

**DRAINAGE BASIN ATTRIBUTES**

Basin #	Sq. Ft.	Acres	Sq. Mi.	Future Land Use						Weighted CN (ac)
				Type C Soil		Type D Soil		Type E Soil		
				Open Space	Single Family Lot Size	Open Space	Single Family Lot Size	Open Space	Single Family Lot Size	
1	1085911	24.93	0.0390	0	0	0	125989	959922		95.64
2	1854244	42.57	0.0665	52310			1801934			90.10
3 (Ex)	570777	13.10	0.0205	4660			392738	173379		92.04
3 (Prop)	570777	13.10	0.0205		4660			566117		96.35
4	953767	21.90	0.0342	505506	37995		377976	32290		88.78
5 (Ex)	376382	8.64	0.0135				38674	337708		96.26
5 (Prop)	513765	11.79	0.0184			39074	9758	174875	290058	94.81
6	960755	22.06	0.0345	524031			436724			88.32
7	484878	11.13	0.0174	256669			228209			88.37
8	387445	8.89	0.0139	352855			34590			87.06
9	435927	10.01	0.0156	161019			274908			88.92
103	333219	7.65	0.0120							76.87

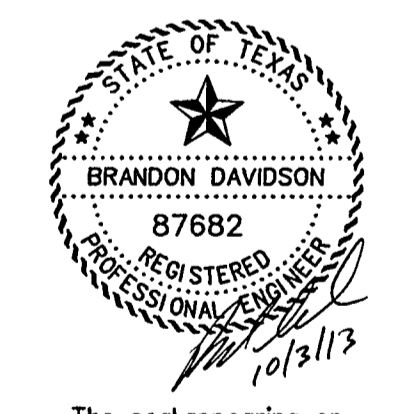
Used Values from MDS

**HEC-HMS RESULTS - PRE-PROJECT FLOW**

Hydrologic Element	Drainage Area (Sq. Mi.)	10 Year		50 Year		100 Year	
		Peak Flow	Peak Flow	Peak Flow	Peak Flow		
Junction-1	0.1055	282.8	380.3	428.8	532.4		
Junction-2	0.1602	311.9	466.5	547.7	714.6		
Junction-3	0.1947	295.2	469.4	545.5	711.2		
Junction-4	0.2082	308.9	462.5	539.9	702.2		
Junction-5	0.2256	306.5	418.3	463.4	576.8		
Junction-6	0.2376	310.0	423.7	469.7	585.2		
Reach-A	0.1055	207.6	307.5	358.0	464.0		
Reach-B	0.1602	250.3	393.3	453.4	579.6		
Reach-C	0.1947	294.9	445.0	519.2	674.7		
Reach-D	0.2082	292.5	405.1	449.5	560.1		
Reach-E	0.2256	304.7	417.3	462.4	575.9		
Reservoir-1	0.1055	221.0	335.2	390.4	493.3		
Subbasin-1	0.0390	141.9	188.2	211.3	263.7		
Subbasin-103	0.0120	32.2	47.1	54.5	70.5		
Subbasin-2	0.0665	175.7	238.1	269.2	335.3		
Subbasin-3	0.0205	65.9	88.6	99.8	123.8		
Subbasin-4	0.0342	94.6	129.0	146.1	182.5		
Subbasin-5	0.0135	47.0	62.2	69.9	86.1		
Subbasin-6	0.0345	94.8	129.6	146.8	183.6		
Subbasin-7	0.0174	52.4	71.6	81.1	101.4		

**LEGEND**

- DRAINAGE AREA DIVIDE
- 101  
127.32 AC. DRAINAGE AREA NO.
- HYDROLOGIC GROUP C SOIL
- HYDROLOGIC GROUP D SOIL



The seal appearing on this document was authorized by Brandon Davidson P.E. 87682, on October 3, 2013

**Appendix E - Time of Concentration Calculations - Pre- and Post-Project Conditions**

Basin #	Cover Type	Sheet Flow Slope (ft/ft)	n value	Length of Sheet Flow (ft)	Time of Sheet Flow (min)	Length of Concentrated Flow (ft)	Shallow Concentrated Flow Slope (ft/ft)	Cover Type	Velocity of Shallow Concentrated Flow (fps)	Time of Shallow Concentrated Flow (min)	Length of Channel Flow (ft)	Slope of Channel Flow (ft/ft)	k	Velocity of Channel Flow (fps)	Time of Channel Flow (min)	Total Time of Concentration (min)	Lag Time (0.6 * Tc) (min)		
																		Time of Concentration (hr)	
1	Grass	0.0200	0.41	34	3.29	278	0.0170	Unpaved	2.10	2.20	764			1.64	7.14	0.12	4.28		
2	Range	0.0400	0.41	49	3.29	1737	0.0149	Unpaved	1.97	14.70	304			1.6	3.11	21.10	0.35	12.66	
3 (Ex)	Grass	0.0100	0.41	24	3.29	415	0.0250	Paved	3.21	2.15	1373			6.49	11.93	0.20	7.16		
3 (Prop)	Grass	0.0100	0.41	24	3.29	414	0.0250	Paved	3.21	2.15	1373			3.53	8.97	0.15	5.38		
4	Range	0.0100	0.13	77	8.26	909	0.0341	Unpaved	2.98	5.08	3242			4.9	4.21	17.55	0.29	10.53	
5 (Ex)	Grass	0.0100	0.41	24	3.29	781	0.0200	Paved	2.87	4.53	405			2.01	9.83	0.16	5.90		
5 (Prop)	Grass	0.0100	0.41	24	3.29	781	0.0200	Paved	2.87	4.53	405			1.32	9.14	0.15	5.49		
6	Range	0.0161	0.13	98	8.26	859	0.0571	Unpaved	3.86	3.71	856			2.6	5.56	17.53	0.29	10.52	
7	Range	0.0100	0.13	77	8.26	722	0.0400	Unpaved	3.23	3.73	403			0.0397	41	8.1	12.81	0.21	7.69
8	Range	0.0872	0.13	100	4.28	133	0.0414	Unpaved	3.28	0.68	872			2.5	5.82	10.78	0.18	6.47	
9	Range	0.0161	0.13	98	8.26	652	0.0499	Unpaved	3.60	3.02	695			1.83	13.10	0.22	7.86		
103															6.90	0.12	4.14		

Used Values from MDS

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

**DEVELOPMENT PLANS FOR  
 STONE CREEK PHASE IV  
 ROCKWALL, TEXAS**

**PRE-PROJECT CONDITIONS DRAINAGE AREA MAP**

DRAWN BY	DESIGNED BY	CHECKED BY	SHEET NO.
JOB NUMBER	DATE	SCALE:	1 OF 1
12033	FEBRUARY 2013	1"=200'	