

FULLY DEVELOPED DRAINAGE AREA CALCULATIONS										
Drainage Area Designation	Acreage (AC)	C Factor	C X A	Rainfall Intensity (In/Hr)			Runoff (cfs)			Remarks
				2 Yr.	25 Yr.	100 Yr.	2 Yr.	25 Yr.	100 Yr.	
A-1	0.52	0.90	0.47	5.2	8.3	9.8	2.43	3.88	4.59	Grade to Drain (Future Street Inlet)
A-2	0.52	0.90	0.47	5.2	8.3	9.8	2.43	3.88	4.59	Street Inlet
A-3	0.51	0.90	0.46	5.2	8.3	9.8	2.39	3.81	4.50	Grade to Drain (Future Street Inlet)
A-4	0.51	0.90	0.46	5.2	8.3	9.8	2.39	3.81	4.50	Street Inlet
A-5	0.51	0.90	0.46	5.2	8.3	9.8	2.39	3.81	4.50	Grade to Drain (Future Street Inlet)
A-6	0.66	0.90	0.59	5.2	8.3	9.8	3.09	4.93	5.82	Street Inlet
A-7	0.49	0.90	0.44	5.2	8.3	9.8	2.29	3.66	4.32	Grade to Drain (Future Street Inlet)
A-8	0.28	0.90	0.25	5.2	8.3	9.8	1.31	2.09	2.47	Street Inlet
A-9i	2.85	0.90	2.57	5.2	8.3	9.8	13.34	21.29	25.14	Future Development
A-9ii	4.49	0.90	4.04	5.2	8.3	9.8	21.01	33.54	39.60	Future Development
A-10i	1.31	0.90	1.18	5.2	8.3	9.8	6.13	9.79	11.55	Future Development
A-10ii	2.07	0.90	1.86	5.2	8.3	9.8	9.69	15.46	18.26	Future Development
A-11i	1.53	0.90	1.38	5.2	8.3	9.8	7.16	11.43	13.49	Future Development
A-11ii	2.41	0.90	2.17	5.2	8.3	9.8	11.28	18.00	21.26	Future Development
A-12	6.65	0.90	5.99	5.2	8.3	9.8	31.12	49.68	58.65	Future Development
F-1	5.85	0.90	5.27	5.2	8.3	9.8	27.38	43.70	51.60	Existing Storm Drain Stub Out
Storm Drain line 'B'--Cross Culvert 'B'										
B-1	0.42	0.90	0.38	5.2	8.3	9.8	1.97	3.14	3.70	Street Inlet
B-2	0.46	0.90	0.41	5.2	8.3	9.8	2.15	3.44	4.06	Future Street Inlet
B-3	0.68	0.90	0.61	5.2	8.3	9.8	3.18	5.08	6.00	Street Inlet
B-4	0.69	0.90	0.62	5.2	8.3	9.8	3.23	5.15	6.09	Street Inlet (Ultimate Design); Temporary 2' X 2' Drop Inlet
B-5	0.49	0.90	0.44	5.2	8.3	9.8	2.29	3.66	4.32	Future Street Inlet
B-6	0.47	0.90	0.42	5.2	8.3	9.8	2.20	3.51	4.15	Street Inlet
B-7	0.79	0.90	0.71	5.2	8.3	9.8	3.70	5.90	6.97	Future Street Inlet
B-8	0.81	0.90	0.73	5.2	8.3	9.8	3.79	6.05	7.14	Street Inlet
B-9	4.02	0.90	3.62	5.2	8.3	9.8	18.81	30.03	35.46	Shubb-Out for Future Development
G-1	8.32	0.90	7.49	5.2	8.3	9.8	38.94	62.15	73.38	Culvert 'B' Crossing
G-2	13.25	0.90	11.93	5.2	8.3	9.8	62.01	98.98	116.87	Existing Culvert Crossing
O-1	0.61	0.35	0.21	5.2	8.3	9.8	1.11	1.77	2.09	Detained flow from Whitmore's Industrial Manufacturing
Storm Drain line 'D'--Drainage in Townsend Blvd.										
D-1	0.20	0.90	0.18	5.2	8.3	9.8	0.94	1.49	1.76	Future Street Inlet
D-2	0.12	0.90	0.11	5.2	8.3	9.8	0.56	0.90	1.06	Street Inlet
D-3	0.80	0.35	0.28	5.2	8.3	9.8	1.46	2.32	2.74	Until Area is Developed, Area Drains to Justin Rd. as Un-developed
D-4	0.37	0.35	0.13	5.2	8.3	9.8	0.67	1.07	1.27	See Townsend Blvd. Plans by Wier and Associates

NOTES:

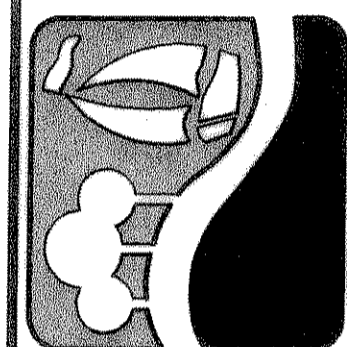
- 1) PRESENT AND FUTURE FLOWS FROM DRAINAGE AREAS A-9ii, A-10ii, A-11ii, AND A-12 ENTER STORM DRAIN SYSTEM 'A' THROUGH HEADWALL AND CULVERT A-12. CULVERT AT A-12 AND STORM DRAIN LINE 'A' WERE SIZED FOR FULLY DEVELOPED CONDITIONS. THEREFORE, $Q_{100} = \text{SUM}(A-9ii, + A-10ii, + A-11ii, + A-12) = 137.77 \text{ CFS}$.
- 2) USING A C FACTOR OF 0.9 FOR THE RUNOFF CALCULATIONS, ALL INLET DESIGNS ACCOMMODATE THE STREET SECTIONS, PARKWAYS, AND ROWS FOR THEIR RESPECTIVE DRAINAGE AREAS.
- 3) DRAINAGE AREA G-1 IS CURRENTLY UN-DEVELOPED. CULVERT CROSSING WAS SIZED FOR FULLY DEVELOPED CONDITIONS.
- 4) FLOW FROM DRAINAGE AREAS D-1, D-2, D-3, AND D-4 ARE ACCOUNTED FOR IN THE ROADWAY IMPROVEMENTS FOR TOWNSEND BLVD.
- 5) DRAINAGE AREAS B-3 AND B-4 WILL DRAIN TO TEMPORARY FIELD INLET LOCATED AT END OF LATERAL B-4.

**RECORD
DRAWING
2/18/09**

△ REVISED 12/27/2006

FILE: DACALCS-04124_01_REV-01.dwg
TIME: 9:57

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 JUSTIN ROAD
 EXTENSION**

**DRAINAGE
 AREA
 CALCULATIONS**

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 LAST SHEET EDIT
 DATE 02-18-2009
 WA# 04124_01

**SHEET NO.
 D003**