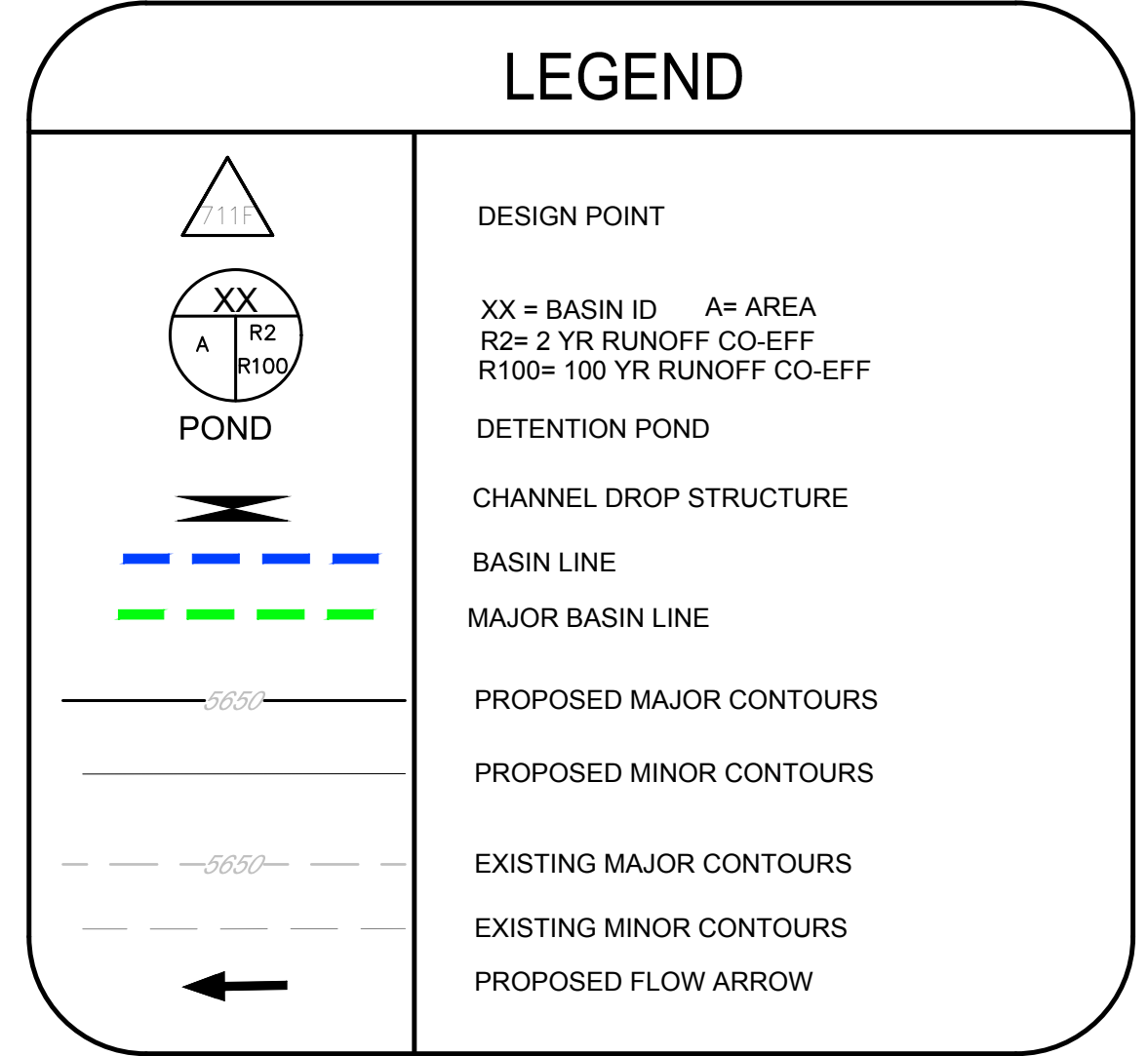
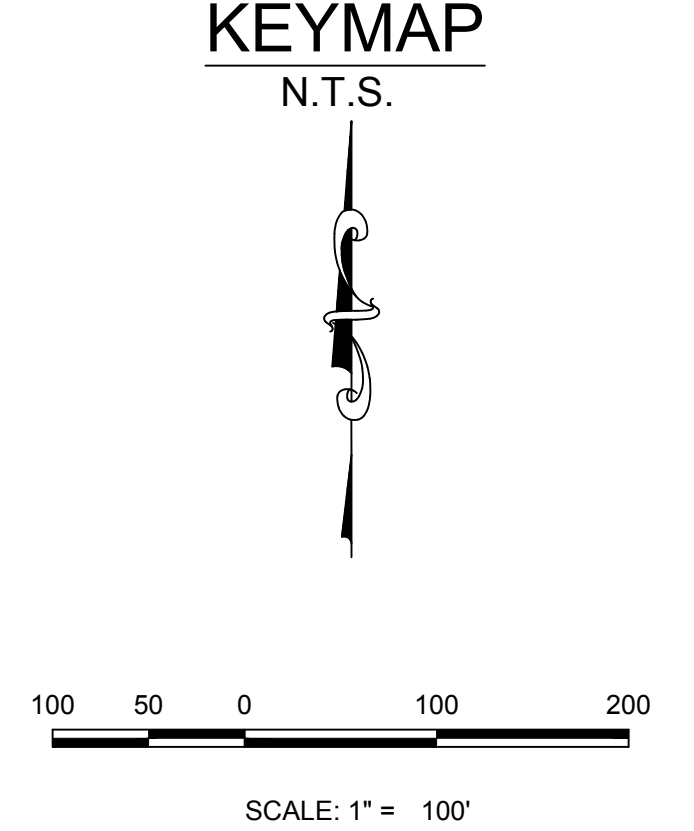
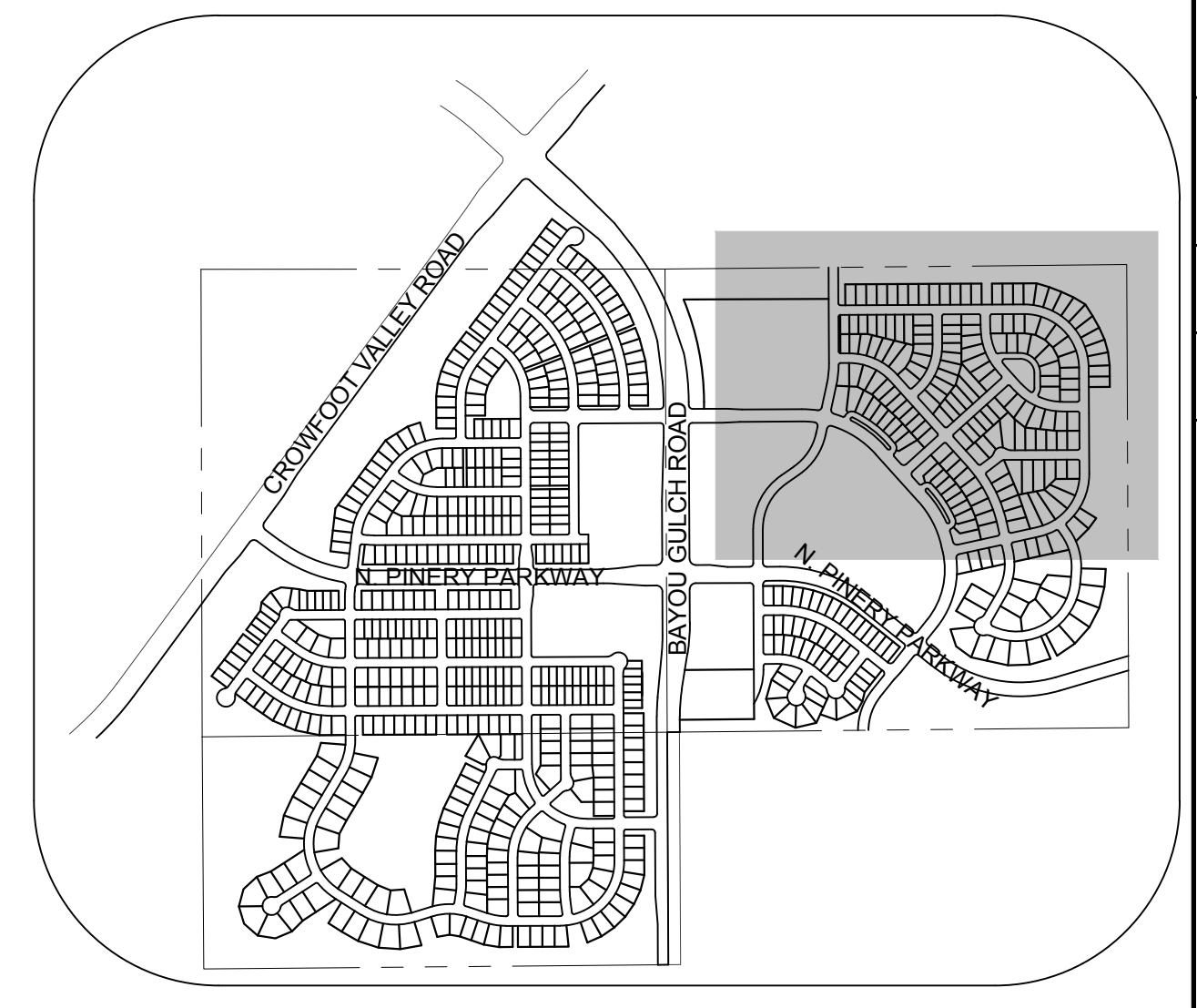
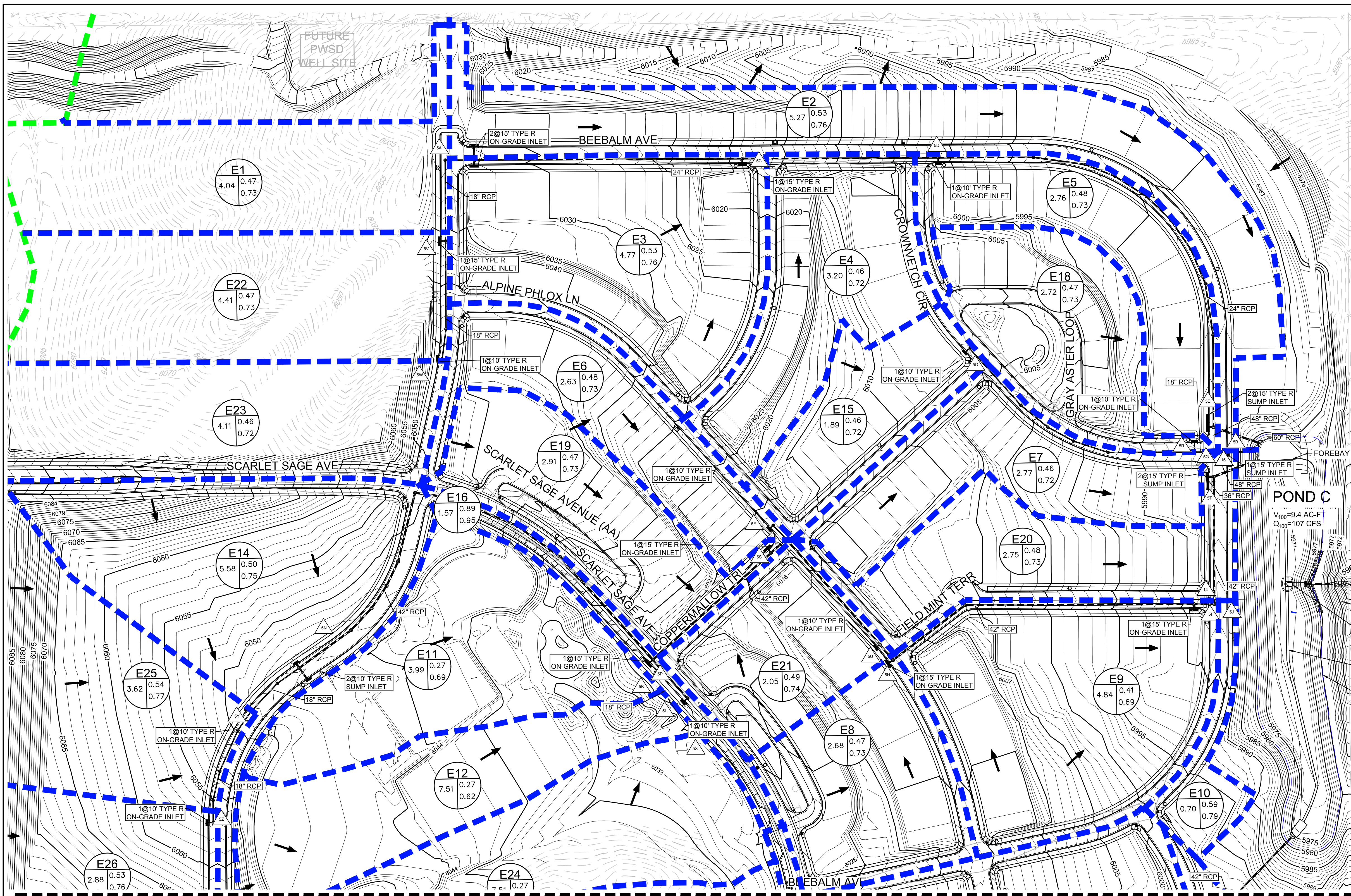
BENCHMARK
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N:\PROJECTS\BENCHMORSE\ENGINEERING\DRAINAGE\MAPS\DRAINAGE MAP FINAL.DWG, RSP\UNCC_10262007.9.21.AM

CALL 811
TWO WORKING DAYS
BEFORE YOU DIG
UNCC 1-800-922-1987
UTILITY NOTIFICATION CENTER OF COLORADO

SCALE:	AS SHOWN	FILE NO:	8130283701
DRAWN BY:	AVK	CHECKED BY:	JU
SHEET NUMBER	5	DATE:	MAY 2017
PREPARED UNDER THE SUPERVISION OF MARK SCHEURER COLORADO P.E. 48988			
TRAILS AT CROWFOOT FINAL DRAINAGE MAP DRAINAGE MAP			
ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112			
CVL CONSULTANTS			
No.	Revisions	Date	Appr.



Note: 1) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
E1	4.04	52.65	4.95		
E2	5.27	52.02	4.71		
E3	4.77	52.31	5.64		
E4	3.20	52.07	3.78		
E5	2.76	53.77	3.09		
E6	2.63	53.59	3.06		
E7	2.77	51.99	3.21		
E8	2.68	53.33	3.13		
E9	4.84	39.52	3.92		
E10	0.70	56.03	0.85		
E11	3.99	30.00	2.48		
E12	3.28	30.00	2.04		
E13	4.45	30.00	2.76		
E14	5.58	56.35	7.00		
E15	1.89	51.97	2.08		
E16	1.57	73.60	2.68		
E17	1.55	73.60	2.64		
E18	2.72	52.96	3.45		
E19	2.91	53.40	3.58		
E20	2.75	53.49	3.12		
E21	2.05	54.72	2.56		
E22	4.41	53.09	5.39		
E23	4.11	51.69	4.81		
E24	4.23	30.00	2.63		
E25	3.62	52.58	4.65		
E26	2.88	59.79	4.24		

MATCHLINE - SHEET 7

Design Point ID	CUMULATIVE FLOW	
	Q2 (CFS)	Q100 (CFS)
14	35.26	128.18
15	67.15	145.92
5A	14.28	56.31
5B	68.09	19.36
5C	18.85	70.87
5D	21.89	79.97
5E	26.21	83.44
5F	3.06	12.34
5G	7.82	146.09
5H	32.81	81.28
5I	3.92	19.46
5J	0.85	3.31
5K	2.48	14.96
5L	4.60	27.74
5M	2.76	16.67
5N	15.09	58.98
5O	2.08	8.55
5P	22.99	49.94
5Q	5.06	23.96
5R	3.45	14.00
5S	28.34	67.90
5T	3.12	12.57
5U	2.56	10.18
5V	9.85	39.52
5W	4.81	19.86
5X	2.63	15.87
5Y	8.69	33.62
5Z	4.24	15.89

NOTE:

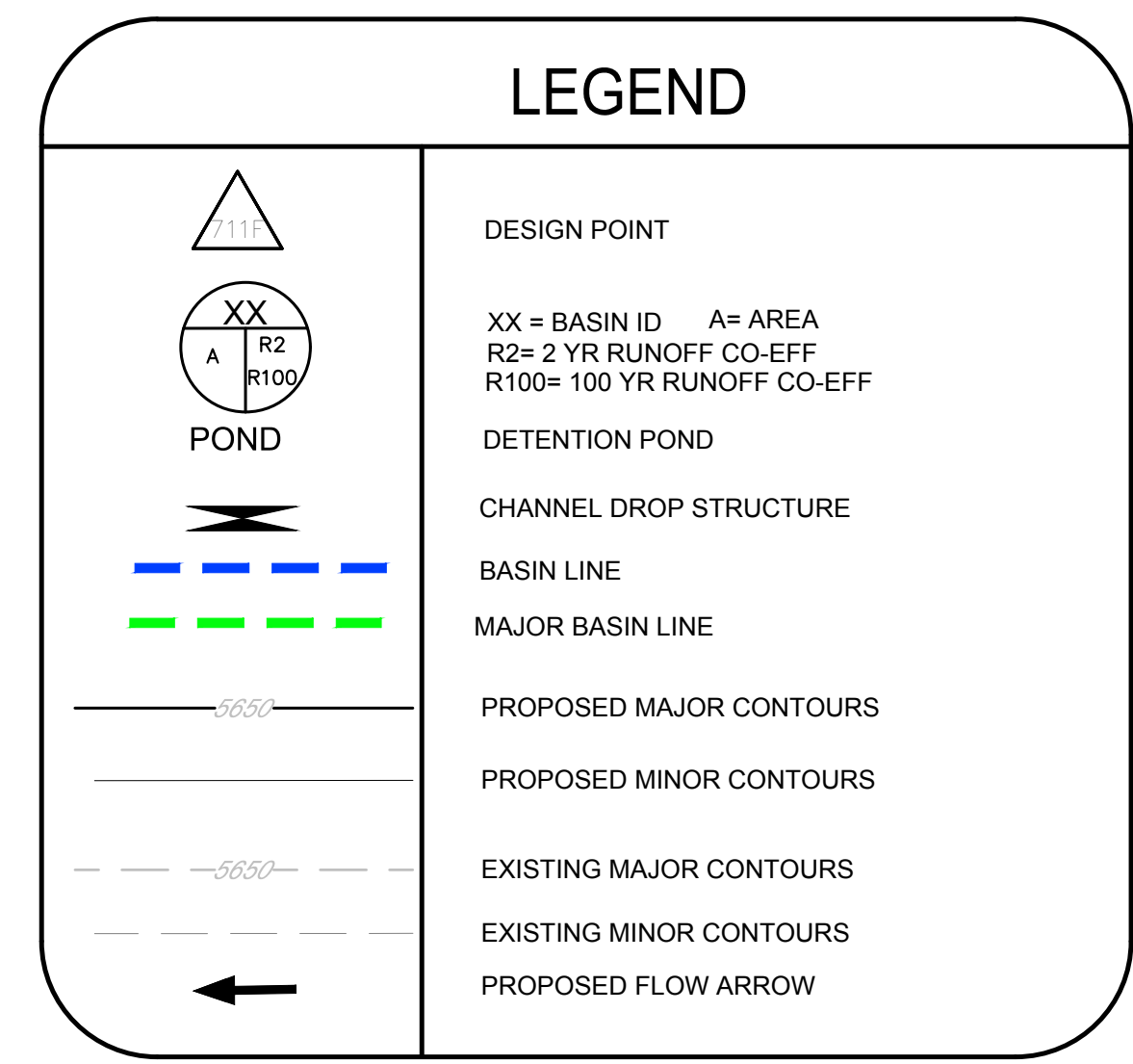
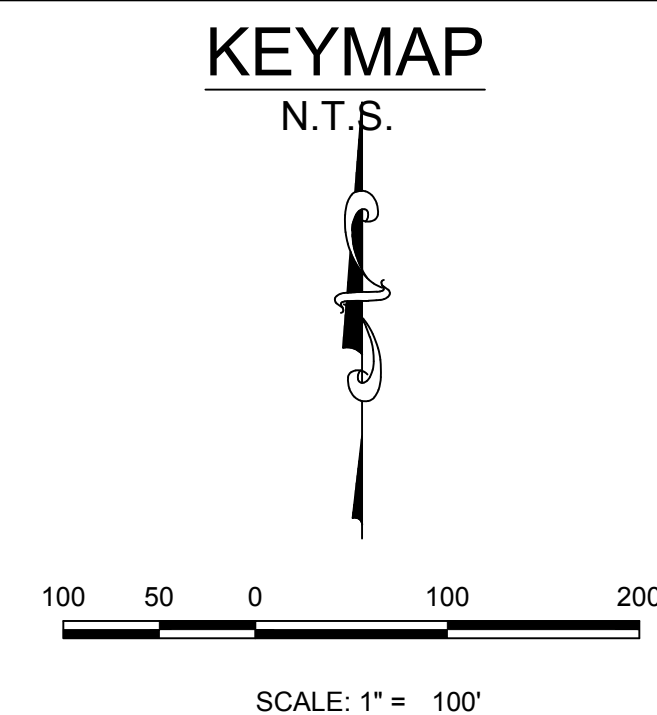
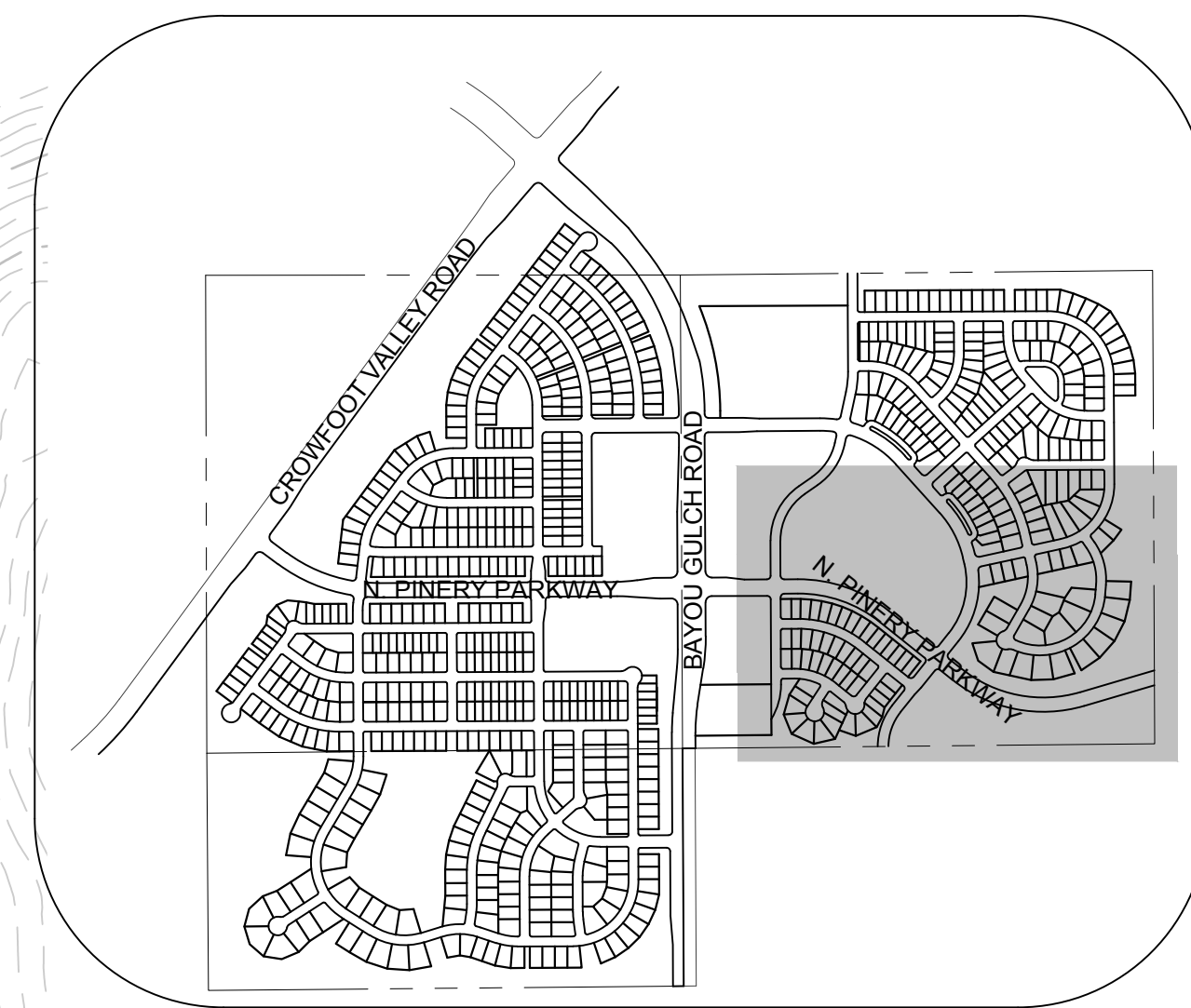
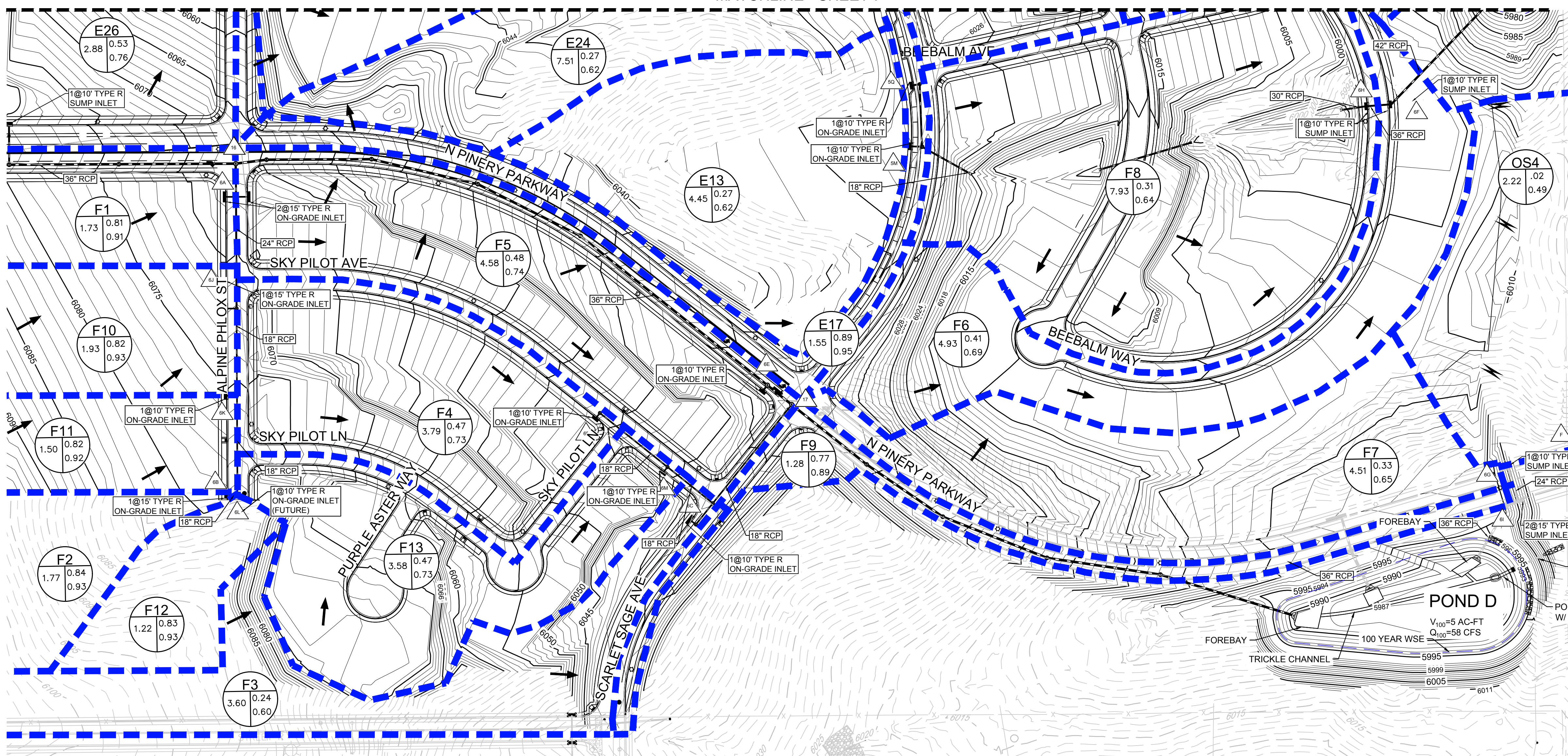
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- OUTLET STRUCTURE AND OVERFLOW WEIR DETAILS ARE PROVIDED WITH CIVIL PLANS.
- DROP STRUCTURE DETAILS ARE PROVIDED IN CHANNEL PLAN AND PROFILE SHEET.

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

BASIS OF BEARINGS:
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 00°15'06" EAST, 2648.70 FEET.

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UNCC 1.800.922.1987

10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548	Revisions	Date	Appr.	Date
	No.			
ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112	TRAILS AT CROWFOOT FINAL DRAINAGE MAP DRAINAGE MAP			
SCALE: AS SHOWN DRAWN BY: AVK CHECKED BY: JJ DATE: MAY 2017	FILE NO: 8130283701	PREPARED UNDER THE SUPERVISION OF		
SHEET NUMBER 6	MARK SCHEURER COLORADO P.E. 48988			



Note: 1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA (AC)	Imperviousness %	Q2 (CFS)	Q100 (CFS)	Street Type	Slope %
E1	4.04	52.65	4.95	20.19	Local	2.70
E2	5.27	52.02	4.71	19.36	Local	0.00
E3	4.77	52.31	5.64	23.07	Local	3.00
E4	3.20	52.07	3.78	14.69	Local	4.00
E5	2.76	53.77	3.09	12.43	Local	0.00
E6	2.63	53.59	3.06	12.34	Local	1.00
E7	2.77	51.99	3.21	13.17	Local	0.00
E8	2.68	53.33	3.13	12.64	Local	2.00
E9	4.84	39.52	3.92	19.46	Local	2.00
E10	0.70	56.03	0.85	3.31	Local	1.00
E11	3.99	30.00	2.48	14.96	Local	1.00
E12	3.28	30.00	2.04	12.33	Local	6.00
E13	4.45	30.00	2.76	16.67	Local	1.00
E14	5.58	56.35	7.00	27.28	Local	0.00
E15	1.89	51.97	2.08	8.55	Local	2.00
E16	1.57	73.60	2.68	8.89	Local	6.00
E17	1.55	73.60	2.64	8.76	Local	1.00
E18	2.72	52.96	3.45	14.00	Local	1.50
E19	2.91	53.40	3.58	14.46	Local	1.20
E20	2.75	53.49	3.12	12.57	Local	2.00
E21	2.05	54.72	2.56	10.18	Local	2.00
E22	4.41	53.09	5.39	21.86	Local	2.70
E23	4.11	51.69	4.81	19.86	Local	2.70
E24	4.23	30.00	2.63	15.87	Local	2.00
E25	3.62	52.58	4.65	18.92	Local	2.00
E26	2.88	59.79	4.24	15.89	Local	2.00

CUMULATIVE FLOW

Design Point ID	Q2 (CFS)	Q100 (CFS)
I4	35.26	128.18
I5	67.15	145.92
5A	14.28	56.31
5B	68.09	19.36
5C	18.85	70.87
5D	21.89	79.97
5E	26.21	83.44
5F	3.06	12.34
5G	7.82	146.09
5H	32.81	81.28
5I	3.92	19.46
5J	0.85	3.31
5K	2.48	14.96
5L	4.60	27.74
5M	2.76	16.67
5N	15.09	58.98
5O	2.08	8.55
5P	22.99	49.94
5Q	5.06	23.96
5R	3.45	14.00
5S	28.34	67.90
5T	3.12	12.57
5U	2.56	10.18
5V	9.85	39.52
5W	4.81	19.86
5X	2.63	15.87
5Y	8.69	33.62
5Z	4.24	15.89

Note: 1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA (AC)	Imperviousness %	Q2 (CFS)	Q100 (CFS)	Street Type	Slope %
F1	1.71	90.64	4.59	13.55	Local	2.50
F2	1.77	93.50	4.96	14.53	Local	2.50
F3	3.60	19.77	1.47	12.47	Local	1.00
F4	3.79	53.06	4.56	18.47	Local	4.00
F5	4.58	46.86	4.46	19.66	Res. Blvd	4.00
F6	4.93	38.37	3.70	18.75	Local	0.00
F7	4.51	18.05	1.68	15.41	Res. Blvd	0.00
F8	7.93	34.99	5.57	30.18	Local	0.00
F9	1.28	66.27	1.75	6.18	Res. Blvd	0.00
F10	1.93	92.20	5.30	15.64	Local	2.50
F11	1.50	91.79	4.07	12.03	Local	2.50
F12	1.22	93.17	3.39	9.95	Local	2.50
F13	3.58	52.91	4.36	17.70	Local	4.00

CUMULATIVE FLOW

Design Point ID	Q2 (CFS)	Q100 (CFS)
6A	21.41	56.86
6B	8.28	23.93
6C	9.45	44.87
6D	4.56	18.47
6E	34.09	58.80
6F	13.68	69.19
6G	40.96	164.40
6H	10.08	51.13
6I	40.22	154.89
6J	17.19	46.79
6K	12.18	34.01
6L	3.39	9.95
6M	8.80	35.37
16	32.20	55.27
17	40.76	97.22

- NOTE:
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BENCHMARK
 THE DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.069032, BEING A 3-1/4" ALUMINUM CAP BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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N:\PROJECTS\5555\5555\ENGINEERING\DRAINAGE\MAPS\FINAL\DRAINAGE MAP 06.DWG, A5EINDK, 10/26/2017 9:51 AM

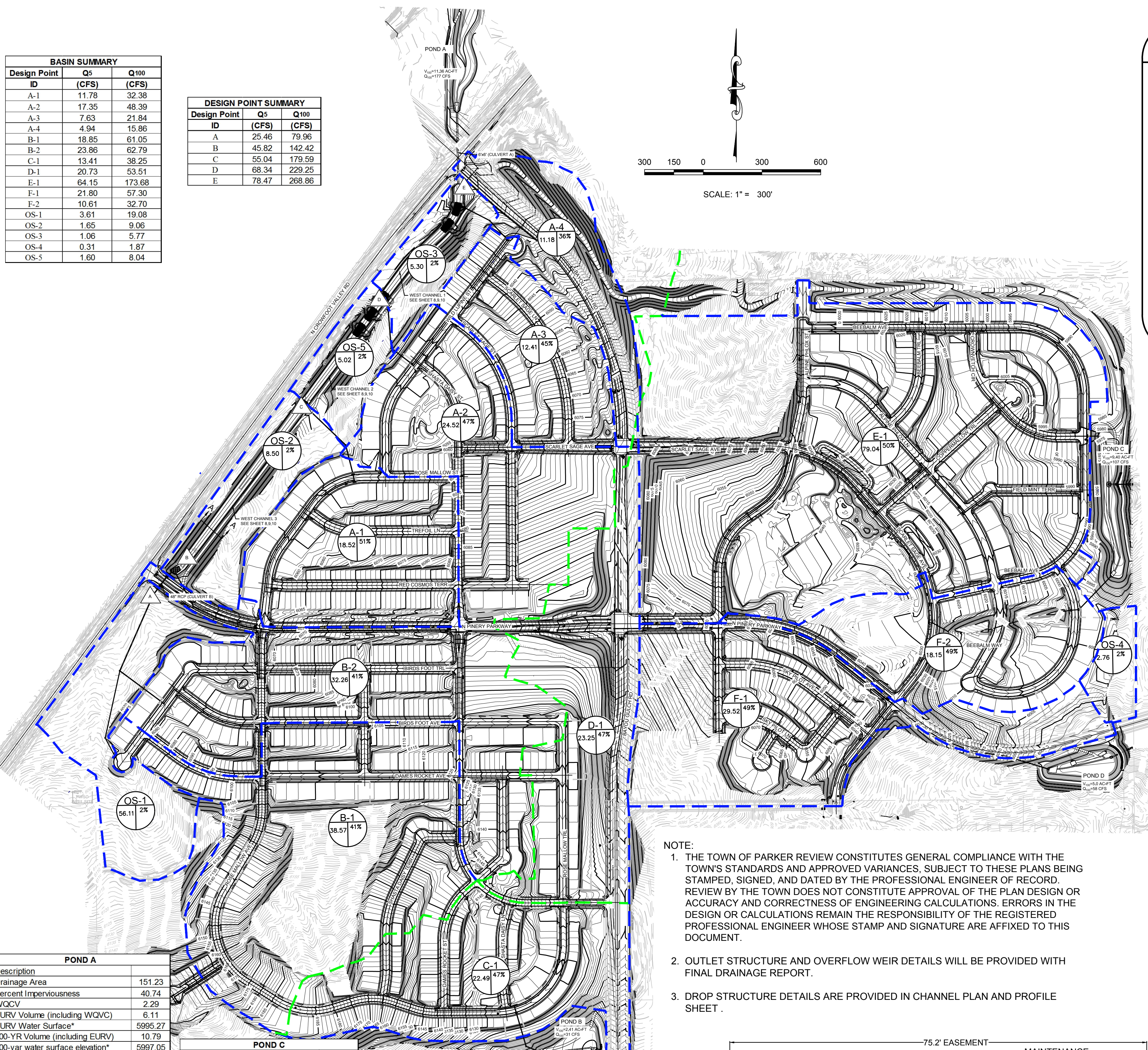
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 TWO WORKING DAYS
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PREPARED UNDER THE SUPERVISION OF
 MARK SCHEURER
 COLORADO P.E. 48988

SHEET NUMBER	DRAWN BY: AVK	CHECKED BY: JU	DATE: MAY 2017	SCALE: AS SHOWN	FILE NO: 8130283701	TRAILS AT CROWFOOT FINAL DRAINAGE MAP DRAINAGE MAP	ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112		10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548
				NO. REVISIONS	APPR. DATE				

BASIN SUMMARY		
Design Point	Q5	Q100
ID	(CFS)	(CFS)
A-1	11.78	32.38
A-2	17.35	48.39
A-3	7.63	21.84
A-4	4.94	15.86
B-1	18.85	61.05
B-2	23.86	62.79
C-1	13.41	38.25
D-1	20.73	53.51
E-1	64.15	173.68
F-1	21.80	57.30
F-2	10.61	32.70
OS-1	3.61	19.08
OS-2	1.65	9.06
OS-3	1.06	5.77
OS-4	0.31	1.87
OS-5	1.60	8.04

DESIGN POINT SUMMARY		
Design Point	Q5	Q100
ID	(CFS)	(CFS)
A	25.46	79.96
B	45.82	142.42
C	55.04	179.59
D	68.34	229.25
E	78.47	268.86

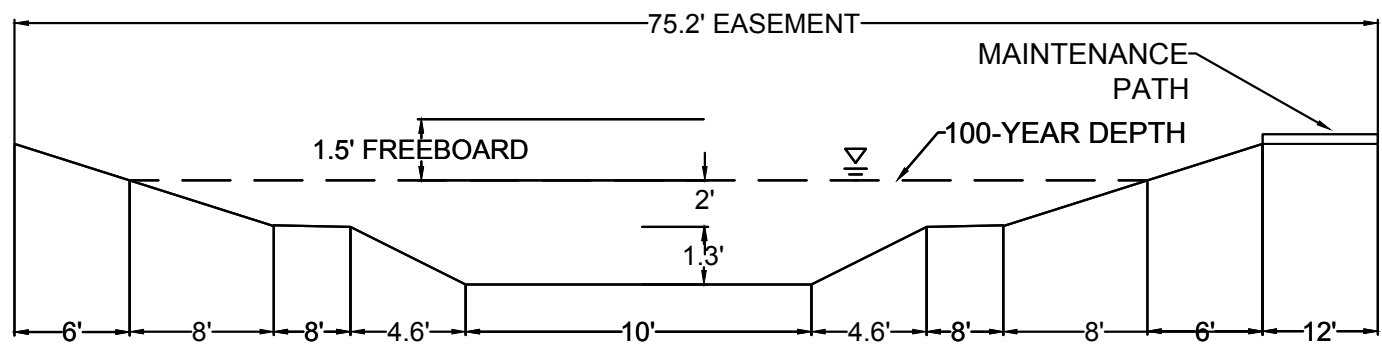


POND A	
Description	
Drainage Area	151.23
Percent Imperviousness	40.74
WQCV	2.29
EURV Volume (including WQVC)	6.11
EURV Water Surface*	5995.27
100-YR Volume (including EURV)	10.79
100-yr water surface elevation*	5997.05
Emergency Spillway Crest Elevation*	5997.05
100-year Peak Inflow (cfs)	268.86
100-year Peak Outflow (cfs)	177.21

POND C	
Description	
Drainage Area	97.79
Percent Imperviousness	45.93
WQCV	1.60
EURV Volume (including WQVC)	4.49
EURV Water Surface	5973.31
100-YR Volume (including EURV)	8.34
100-yr water surface elevation	5978.09
Emergency Spillway Crest Elevation	5978.09
100-year Peak Inflow (cfs)	314.00
100-year Peak Outflow (cfs)	106.71

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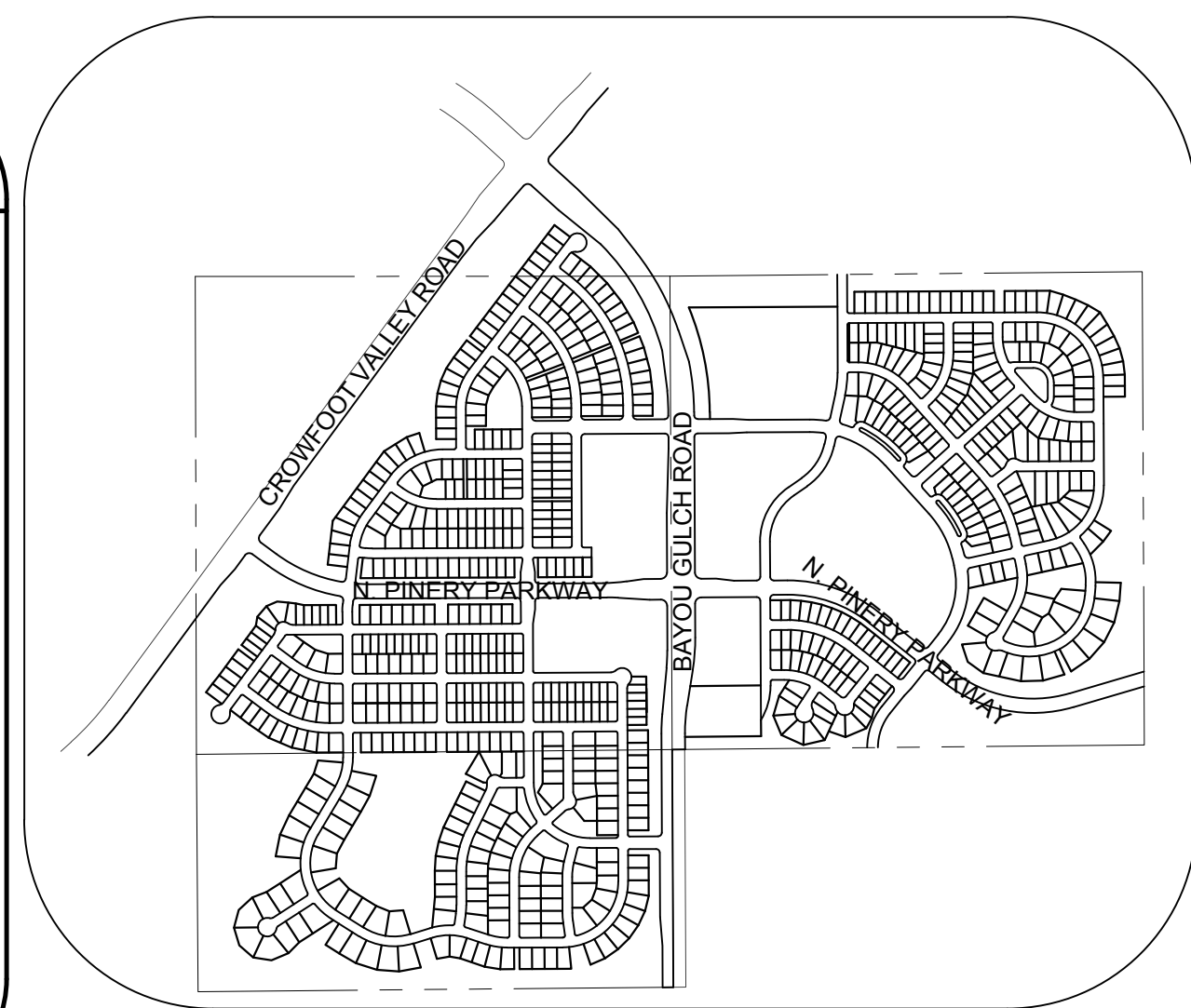
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 3. DROP STRUCTURE DETAILS ARE PROVIDED IN CHANNEL PLAN AND PROFILE SHEET.



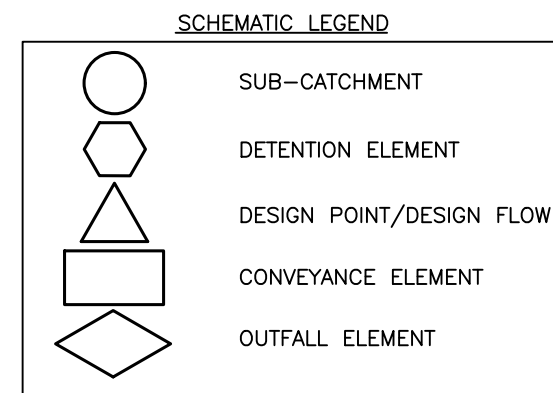
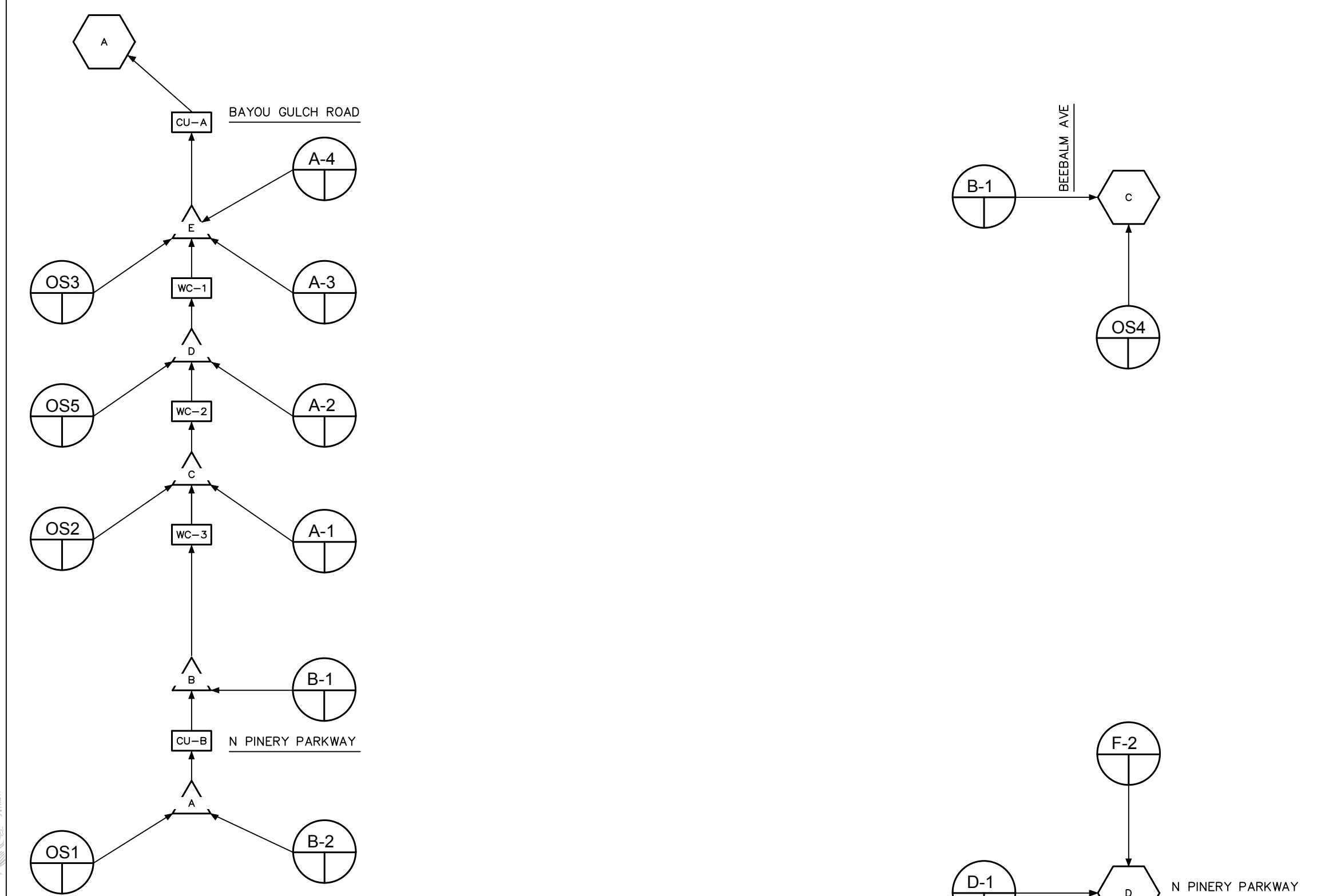
CHANNEL SECTION A-A
NO TO SCALE

LEGEND

	DESIGN POINT
	POND A
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW



KEYMAP
N.T.S.



SWMM SCHEMATIC

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TOWN OF PARKER, PUBLIC WORKS DIRECTOR	DATE
TOWN OF PARKER, PUBLIC WORKS MANAGER - STORMWATER	DATE
TOWN OF PARKER, PUBLIC WORKS MANAGER - TRANSPORTATION	DATE

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, BEING A 3-1/4" ALUMINUM CAP, BEING LOCATED IN THE SOUTHWEST QUARTER OF SECTION 33, TOWNSHIP 6 SOUTH, RANGE 66 WEST OF THE SIXTH PRINCIPAL MERIDIAN, HAVING A PUBLISHED ELEVATION OF 1799.2870 METERS (5903.13 FEET) NAVD '88 DATUM.

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PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

10333 E. Dry Creek Rd. Suite 240 Englewood, CO 80152 Tel: (720) 482-9526 Fax: (720) 482-9546	CVL CONSULTANTS	ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112	TRAILS AT CROWFOOT FINAL DRAINAGE MAP SWMM DRAINAGE MAP	SCALE: AS SHOWN CHECKED BY: JLU DATE: MAY 2017 FILE NO: 8130283701	SHEET NUMBER: 8	DATE: MAY 2017
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