



RUNOFF COLLECTION POINT (INLET OR MANHOLE)	DISTANCE BETWEEN COLLECTION POINTS	INCREMENTAL DRAINAGE AREA				TOTAL "CA"	TIME OF UPSTREAM STATION (MINUTES)	DESIGN STORM FREQUENCY (YEARS)	INTENSITY "I" (IN/HR)	STORM WATER RUNOFF "Q" (CFS)	SELECTED STORM SEWER SIZE	SLOPE OF HYDRAULIC GRADIENT "S" (FT/FT)	VELOCITY IN SEWER BETWEEN COLLECTION POINTS "V" (FPS)	VELOCITY HEAD V2/2g (FT)	HEAD LOSS COEFFICIENT "Kj"	VELOCITY HEAD LOSS @ UPSTREAM STATION KJV2/2g (FT)	FLOW TIME IN SEWER (L/V*60) (MINUTES)	TIME AT DOWNSTREAM STATION (MINUTES)	HYDRAULIC GRADE LINE DOWNSTREAM (1)	HYDRAULIC GRADE LINE UPSTREAM (2)	PROPOSED TOP OF GRATE OR CURB
		AREA	TOTAL AREA	RUNOFF COEFFICIENT "C"	INCREMENTAL "CA"																
UPSTREAM STATION	DOWNSTREAM STATION	AREA NUMBER																			
LINE A																					
63	0	63	Total Area - Detention							28.2	24"	0.015	8.84	1.21	1.25	1.52	0.12	10.12	588.75	589.70	593.15

LINE B																							
507	472	35	DA-2	0.45	0.45	0.9	0.41	0.41	10.0	100	8.74	3.58	24	0.0003	1.14	0.02	0.6	0.01	0.5	10.5	592.06	592.07	592.08
472	434	38	DA-4+DA-5	0.45	0.90	0.9	0.41	0.81	10.5	100	8.61	6.97	24	0.0009	2.21	0.08	0.6	0.05	0.3	10.8	591.99	592.02	595.42
434	362	72	DA-6	0.31	1.21	0.9	0.28	1.09	10.8	100	8.54	9.31	24	0.0017	2.96	0.14	0.6	0.08	0.4	11.2	591.83	591.95	596.42
362	303	59	DA-7	0.33	1.54	0.9	0.30	1.39	11.2	100	8.45	11.75	24	0.0027	3.74	0.22	0.6	0.12	0.3	11.5	591.62	591.78	597.42
303	237	66	DA-3	0.32	1.86	0.9	0.29	1.67	11.5	100	8.39	14.01	24	0.0038	4.46	0.31	0.6	0.19	0.2	11.7	591.32	591.57	598.42
237	10	227	DA-8	0.29	2.15	0.9	0.26	1.94	11.7	100	8.35	16.20	24	0.0051	5.15	0.41	0.6	0.25	0.7	12.4	590.10	591.26	599.42
10	0	10	DA-1 + DA-11-14	1.75	3.90	0.9	1.58	3.51	12.4	100	8.16	28.64	33	0.0029	4.82	0.36	0.6	0.22	0.03	12.4	590.10	590.13	592.00
LINE C																							
493	486	7	DA-14	0.27	0.27	0.9	0.24	0.24	10.0	100	8.74	2.12	18	0.0004	1.20	0.02	0.6	0.01	0.10	10.1	591.80	591.80	591.50
486	265	221	DA-1	0.49	0.76	0.9	0.44	0.68	10.1	100	8.72	5.93	18	0.0032	3.35	0.18	0.6	0.11	1.1	11.2	590.99	591.70	593.50
265	178	87	DA-12	0.22	0.98	0.9	0.20	0.88	11.2	100	8.45	7.44	21	0.0022	3.09	0.15	0.6	0.09	0.5	11.7	590.82	591.01	594.08
178	22	156	DA-13	0.22	1.20	0.9	0.20	1.08	11.7	100	8.33	9.00	21	0.0032	3.74	0.22	0.6	0.13	0.7	12.4	590.28	590.78	592.60
22	0	22	DA-11	0.55	1.75	0.9	0.5	1.58	12.4	100	8.16	12.85	24	0.0032	4.09	0.26	0.6	0.16	0.1	12.5	590.19	590.26	592.60



MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN

MAY 16, 2002

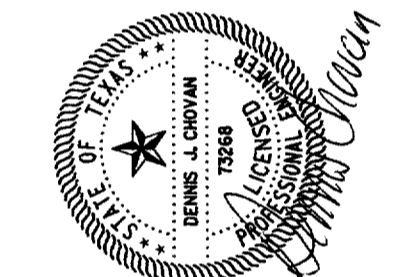
Runoff Coefficient = 0.9
 Drainage Area = 63 acres
 Time of Concentration = 10.1 minutes
 Maximum Outflow Rate = 1.4 cfs

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge (cfs)	Inflow Volume (Cu.Ft)	Outflow Duration (minutes)	Outflow Volume (Cu.Ft)	Storage Volume (Cu.Ft)
5	10.56	0.88	37.7	11,319	17	13,959	(2,640)
10	8.88	1.48	31.7	19,037	22	18,189	848
15	7.56	1.89	27.0	24,311	27	22,419	1,892
20	7.00	2.33	25.0	30,013	32	26,649	3,364
30	5.80	2.90	20.7	37,302	42	35,109	2,193
40	5.00	3.33	17.9	42,876	52	43,569	(693)
50	4.40	3.67	15.7	47,164	62	52,029	(4,865)
60	3.96	3.96	14.1	50,937	72	60,489	(9,552)
70	3.70	4.32	13.2	55,524	82	68,949	(13,425)
80	3.40	4.53	12.1	58,311	92	77,409	(19,098)
90	3.10	4.65	11.1	59,812	102	85,869	(26,057)
120	2.65	5.30	9.5	68,173	132	111,249	(43,076)
180	1.93	5.78	6.9	74,347	192	162,009	(87,662)
360	1.16	6.98	4.2	89,782	372	314,289	(224,507)
720	0.73	8.80	2.6	113,193	732	618,849	(505,656)
1440	0.40	9.55	1.4	122,840	1,452	1,227,969	(1,105,129)

Required Storage Volume = 3,364 cubic feet
 0.08 acre-feet

OSTEOMED CORPORATION FACILITY
 ADDISON, TEXAS

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THE BOARD OF ENGINEERS AND SURVEYORS OF THE STATE OF TEXAS. ANY ALTERATION OF THIS SEALED DOCUMENT WITHOUT THE WRITTEN APPROVAL OF THE SEALING ENGINEER OR SURVEYOR IS UNLAWFUL. THIS IS A REPRODUCED COPY OF THE ORIGINAL DRAWING. THE ORIGINAL DRAWING IS ON FILE IN THE RECORDS OF THE ENGINEER OR SURVEYOR. 8616 NORTHWEST PLAZA DRIVE, DALLAS, TEXAS 75225



Half Associates, Inc.
 ENGINEERS • ARCHITECTS • SCIENTISTS • PLANNERS • SURVEYORS
 8616 NORTHWEST PLAZA DRIVE
 DALLAS, TEXAS 75225
 TEL (214) 342-6500
 FAX (214) 739-4095

Project No:	AVO # 20079	
Issue:	05/18/02	
Revisions:		
No.	Date	Description
1	05/16/02	COMPUTATION CHANGE
2	5/20/2002	AS PER SITE CHANGES
Drawn by: DD		
Checked by: DJC		
Sheet Title		
STORM DRAINAGE CALCULATIONS		
C5.1		
Sheet Number		

AS-BUILT PLAN BASED ON CONTRACTOR'S RECORD DRAWINGS