



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	151.23
Percent Imperviousness	40.74
WQCV	2.29
EURV Volume (including WQVC)	6.11
EURV Water Surface*	5999.98
100-YR Volume (including EURV)	11.36
100-yr water surface elevation*	6002.05
Emergency Spillway Crest Elevation*	6002.05
100-year Peak Inflow (cfs)	268.86
100-year Peak Outflow (cfs)	177.21

POND B	
Description	
Drainage Area	23.2
Percent Imperviousness	47.36
WQCV	0.39
EURV Volume (including WQVC)	1.10
EURV Water Surface*	6092.92
100-YR Volume (including EURV)	2.41
100-yr water surface elevation*	6094.57
Emergency Spillway Crest Elevation*	6094.57
100-year Peak Inflow (cfs)	105.30
100-year Peak Outflow (cfs)	30.56

POND C	
Description	
Drainage Area	97.79
Percent Imperviousness	45.93
WQCV	1.59
EURV Volume (including WQVC)	4.49
EURV Water Surface*	-
100-YR Volume (including EURV)	9.40
100-yr water surface elevation*	-
Emergency Spillway Crest Elevation*	-
100-year Peak Inflow (cfs)	299.05
100-year Peak Outflow (cfs)	106.71

POND D	
Description	
Drainage Area	52.76
Percent Imperviousness	55.15
WQCV	0.97
EURV Volume (including WQVC)	2.954
EURV Water Surface*	-
100-YR Volume (including EURV)	4.99
100-yr water surface elevation*	-
Emergency Spillway Crest Elevation*	-
100-year Peak Inflow (cfs)	163.82
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

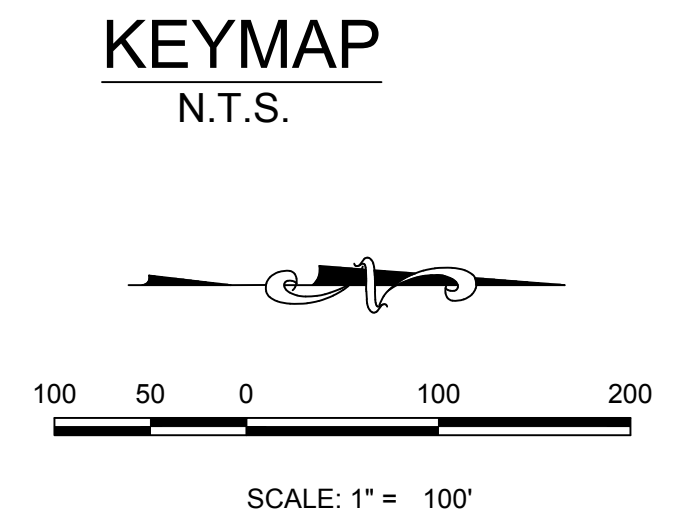
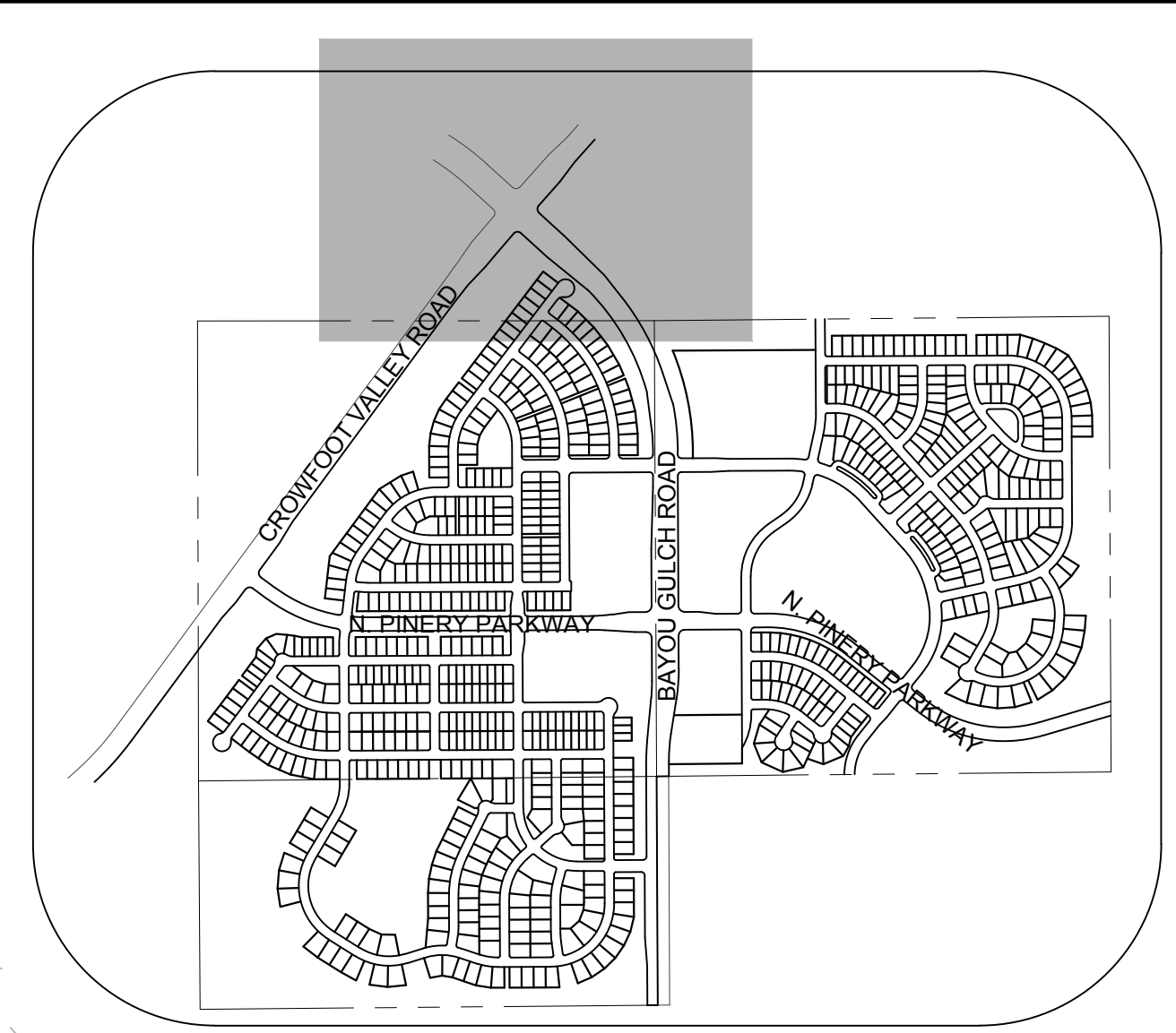
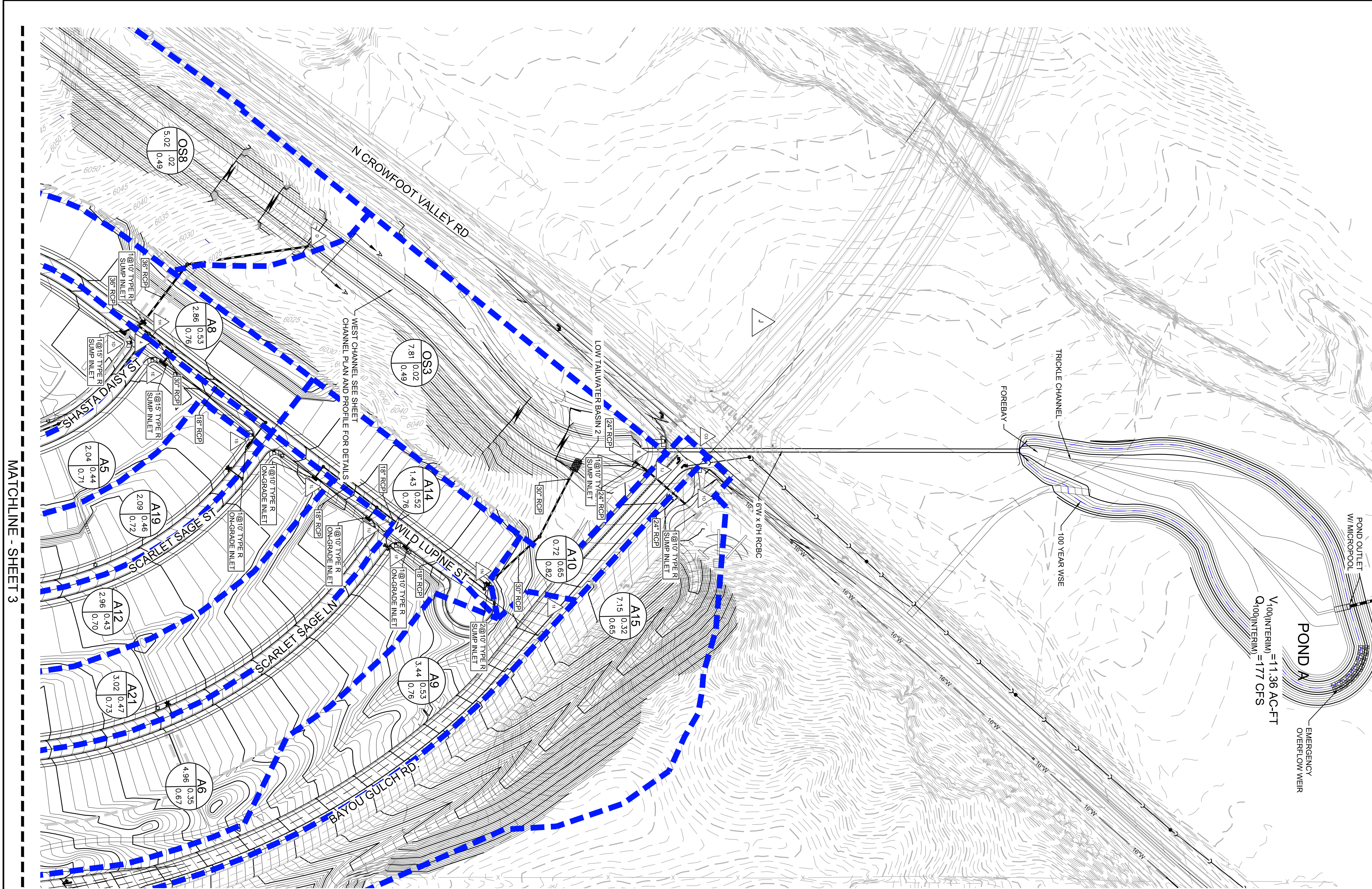
NOTE: Flows are from SWMM analysis. See drainage report for more details.

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
5I	3.92	19.46
5J	0.85	3.31
5K	2.48	14.96
5L	4.60	27.74
5M		



Note:  
1) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	Imperviousness %	DIRECT FLOW		Street Type	Slope %
			Q <sub>2</sub> (CFS)	Q <sub>100</sub> (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

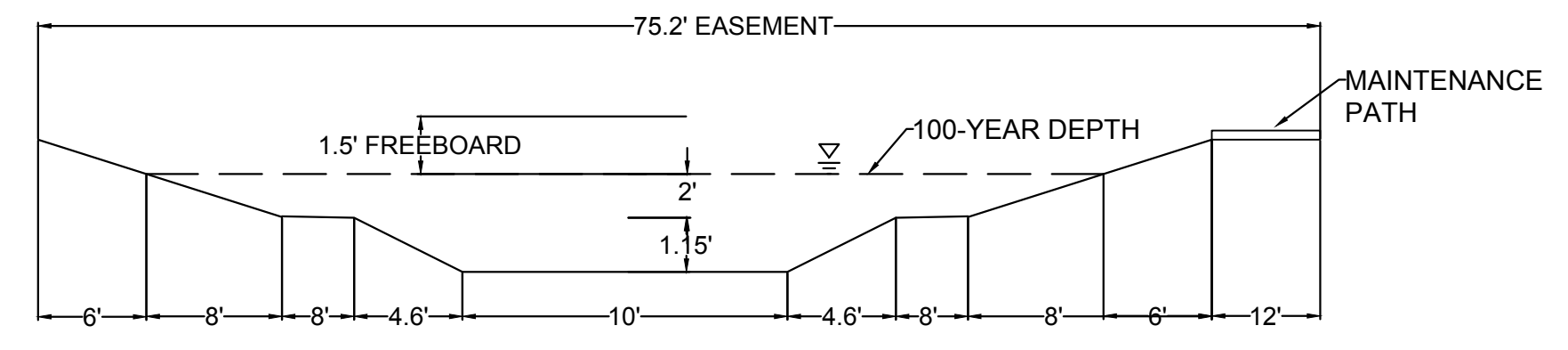
Design Point ID	CUMULATIVE FLOW	
	Q <sub>2</sub> (CFS)	Q <sub>100</sub> (CFS)
IA	3.84	17.73
IB	5.04	60.61
IC	18.94	72.95
ID	19.26	82.87
IE	4.69	68.74
IF	9.74	45.15
IG	5.01	55.58
IH	22.10	94.13
II	3.75	15.73
IJ	7.60	40.45
IK	2.92	11.75
IL	3.22	13.95
IM	6.77	29.97
IN	11.20	49.77
IO	3.58	23.96
IP	5.05	21.53
IQ	6.90	27.93
IR	2.95	11.99
IS	2.51	10.32
IT	7.21	37.59
IU	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

MATCHLINE - SHEET 3

- NOTE:
- 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.
  - POND A & C ARE MAINTAINED BY METRO DISTRICT AND TOWN'S STORMWATER UTILITY.
  - OUTLET STRUCTURE AND OVERFLOW WEIR DETAILS WILL BE PROVIDED WITH FINAL DRAINAGE REPORT.
  - DROP STRUCTURE DETAILS ARE PROVIDED IN CHANNEL PLAN AND PROFILE SHEET.
  - LOW TAILWATER BASIN DETAILS ARE PROVIDED WITH FINAL DRAINAGE REPORT.

### 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



**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.

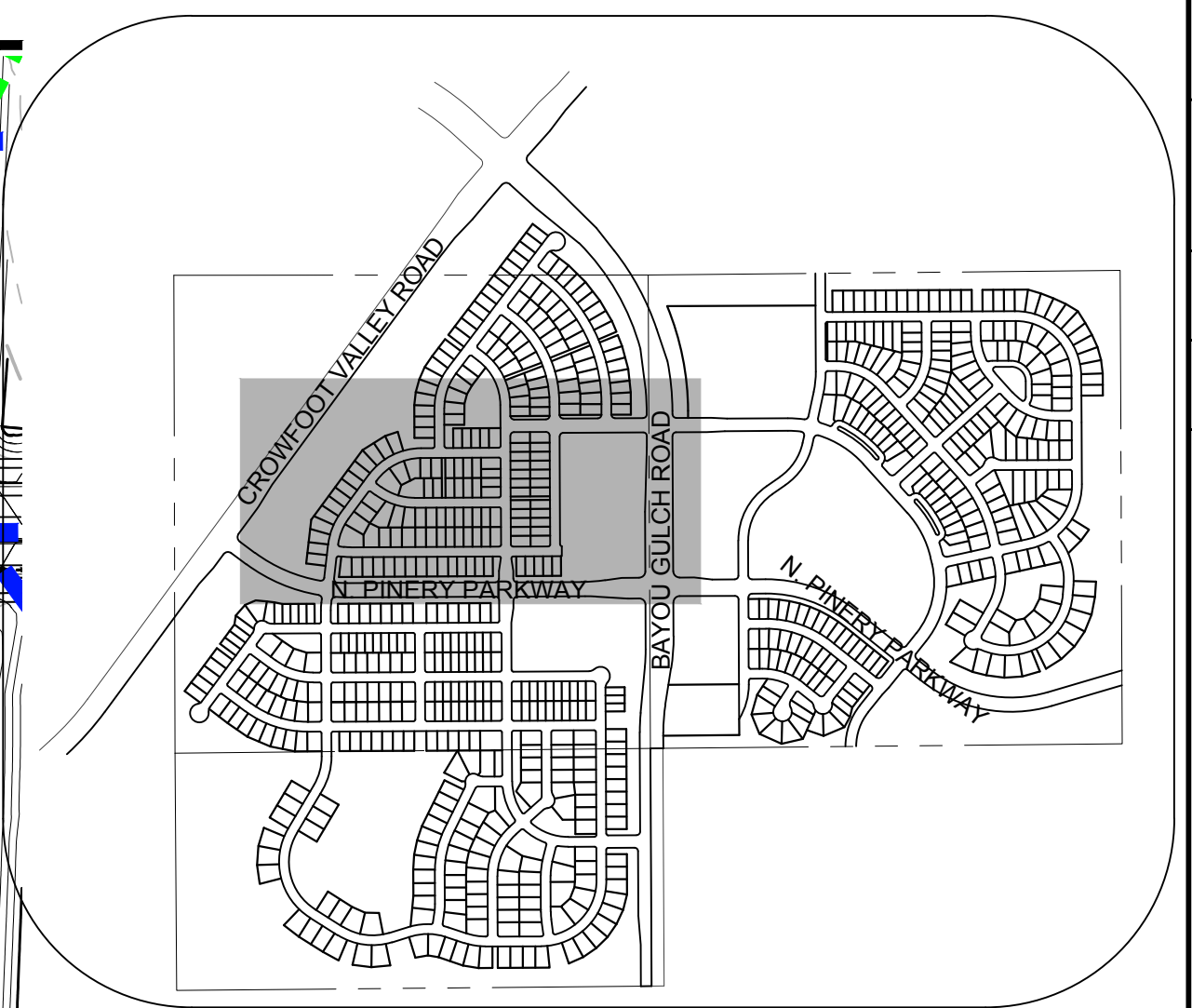
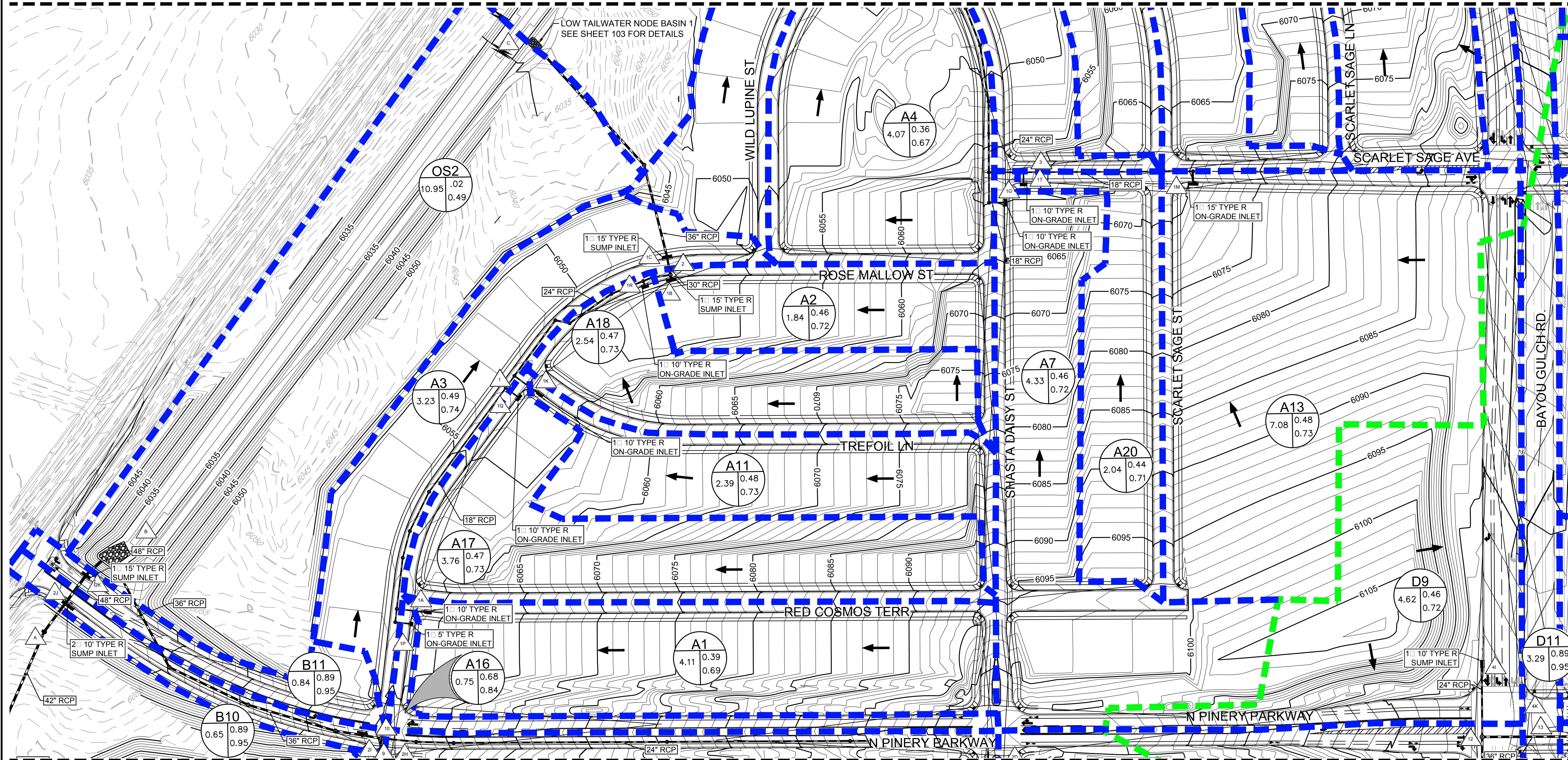
**BASIS OF BEARINGS:**  
THE EAST LINE OF THE NORTHEAST QUARTER OF SAID SECTION 9 BEING MONUMENTED AT THE NORTHEAST CORNER OF SAID SECTION 9 BY A 3-1/4" ALUMINUM CAP STAMPED LS 23053 AND AT THE EAST QUARTER CORNER OF SAID SECTION 9 BY A 2-1/2" ALUMINUM CAP STAMPED LS 6935 BEING CONSIDERED TO BEAR SOUTH 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

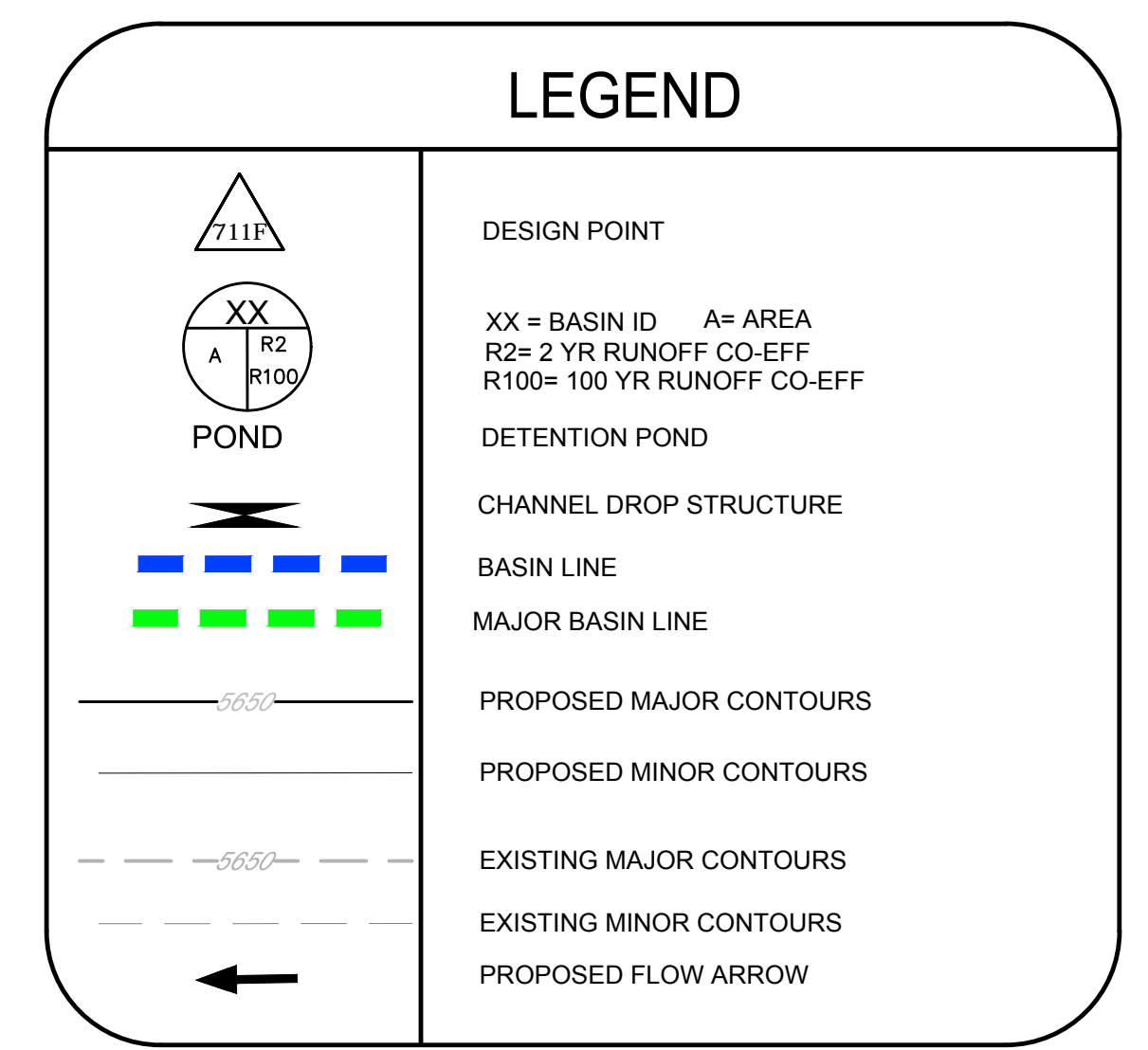
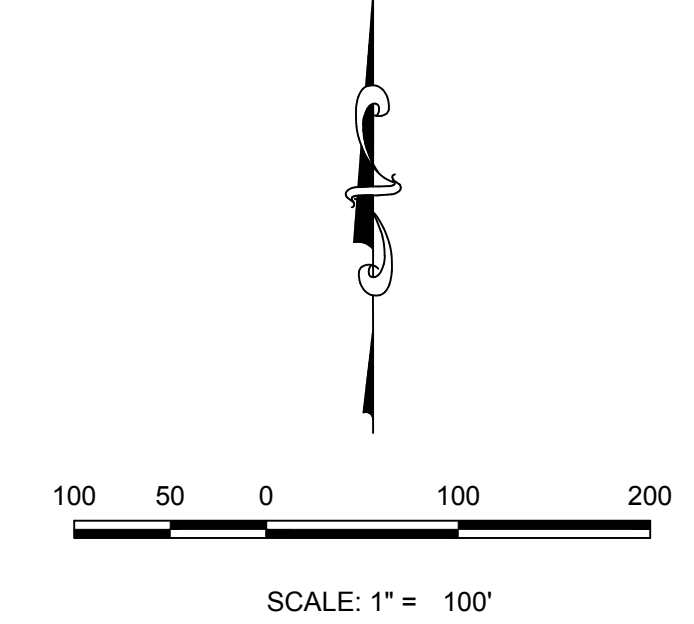
PREPARED UNDER THE SUPERVISION OF  
**MARK SCHEURER**  
COLORADO P.E. 48988

10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548	Revisions	Date	Appr.	Date
<b>CVL</b> CONSULTANTS	No.			
<b>ESX MANAGEMENT</b> 7353 South Alton Way CENTENNIAL, CO 80112				
<b>TRAILS AT CROWFOOT</b> PRELIMINARY DRAINAGE MAP DRAINAGE MAP				
SCALE: AS SHOWN DRAWN BY: AVK CHECKED BY: JU DATE: APRIL 2017	FILE NO: 8130283701			
SHEET NUMBER <b>2</b>				

MATCHLINE - SHEET 2



KEYMAP  
N.T.S.



MATCHLINE - SHEET 4

Note:  
1) 0% slope indicates sump inlet.

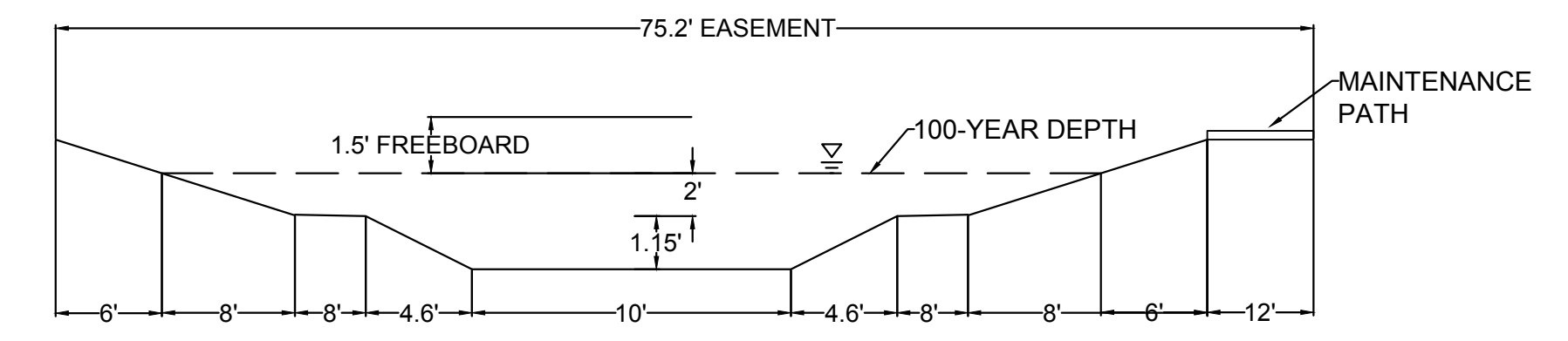
BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
A1	4.11	43.77	3.84	Local	2.00
A2	1.84	52.16	2.22	Local	0.00
A3	3.23	48.80	3.16	Local	0.00
A4	4.07	34.03	2.78	Local	0.00
A5	2.04	49.08	2.27	Local	0.00
A6	4.96	35.28	3.58	Local	1.50
A7	4.33	51.70	5.01	Local	4.00
A8	2.86	52.68	3.45	Local	0.00
A9	3.44	50.33	3.75	Arterial	2.00
A10	0.72	61.44	1.12	Arterial	0.00
A11	2.39	53.79	2.92	Local	2.00
A12	2.96	48.02	3.22	Local	1.50
A13	7.08	46.42	6.77	Local	5.00
A14	1.43	54.86	1.94	Local	0.00
A15	7.15	26.55	3.58	Arterial	0.00
A16	0.75	76.70	1.39	Local	2.00
A17	3.76	52.91	4.19	Local	2.00
A18	2.54	52.87	2.95	Local	2.00
A19	2.09	51.95	2.51	Local	4.00
A20	2.04	49.09	2.28	Local	2.00
A21	3.02	52.59	3.69	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)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
C1	7.47	43.49	6.21	Local	0.00
D1	5.94	42.41	5.34	Local	0.00
D2	5.33	46.14	5.58	Local	5.00
D3	3.66	43.82	3.28	Local	5.00
D4	2.91	42.33	2.45	Local	3.00
D5	9.10	61.93	11.25	Arterial	0.00
D6	2.57	42.99	2.30	Arterial	6.00
D7	2.58	42.09	2.48	Local	4.00
D8	0.85	51.73	1.06	Local	5.00
D9	4.62	45.07	4.34	Arterial	0.00
D10	4.80	50.52	5.60	Local	0.00
D11	3.29	84.30	6.19	Arterial	0.00
D12	1.13	84.30	2.13	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

- NOTE:
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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  
UNCC 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

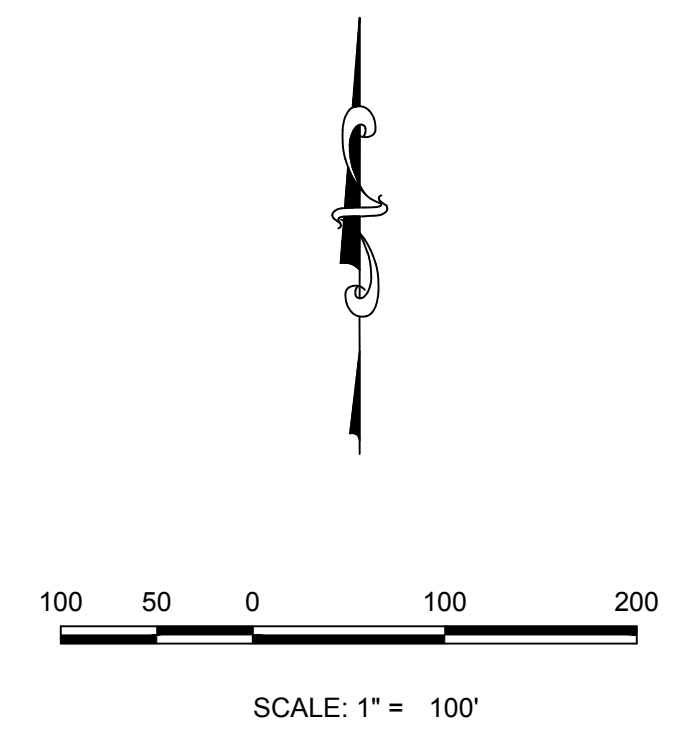
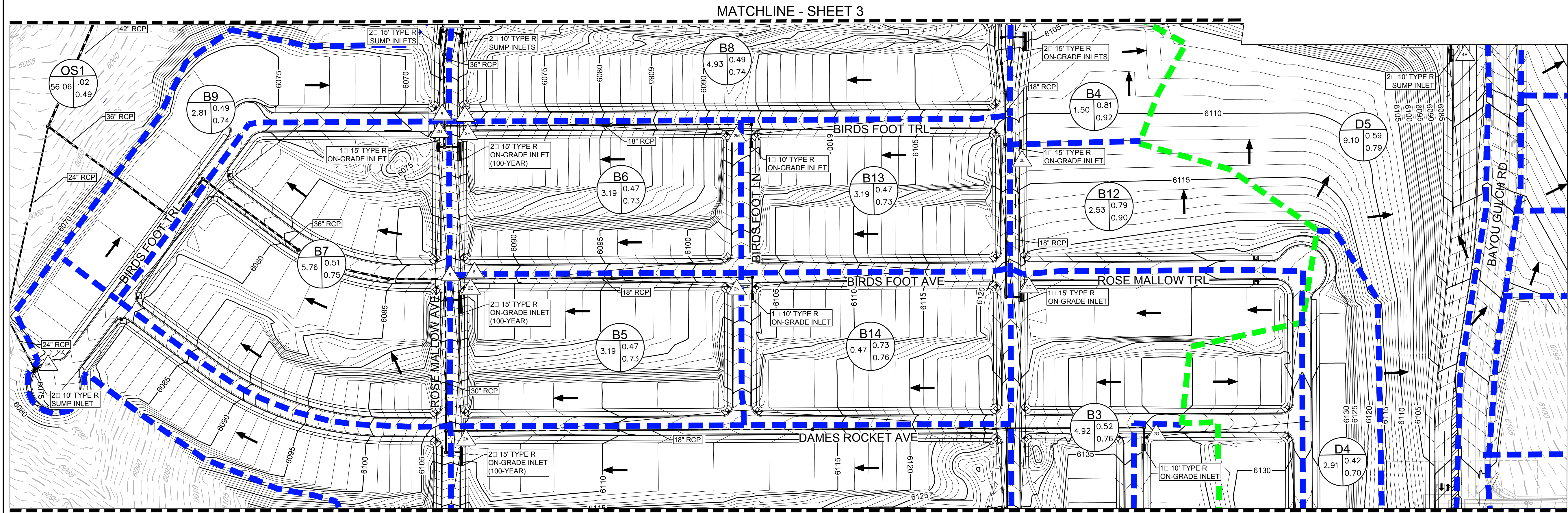
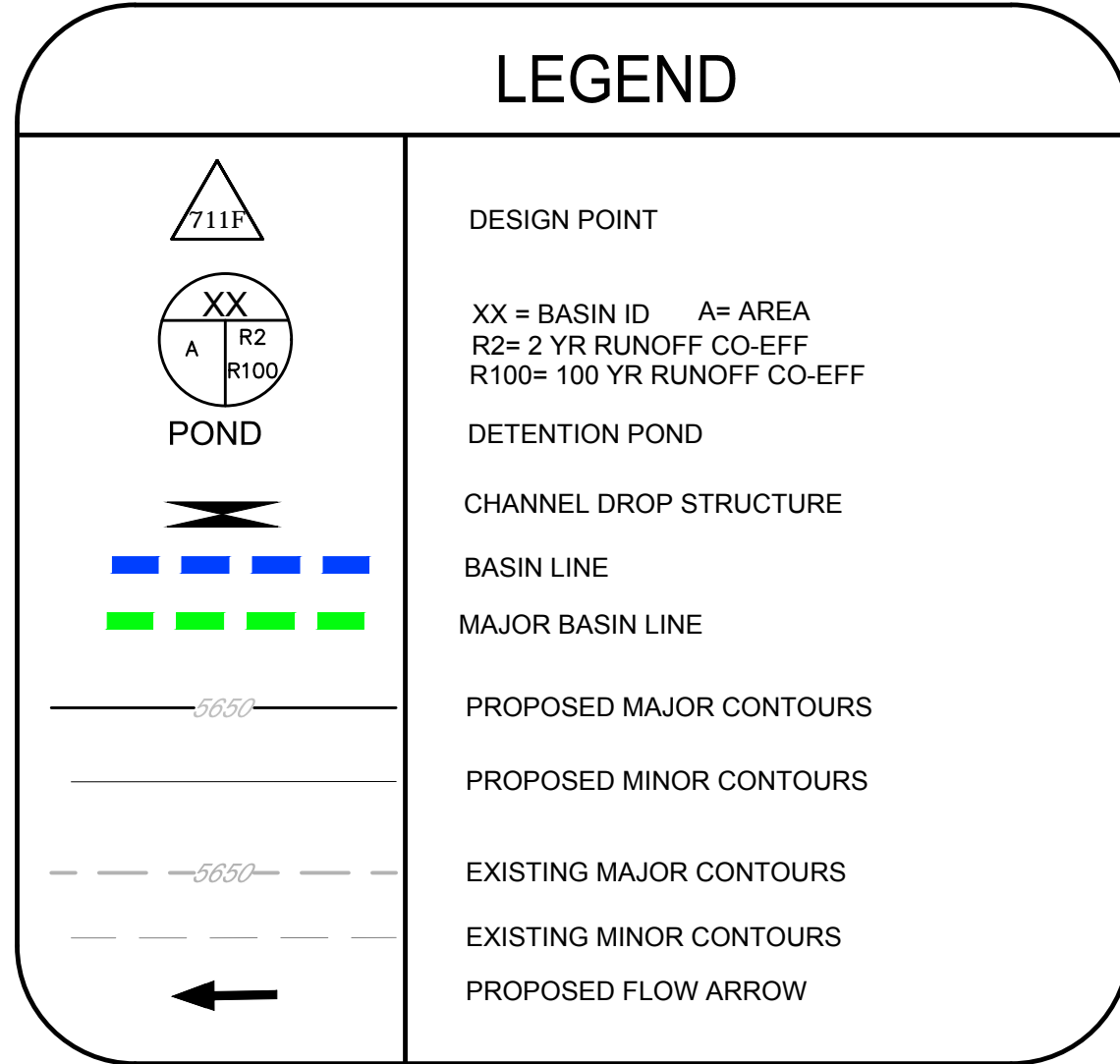
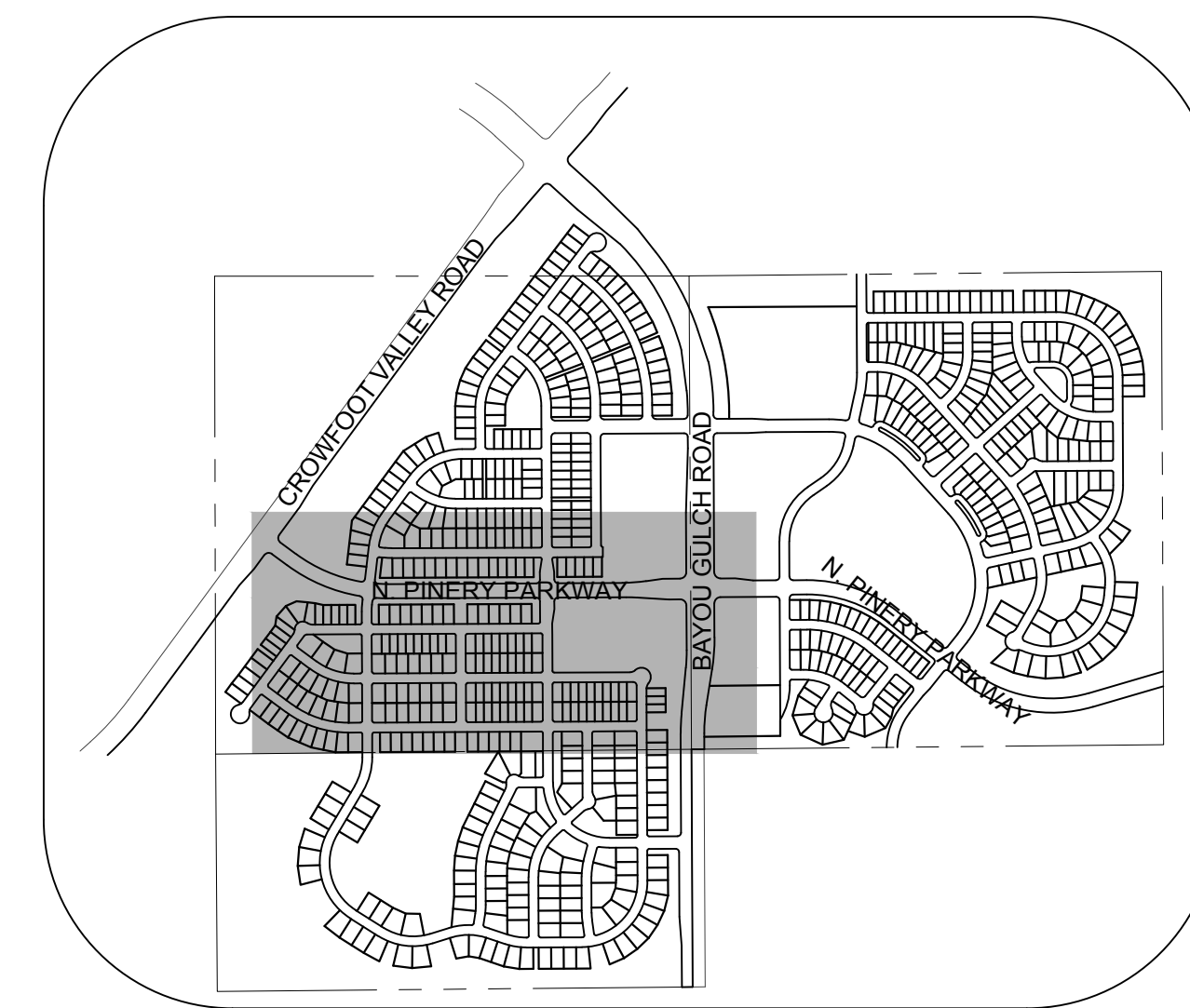
**TRAILS AT CROWFOOT FINAL DRAINAGE MAP**

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	Local	7.00
B2	3.13	51.76	3.82	Local	3.00
B3	4.92	50.31	5.58	Local	3.00
B4	1.50	91.11	4.10	Local	5.00
B5	3.19	53.20	3.88	Local	6.00
B6	3.19	53.20	3.88	Local	6.00
B7	5.76	49.66	5.79	Local	6.00
B8	4.93	46.94	4.95	Res. Blvd	0.00
B9	2.81	49.17	2.94	Local	0.00
B10	0.65	76.70	1.28	Res. Blvd	0.00
B11	0.84	76.70	1.59	Res. Blvd	0.00
B12	2.53	88.00	5.86	Local	3.00
B13	3.19	53.20	3.88	Local	2.00
B14	3.19	53.20	3.88	Local	2.00
B15	2.01	53.11	2.50	Local	1.00

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	Local	0.00
D1	5.94	42.41	5.34	Local	0.00
D2	5.33	46.14	5.58	Local	5.00
D3	3.66	43.82	3.28	Local	5.00
D4	2.91	42.33	2.45	Local	3.00
D5	9.10	61.93	11.25	Arterial	0.00
D6	2.57	42.99	2.30	Arterial	6.00
D7	2.58	42.09	2.48	Local	4.00
D8	0.85	51.73	1.06	Local	5.00
D9	4.62	45.07	4.34	Arterial	0.00
D10	4.80	50.52	5.60	Local	0.00
D11	3.29	84.30	6.19	Arterial	0.00
D12	1.13	84.30	2.13	Arterial	1.50

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
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**BENCHMARK**  
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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**

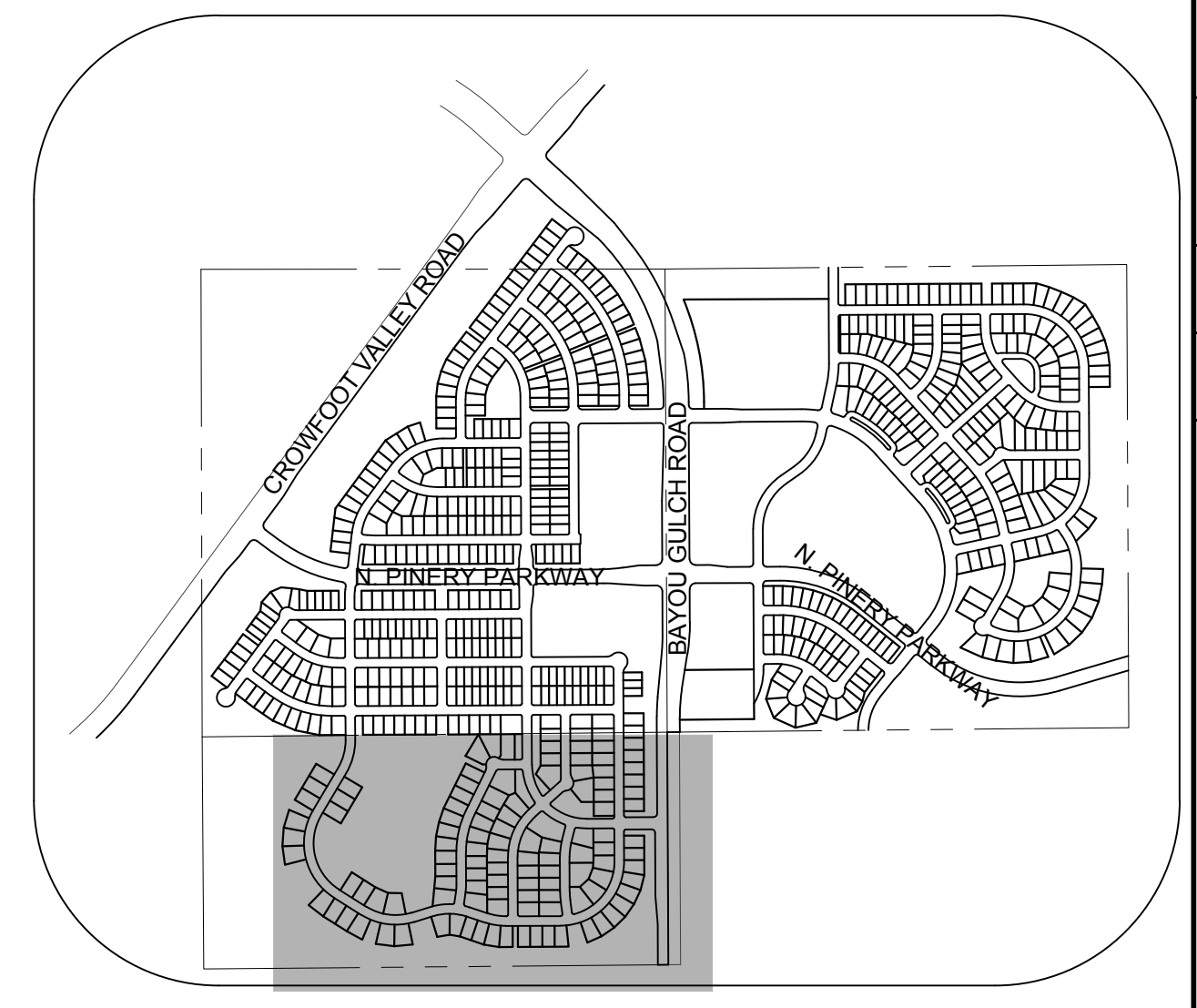
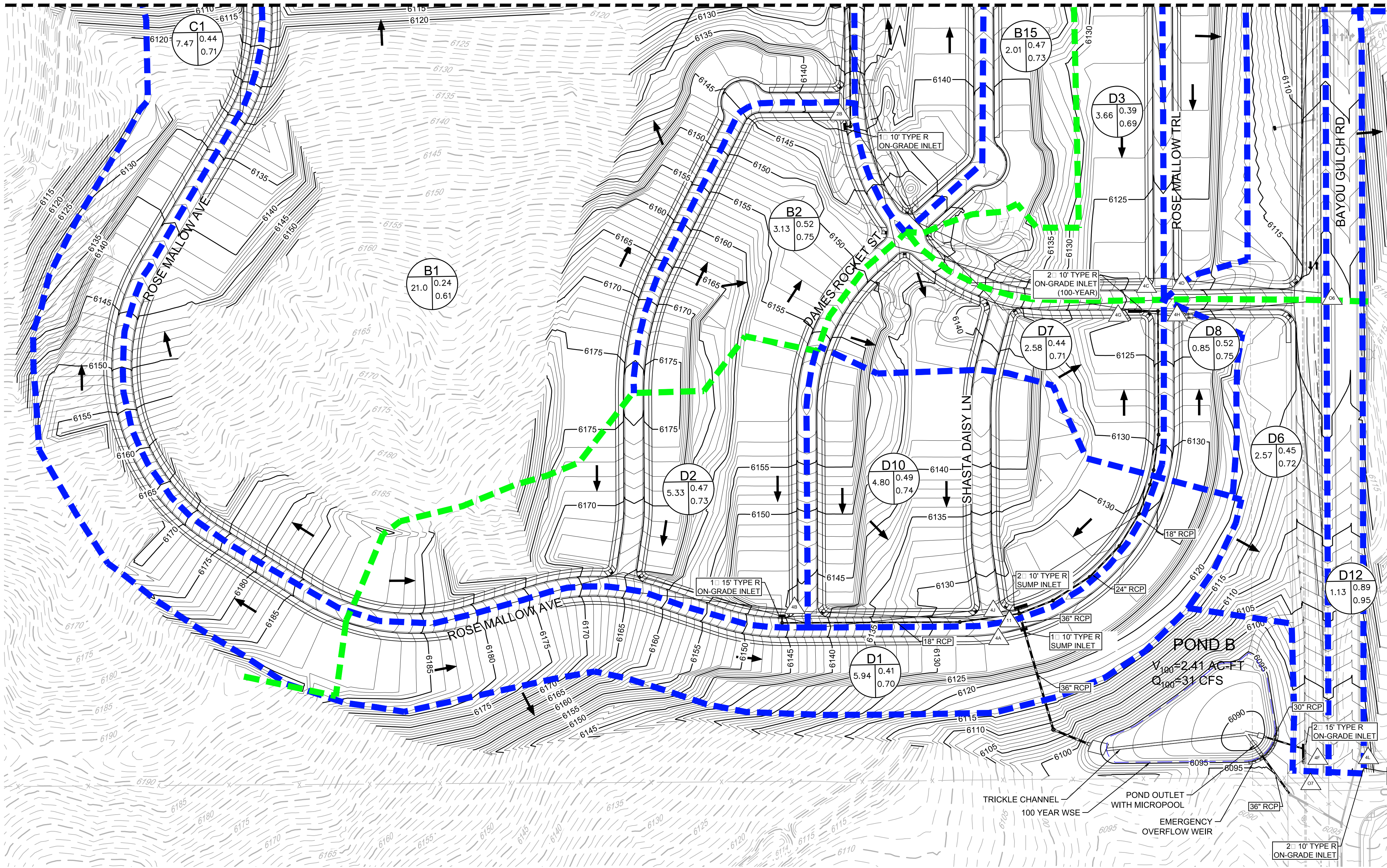
**ESX MANAGEMENT**  
 7353 South Alton Way, CENTENNIAL, CO 80112

**TRAILS AT CROWFOOT FINAL DRAINAGE MAP**  
 DRAINAGE MAP

SCALE: AS SHOWN  
 FILE NO: 8130283701  
 DATE: MAY 2017

SHEET NUMBER **4**

No.	Revisions	Date	Appr.	Date



KEYMAP  
N.T.S.

- NOTE:
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### 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) 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.

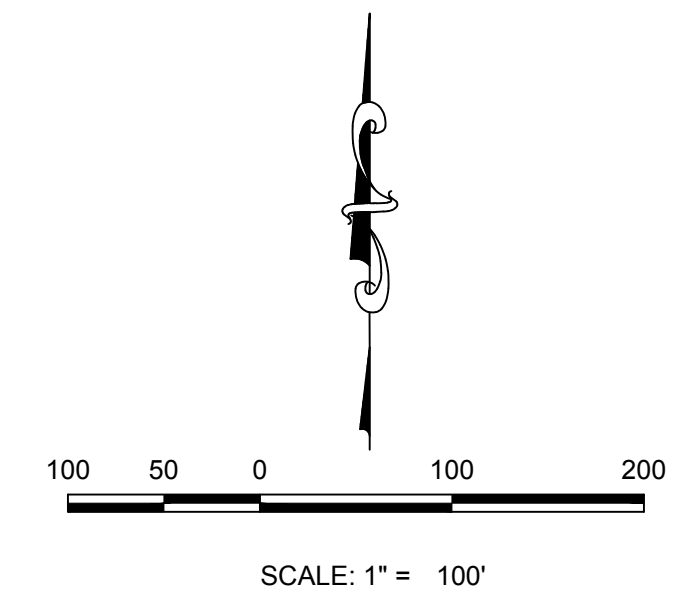
BASIN ID	AREA (AC)	DIRECT FLOW		Street Type	Slope %
		Imperviousness %	Q2 (CFS)		
C1	7.47	43.49	6.21		
D1	5.94	42.41	5.34		
D2	5.33	46.14	5.58		
D3	3.66	43.82	3.28		
D4	2.91	42.33	2.45		
D5	9.10	61.93	11.25		
D6	2.57	42.99	2.30		
D7	2.58	42.09	2.48		
D8	0.85	51.73	1.06		
D9	4.62	45.07	4.34		
D10	4.80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

CUMULATIVE FLOW

Design Point ID	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

CUMULATIVE FLOW

Design Point ID	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



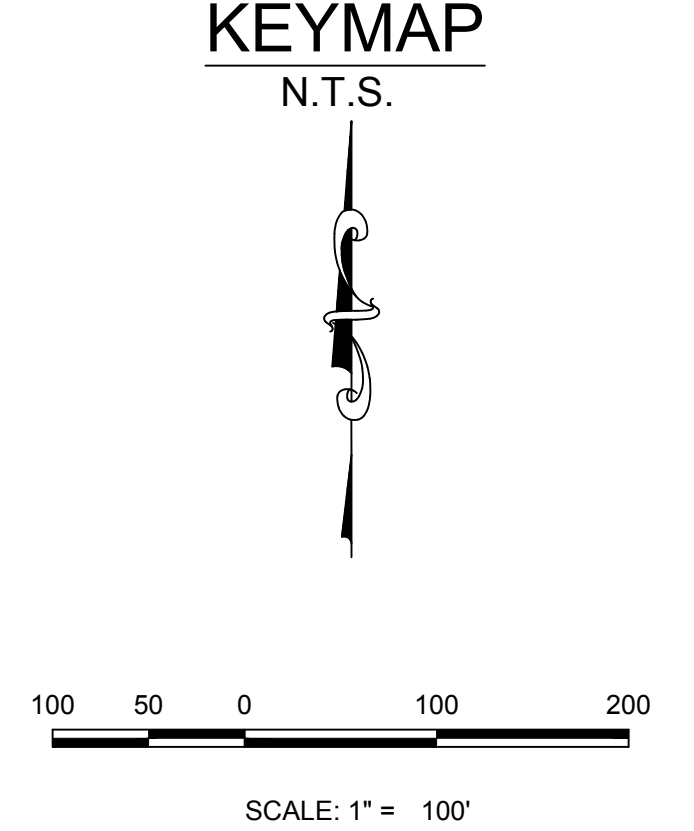
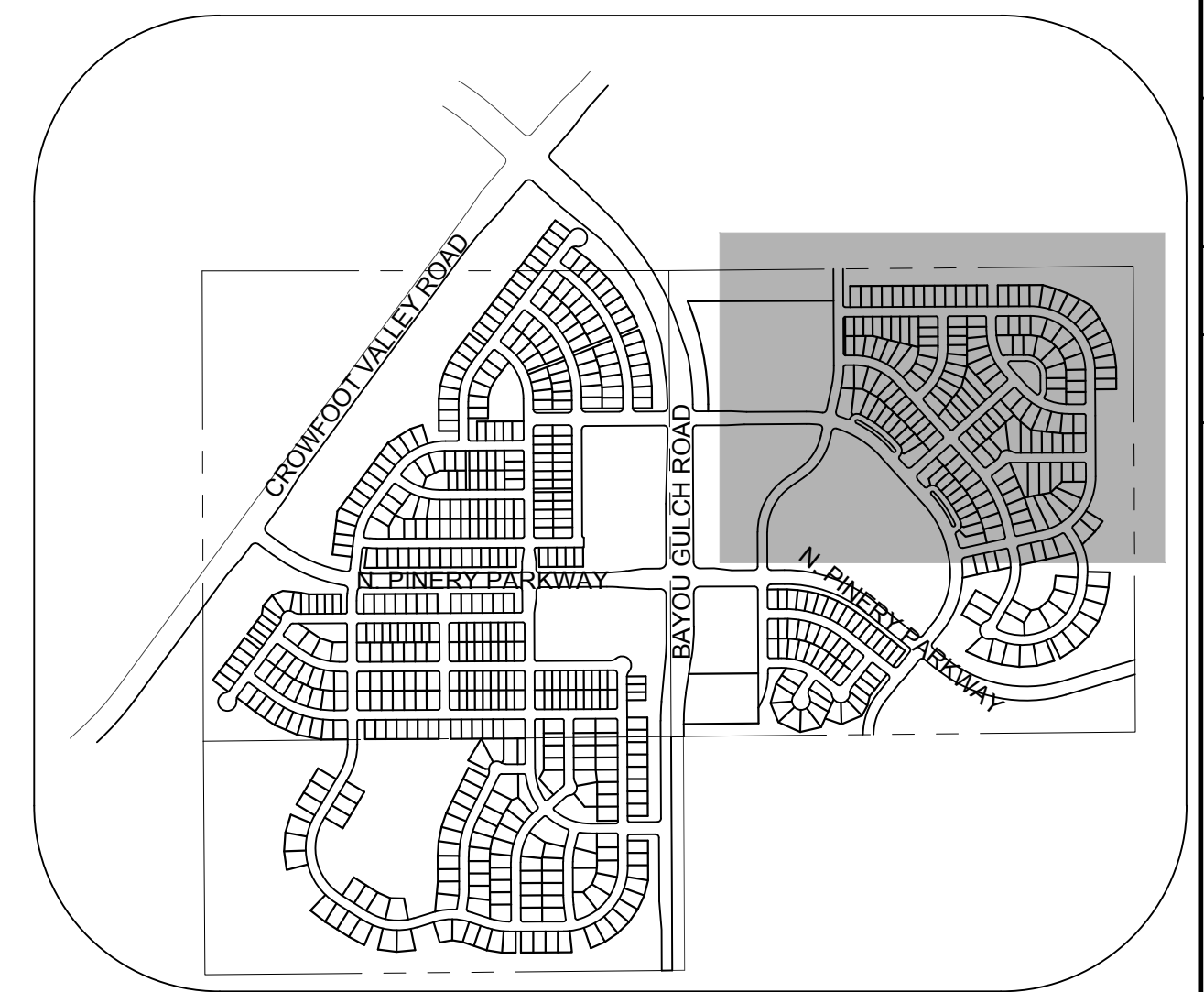
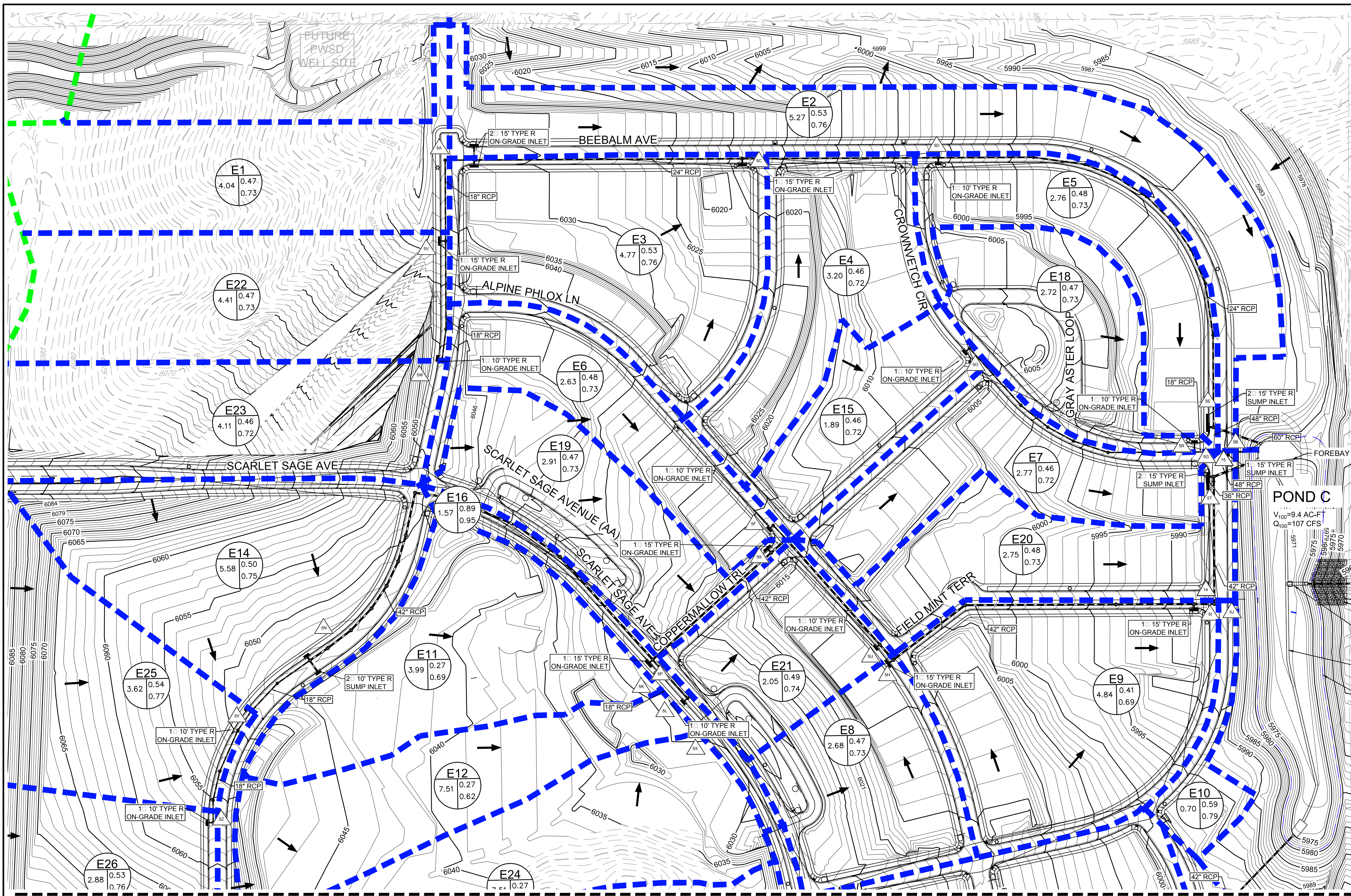
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UTILITY NOTIFICATION CENTER OF COLORADO

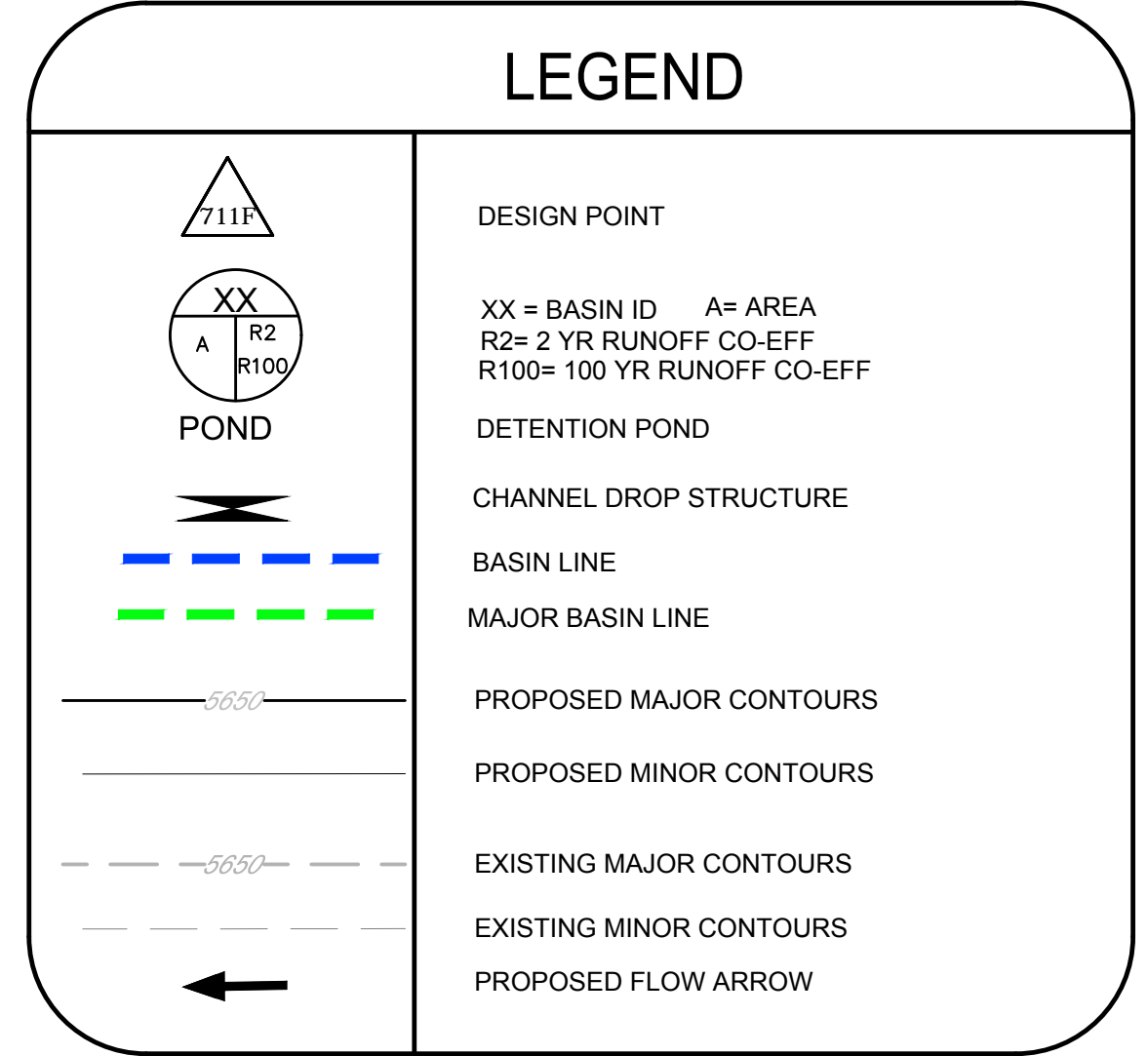
PREPARED UNDER THE SUPERVISION OF  
MARK SCHEURER  
COLORADO P.E. 48988

NO.	REVISIONS	DATE	INIT.	APPR.	DATE
<p>10333 E. Dry Creek Rd. Suite 410 Englewood, CO 80150 Tel: (720) 482-9526 Fax: (720) 482-9548</p> <p><b>CVL CONSULTANTS</b></p> <p>ESX MANAGEMENT 7353 South Alton Way CENTENNIAL, CO 80112</p> <p>TRAILS AT CROWFOOT FINAL DRAINAGE MAP DRAINAGE MAP</p> <p>SCALE: AS SHOWN FILE NO: 8130283701 DATE: MAY 2017</p> <p>SHEET NUMBER <b>5</b></p>					



EMERGENCY OVERFLOW WEIR  
POND OUTLET W/ MICROPOND  
TRICKLE CHANNEL  
100 YEAR WSE

**POND C**  
V<sub>100</sub>=9.4 AC-FT  
Q<sub>100</sub>=107 CFS



**MATCHLINE - SHEET 7**

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)
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

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PREPARED UNDER THE SUPERVISION OF  
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**ESX MANAGEMENT**  
7353 South Alton Way, CENTENNIAL, CO 80112

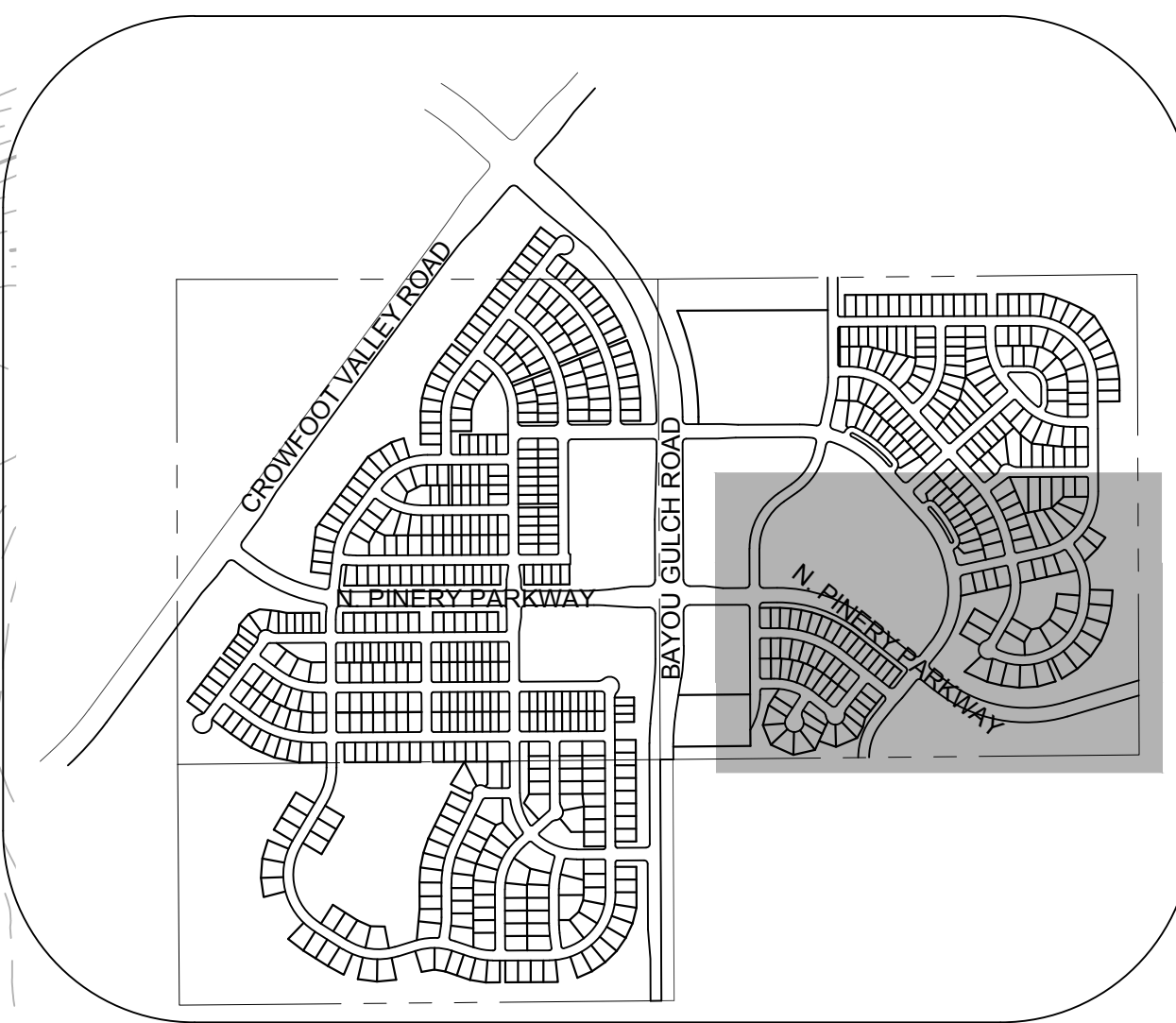
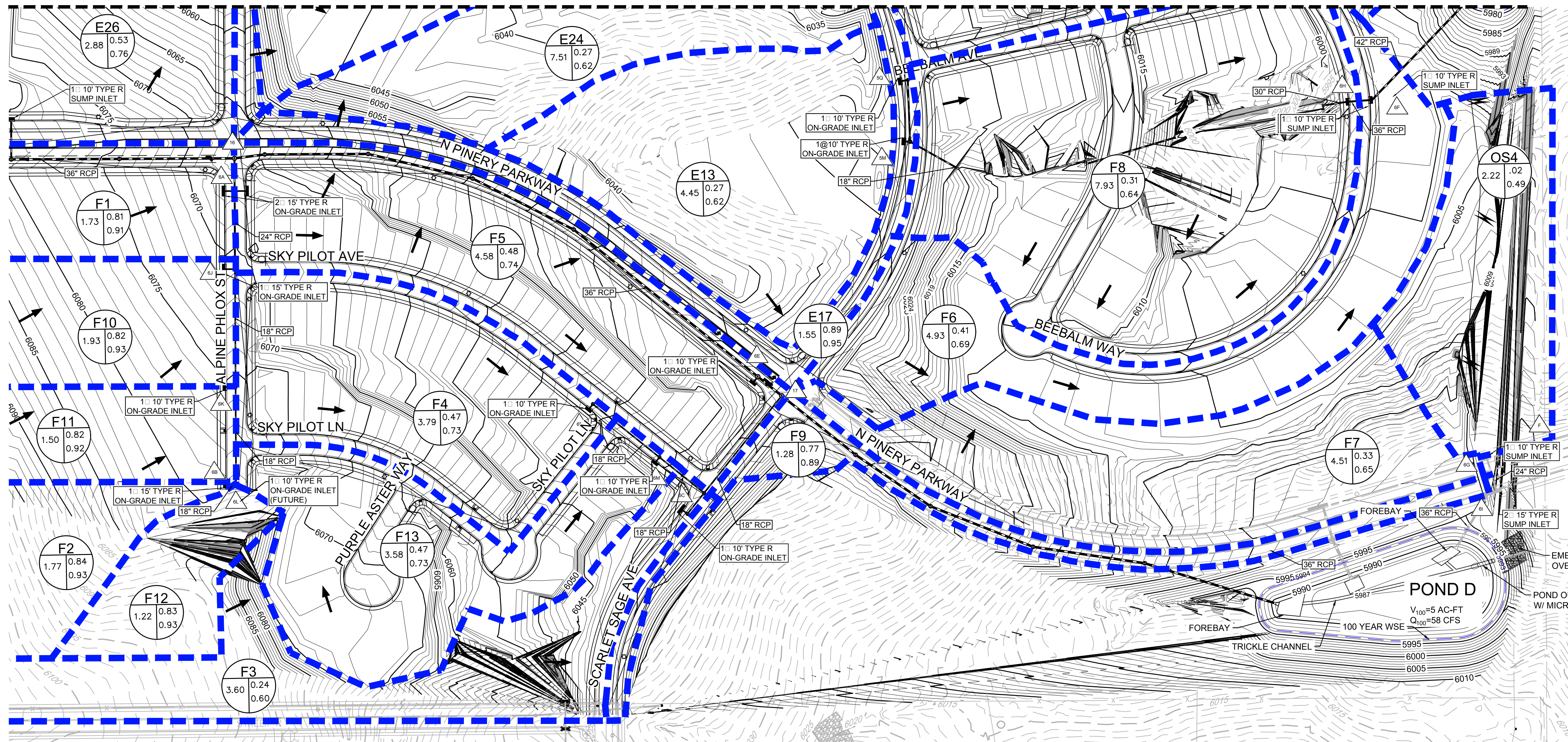
**TRAILS AT CROWFOOT FINAL DRAINAGE MAP**  
DRAINAGE MAP

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

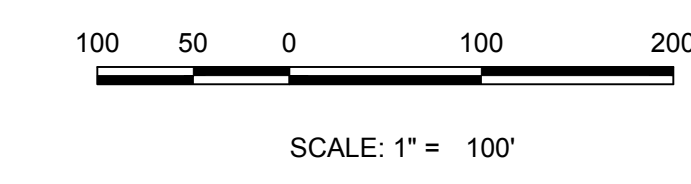
FILE NO: 8130283701

SHEET NUMBER: **6**

No.	Revisions	Date	Appr.	Date



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) 0% slope indicates sump inlet.

BASIN ID	AREA (AC)	Imperviousness %	DIRECT FLOW		Street Type	Slope %
			Q2 (CFS)	Q100 (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	52.00	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.

BASIN ID	AREA (AC)	Imperviousness %	DIRECT FLOW		Street Type	Slope %
			Q2 (CFS)	Q100 (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

Design Point	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

Design Point	CUMULATIVE FLOW	
	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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  - 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.

**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.

**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.

N:\PROJECTS\SS\BRANCHES\ENGINEERING\DRAINAGE\MAPS\FINAL\DRAINAGE MAP 06.DWG.DWG.ASE\INDR. 11.15.2017 10:52 AM

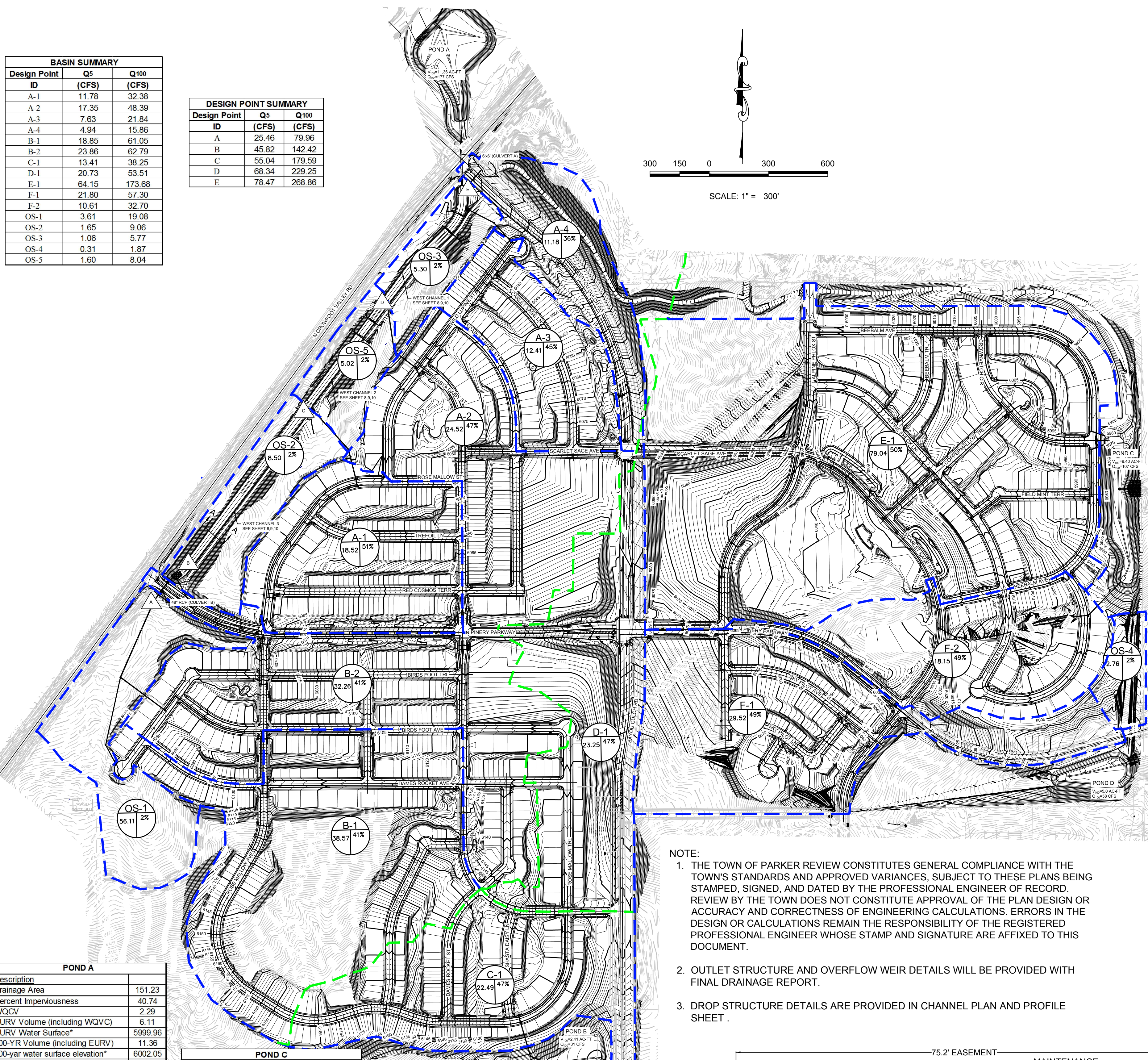
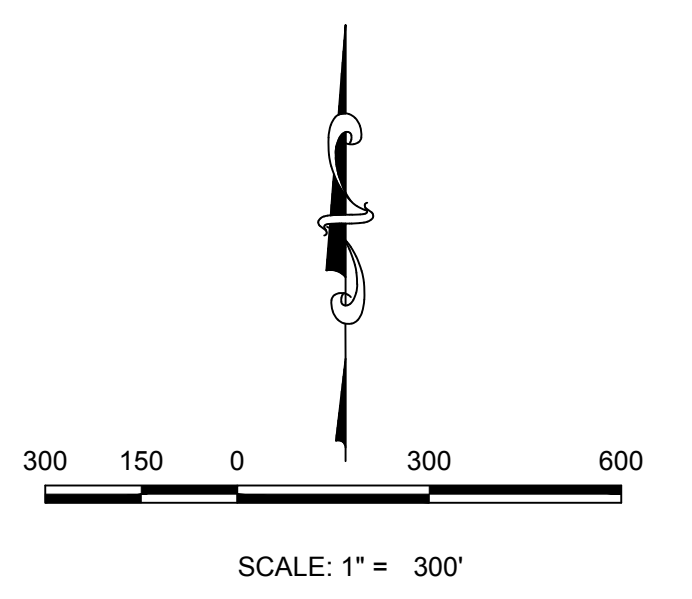
CALL 811  
TWO WORKING DAYS  
BEFORE YOU DIG  
UNCC 1-800-922-1987

SHEET NUMBER	DRAWN BY: AYK	CHECKED BY: JJJ	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

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

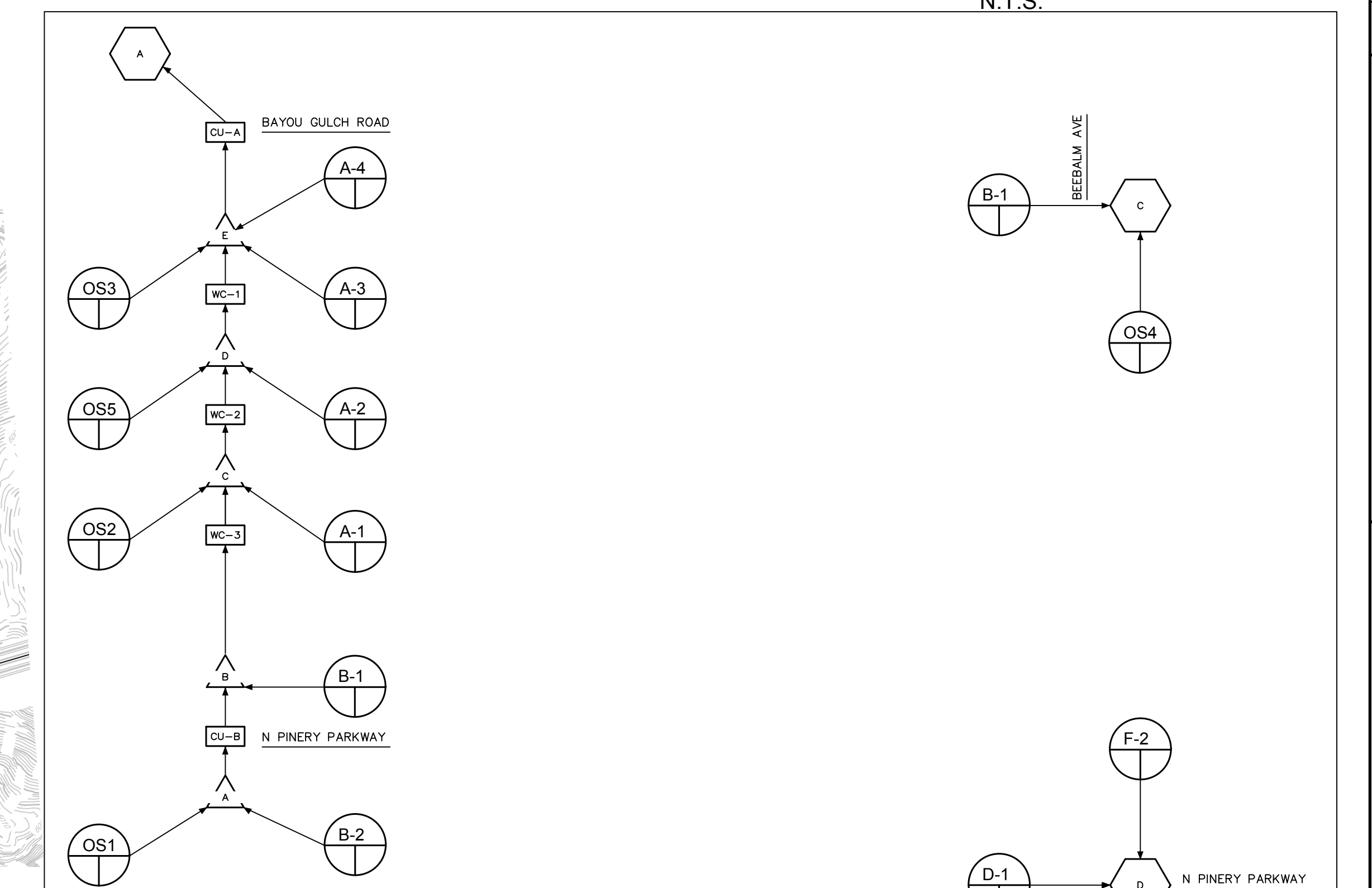
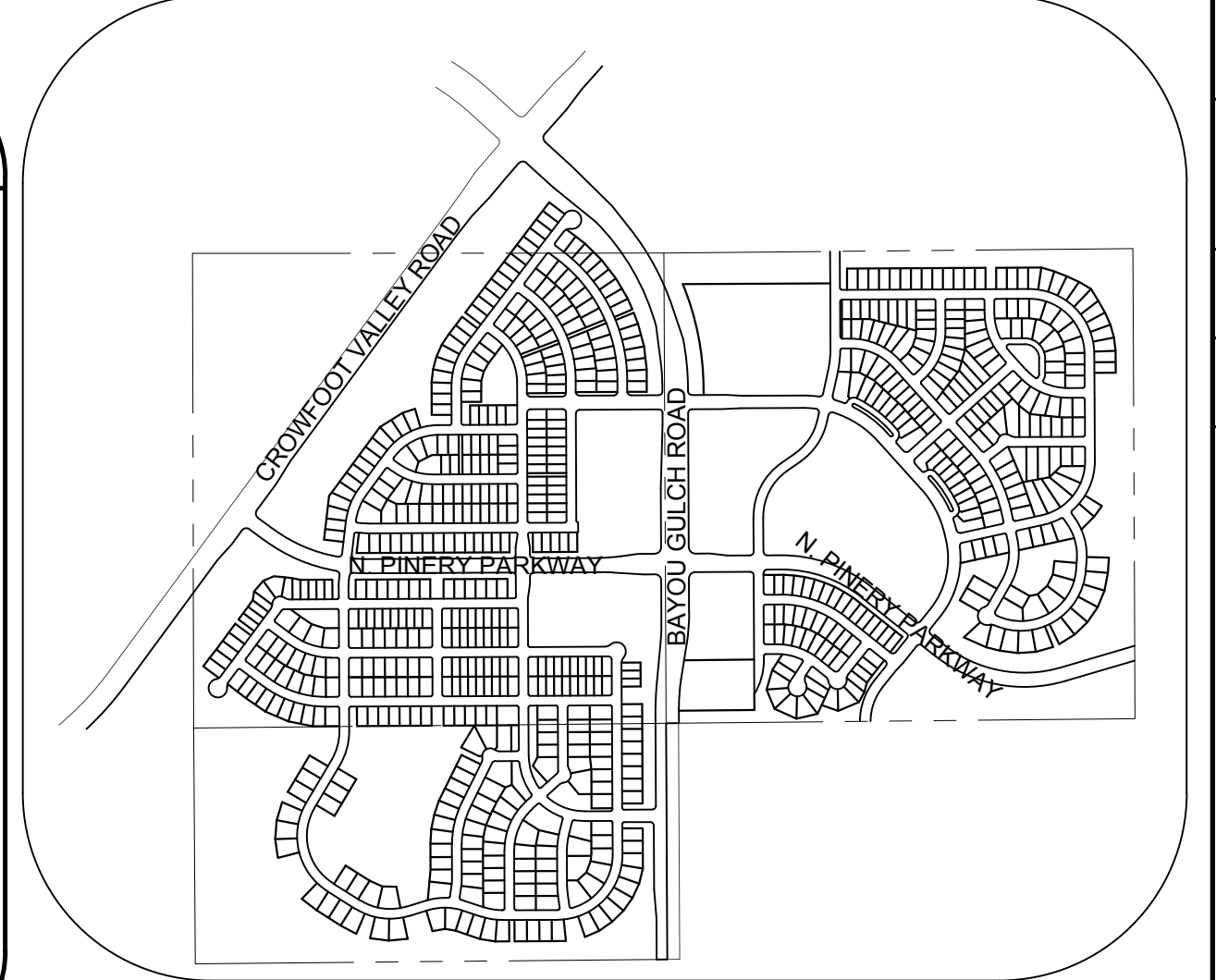
BASIN SUMMARY		
Design Point	Q5	Q100
A-1	11.78	32.38
A-2	17.35	48.39
A-3	7.63	21.84
A-4	4.94	15.86
B-1	18.85	61.05
B-2	23.96	62.79
C-1	13.41	38.25
D-1	20.73	53.51
E-1	64.15	173.68
F-1	21.80	57.30
F-2	10.61	32.70
OS-1	3.61	19.08
OS-2	1.65	9.06
OS-3	1.06	5.77
OS-4	0.31	1.87
OS-5	1.60	8.04

DESIGN POINT SUMMARY		
Design Point	Q5	Q100
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

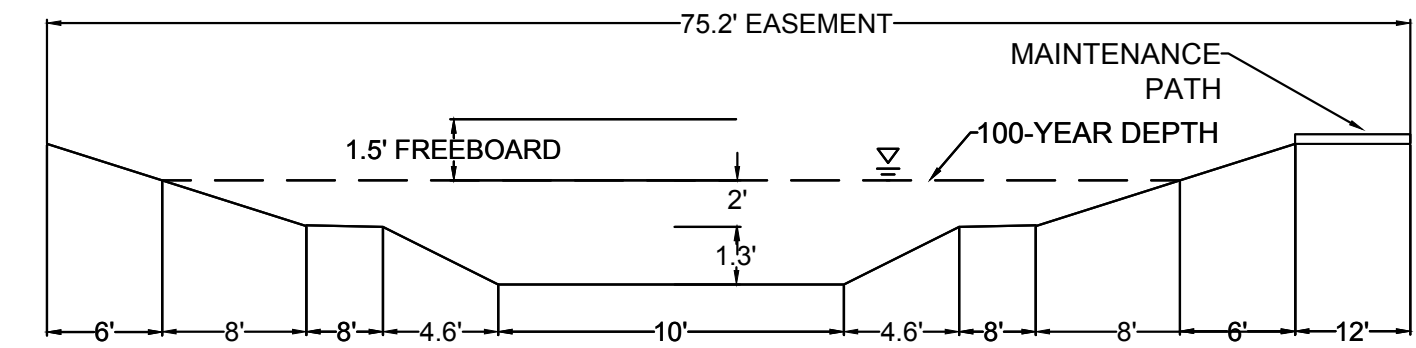


### LEGEND

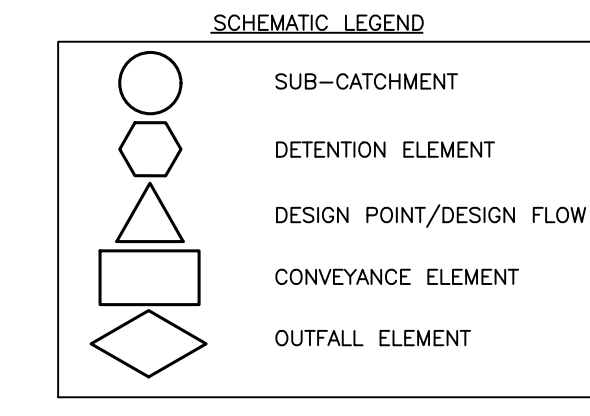
	DESIGN POINT
	XX = BASIN ID    A = AREA R2 = 2 YR RUNOFF CO-EFF R100 = 100 YR RUNOFF CO-EFF
	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
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- NOTE:**
1. THE TOWN OF PARKER REVIEW 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.
  2. OUTLET STRUCTURE AND OVERFLOW WEIR DETAILS WILL BE PROVIDED WITH FINAL DRAINAGE REPORT.
  3. DROP STRUCTURE DETAILS ARE PROVIDED IN CHANNEL PLAN AND PROFILE SHEET.



**CHANNEL SECTION A-A**  
NO TO SCALE



**SWMM SCHEMATIC**

POND A	
Description	
Drainage Area	151.23
Percent Imperviousness	40.74
WQCV	2.29
EURV Volume (including WQVC)	6.11
EURV Water Surface*	5999.96
100-YR Volume (including EURV)	11.36
100-yr water surface elevation*	6002.05
Emergency Spillway Crest Elevation*	6002.05
100-year Peak Inflow (cfs)	268.86
100-year Peak Outflow (cfs)	177.21

POND B	
Description	
Drainage Area	23.2
Percent Imperviousness	47.36
WQCV	0.39
EURV Volume (including WQVC)	1.10
EURV Water Surface*	6092.92
100-YR Volume (including EURV)	2.41
100-yr water surface elevation*	6094.57
Emergency Spillway Crest Elevation*	6094.57
100-year Peak Inflow (cfs)	105.30
100-year Peak Outflow (cfs)	30.56

POND C	
Description	
Drainage Area	97.79
Percent Imperviousness	45.93
WQCV	1.60
EURV Volume (including WQVC)	4.49
EURV Water Surface	5976.36
100-YR Volume (including EURV)	8.34
100-yr water surface elevation	5978.46
Emergency Spillway Crest Elevation*	-
100-year Peak Inflow (cfs)	314.00
100-year Peak Outflow (cfs)	106.71

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

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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

**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

SCALE:	AS SHOWN
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