

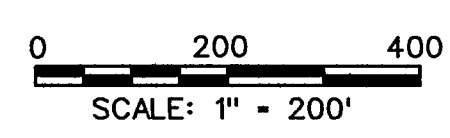
**DRAINAGE BASIN ATTRIBUTES**

Basin #	Sq. Ft.	Acres	Sq. MI.	Future Land Use						Weighted CN
				Type C Soil			Type D Soil			
				Open Space	1/8 Acre	1/4 Acre	Open Space	1/8 Acre	1/4 Acre	(adj)
1	1085911	24.93	0.0320	0	0	0	125989	959922		95.64
2	1854344	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		379796	32290		88.78
5(Ex)	376382	8.64	0.0135				33708			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 - POST-PROJECT FLOW**

Hydrologic Element	Drainage Area (SM)	10 Year Peak Flow	50 Year Peak Flow	100 Year Peak Flow	500 Year Peak Flow
Junction-1	0.1055	282.8	380.3	428.8	532.4
Junction-1A	0.1397	272.8	409.0	479.1	623.1
Junction-2	0.1602	303.7	452.4	530.1	691.2
Junction-2A	0.1758	270.7	416.4	484.7	628.8
Junction-3	0.1897	274.2	424.5	481.5	608.3
Junction-4	0.2081	284.5	427.4	482.1	593.0
Junction-5	0.2255	279.7	391.3	435.7	551.5
Junction-6	0.2375	282.0	395.8	440.8	555.7
Reach-A	0.1055	207.6	307.5	358.0	464.0
Reach-A1	0.1397	271.9	407.0	476.6	620.3
Reach-B	0.1602	247.2	387.1	448.0	574.4
Reach-B1	0.1758	265.9	407.5	463.1	586.9
Reach-C	0.1897	273.9	411.3	464.5	575.5
Reach-D	0.2081	271.3	380.1	424.3	537.9
Reach-E	0.2255	277.9	389.9	434.5	548.0
Reservoir-1	0.1055	221.0	335.2	390.4	493.3
Reservoir-2	0.0156	24.6	29.3	41.7	60.2
Subbasin-1	0.0390	141.9	188.2	211.3	260.7
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	72.4	95.9	107.6	132.7
Subbasin-4	0.0342	94.6	129.0	146.1	182.5
Subbasin-5	0.0184	64.2	85.3	95.8	118.4
Subbasin-7	0.0174	52.4	71.6	81.1	101.4
Subbasin-8	0.0139	42.7	58.7	66.6	83.5
Subbasin-9	0.0156	47.1	64.2	72.7	90.7



- LEGEND**
- DRAINAGE AREA DIVIDE
  - 1  
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)	Shallow Concentrated Flow		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)	
						Length (ft)	Flow Slope (ft/ft)											
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			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	1242			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	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	0.83	12.81	0.21	7.69
8	Range	0.0872	0.13	100	4.28	133	0.0414	Unpaved	3.28	0.68	872			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  
 TBP FIRM #5951

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

**POST-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'	