



47th Street South Drainage Calculations

BASIN	AREA (Ac.)	C (5 Year)	C (100 Year)	L (min.)	Q ₁ (cfs)	Q ₁₀₀ (cfs)	REMARKS
A1	97.33	0.22	0.27	81	37.9	82.3	See General Note 1
A1*	1.15*	--	--	15*	1.2*	2.3*	Adjusted Values
A2	0.90	0.22	0.27	15	0.9	1.8	
A3	1.07	0.22	0.27	15	1.1	2.1	
A4	1.07	0.22	0.27	15	1.1	2.1	
A5	2.31	0.22	0.27	15	2.3	4.6	
A6	1.73	0.22	0.27	15	1.7	3.4	
A7	3.37	0.22	0.27	15	3.4	6.7	
A8	14.10	0.22	0.27	20	12.4	24.9	
A8*	10.63*	--	--	15*	10.7*	21.2*	Adjusted Values
A9	3.36	0.22	0.27	15	3.4	6.7	
A10	3.63	0.22	0.27	15	3.6	7.2	
A11	1.77	0.22	0.27	15	1.8	3.5	
A12	0.87	0.22	0.27	15	0.9	1.7	
A13	1.78	0.22	0.27	15	1.8	3.5	
A14	10.01	0.45	0.55	20	18.0	36.0	
A15	0.78	0.22	0.27	15	0.8	1.6	
B1	4.77	0.22	0.27	15	4.8	9.5	
B2	3.74	0.45	0.55	15	3.8	15.2	
B3	1.63	0.22	0.27	15	1.6	3.2	
B4	2.35	0.45	0.55	15	4.8	9.5	
B5	5.30	0.22	0.27	15	5.3	10.5	
B6	6.22	0.45	0.55	15	12.8	25.2	
B7	1.40	0.45	0.55	15	2.9	5.6	
B8	0.34	0.22	0.27	15	0.3	0.7	
B9	2.96	0.45	0.55	15	6.1	12.0	
B10	0.69	0.22	0.27	15	0.7	1.4	
B11	1.09	0.45	0.55	15	2.2	4.4	
B12	0.88	0.22	0.27	15	0.9	1.8	
B13	34.28	0.45	0.55	31	49.2	100.3	
B13*	13.45*	--	--	24*	22.1*	44.5*	Adjusted Values

* = Indicates Adjusted Values From Limiting Drainage Basins to a Maximum Distance of 600 feet from the Center Line of 47th Street South.

GENERAL NOTES

- Basin A1 currently crosses Meridian Avenue through an 18" CMP approximately 725' north of 47th Street South. This water then flows through Basin A8 and into the existing ditches along 47th Street South. When the Meridian Avenue - 47th Street South to 31st Street South project is complete, the runoff from Basin A1 will be collected into the future stormwater system that will be connected to the RCBC system designed with this project. This entire system will then discharge into the drainage ditch 1/2 mile east of Meridian on the south side of 47th Street South.
- The existing Drainage Dedication adjacent to the Caldwell's Third Addition will need to be reclaimed by the City and graded to provide drainage to the drainage basins north of 47th Street South that cannot be handled by the proposed stormwater sewer system. This runoff will pass under Euclid Street in 2-36" RCP's and be collected by the existing drop inlet west of Clarence and flowing under 47th Street South in the existing 10' X 4' RCBC.

DRAINAGE SUMMARY (Based on Flows)
 Total Q₁₀₀ = 343 cfs
 Participating Q₁₀₀ = 207 cfs*
 Participating Q₁₀₀ / Total Q₁₀₀ = 207 cfs/343 cfs = 0.60
 Participating Portion of SWS System = 60%

DRAINAGE SUMMARY (Based on Area)
 Total Q₁₀₀ = 210 Acres
 Participating Q₁₀₀ = 90 Acres*
 Participating Q₁₀₀ / Total Q₁₀₀ = 90 Ac./210 Ac. = 0.43
 Participating Portion of SWS System = 43%

Drawing File: F:\47th St. South\Drainage\Drainage Plan.dwg
 Design: TPV
 Drawn: Staff
 Approved: TPV
 Scale: 1" = 400'

Project No. 05-10E397 CAPITAL IMPROVEMENT PROJECT
47th STREET DRAINAGE PLAN
 47TH STREET SOUTH - MERIDIAN AVENUE TO SENECA STREET

Baughman Company, P.A.
 315 Ellis St., Wichita, KS 67211 P 316.262.7271 F 316.262.0149
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