



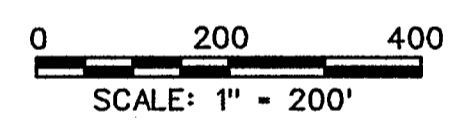
**DRAINAGE BASIN ATTRIBUTES - Fully Developed Conditions**

Basin #	Sq. Ft.	Acres	Sq. Mi.	Future Land Use				Type C Soil			Type D Soil			Weighted CN
				Open Space				Single Family Lot Size			Single Family Lot Size			
				Open Space	1/8 Acre	1/4 Acre	Commercial	Open Space	1/8 Acre	1/4 Acre	Commercial	Open Space	1/8 Acre	
1	1085911	24.93	0.0390	0	0	0	Commercial	125989	959922					95.64
2	1353941	31.08	0.0486	48161	4063			145775	1155942					95.35
3	570777	13.10	0.0205		4660				566117					96.35
4	504796	11.59	0.0181	368816	91391			12316	32273					89.01
5	513765	11.79	0.0184		39074	9758			174875	290058				94.81
6	2247360	51.59	0.0806					216192						96.26
7	466190	10.70	0.0167	171253				85143	56966			152828		92.71
8	411330	9.44	0.0148	366287	14483				30560					87.31
103	333219	7.65	0.0120											76.87

Used Values from MDS

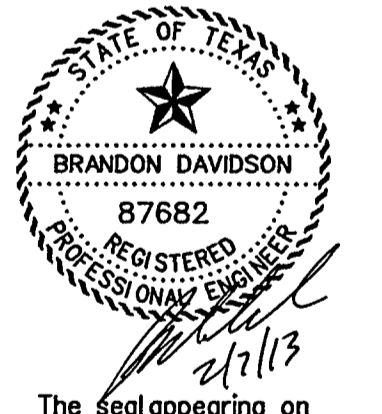
**HEC-HMS RESULTS - FULLY DEVELOPED FLOW**

Hydrologic Element	Drainage Area (SM)	Peak Flow			
		10 Year	50 Year	100 Year	500 Year
Junction-1	0.0876	305.7	405.7	455.6	562.3
Junction-1A	0.1057	222.8	335.9	397.9	526.4
Junction-2	0.1262	261.5	390.0	462.0	612.7
Junction-2A	0.2068	295.5	394.8	494.4	674.8
Junction-3	0.2216	264.9	407.6	487.7	680.0
Junction-4	0.2420	276.0	415.2	484.1	632.3
Junction-5	0.2567	273.6	382.3	437.7	565.2
Junction-6	0.2687	276.4	386.9	442.7	572.3
Reach-A	0.0876	192.2	288.0	339.8	445.1
Reach-A1	0.1057	221.8	333.4	394.4	522.3
Reach-a	0.1262	195.9	304.8	367.0	478.6
Reach-B1	0.2068	255.9	390.9	467.8	652.6
Reach-C	0.2216	264.7	399.0	468.3	594.3
Reach-D	0.2400	266.2	372.7	427.8	553.9
Reach-E	0.2567	272.1	380.9	436.4	564.8
Reservoir-1	0.0876	212.5	334.6	393.8	500.8
Reservoir-2 FD	0.0806	63.9	103.7	137.2	207.2
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	0.0486	166.4	221.0	246.2	306.3
Subbasin-3	0.0205	72.4	95.9	107.6	132.7
Subbasin-4	0.0181	59.2	80.6	91.2	113.8
Subbasin-5	0.0184	64.2	85.3	95.8	118.4
Subbasin-6	0.0806	253.1	335.3	376.4	464.1
Subbasin-7	0.0167	59.6	79.8	89.8	111.3
Subbasin-8	0.0148	45.7	62.7	71.1	89.1



**LEGEND**

- DRAINAGE AREA DIVIDE
- 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 February 7, 2013

**Appendix F - Time of Concentration Calculations - Fully Developed Conditions**

Basin #	Cover Type	Sheet Flow Slope (ft/ft)	n value	Length of Sheet Flow (ft)	Time of Sheet Flow (min)	Length of Shallow 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)	
																		From As-Builts
1	Grass	0.0100	0.41	24	3.29	278	0.0150	Unpaved	2.10	2.20	764	0.0150	8.0	1.64	7.14	0.12	4.28	
2	Grass	0.0100	0.41	24	3.29	500	0.0150	Unpaved	1.98	4.22	1350	0.0150	8.0	2.81	10.32	0.17	6.19	
3	Grass	0.0100	0.41	24	3.29	414	0.0250	Paved	3.21	2.15	1373	0.0150	8.0	3.53	8.97	0.15	5.38	
4	Range	0.0827	0.13	100	4.38	122	0.0941	Unpaved	2.98	0.68	1179	0.0150	8.0	4.9	4.00	9.05	0.15	5.43
5	Grass	0.0100	0.41	24	3.29	781	0.0200	Paved	2.87	4.53	405	0.0150	8.0	1.32	9.14	0.15	5.49	
6	Grass	0.0100	0.41	24	3.29	500	0.0150	Unpaved	1.98	4.22	3674	0.0150	8.0	7.65	15.17	0.25	9.10	
7	Grass	0.0100	0.41	24	3.29	500	0.0400	Unpaved	3.23	2.58	479	0.0150	8.0	1.00	6.87	0.11	4.12	
8	Range	0.0872	0.13	100	4.28	133	0.0414	Unpaved	3.28	0.68	872	0.0150	8.0	5.82	10.78	0.18	6.47	
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  
 TBPE FIRM #5951

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

**FULLY DEVELOPED CONDITIONS DRAINAGE AREA MAP**

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