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RUNOFF COLLECTION POINT (INLET OR MANHOLE) UPSTREAM STATION	DOWNSTREAM STATION	DISTANCE BETWEEN COLLECTION POINTS	INCREMENTAL DRAINAGE AREA AREA NUMBER	AREA	TOTAL AREA	RUNOFF COEFFICIENT "C"	INCREMENTAL "CA"	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 V22/2g (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
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

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MODIFIED RATIONAL METHOD DETENTION BASIN DESIGN

PROJECT

MAY 16, 2002

Runoff Coefficient C = [redacted]
Drainage Area - A = [redacted] acres
Time of Concentration - tc = [redacted] minutes
Maximum Outflow Rate - Q = [redacted] cfs

Duration (minutes)	Intensity (inches/hr)	Depth (inches)	Inflow Discharge Q=CIA	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	

"AS-BUILT PLAN BASED ON CONTRACTOR'S RECORD DRAWINGS"

OSTEOMED CORPORATION FACILITY

ADDISON, TEXAS

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1	05/13/02	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

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