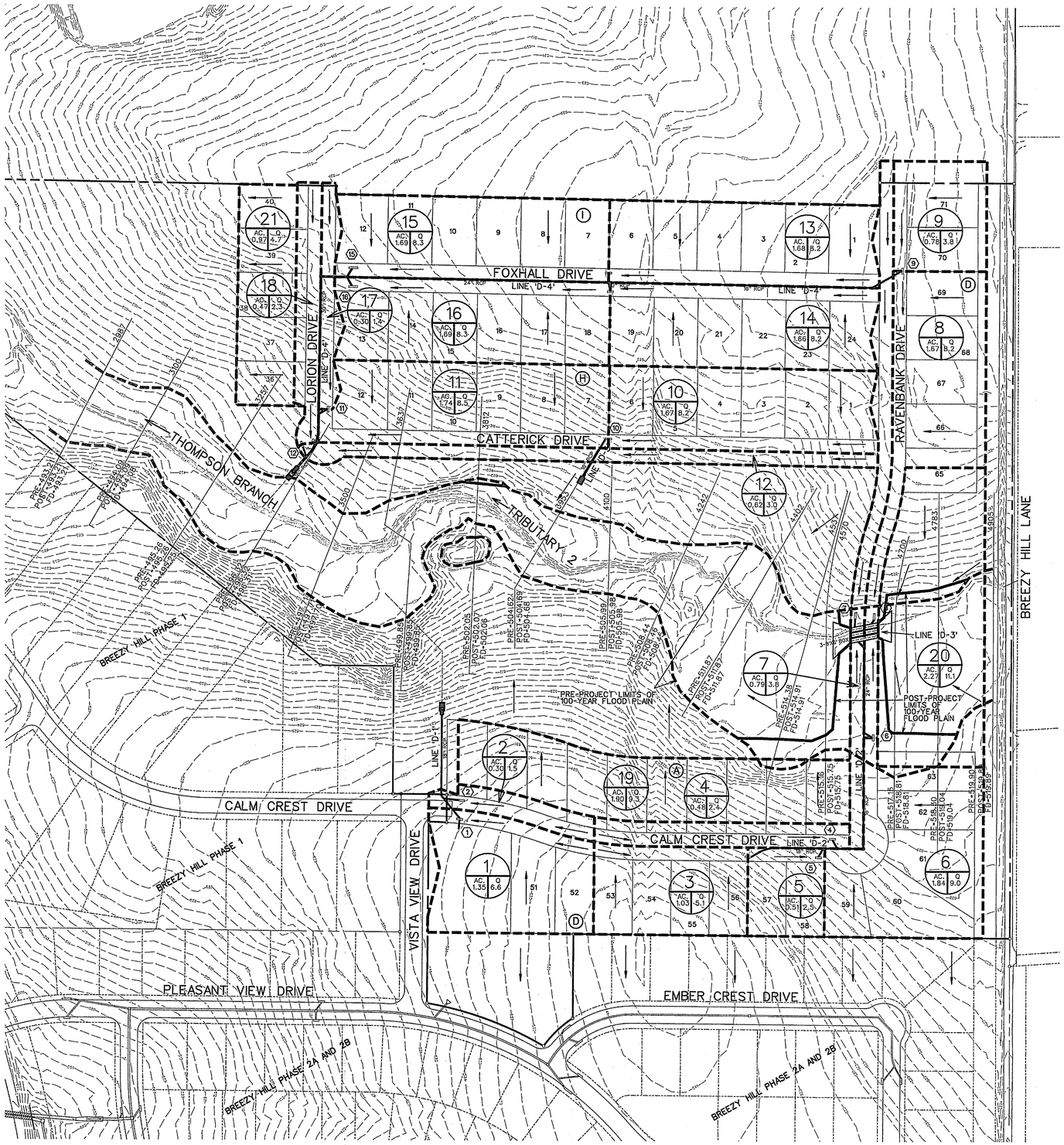

RUNOFF COMPUTATIONS

Area #	Area (sf)	Area (acres)	Runoff Coefficient	CA	Tc (min)	I(100) (in/hr)	Q(100) (cfs)
1	58892	1.35	0.50	0.68	10	9.80	6.6
2	13030	0.30	0.50	0.15	10	9.80	1.5
3	45009	1.03	0.50	0.52	10	9.80	5.1
4	20944	0.48	0.50	0.24	10	9.80	2.4
5	22400	0.51	0.50	0.26	10	9.80	2.5
6	80310	1.84	0.50	0.92	10	9.80	9.0
7	34218	0.79	0.50	0.39	10	9.80	3.8
8	72743	1.67	0.50	0.83	10	9.80	8.2
9	33911	0.78	0.50	0.39	10	9.80	3.8
10	72601	1.67	0.50	0.83	10	9.80	8.2
11	75839	1.74	0.50	0.87	10	9.80	8.5
12	26871	0.62	0.50	0.31	10	9.80	3.0
13	72997	1.68	0.50	0.84	10	9.80	8.2
14	72524	1.66	0.50	0.83	10	9.80	8.2
15	73485	1.69	0.50	0.84	10	9.80	8.3
16	73556	1.69	0.50	0.84	10	9.80	8.3
17	12854	0.30	0.50	0.15	10	9.80	1.4
18	20424	0.47	0.50	0.23	10	9.80	2.3
19	82760	1.90	0.50	0.95	10	9.80	9.3
20	98772	2.27	0.50	1.13	10	9.80	11.1
21	42056	0.97	0.50	0.48	10	9.80	4.7

INLET CALCULATIONS

No.	Inlet Location	Freq. (years)	Tc (min)	"I" (in/hr)	Coeff. "C"	"A" (acres)	Q (cfs)	Upstream (cfs)	Flow (cfs)	Capacity (cfs)	Slope (ft/100 ft)	Crown Type	Length Li (ft)	Type	Capacity (cfs)	Downstream Inlet (cfs)
1	21+00 Calm Crest	100	10	9.8	0.5	1.35	6.6	0.0	6.6	6.7	1.00%	6" pbl	10	STD.	7.0	0.0
2	21+00 Calm Crest	100	10	9.8	0.5	0.30	1.5	0.0	1.5	6.7	1.00%	6" pbl	10	STD.	7.0	0.0
3	26+29.48 Calm Crest	100	10	9.8	0.5	1.03	5.1	0.0	5.1	6.0	0.80%	6" pbl	10	STD.	7.4	0.0
4	27+83.45 Calm Crest	100	10	9.8	0.5	0.48	2.4	0.0	2.4	6.0	0.80%	6" pbl	10	STD.	7.4	0.0
5	27+57.85 Calm Crest	100	10	9.8	0.5	0.51	2.5	0.0	2.5	6.0	0.80%	6" pbl	10	STD.	7.4	0.0
6	2+00 Ravenbank	100	10	9.8	0.5	1.84	9.0	0.0	9.0	9.5	2.00%	6" pbl	10	STD.	6.5	2.5
7	4+17.64 Ravnebank	100	10	9.8	0.5	0.79	3.8	0.0	3.8	9.5	Low Pt	6" pbl	10	STD.	20.0	0.0
8	4+17.64 Ravnebank	100	10	9.8	0.5	1.67	8.2	2.5	10.7	9.5	Low Pt	6" pbl	10	STD.	20.0	0.0
9	10+50.52 Ravenbank	100	10	9.8	0.5	0.78	3.8	0.0	3.8	4.7	0.50%	6" pbl	10	STD.	7.8	0.0
10	5+24.92 Catterick	100	10	9.8	0.5	1.67	8.2	0.0	8.2	9.2	1.90%	6" pbl	10	STD.	6.5	1.7
11	0+60.50 Lorion	100	10	9.8	0.5	2.04	10.0	1.7	11.6	9.9	Low Pt	6" pbl	10	STD.	20.0	0.0
12	Lorin & Catterick	100	10	9.8	0.5	1.09	5.3	0.0	5.3	9.9	Low Pt	6" pbl	10	STD.	20.0	0.0
13	5+19.86 Foxhall	100	10	9.8	0.5	1.68	8.2	0.0	8.2	9.0	1.80%	6" pbl	10	STD.	6.7	1.5
14	5+23.44 Foxhall	100	10	9.8	0.5	1.66	8.2	0.0	8.2	9.0	1.80%	6" pbl	10	STD.	6.7	1.5
15	0+58.50 Foxhall	100	10	9.8	0.5	1.69	8.3	1.5	9.8	9.0	1.80%	6" pbl	15	STD.	10.6	0.0
16	0+58.50 Foxhall	100	10	9.8	0.5	1.69	8.3	1.5	9.7	10.4	2.40%	6" pbl	15	STD.	10.3	0.0

STORM SEWER CALCULATIONS

Upstream Station	Downstream Station	Distance (ft)	AREA NO.	Total Area (Acres)	Picked Up (Acres)	C	CA	Accumulated CA	Tc (Min)	Design Storm (Years)	I (in/hr)	Q (CFS)	S (ft/ft)	Pipe Size (in)	Velocity (fps)	Head Loss (ft)	Flow Time (Min)	Time at D/S (Min)	Δ Velocity Head (ft)	Hydraulic Grade Upstream	Hydraulic Grade Downstream	Proposed Grade
Line 01																						
4+59.51	4+13.56	45.96	1	1.35	1.35	0.50	0.68	0.68	10.00	100	9.80	6.6	0.0040	18	3.7	0.21	0.21	10.21	0.21	528.63	525.32	528.90
4+13.56	2+51.10	162.45	2	0.30	0.30	0.50	0.15	0.83	10.00	100	9.80	8.1	0.0055	18	4.6	0.33	0.59	10.59	0.12	525.13	525.01	528.90
2+51.10																				524.05		
Line 02																						
5+96.60	4+51.02	135.58	3	1.03	1.03	0.50	0.52	0.52	10.00	100	9.80	5.1	0.0024	18	2.9	0.13	0.78	10.78	0.13	529.68	529.45	529.16
4+51.02	4+25.42	25.60	5	0.51	0.51	0.50	0.26	0.78	10.00	100	9.80	7.6	0.0053	18	4.3	0.29	0.10	10.10	0.16	529.13	528.97	528.14
4+25.42	3+78.24	47.18	4	0.48	0.48	0.50	0.24	1.02	10.00	100	9.30	10.0	0.0091	18	5.7	0.50	0.14	10.14	0.25	528.84	528.63	527.93
3+78.24	1+69.29	208.95	KH	0.00	0.00	0.50	0.00	1.02	10.00	100	9.60	10.0	0.0091	18	5.7	0.50	0.61	10.61	0.00	528.20	528.20	526.90
1+69.29	0+00.00	169.29	6	1.84	1.33	0.50	0.66	1.68	10.00	100	9.80	16.5	0.0053	24	5.2	0.42	0.54	10.54	-0.04	516.31	516.35	524.00
0+00.00																				515.45		
Line 03																						
See Drainage Study																						
Line 04																						
15+15.62	14+53.51	62.11	9	0.78	0.78	0.50	0.39	0.39	10.00	100	9.80	3.8	0.0013	18	2.2	0.08	0.47	10.47	0.08	528.64	528.56	532.36
14+53.51	9+73.52	479.99	Read	0.00	0.00	0.50	0.00	0.39	10.00	100	9.80	3.8	0.0013	18	2.2	0.08	3.64	13.64	0.00	528.48	528.40	532.60
9+73.52	5+00.71	472.81	13-14	3.34	2.73	0.50	1.37	1.76	10.00	100	9.80	17.2	0.0058	24	5.5	0.47	1.43	11.43	0.39	527.84	527.45	521.73
5+00.71	4+53.66	47.05	15-16	3.38	3.98	0.50	1.99	3.75	10.00	100	9.80	36.8	0.0090	30	7.5	0.87	0.10	10.10	0.40	584.70	584.30	512.59
4+53.66	2+05.21	248.45	KH	0.00	0.00	0.50	0.00	3.75	10.00	100	9.80	36.8	0.0080	30	7.5	0.87	0.55	10.55	0.60	583.92	583.92	512.28
2+05.21	1+53.23	51.98	11,17	2.94	2.67	0.50	1.34	5.09	10.00	100	9.80	49.9	0.0149	30	10.2	1.62	0.08	10.08	0.75	581.93	581.18	507.16
1+53.23	1+21.20	32.03		0.00	0.00	0.50	0.00	5.09	10.00	100	9.80	49.9	0.0149	30	10.2	1.62	0.05	10.05	0.00	581.43	581.43	508.33
1+21.20	0+81.28	39.92	12,19	1.09	1.55	0.50	0.78	5.87	10.00	100	9.80	57.5	0.0074	36	9.1	1.02	0.68	10.68	-0.30	499.94	500.24	506.38
0+81.28																				499.94		
Line 05																						
0+83.00	0+00.00	83.00	10	1.67	1.33	0.50	0.66	0.66	10.00	100	9.80	6.5	0.0039	18	3.7	0.21	0.37	10.37	0.21	511.42	511.21	528.14
0+00.00																				510.90		

LEGEND

PRE	PRE-PROJECT 100-YR FLOOD PLAIN ELEVATION
POST	POST-PROJECT 100-YR FLOOD PLAIN ELELVATION
FD	FULLY DEVELOPED 100-YR FLOOD PLAIN ELEVATION
	PROP. STORM SEWER
	PROP. CURB INLETS
	PROP. CONC. HEADWALL
	EXIST. STORM SEWER
	DRAINAGE AREA DIVIDE
	FLOW ARROW
AC. / Q	DRAINAGE AREA NO.

N

0 50 100 200

SCALE: 1" = 100'

STATE OF TEXAS
BRANDON DAVIDSON
87682
REGISTERED PROFESSIONAL ENGINEER
7/29/14

The seal appearing on this document was authorized by Brandon Davidson P.E. 87682, on July 29, 2014

AS-BUILT MARCH 2015
INFORMATION PROVIDED BY CONTRACTORS
(NOT FIELD VERIFIED)

CORWIN ENGINEERING, INC.
200 W. BELMONT, SUITE E
ALLEN, TEXAS 75013 (972)396-1200
TBPE FIRM #5951

DEVELOPMENT PLANS FOR
BREEZY HILL
PHASE III
ROCKWALL, TEXAS

DRAINAGE AREA MAP

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER 14023	DATE JULY 2014	SCALE: 1"=100'	3 OF 20