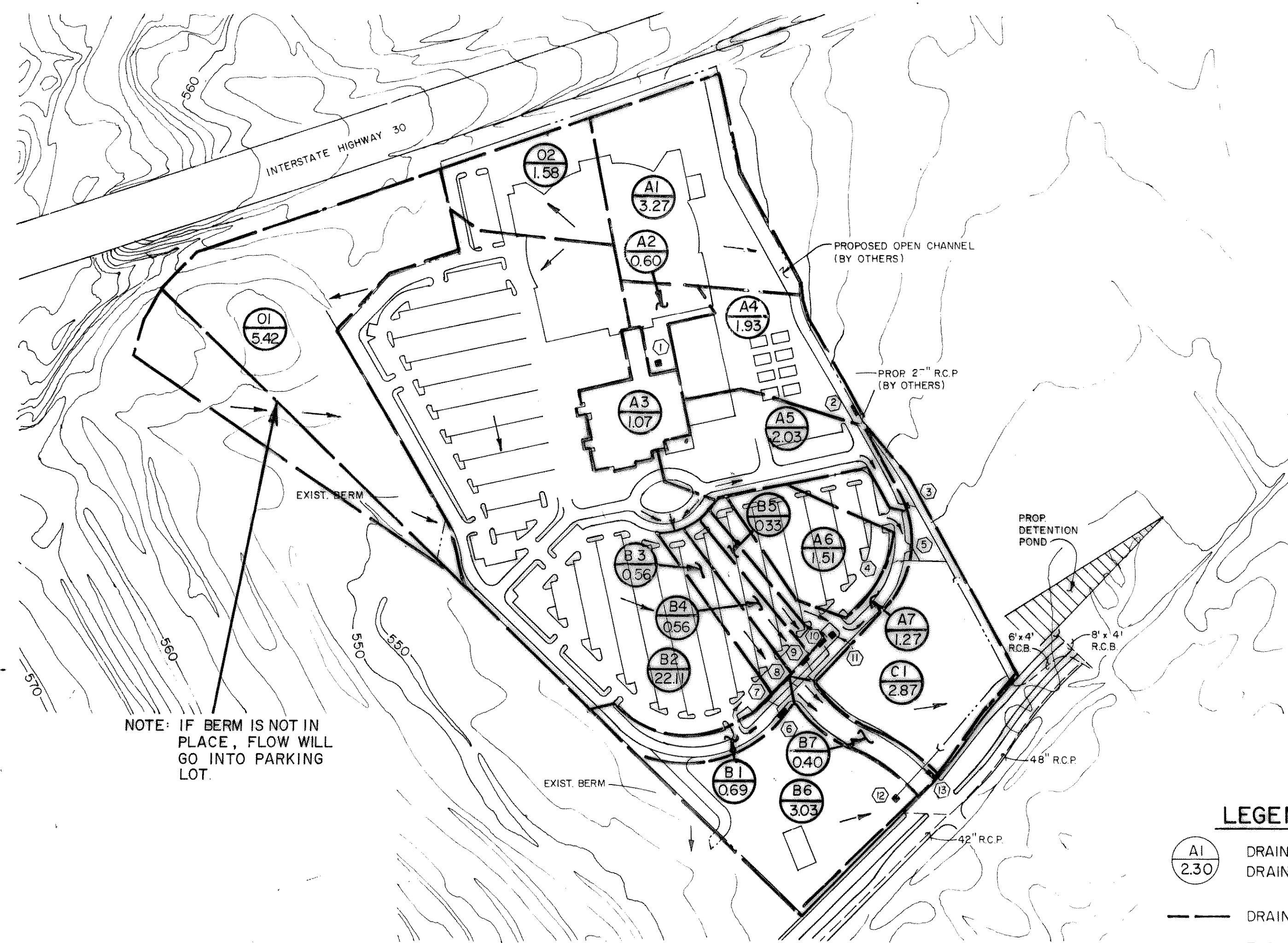


STORM SEWER CALCULATIONS



NOTE: IF BERM IS NOT IN PLACE, FLOW WILL GO INTO PARKING LOT.

LEGEND

- A1 DRAINAGE AREA NO.
- 2.30 DRAINAGE AREA (AC.)
- DRAINAGE DIVIDE
- FLOW ARROW
- ⊙ PROP. INLET NO.
- EXIST. STORM SEWER
- PROP. STORM SEWER

RUNOFF COMPUTATIONS

D.A. NO.	AREA (AC)	C	TC (MIN)	I <sub>100</sub> (IN/HR)	Q <sub>100</sub> (CFS)
A2	0.60	0.90	10.00	9.8	5.29
A3	1.07	0.90	10.00	9.8	9.44
A4	1.93	0.90	10.00	9.8	17.92
A5	2.03	0.90	10.00	9.8	17.90
A6	1.51	0.90	10.00	9.8	13.32
A7	1.27	0.90	10.00	9.8	11.20
B1	0.69	0.90	10.00	9.8	6.09
B2	22.11	0.90	10.00	9.8	195.01
B3	0.56	0.90	10.00	9.8	4.94
B4	0.56	0.90	10.00	9.8	4.94
B5	0.33	0.90	10.00	9.8	2.91
B6	3.03	0.90	10.00	9.8	26.72
B7	0.40	0.90	10.00	9.8	3.53
C1	2.87	0.90	10.00	9.8	25.31
O1	5.42	0.90	10.00	9.8	47.80
O2	1.58	0.90	10.00	9.8	13.94

NOTES: 1.) DRAINAGE AREA O1 PRODUCES 47.80 CFS WHICH DRAINS ONTO THE SUBJECT SITE AND THE PRIVATE DRAINAGE SYSTEM IS NOT DESIGNED FOR THIS OFFSITE RUNOFF.  
2.) DRAINAGE AREA O2 PRODUCES 13.94 CFS WHICH DRAINS TO IH - 30.

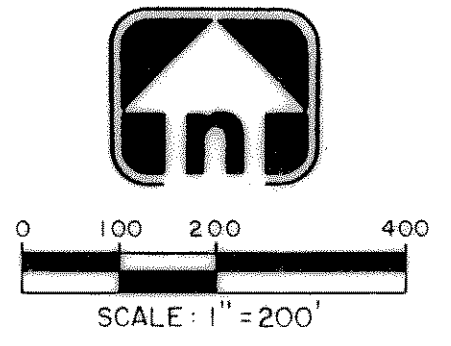
UPSTREAM STATION	DOWNSTREAM STATION	Distance Between Collection Points	INCREMENTAL DRAINAGE AREA				Accumulated "CA"	Time of Upstream Station (minutes)	Design Storm Frequency (yrs.)	Intensity "I" (inches/hr.)	Storm Water Runoff "Q" (c.f.s.)	Slope of Hydraulic Gradient "S" (ft./ft.)	Selected Storm Sewer Size	Velocity in Sewer Between Collection Points "V" (f.p.s.)	Head Loss Coeff. K	Head Loss at Upstream Station (feet)	Flow Time in Sewer Distance V x 60 (minutes)	Time of Downstream Station (minutes)	Hydraulic Grade Elevation Upstream/Downstream		
			Area No.	Drainage Area "A" (Acres)	Runoff Coeff. "C"	Incremental "CA"															
LINE "A" HEADWALL	12+69.63	337.22	A-1	3.27	0.90	2.94	2.94	10.00	100	9.8	28.81	0.0087	27	7.26	0.75		0.78	10.78	540.68	527.75	
CI-2	12+47.29	11.30	A-4	1.93	0.90	1.74	1.74	10.00	100	9.8	17.05	0.0057	24	5.43	0.75		0.03	10.03	537.81	537.75	
LAT-2	12+26.41	233.00					4.68	10.70	100	9.7	45.40	0.0074	33	7.65	0.75		0.30	0.51	11.29	537.45	856.72
CI-3	11+81.09	20.00	A6	2.03	0.90	1.83	1.83	10.00	100	9.8	17.93	0.0063	24	5.71	0.75		0.06	10.06	535.85	536.72	
LAT-3	11+81.99	135.00					6.51	11.29	100	9.6	62.50	0.0088	36	8.94	0.75		0.34	0.25	11.54	535.58	534.19
LINE "A1" HEADWALL	52.00	LINE "A1"				2.50	9.01	11.84	100	9.6	86.50	0.0074	42	9.00	0.75				533.84	533.46	
CI-4	LAT-5	67.00	A-6	1.51	0.90	1.36	1.36	10.00	100	9.8	13.33	0.0181	18	7.55	0.75		0.15	10.15	536.42	535.34	
CI-5	LINE "A1"	15.00	A-7	1.27	0.90	1.14	1.14	10.00	100	9.8	11.17	0.0090	21	4.65	0.75		0.05	10.05	535.42	535.34	
LAT-5	LINE "A"	69.00					2.50	10.15	100	9.8	24.50	0.0063	27	6.17	0.75		0.25	0.19	10.34	535.08	534.65
														9.00	0.75		0.81			533.84	

UPSTREAM STATION	DOWNSTREAM STATION	Distance Between Collection Points	INCREMENTAL DRAINAGE AREA				Accumulated "CA"	Time of Upstream Station (minutes)	Design Storm Frequency (yrs.)	Intensity "I" (inches/hr.)	Storm Water Runoff "Q" (c.f.s.)	Slope of Hydraulic Gradient "S" (ft./ft.)	Selected Storm Sewer Size	Velocity in Sewer Between Collection Points "V" (f.p.s.)	Head Loss Coeff. K	Head Loss at Upstream Station (feet)	Flow Time in Sewer Distance V x 60 (minutes)	Time of Downstream Station (minutes)	Hydraulic Grade Elevation Upstream/Downstream		
			Area No.	Drainage Area "A" (Acres)	Runoff Coeff. "C"	Incremental "CA"															
Y-12	LAT-13	100.00	B6	3.03	0.90	2.73	2.73	10.00	100	9.8	26.72	0.0074	27	6.73	0.75		0.25	10.25	536.46	534.22	
CI-13	LINE "B"	19.00	B7	0.40	0.90	0.36	0.36	10.00	100	9.8	3.53	0.0011	18	2.00	0.75		0.16	10.16	534.74	534.22	
LAT-13	LINE "B1"	7.00					3.09	10.25	100	9.8	30.28	0.0055	30	6.17	0.75		0.06	0.02	10.27	534.66	534.62
LINE "B1" HEADWALL	20.00	LINE "B"				21.27	24.36	11.04	100	9.6	233.86	0.0049	66	9.85	0.75		1.08	0.03	11.07	533.56	533.46
CI-5	45° BEND	36.00	B1	0.69	0.90	0.62	0.62	10.00	100	9.8	6.09	0.0034	18	3.44	0.75		0.17	10.17	537.43	537.31	
45° BEND	LAT-7	20.00				0.62	0.62	10.17	100	9.8	6.08	0.0034	18	3.44	0.75		0.05	0.10	10.27	537.26	537.19
CI-7	LINE "B1"	32.00	B2	4.86	0.90	4.38	4.38	10.00	100	9.8	42.90	0.0041	36	6.07	0.75		0.09	10.09	537.32	537.19	
LAT-7	LAT-8	40.00					5.00	10.27	100	9.8	49.00	0.0054	36	6.94	0.75		0.61	0.10	10.37	536.58	536.37
CI-8	LINE "B1"	32.00	B3	4.81	0.90	4.33	4.33	10.00	100	9.8	42.40	0.0040	36	6.00	0.75		0.09	10.09	536.50	536.37	
LAT-8	LINE "B2"	14.00					9.33	10.37	100	9.8	91.43	0.0041	48	7.28	0.75		0.26	0.03	10.40	536.11	536.05
LINE "B2" BEND	33.00	LINE "B2"				11.94	21.27	10.40	100	9.8	208.45	0.0039	66	8.78	0.75		0.57	0.06	10.46	536.48	536.35
BEND	LINE "B"	305.00					21.27	10.46	100	9.8	208.45	0.0039	66	8.78	0.75		0.30	0.58	11.04	535.05	533.86
LINE "B2"														9.85	0.75		0.30			533.56	
CI-11	45° BEND	32.00	B2-B5	4.70	0.90	4.23	4.23	10	100	9.8	41.46	0.0039	36	5.87	0.75		0.09	10.09	537.85	537.72	
45° BEND	LAT-10	30.00					4.23	10.09	100	9.8	41.46	0.0039	36	5.87	0.55		0.24	0.09	10.18	537.48	537.37
CI-10	LINE "B2"	32.00	B2-B5	3.84	0.90	3.46	3.46	10	100	9.8	33.92	0.0041	33	5.72	0.75		0.09	10.09	537.50	537.37	
LAT-10	LAT-9	60.00					7.69	10.18	100	9.8	75.36	0.0056	42	7.84	0.75		0.13	10.31	536.80	536.46	
CI-9	LINE "B2"	32.00	B2-B4	4.72	0.90	4.25	4.25	10	100	9.8	41.68	0.0039	36	5.90	0.75		0.09	10.09	536.89	536.46	
LAT-9	LINE "B1"	15.00					11.94	10.31	100	9.8	117.01	0.0048	45	8.25	0.75		0.03	10.34	536.12	536.05	

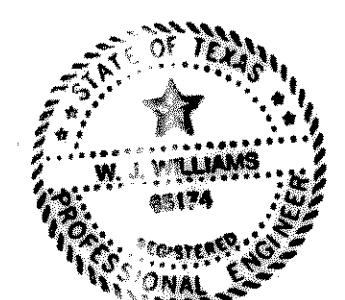
CITY OF ROCKWALL, TEXAS  
COMPUTATION SHEET FOR DETERMINING CAPACITY OF CURB OPENING INLET

INLET NO.	TYPE	D.A. NO.	Q <sub>o</sub> C.F.S.	CARRY-OVER FLOW q C.F.S.	TOTAL FLOW Q <sub>o</sub> C.F.S.	Z	Z/N	S <sub>o</sub> FT/FT	V <sub>o</sub> FT.	WIDTH	Q <sub>o</sub> C.F.S. FT.	L <sub>o</sub> FT.	L <sub>o</sub> FT.	Q <sub>o</sub> C.F.S.	Q <sub>o</sub> C.F.S.	CARRY-OVER FLOW q C.F.S.	REMARKS		
1	AREA DRAIN	A2	5.29	-	5.29										5.29	0.00	LOW POINT		
2	CURB	A4	17.02	-	17.02						1.15	14.8	15	-	17.02	0.00	LOW POINT		
3	CURB	A5	17.9	-	17.9	100	6666	0.014	0.30	30	0.94	19.04	20	-	17.90	0.00	LOW POINT		
4	CURB	A6	13.32	-	13.32						1.15	11.58	15	-	13.32	0.00	LOW POINT		
5	CURB	A7	11.20	-	11.20						1.15	9.74	10	-	11.20	0.00	LOW POINT		
6	CURB	B10	6.09	-	6.09						1.15	5.30	10	-	6.09	0.00	LOW POINT		
7	CURB	B2	195.01	-	195.01	100	6666	0.01	0.70	70	1.30	150.0	20	0.13	0.22	42.90	152.11	LOW POINT	
8	CURB	B3	4.94	152.11	157.05	100	6666	0.01	0.65	65	1.30	120.8	20	0.17	0.27	42.40	114.15	LOW POINT	
9	CURB	B4	4.94	114.15	119.09	100	6666	0.01	0.62	62	1.30	87.76	20	0.23	0.35	41.68	72.47	LOW POINT	
10	CURB	B5	2.91	72.47	75.38	100	6666	0.01	0.55	55	1.21	62.30	20	0.32	0.45	33.92	41.46	LOW POINT	
11	Y-INLET			41.46	41.46												41.46	0.00	1.0' HEAD
12	Y-INLET	B6	26.72	-	26.72												26.72	0.00	
13	CURB	B7	3.53	-	3.53						1.15	3.1	5	-	1.43	3.53	0.00		

2.20



**RECORD DRAWING**  
This is to certify that changes and corrections have been made to a drawing to the contractor's records of this project.  
Signature: *[Signature]* Date: 4/12/00  
Graham Associates, Inc.  
CONSULTING ENGINEERS & PLANNERS



*[Signature]*  
11/14/79

DRAINAGE AREA MAP & DATA

LOT 1, BLOCK A  
LAKE POINTE  
BAPTIST CHURCH

CITY OF ROCKWALL  
ROCKWALL COUNTY, TEXAS

Graham Associates, Inc.  
CONSULTING ENGINEERS & PLANNERS  
616 SIX FLAGS DRIVE, SUITE 400  
ARLINGTON, TEXAS 76011 (817) 640-8535

Date: NOV., 1998  
File: 9762-1011  
Drawn By: B.M.A. Sheet: 8 of 27