

DRAINAGE AREA CALCULATIONS

DRAINAGE AREA DESIGNATION	TOTAL AREA (ACRES)	C	C	C	C	C	C	C	C x A	tc (min.)	I	I	I	Q	Q	Q	
		0.35 PARKS, OPEN SPACE & FLOOD PLAIN	0.50 SINGLE FAMILY & DUPLEX RESIDENTIAL	0.70 SCHOOL	0.75 MULTI FAMILY RESIDENTIAL	0.80 TOWNHOUSE / CHURCHES	0.90 INDUSTRIAL / COMMERCIAL / MERCANTILE / RETAIL	0.90 STREET RIGHT-OF-WAY			(in./Hr.) 10 YEAR STORM	(in./Hr.) 25 YEAR STORM	(in./Hr.) 100 YEAR STORM	(cfs) 10 YEAR STORM	(cfs) 25 YEAR STORM	(cfs) 100 YEAR STORM	
A-1	653																2,841
A-2	36.22				6.21			18.49	11.52	31.67	13.9	6.65	7.51	9.11	210.6	237.8	288.5
A-3	0.86								0.86	0.77	10	7.24	8.15	9.80	5.6	6.3	7.5
A-4	0.90								0.90	0.81	10	7.24	8.15	9.80	5.9	6.6	7.9
A-4.1	2.35							2.35		2.12	10	7.24	8.15	9.80	15.3	17.3	20.8
A-4.2	0.42								0.42	0.38	10	7.24	8.15	9.80	2.8	3.1	3.7
A-4.3	1.04								1.04	0.94	10	7.24	8.15	9.80	6.8	7.7	9.2
A-4.4	1.86							1.86		1.67	10	7.24	8.15	9.80	12.1	13.6	16.4
A-4.5	0.74				0.13			0.30	0.31	0.65	10	7.24	8.15	9.80	4.7	5.3	6.4
A-4.6	0.92				0.43			0.02	0.47	0.76	10	7.24	8.15	9.80	5.5	6.2	7.4
A-4.7	0.80								0.80	0.72	10	7.24	8.15	9.80	5.2	5.9	7.1
A-4.8	0.86								0.86	0.77	10	7.24	8.15	9.80	5.6	6.3	7.5
A-5	0.59								0.59	0.53	10	7.24	8.15	9.80	3.8	4.3	5.2
A-5.1	0.78				0.01				0.77	0.70	10	7.24	8.15	9.80	5.1	5.7	6.9
A-5.2	0.30								0.30	0.27	10	7.24	8.15	9.80	2.0	2.2	2.6
A-5.3	0.28								0.28	0.25	10	7.24	8.15	9.80	1.8	2.0	2.5
A-5.4	0.34								0.34	0.31	10	7.24	8.15	9.80	2.2	2.5	3.0
A-5.5	0.20								0.20	0.18	10	7.24	8.15	9.80	1.3	1.5	1.8
B-1	2.35				1.49				0.86	1.89	10	7.24	8.15	9.80	13.7	15.4	18.5
B-2	1.02				0.12				0.90	0.90	10	7.24	8.15	9.80	6.5	7.3	8.8
C-1	0.24							0.02	0.22	0.22	10	7.24	8.15	9.80	1.6	1.8	2.2
C-2	1.08				0.50			0.04	0.54	0.90	10	7.24	8.15	9.80	6.5	7.3	8.8

NOTE: FOR DRAINAGE BASIN "A-1", REFER TO FLOOD STUDY PREPARED BY NATIONWIDE RESOURCE SERVICES, INC.
Q100 FOR DRAINAGE BASIN "A-1" PER THIS STUDY = 2,841 cfs AT PROPOSED BOX CULVERT CROSSING LOCATION.

Drainage Area	Travel Distance (ft)	Average Slope (%)	Type Of Conveyance	Average Velocity (ft/sec)	Travel Time (min.)	Time Of Concen. (min.)
A-2	150	0.7	Paved Swale	2.5	1.0	13.9
	600	1.1	Earthen Swale	1.5	6.7	
	310	2.5	Enclosed Storm Drain System	11.4	0.5	
	270	1.5	Earthen Swale	1.8	2.5	
	1550	1.8	Earthen Ditch	8.2	3.2	

INLET DESIGN CALCULATIONS

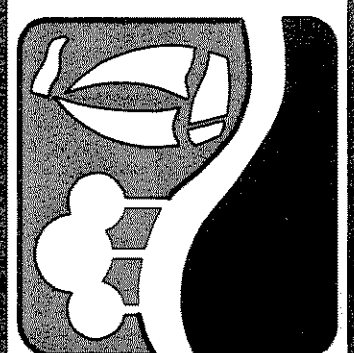
INLET No.	DISCHARGES TO	DESIGN STORM FREQUENCY (years)	TIME OF CONC. (min.)	RAINFALL INTENSITY (in./hr.)	DRAINAGE AREA (acres)	DRAINAGE AREA CA	FLOW FROM DRAINAGE AREA (cfs)	CARRY-OVER (cfs)	TOTAL GUTTER FLOW (cfs)	GUTTER SLOPE (%)	STREET SECTION	CROSS-SLOPE OR CROWN (#/ft) OR (in.)	DEPTH OF FLOW (ft)	PONDED WIDTH (ft)	INLET LENGTH	FLOW COLLECTED	CARRY-OVER (cfs)	REMARKS
INLET A-3	LINE A-3	100	10	9.8	0.86	0.77	7.5	4.4	11.9	-	TRIANGULAR	2.00%	0.41	-	15	11.9	0.0	FUTURE RECESSED CURB INLET
INLET A-4	LINE A-4	100	10	9.8	0.90	0.81	7.9	0.0	7.9	1.30	TRIANGULAR	2.00%	0.29	14.6	10	5.5	2.4	RECESSED CURB INLET
AREA A-4.1	LAT. A-4.1	100	10	9.8	2.35	2.12	20.8	0.0	20.8	-	TRIANGULAR	2.00%	0.40	-	N/A	20.8	0.0	FUTURE STORM DRAIN EXTENSION
INLET A-4.2	LAT. A-4.2	100	10	9.8	0.42	0.38	3.7	2.4	6.1	2.44	TRIANGULAR	2.00%	0.23	11.7	10	4.6	1.5	RECESSED CURB INLET
INLET A-4.3	LAT. A-4.3	100	10	9.8	1.04	0.94	9.2	0.0	9.2	2.44	TRIANGULAR	2.00%	0.27	13.7	10	5.4	3.8	FUTURE RECESSED CURB INLET
INLET A-4.4	LAT. A-4.4	100	10	9.8	1.86	1.67	16.4	0.0	16.4	-	TRIANGULAR	2.00%	0.37	-	16	16.4	0.0	TEMP. DROP INLET FUTURE STORM DRAIN EXTENSION
INLET A-4.5	LAT. A-4.5	100	10	9.8	0.74	0.65	6.4	1.5	7.9	2.44	TRIANGULAR	2.00%	0.26	13.0	10	5.2	2.7	RECESSED CURB INLET
INLET A-4.6	LAT. A-4.6	100	10	9.8	0.92	0.76	7.4	2.7	10.1	1.00	TRIANGULAR	2.00%	0.33	16.7	10	6.4	3.7	RECESSED CURB INLET
INLET A-4.7	LAT. A-4.7	100	10	9.8	0.80	0.72	7.1	3.8	10.9	1.00	TRIANGULAR	2.00%	0.34	17.2	10	6.5	4.4	FUTURE RECESSED CURB INLET
INLET A-4.8	LAT. A-4.8	100	10	9.8	0.86	0.77	7.5	3.7	11.2	-	TRIANGULAR	2.00%	0.40	-	15	11.2	0.0	RECESSED CURB INLET
INLET A-5	LINE A-5	100	10	9.8	0.59	0.53	5.2	0.0	5.2	3.74	TRIANGULAR	2.00%	0.20	10.2	10	4.2	1.0	RECESSED CURB INLET
INLET A-5.1	LAT. A-5.1	100	10	9.8	0.78	0.70	6.9	0.0	6.9	4.28	TRIANGULAR	2.00%	0.22	11.1	10	4.6	2.3	FUTURE RECESSED CURB INLET
INLET A-5.2	LAT. A-5.2	100	10	9.8	0.30	0.27	2.6	1.0	3.6	4.28	TRIANGULAR	2.00%	0.17	8.7	10	3.5	0.1	RECESSED CURB INLET
INLET A-5.3	LAT. A-5.3	100	10	9.8	0.28	0.25	2.5	2.3	4.8	4.28	TRIANGULAR	2.00%	0.19	8.6	10	4.0	0.8	FUTURE RECESSED CURB INLET
INLET A-5.4	LAT. A-5.4	100	10	9.8	0.34	0.31	3.0	0.1	3.1	2.72	TRIANGULAR	2.00%	0.18	8.9	10	3.1	0.0	RECESSED CURB INLET
INLET A-5.5	LAT. A-5.5	100	10	9.8	0.20	0.18	1.8	0.8	2.6	2.72	TRIANGULAR	2.00%	0.17	8.3	10	2.6	0.0	FUTURE RECESSED CURB INLET
INLET B-1	LINE B	100	10	9.8	2.35	1.89	18.5	0.0	18.5	-	TRIANGULAR	2.00%	0.48	-	15	18.5	0.0	RECESSED CURB INLET
INLET B-2	LAT. B-2	100	10	9.8	1.02	0.90	8.8	0.0	8.8	-	TRIANGULAR	2.00%	0.36	-	10	8.8	0.0	RECESSED CURB INLET
INLET C-1	LINE C	100	10	9.80	0.24	0.22	2.2	0.0	2.2	1.00	SWALE	12" INVERT	0.50	6.0	3.5x5'	2.2	0.0	TxDOT TYPE H HORIZONTAL GRATE INLET
INLET C-2	LINE C	100	10	9.80	1.08	0.90	8.8	0.0	8.8	1.00	SWALE	12" INVERT	0.90	11.0	3'x3'	8.8	0.0	TxDOT TYPE H HORIZONTAL GRATE INLET

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RECORD PLANS
MARCH 28, 2008



 PREPARED BY:
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PHASE I SH. 205 BYPASS
 FROM SH. 276 TO INTERSTATE 30
**DRAINAGE AREA &
 INLET DESIGN CALCULATIONS**

STATE OF TEXAS
 PHILIP L. GRAHAM
 94719
 LICENSED PROFESSIONAL ENGINEER
 3/28/08

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