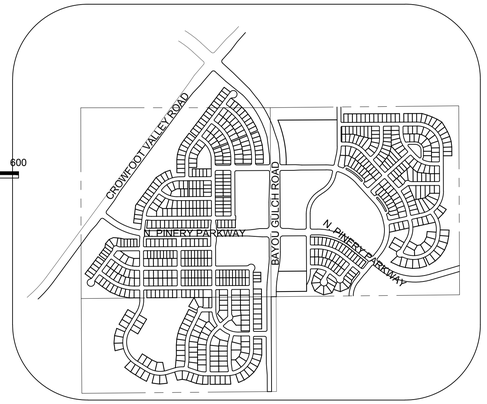

KEYMAP

N.T.S.

LEGEND

7111F	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND A	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
5650	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5650	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW

NOTE:

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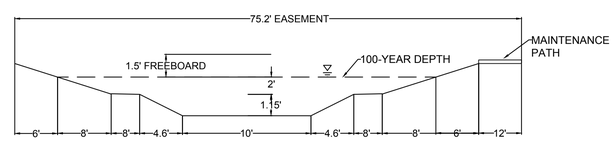
4. DROP STRUCTURE DETAILS ARE PROVIDED IN CHANNEL PLAN AND PROFILE SHEET .



CHANNEL SECTION A-A

NO TO SCALE

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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

PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

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
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BEFORE YOU DIG
1-800-922-1987
UNCC UTILITY NOTIFICATION CENTER OF COLORADO

No.	Revisions	Date	Init.	Appr.	Date

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Suite 240
Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546
CVL CONSULTANTS

E5X MANAGEMENT
7355 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FINAL DRAINAGE MAP

OVERALL DRAIANGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
SHEET NUMBER 1A

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAPS\FINAL OVERALL DRAINAGE MAP.DWG, ASFLINDX, 8/10/2017 2:52 PM

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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 Relavent for 100 year)
4	16.64	41.99
CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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 Relavent for 100 year)
7	7.40	(Not Relavent for 100 year)
9	19.80	84.75
10	31.82	84.62
CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
ID	(CFS)	(CFS)
3A	6.44	43.61
CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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	Q_2	Q_{100}
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	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

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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	Q_2	Q_{100}	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	Q_2	Q_{100}	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	Q_2	Q_{100}	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	Q_2	Q_{100}	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	Q_2	Q_{100}	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	Q_2	Q_{100}	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*	5999.96
100-YR Volume (including EURV)	11.36
100-yar 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

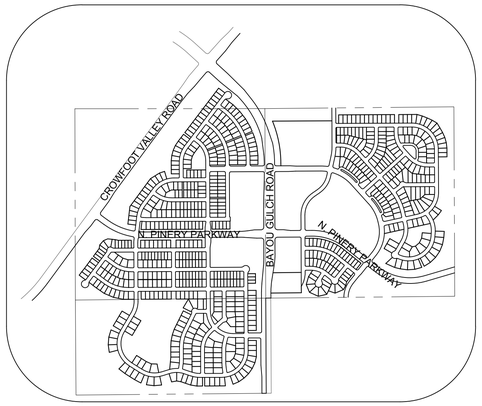
POND B	
Description	
Drainage Area	23.2
Percent Imperviousness	47.36
WQCV	0.39
EURV Volume (including WQVC)	1.10
EURV Water Surface*	6092.92
100-YR Volume (including EURV)	2.41
100-yar water surface elevation*	6094.57
Emergency Spillway Crest Elevation*	6094.57
100-year Peak Inflow (cfs)	105.30
100-year 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-yar 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-yar 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	Q_2	Q_{100}
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



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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.

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

PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

No.	Revisions	Date	Init.	Appr.	Date

CVL CONSULTANTS
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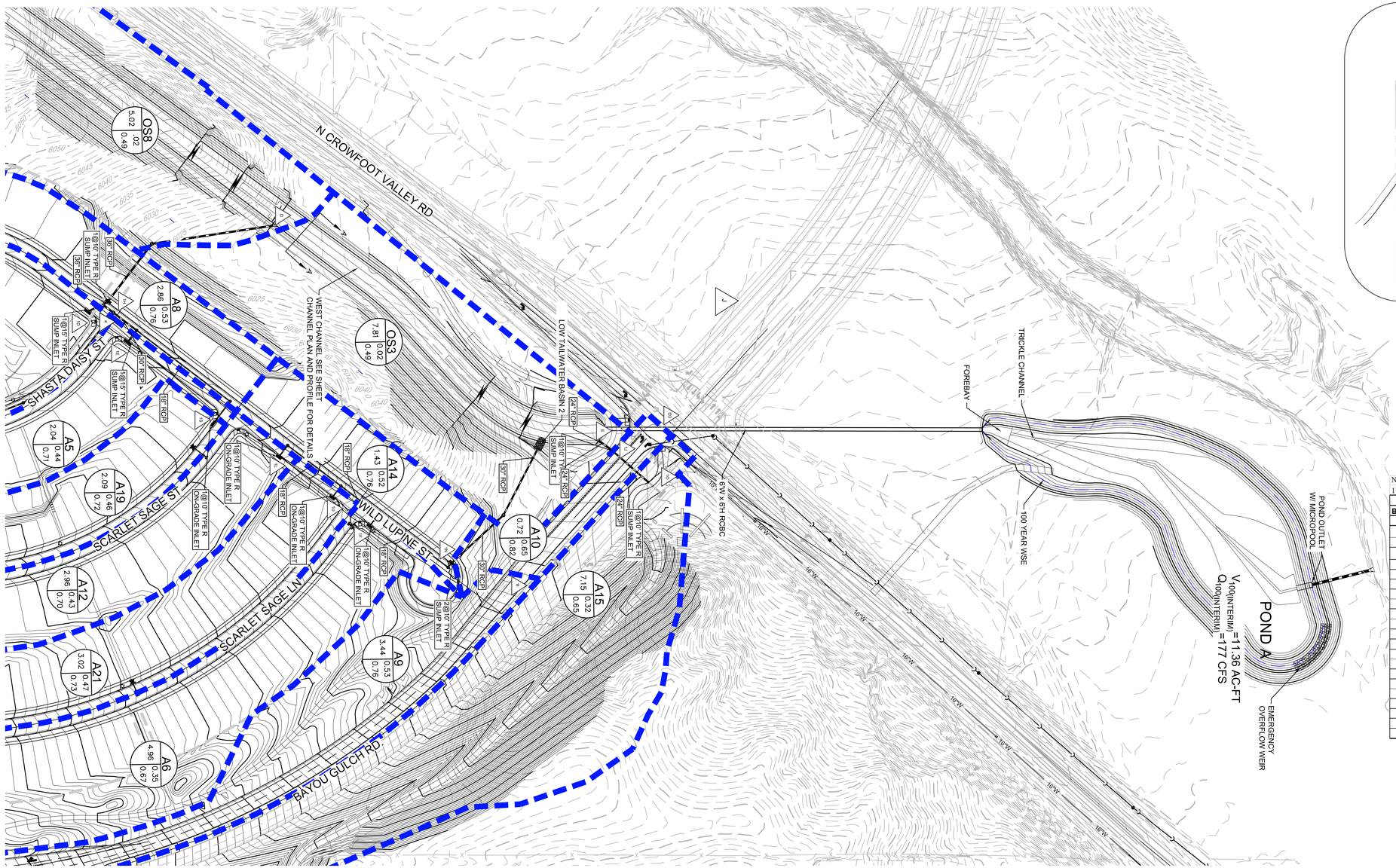
Fax: (720) 482-9546

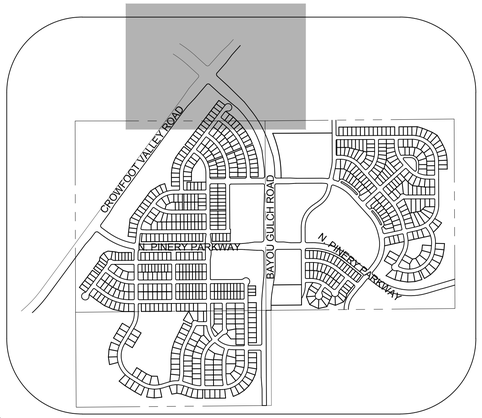
E5X MANAGEMENT
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
OVERALL DRAINAGE MAP - TABLES

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
SHEET NUMBER 1B

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAPS\FINAL OVERALL DRAINAGE MAP.DWG, ANDREWP, 5/15/2017 10:47 AM





KEYMAP

N.T.S.

SCALE: 1" = 100'

Note:
1) 0% slope indicates sump inlet.

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

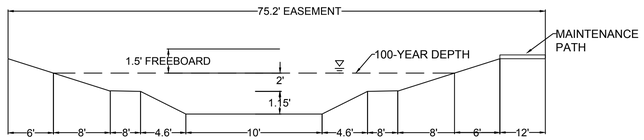
CUMULATIVE FLOW		
Design Point ID	Q2 (CFS)	Q100 (CFS)
1A	3.84	17.73
1B	5.04	60.61
1C	18.94	72.95
1D	19.26	82.87
1E	4.69	68.74
1F	9.74	45.15
1G	5.01	55.58
1H	22.10	94.13
1I	3.75	15.73
1J	7.60	40.45
1K	2.92	11.75
1L	3.22	13.95
1M	6.77	29.97
1N	11.20	49.77
1O	3.58	23.96
1P	5.05	21.53
1Q	6.90	27.93
1R	2.95	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 Relavent for 100 year)
4	16.64	41.99

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

LEGEND

711F	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
5650	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5650	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW



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
1-800-922-1987
UNCC UTILITY NOTIFICATION CENTER OF COLORADO

PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

No.	Revisions	Date	Init.	Appr.	Date

CVL CONSULTANTS
10333 E. Dry Creek Rd.
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Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546

E5X MANAGEMENT
7353 South Alton Way
CENTENNIAL, CO 80112

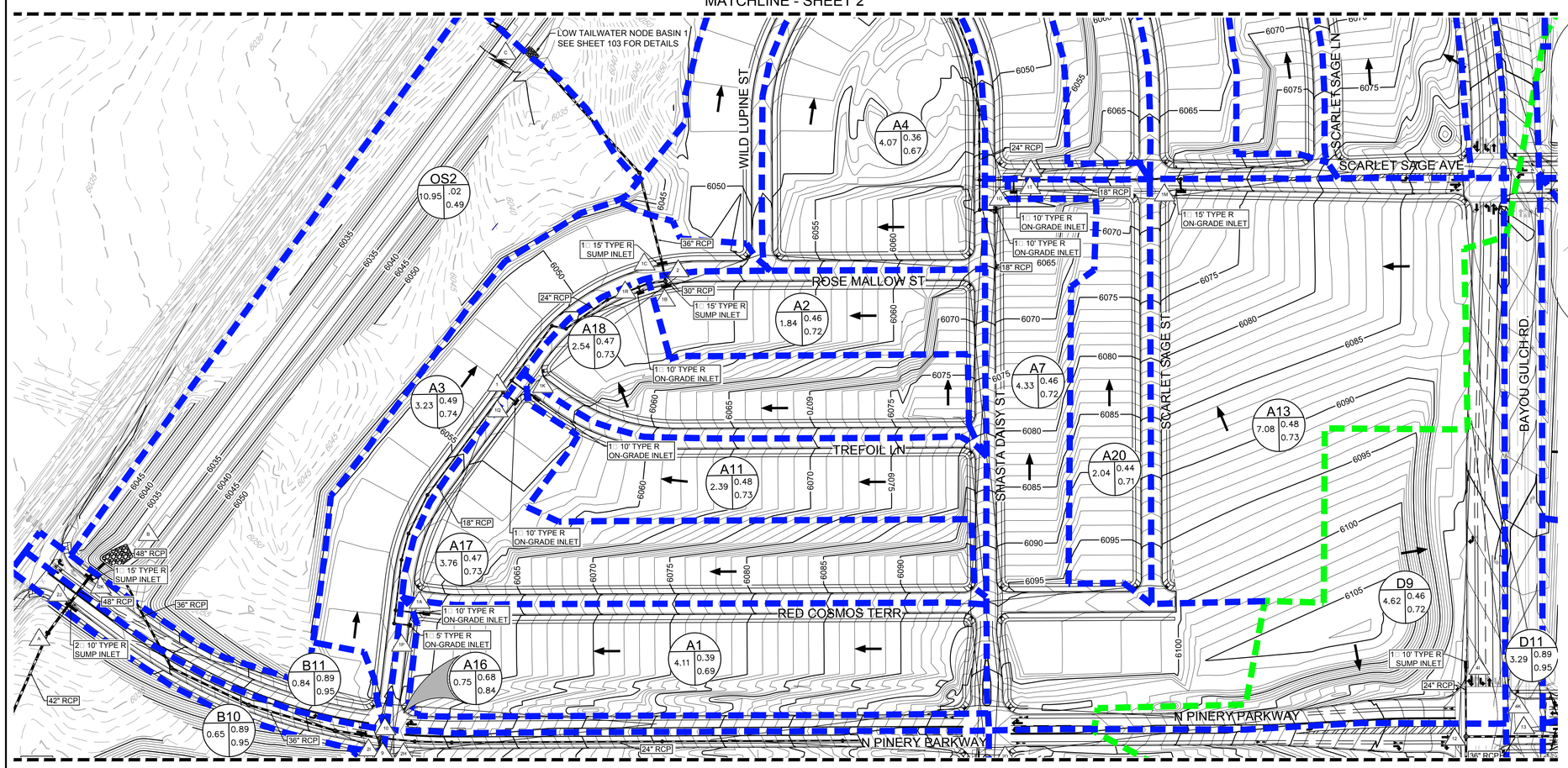
TRAILS AT CROWFOOT
PRELIMINARY DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: APRIL 2017
SHEET NUMBER 2

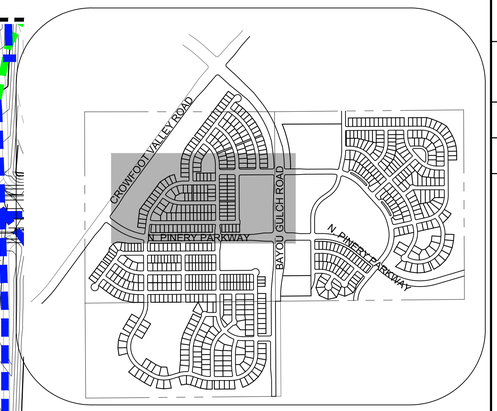
MATCHLINE - SHEET 3

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\PRELIMINARY DRAINAGE STUDIES\DRAINAGE MAPS\PRELIMINARY DRAINAGE MAP D2.05.DWG, ASFUNDK, 6/21/2017 3:45 PM

MATCHLINE - SHEET 2



MATCHLINE - SHEET 4



KEYMAP

N.T.S.

100 50 0 100 200

SCALE: 1" = 100'

LEGEND

711P	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
5650	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5650	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q_2	Q_{100}	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

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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 Relavent for 100 year)
4	16.64	41.99

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q_2	Q_{100}	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

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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

NOTE:

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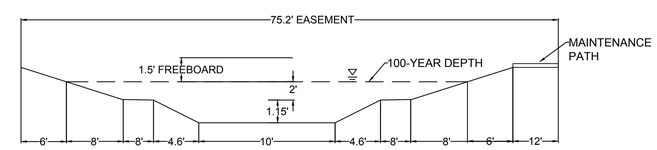

CHANNEL SECTION A-A

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
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BEFORE YOU DIG
1-800-922-1987
UNCC UTILITY NOTIFICATION CENTER OF COLORADO

PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

No.	Revisions	Date	Init.	Appr.	Date

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Suite 240
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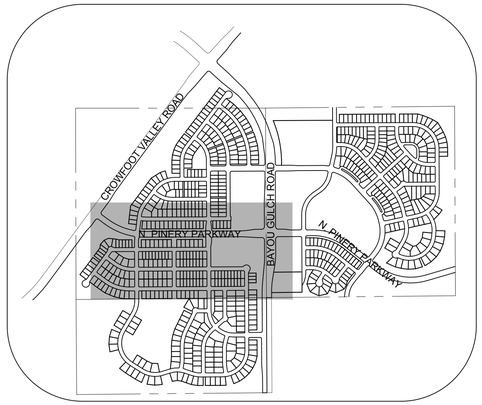
Tel: (720) 482-9526
Fax: (720) 482-9546

E5X 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: JJJ
DATE: MAY 2017
SHEET NUMBER 3

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAPS\DRAINAGE MAP FINAL.DWG, ASFUNDK, 5/15/2017 10:49 AM

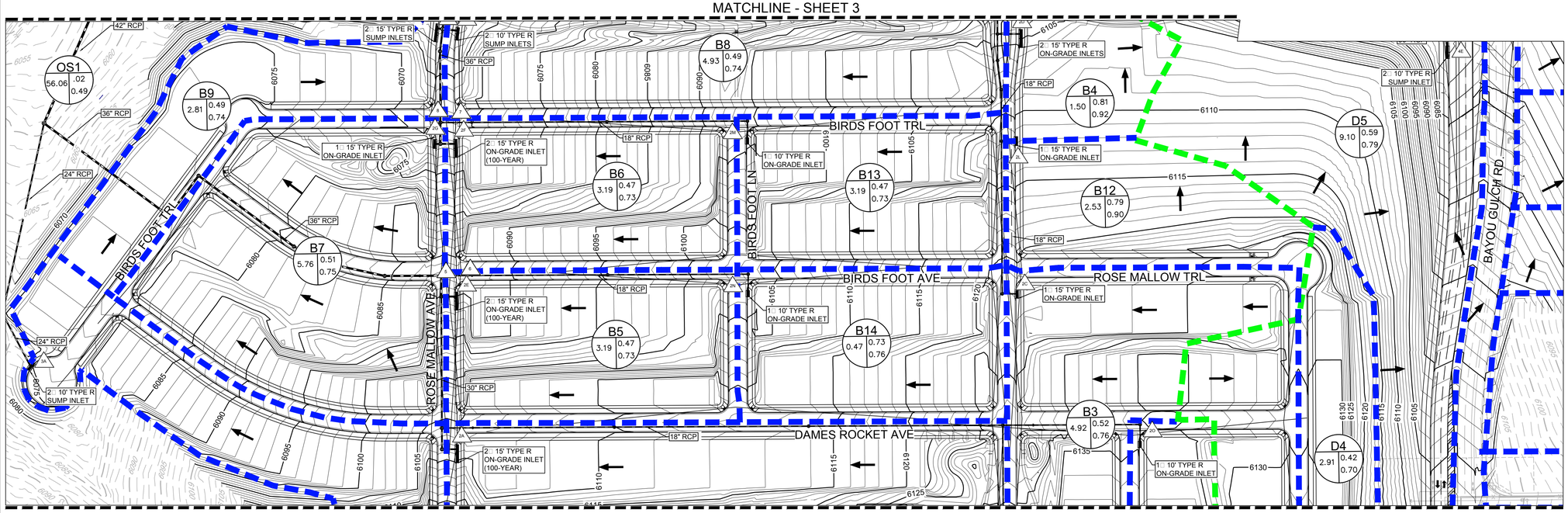


KEYMAP
N.T.S.

LEGEND

711P	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
5650	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5650	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW

MATCHLINE - SHEET 3



MATCHLINE - SHEET 5

100 50 0 100 200

SCALE: 1" = 100'

NOTE:

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

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q_2	Q_{100}	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	Q_2	Q_{100}	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

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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 Relavent for 100 year)
7	7.40	(Not Relavent for 100 year)
9	19.80	84.75
10	31.82	84.62

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
ID	(CFS)	(CFS)
3A	6.44	43.61
CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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

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:
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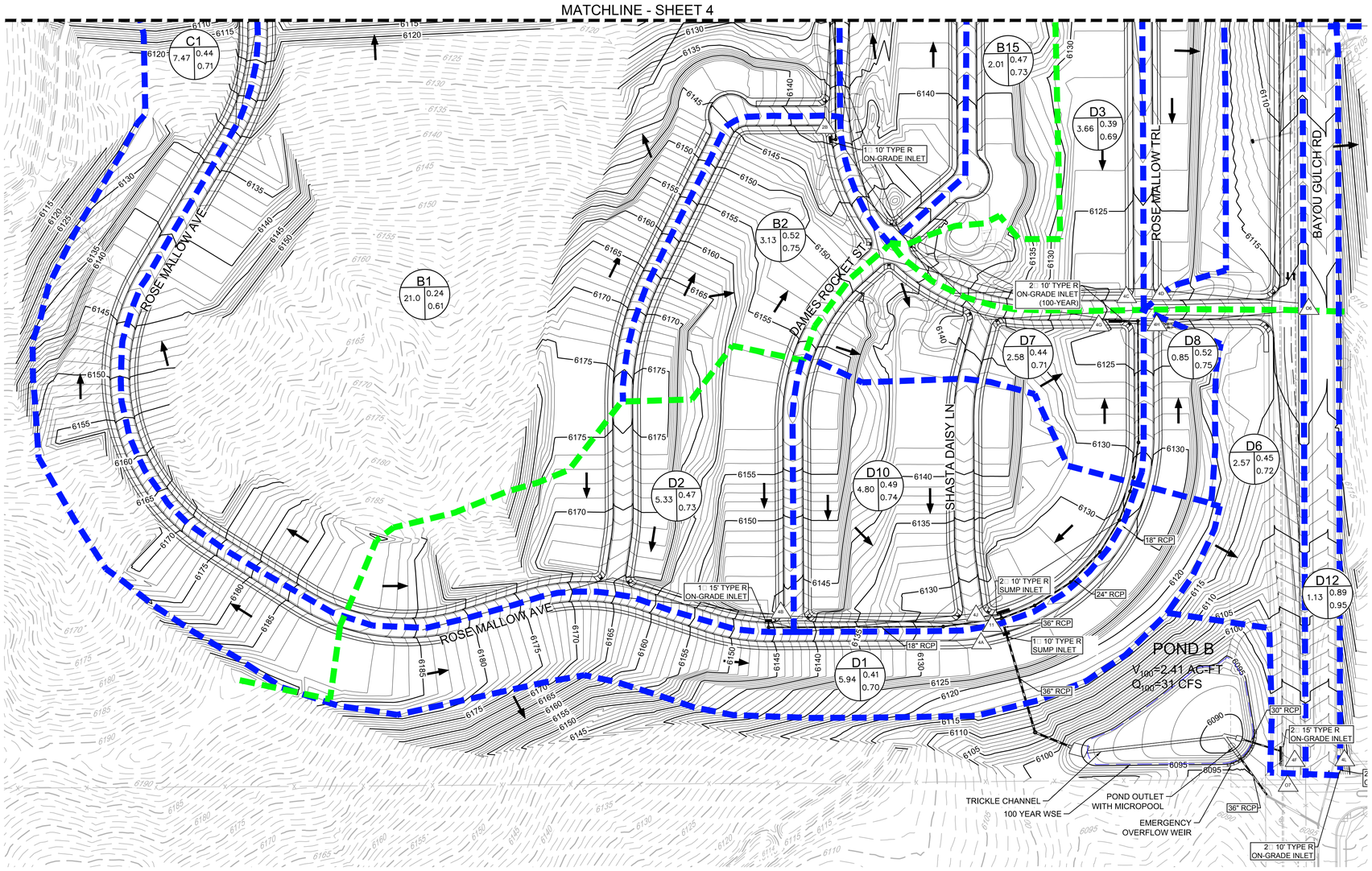
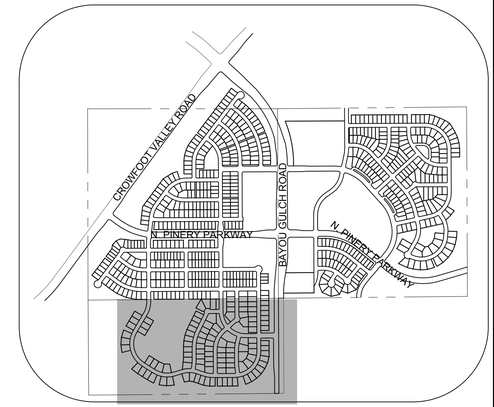
TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
SHEET NUMBER 4

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAPS\DRAINAGE MAP- FINAL.DWG, ASFUNDX, 5/15/2017 10:49 AM





KEYMAP
N.T.S.

NOTE:

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

LEGEND

711P	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
5650	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5650	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q_2	Q_{100}	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	Q_2	Q_{100}	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

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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 Relavent for 100 year)
7	7.40	(Not Relavent for 100 year)
9	19.80	84.75
10	31.82	84.62

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
ID	(CFS)	(CFS)
3A	6.44	43.61
CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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

100 50 0 100 200

SCALE: 1" = 100'

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
UNCC 1-800-922-1987
UTILITY NOTIFICATION CENTER OF COLORADO

PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

No.	Revisions	Date	Init.	Appr.	Date

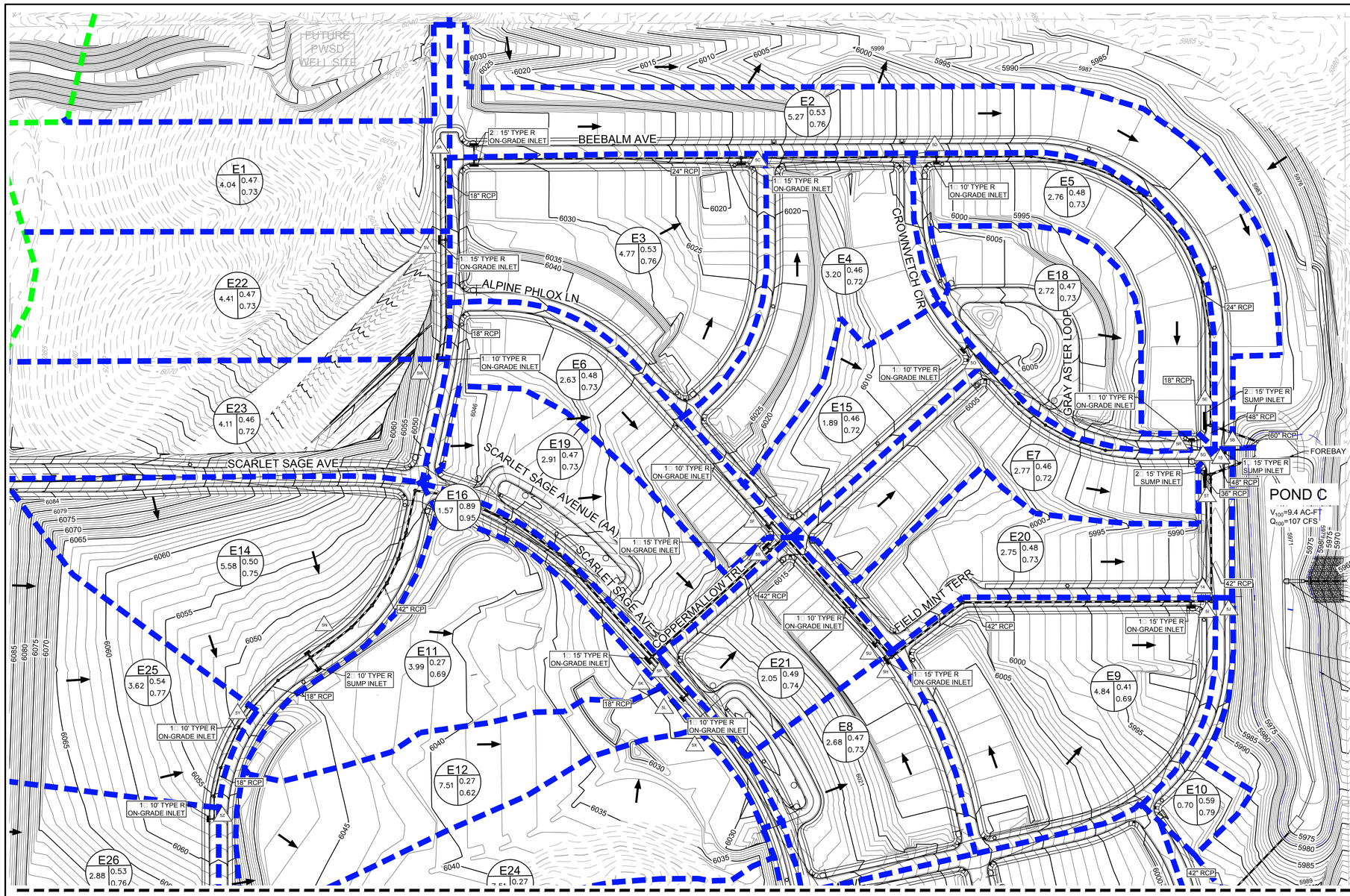
CVL CONSULTANTS
10333 E. Dry Creek Rd.
Suite 240
Englewood, CO 80112
Tel: (720) 482-9526
Fax: (720) 482-9546

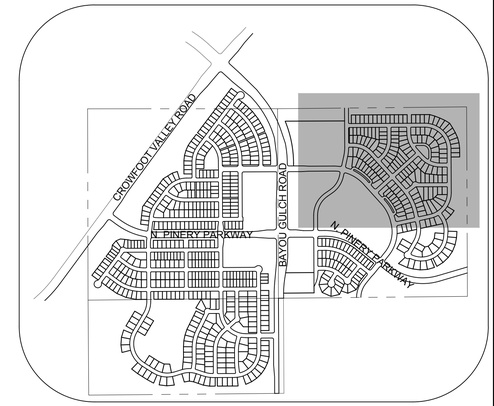
E5X MANAGEMENT
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
SHEET NUMBER 5

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAP\SDRAINAGE MAP FINAL.DWG, ASFUNDK, 5/15/2017 10:50 AM





KEYMAP
N.T.S.

SCALE: 1" = 100'

LEGEND

711P	DESIGN POINT
XX / A / R2 / R100 / POND	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
5850	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5850	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW

MATCHLINE - SHEET 7

Note:
1) 0% slope indicates sump inlet.

DIRECT FLOW						
BASIN ID	AREA	Imperviousness	Q_2	Q_{100}	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

CUMULATIVE FLOW		
Design Point	Q_2	Q_{100}
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	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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slope indicates sump inlet

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No.	Revisions	Date	Init.	Appr.	Date

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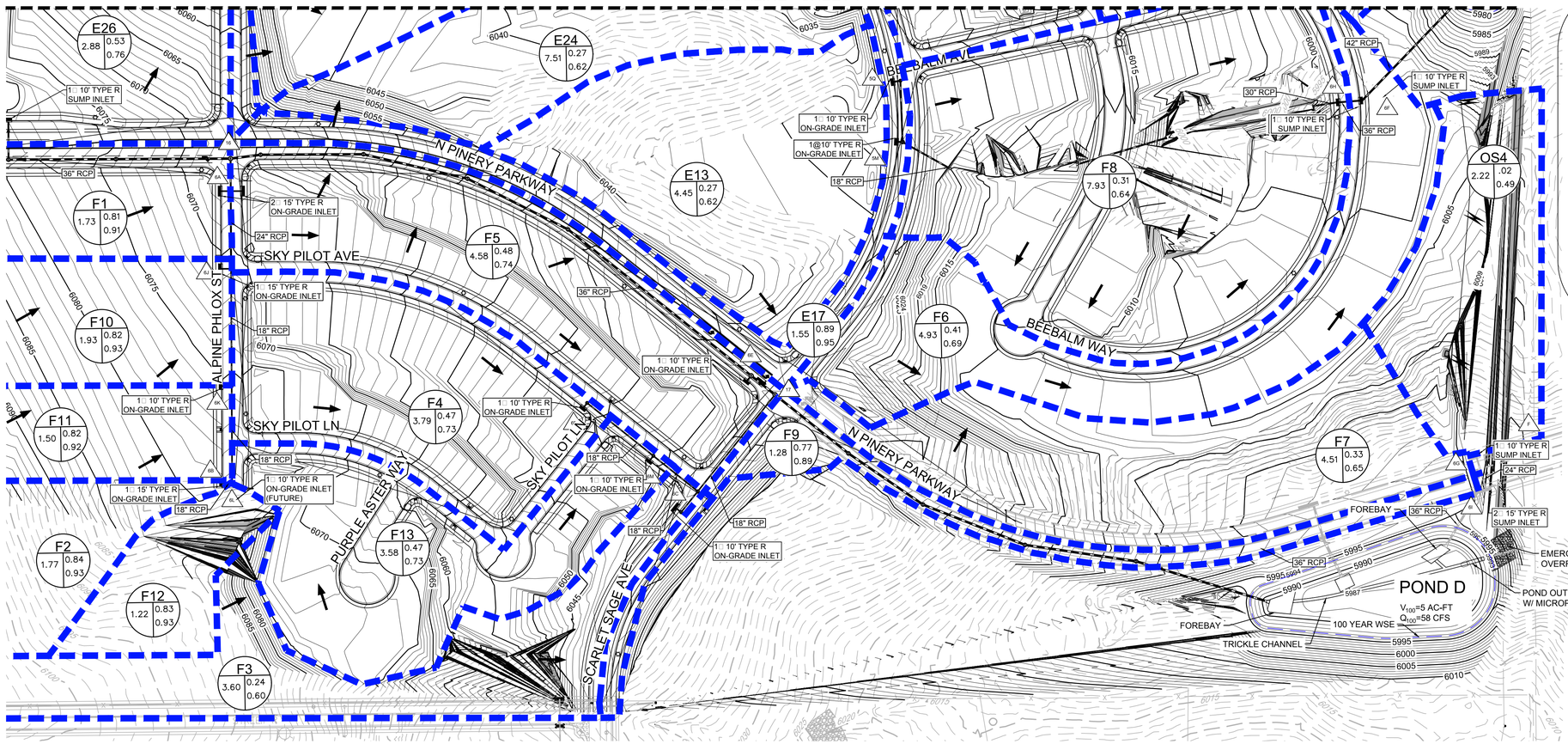
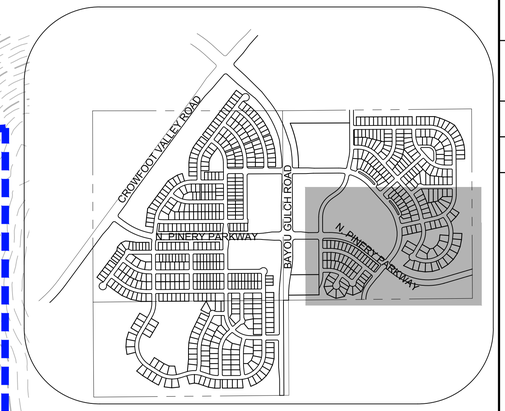
TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
SHEET NUMBER 6

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAP\SF\FINAL DRAINAGE MAP D6-07 DWG, ASFUNDK, 5/15/2017 10:52 AM

MATCHLINE - SHEET 7





KEYMAP
N.T.S.

SCALE: 1" = 100'

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

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	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

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

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LEGEND

711F	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND	DETENTION POND
	CHANNEL DROP STRUCTURE
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	MAJOR BASIN LINE
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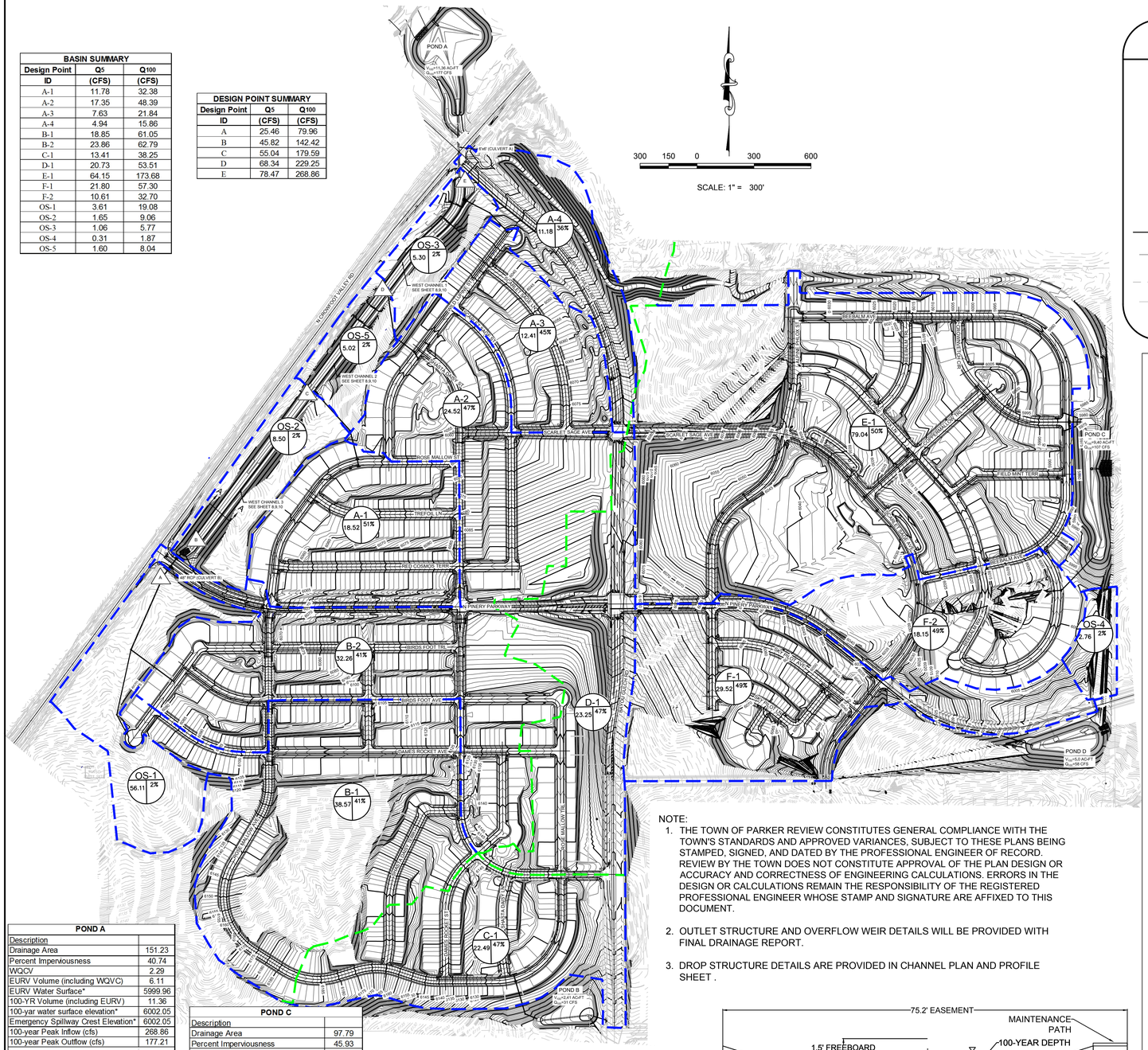
TRAILS AT CROWFOOT
FINAL DRAINAGE MAP
DRAINAGE MAP

SCALE: AS SHOWN
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
FILE NO: 8130283701
SHEET NUMBER 7

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAPS\FINAL DRAINAGE MAP 06-07.DWG, ASFUNDK, 5/15/2017 10:52 AM

BASIN SUMMARY		
Design Point	Q_5	Q_{100}
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	Q_5	Q_{100}
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 WQCV)	6.11
EURV Water Surface*	5999.96
100-YR Volume (including EURV)	11.36
100-yar 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 WQCV)	1.10
EURV Water Surface*	6092.92
100-YR Volume (including EURV)	2.41
100-yar 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 WQCV)	4.49
EURV Water Surface	5976.36
100-YR Volume (including EURV)	8.34
100-yar water surface elevation	5978.46
Emergency Spillway Crest Elevation*	-
100-year Peak Inflow (cfs)	314.00
100-year Peak Outflow (cfs)	106.71

*To be provided with Final Drainage

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

*To be provided with Final Drainage

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

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 .

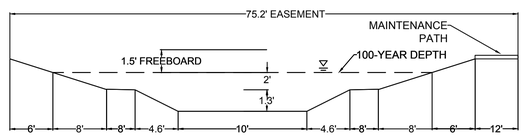
THE TOWN OF PARKER REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE TOWN'S STANDARDS AND APPROVED VARIANCES, SUBJECT TO THESE PLANS BEING STAMPED, SIGNED, AND DATED BY THE PROFESSIONAL ENGINEER OF RECORD. REVIEW BY THE TOWN DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN OR ACCURACY AND CORRECTNESS OF 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.

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

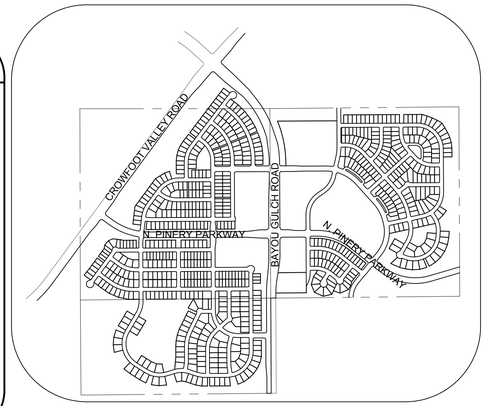
NO TO SCALE

BENCHMARK
DOUGLAS COUNTY CONTROL POINT KNOWN AS 1.060032, 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.

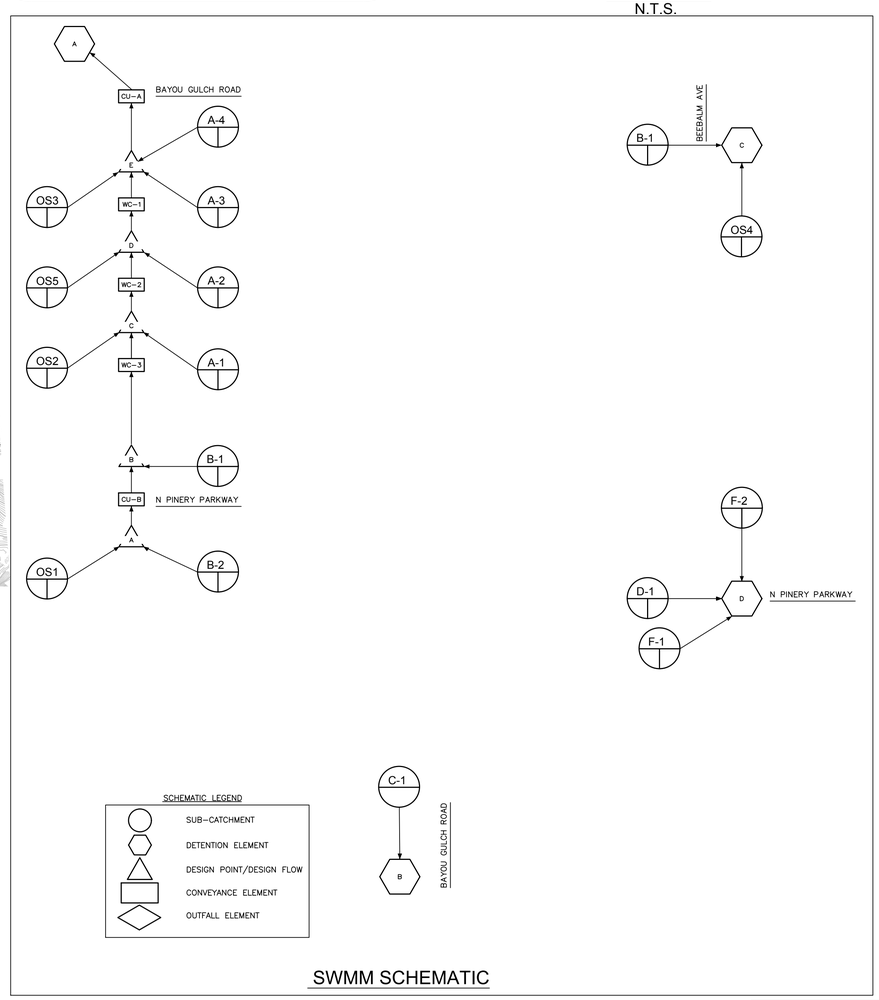
LEGEND

711F	DESIGN POINT
XX / A / R2 / R100	XX = BASIN ID A= AREA R2= 2 YR RUNOFF CO-EFF R100= 100 YR RUNOFF CO-EFF
POND A	DETENTION POND
	CHANNEL DROP STRUCTURE
	BASIN LINE
	MAJOR BASIN LINE
5650	PROPOSED MAJOR CONTOURS
	PROPOSED MINOR CONTOURS
5650	EXISTING MAJOR CONTOURS
	EXISTING MINOR CONTOURS
	PROPOSED FLOW ARROW



KEYMAP

N.T.S.



SWMM SCHEMATIC

PREPARED UNDER THE SUPERVISION OF

MARK SCHEURER
COLORADO P.E. 48988

No.	Revisions	Date	Init.	Appr.	Date

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Englewood, CO 80112
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Fax: (720) 482-9546

E5X MANAGEMENT
7353 South Alton Way
CENTENNIAL, CO 80112

TRAILS AT CROWFOOT
FINAL DRAINAGE MAP

SWMM DRAINAGE MAP

SCALE: AS SHOWN
FILE NO: 8130283701
DRAWN BY: AYK
CHECKED BY: JJJ
DATE: MAY 2017
SHEET NUMBER 8

N:\PROJECTS\HESS RANCH\DOCS\ENGINEERING\DRAINAGE\FINAL DRAINAGE STUDIES\DRAINAGE MAPS\FINAL OVERALL DRAINAGE MAP SWMM.DWG, ASF.UNDK, 5/15/2017 11:20 AM