ENGINEER _____ JOB No. 94-306 DATE 16 NOV 1995 PROJECT Cherrywood Park - Plat 2 & 3

HYDRAULIC COMPUTATIONS

LINE UPPER	LINE LOWER	PIPE CHARACTERISTICS LENGTH	SIZE	F.L. GRADE	F.L. UPPER	F.L. LOWER	STRUCT. TOPS UPPER	STRUCT. TOPS LOWER	DEPTH HYD. GRADE	ELEV. HYD. GR'D. UPPER	ELEV. HYD. GR'D. LOWER	HYD. GRADE	FRICT. HEAD LOSS	VEL.	$\frac{V^2}{2g}$	VHL.	TURN LOSS	INLETS STREET GRADE	INLETS CAPACITY	FLOW REQUIREMENTS DRNG. AREA	FLOW REQUIREMENTS P.I.	FLOW REQUIREMENTS Q	FLOW REQUIREMENTS TOTAL Q	PIPE CAP.
											< Full 513.70													
CE 2-28	AI 2-22	165	12"AOS	1.47%	512.70	510.27	520.0	515.2	6.30	513.42	512.77	.0040	.65	3.1	.15	.15	.08/50°	LOW	4.0	0.92 AC	2.64	2.43	2.43	4.68
											527.08													
AI 2-27	MH 2-26	106'	12"AOS	1.5%	526.00	524.41	529.8	532.3	2.72	526.52	< Full 525.41	.0105	1.11	5.0	.39	.39	0.17/40°	2 SIDES OPEN	5.50	1.50 AC	2.64	3.96	3.96	4.73
MH 2-26	CI 2-25	72'	15"RCP	1.0%	524.21	523.49	532.3	531.5	6.89	525.01	< Full 524.74	.0037	0.27	3.2	.16	.17	0.08/45°	—	—	—	—	—	3.96	6.47
CI 2-25	AI 2-24	99'	15"AOS	2.5%	523.29	520.82	531.5	525.1	6.76	523.33	< Full 522.07	.0128	1.26	6.5	.66	.77	0.42/75°	LOW	4.0	1.50 AC	2.64	3.96	7.92	11.08
AI 2-24	AI 2-23	156'	15"AOS	4.5%	520.62	513.60	525.1	521.5	3.03	517.42	< Full 514.85	.0165	2.57	7.3	.83	.33	—	2 SIDES OPEN	5.50	0.41 AC	2.64	1.08	9.00	14.87
AI 2-23	AI 2-22	313'	21"AOS	1.0%	513.40	510.27	521.5	515.2	6.65	514.69	512.77	.0061	1.92	5.6	.49	.05	—	2 SIDES OPEN	5.50	1.68 AC	2.64	4.44	13.44	17.15
AI 2-22	FE 2-21	24'	24"RCP	1.0%	510.07	509.83	515.2	—	2.43	512.64	100 YR. H.W. 512.50	.0060	0.14	5.6	.49	.13	—	2 SIDES OPEN	5.50	2.43 C.R. 0.60 AC	FROM CI 2.64	2-28 1.69	17.56	22.62
											)	)												
											< Full 521.25													
AI 2-20	CI 2-19	121'	15"AOS	2.4%	520.00	517.10	524.4	523.41	3.15	519.07	< Full 518.35	.0059	0.72	4.4	.30	.30	.05/15°	3 SIDES OPEN	8.25	2.04 AC	2.64	5.39	5.39	10.86
CI 2-19	CI 2-18	37'	15"RCP	2.5%	516.90	515.98	523.41	523.51	5.06	517.68	< Full 517.23	.0121	0.45	5.8	.52	.39	.09/15°	1.15%	2.23	0.02 C.R. 0.65 AC	By-pass 2.64	FROM 2-13 1.72	7.13	10.22
CI 2-18	FE 2-17	141'	15"AOS	2.4%	515.78	512.40	523.51	—	6.28	515.90	513.65	.0159	2.25	7.2	.81	.52	—	1.15%	2.23	0.65 AC	2.64	1.72	8.85	10.86
											< Full 531.80													
CI 2-16	CI 2-13	34'	15"RCP	1.0%	530.55	530.21	535.12	535.12	3.32	531.48	531.48	.0001	—	0.6	.01	.01	—/45°	4.1%	1.17	0.27 AC	2.64	0.71	0.71	6.47
											< Full 535.75													
AI 2-15	MH 2-14	164'	15"AOS	1.0%	534.50	532.86	539.0	542.4	3.25	529.79	< Full 534.11	.0042	0.68	3.7	.21	.21	.14/45°	OPEN 4 SIDES	11.0	OFF-SITE 8.06 ON-SITE 1.44	2.64	0.16 4.36	4.52	7.01
MH 2-14	CI 2-13	136'	15"AOS	1.8%	532.66	530.21	542.4	535.12	8.29	532.05	531.48	.0042	0.57	3.7	.21	—	.11/50°	—	—	—	—	—	4.52	9.40
CI 2-13	CI 2-12	45'	15"AOS	1.8%	530.01	529.20	535.12	535.47	3.64	530.83	< Full 530.45	.0083	0.38	5.2	.42	.36	.29/90°	4.1%	1.17	0.02 C.R. 0.45 AC	By-pass to 2.64	CI 2-19 1.17	6.40	9.40
CI 2-12	CI 2-11	52'	15"AOS	1.8%	529.00	528.06	535.47	534.15	5.02	529.94	< Full 529.31	.0122	0.63	5.8	.52	.19	.26/50°	3.28%	1.46	0.28 AC	2.64	0.74	7.14	8.68
CI 2-11	FE 2-10	128'	15"AOS	4.89%	527.86	521.60	534.15	—	4.84	524.50	522.85	.0129	1.65	6.5	.66	.26	—	3.28%	1.46	0.31 AC	2.64	0.82	7.96	15.50

ENGINEER _____ JOB No. 94-306 DATE Nov 6 1995 PROJECT CHERRYWOOD FARC - PLAT 2 & PLAT 3

COMPUTATIONS

HYDRAULIC

LINE UPPER	LINE LOWER	PIPE CHARACTERISTICS LENGTH	SIZE	F.L. GRADE	F.L. UPPER	F.L. LOWER	STRUCT. TOPS UPPER	STRUCT. TOPS LOWER	DEPTH HYD. GRADE	ELEV. HYD. GR'D UPPER	ELEV. HYD. GR'D LOWER	HYD. GRADE	FRICT. HEAD LOSS	VEL.	$\frac{V^2}{2g}$	VHL.	TURN LOSS	INLETS STREET GRADE	INLETS CAPACITY	FLOW REQUIREMENTS DRNG. AREA	FLOW REQUIREMENTS P.I.	FLOW REQUIREMENTS Q	FLOW REQUIREMENTS TOTAL Q	PIPE CAP.	
											∠ FULL 533.65														
CI Z-8	CI Z-7	34'	15"RCP	1.0%	532.40	532.06	536.64	536.64	2.99	533.12	∠ FULL 533.11	.0002	0.01	0.8	.01	.01	—	Low	4.0	0.38AC	2.64	1.00	1.00	6.47	
CI Z-7	MH Z-2	17'	15"ADS	1.0%	531.86	531.69	536.64	537.6	3.53	532.22	∠ FULL 532.17	.0029	0.05	3.1	.15	.20	.10 $\frac{.11}{90^\circ}$	Low	4.0	0.77 C.R. 0.75 AC	Bypass From CI Z-3 2.64	1.98	3.75	7.01	
											∠ FULL 539.00														
AI Z-6	MH Z-2	73'	12"ADS	7.0%	538.00	532.89	542.0	537.6	3.00	534.08	532.17	.0253	1.85	7.8	.95	.95	.10 $\frac{.67}{90^\circ}$	3 SIDES OPEN	8.25	ON-SITE 8.38 AC OFF-SITE 22.7 AC	2.64	1.03 5.12	6.15	10.22	Ultimate
											535.73														
OS Z-5	MH Z-4A	70.25'	RADIAL 54"RCP	0.96%	530.43	529.76	539.0	538.8	3.27	535.73	535.73	.0052	0.36	8.9	1.23	1.23	.11 $\frac{.14}{40^\circ}$	LOW	ON-SITE OFF-SITE	20.25 AC 73.43 AC	2.64	53.46 88.26	141.72	192.73	R=50
MH Z-4A	DCI Z-4	63.31'	54"RCP	0.96%	529.76	529.15	538.8	540.15	3.43	534.00	∠ FULL 533.65	.0055	0.35	9.2	1.32	0.17	—	—	—	T.Q. From —	Future CI —	4.75 —	146.47	192.73	
DCI Z-4	CI Z-3	47.69'	54"RCP	0.96%	529.15	528.69	540.15	540.15	6.50	533.47	∠ FULL 533.19	.0058	0.28	9.4	1.37	0.10	—	3.2%	4.78	1.14 AC	2.64	3.01	149.48	192.73	
CI Z-3	MH Z-2	105.80'	54"RCP	0.96%	528.69	527.67	540.15	537.2	6.96	532.79	∠ FULL 532.17	.0059	0.62	9.5	1.40	0.06	—	3.2%	1.50	0.86 AC	2.64	2.27	150.98	192.73	
MH Z-2	MH Z-1A	133.52'	RADIAL 54"RCP	0.96%	527.67	526.39	537.2	537.8	5.03	531.96	531.07	.0067	0.89	10.1	1.59	0.31	.10 $\frac{.17}{90^\circ}$	—	—	T.Q. From T.Q. From	CI Z-7 CI Z-6	3.75 6.15	160.88	192.73	R=85
MH Z-1A	FE Z-1	104.62'	54"RCP	0.96%	526.39	525.39	537.8	—	6.73	530.59	529.89	.0067	0.70	10.1	1.59	—	—	—	—	—	—	—	160.88	192.73	