

Martin J. Chávez, Mayor

September 12, 1996

James D. Hughes, P.E.
Community Sciences Corporation
Post Office Box 1328
Corrales, New Mexico 87048

RE: AMENDED GRADING AND DRAINAGE PLAN FOR QUINTESSENCE UNIT 4 (D21/D3),
SUBMITTED FOR ROUGH GRADING APPROVAL, ENGINEER'S STAMP DATED 8/13/96.

Dear Mr. Hughes:

City Hydrology has no objection to the above referenced amended Grading and Drainage Plan, however, this plan must be finalized by the DRB. The previously approved grading plan for Quintessence Unit 4, dated May 24, 1996, was not approved by the DRB, and therefore should not be used for grading purposes.

The Grading and Drainage Certification of the plan approved at DRB must be submitted to and approved by this office prior to release of financial guarantees.

If you should have any questions, please feel free to call me at 768-2666.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Andrew Garcia, City Hydrology
Larry Caudill, Environmental Health
Fred Aguirre, DRB-94-552
File





Martin J. Chávez, Mayor

June 24, 1996

James D. Hughes, P.E.
Community Sciences Corporation
Post Office Box 1328
Corrales, New Mexico 87048

RE: REVISED GRADING AND DRAINAGE PLAN FOR QUINTESSENCE UNITS 4 & 5
(D21/D3), SUBMITTED FOR FINAL PLAT APPROVAL AND ROUGH GRADING
APPROVAL, ENGINEER'S STAMP DATED 5/24/96.

Dear Mr. Hughes:

Based on the information provided in the submittal of May 28, 1996, the revised Grading and Drainage Plan for Quintessence Units 4 & 5 is approved for Final Plat action and for Rough Grading.

As you are aware, a top-soil disturbance permit must be obtained before any grading may occur.

Please be advised that the Grading and Drainage Certification must be submitted to and approved by this office prior to release of financial guarantees.

If you should have any questions, please feel free to call me at 768-2666.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Andrew Garcia, City Hydrology
Larry Caudill, Environmental Health
File



Purpose and Scope:

The purpose of this Addendum is to document the changes to Quintessence Units 4, 5 and 6 now known as just Units 4 and 5. The previously approved Drainage Report with Engineer's stamp dated 9-19-95 dealt with major on and offsite drainage issues. This Addendum addresses only minor onsite drainage issues for only the now proposed Unit 4 and 5 portions of the Quintessence. Units 1, 2 and 3 are Rough Graded, the Plats are recorded, and the Workorders have been issued and construction is substantially complete. So for the purposes of this report Units 1, 2 and 3 are assumed to be existing subdivisions built in accordance with the previously approved plan.

Layout Changes to Unit 4 and 5:

The lot sizes are reduced with this new plan and two minor streets connecting the inner loop road (Anton Circle) with the outer loop road were deleted. Other than that, the street layout changed only slightly to minimize retaining walls. Instead of three separate phases the desire now is to build all of the rest of the Quintessence in a single phase (Unit 4). But the temporary diversion channel on the east side of the lots adjacent to Eubank requires an additional delayed step in grading and also in the infrastructure that crosses that diversion channel. So an extra phase (Unit 5) is required to deal with anticipated delays associated with the construction of Eubank and the removal of the Temporary Diversion Channel.

Hydrology Changes to Unit 4 and 5:

All of the now proposed Units 4 and 5 drains westerly to Quintessence Road, and no offsite drainage enters Units 4 and 5. The same conservative assumption of 5 du's /ac is used both in this Addendum and in the previously approved report so there is no change in the total runoff from this area even though the lot sizes were reduced.

The internal drainage basin boundaries were altered slightly, but the total area of these onsite basins remains exactly the same. The only significant change is that a waterblock on Shauback was removed so that Basin 150.6 now drains to Anman Ave. where it originally drained to Anton Circle via Sameh Rd. This increased flow in Amman required a northerly extension of the storm sewer in Ruseifa Drive to prevent street capacities from being exceeded. Inlet locations were adjusted around the new lots and they cumulatively intercept the same peak rate that they originally did so that both the surface peak flow and the pipe peak flow rates at Quintessence Road remain unchanged.

Grading Changes to Unit 4 and 5:

All of the elevations in this area were lowered from 0.0' to 6.0' with an average elevation change over the entire area of about 3.5'. All of the street slopes were changed so both the street capacity calculations and the inlet capacity calculations were redone.

Presentation of Results:

Tables #1, 2, 3 and 4 are repeated in this Addendum comprehensively covering all of the Quintessence as they did in the previously approved report. The only changes to the previously approved tables are in the Unit 4 and 5 area, and on Tables 3 and 4 the changes are marked with an * to help identify the specific line items that pertain to this Addendum. No changes were made to items in Units 1, 2 and 3. The tables are presented here in their entirety so that they can be inserted into the previously approved report so that book will cross reference this one. Storm Plus and the storm sewer profiles with the hydraulic grade lines will be provided with the Final DRB Plans and can easily be inserted into this Addendum at that time.

Table 1:

SUMMARY OF HYDROLOGIC PARAMETERS

DRAINAGE BASINS		AREA (ACRES)	AREA (SQ. MI.)	LAND TREATMENT				Time to Peak (hrs)
				A %	B %	C %	D %	
100.1		4.236	0.00662	0	50	50	0	0.133
100.2		3.066	0.00479	0	50	50	0	0.133
100.3		3.110	0.00486	0	50	50	0	0.133
110.1		0.755	0.00118	0	0	0	100	0.133
110.2		3.610	0.00564	25	12.5	12.5	50	0.133
110.3		4.301	0.00672	0	25	25	50	0.133
110.4		2.739	0.00428	0	25	25	50	0.133
110.5	*	3.590	0.00561	0	25	25	50	0.133
110.6		5.081	0.00794	0	25	25	50	0.133
110.7	*	30.336	0.0474	43	20	20	17	0.180
110.8	*	11.302	0.01766	43	20	20	17	0.133
110.9	*	8.064	0.0126	43	20	20	17	0.133
120.1	*	21.568	0.0337	43	20	20	17	0.133
120.2	*	8.640	0.0135	43	20	20	17	0.133
120.3	*	8.704	0.0136	43	20	20	17	0.133
120.4	*	45.856	0.07165	43	20	20	17	0.160
120.5	*	28.672	0.04480	43	20	20	17	0.140
120.6	*	55.104	0.08610	43	20	20	17	0.133
120.7	*	31.936	0.0499	43	20	20	18	0.133
120.8	*	22.976	0.0359	43	20	20	18	0.133
120.9	*	7.162	0.01119	0	10	10	80	0.133
140.1		4.845	0.00757	0	25	25	50	0.133
150.1		3.520	0.0055	0	7.5	7.5	85	0.133
150.3		3.36	0.00525	0	25	25	50	0.133
150.4		10.662	0.01666	0	25	25	50	0.133
150.5		4.959	0.00775	0	25	25	50	0.133
150.6		2.300	0.00359	0	25	25	50	0.133
150.7		0.911	0.00142	25	12.5	12.5	50	0.133
150.8		6.892	0.01069	0	25	25	50	0.133
150.9		2.598	0.00406	0	25	25	50	0.133
150.10		4.858	0.00759	0	25	25	50	0.133
150.11		11.526	0.018	0	25	25	50	0.133
160.1		6.107	0.00954	0	25	25	50	0.133
170.1		4.890	0.00764	0	20	20	60	0.133
170.2	*	6.336	0.00990	90	0	5	5	0.133
180.1		3.424	0.00535	0	20	20	60	0.133
180.2		8.326	0.01301	0	20	20	60	0.133
180.3		6.246	0.00976	0	20	20	60	0.133
180.4		3.814	0.00596	0	20	20	60	0.133
180.5	*	2.464	0.00385	0	25	25	50	0.133
180.6	*	1.677	0.00262	0	25	25	50	0.133
180.7	*	2.816	0.00440	90	0	5	5	0.133
190.1	*	38.464	0.06010	0	25	25	50	0.133
190.2	*	44.160	0.06900	0	25	25	50	0.133
190.3	*	17.600	0.02750	0	25	25	50	0.133

* = Offsite Drainage Areas

Table 2: SUMMARY OF DRAINAGE BASIN PEAK DISCHARGES

DRAINAGE BASINS		AREA (ACRES)	AREA (SQ. MI.)	Q-PEAK 100-YEAR (cfs)	Q PEAK 10-YR (cfs)
100.1		4.236	0.00662	13.4	7.1
100.2		3.066	0.00479	8.5	4.0
100.3		3.110	0.00486	9.9	5.2
110.1		0.755	0.00118	3.9	2.6
110.2		3.610	0.00564	14.0	8.2
110.3		4.301	0.00672	18.0	11.0
110.4		2.739	0.00428	11.5	7.0
110.5	*	3.590	0.00561	15.0	9.2
110.6		5.081	0.00794	21.2	13.0
110.7	*	30.336	0.0474	74.2	36.4
110.8	*	11.302	0.01766	33.8	16.8
110.9	*	8.064	0.0126	19.7	9.7
120.1	*	21.568	0.0337	64.5	32.0
120.2	*	8.640	0.0135	25.8	12.8
120.3	*	8.704	0.0136	26.0	12.9
120.4	*	45.856	0.07165	121.8	59.8
120.5	*	28.672	0.04480	82.8	41.0
120.6	*	55.104	0.08610	165.9	81.7
120.7	*	31.936	0.0499	95.4	47.3
120.8	*	22.976	0.03590	66.3	32.9
120.9	*	7.162	0.01119	34.2	22.1
140.1		4.845	0.00757	20.2	12.4
150.1		3.520	0.00550	17.2	11.2
150.3		3.360	0.00525	14.0	8.6
150.4		10.662	0.01666	44.5	27.3
150.5		4.959	0.00775	20.7	12.7
150.6		2.300	0.00359	9.6	5.9
150.7		0.911	0.00142	3.5	2.1
150.8		6.842	0.01069	28.6	17.5
150.9		2.598	0.00406	10.9	6.7
150.10		4.858	0.00759	20.3	12.4
150.11		11.526	0.018	48.1	29.5
160.1		6.107	0.00954	25.5	15.6
170.1		4.890	0.00764	21.4	13.4
170.2	*	6.336	0.00990	14.2	5.4
180.1		3.424	0.00535	15.0	9.4
180.2		8.326	0.01301	36.5	22.8
180.3		6.246	0.00976	27.4	17.1
180.4		3.814	0.00596	16.7	10.4
180.5		2.464	0.00385	10.3	6.3
180.6		1.677	0.00262	7.0	4.3
180.7		2.816	0.0044	6.3	2.4
190.1	*	38.464	0.0601	160.6	98.3
190.2	*	44.160	0.0690	184.4	112.8
190.3	*	17.600	0.0275	73.4	45.0

TABLE 3:

STREET CAPACITY FLOW CHARACTERISTICS AT KEY LOCATIONS

STREET	LOCATION	ST. WIDTH & CURB TYPE	% SLOPE	Q100	Dn	Dc	Vn	Vc	AREA	TOP WIDTH	EG	F	*POOL DEPTH
*SAWSAN RD.	10+45	24 Stand	4.67	24.80	0.38	0.52	5.83	3.24	4.25	24.19	0.91	2.45	0.72
RAMTHA ST.	11+13	24 Stand	1.25	21.20	0.43	0.49	3.70	3.04	5.73	24.22	0.65	1.34	0.67
RAMTHA ST.	11+35	24 Stand	1.25	8.800	0.34	0.35	2.61	2.32	3.37	24.17	0.44	1.23	0.45
PETRA CT.	10+25	25 Mount	3.68	18.00	0.30	0.40	4.68	2.37	3.84	25.97	0.64	2.14	0.51
AJLUN DR.	10+25 (INT. Karak Rd.)	25 Mount	1.41	10.50	0.30	0.32	2.83	2.81	3.71	25.91	0.42	1.32	0.47
KARAK RD.	12+00	25 Mount	2.88	15.00	0.30	0.37	4.05	2.67	3.70	25.91	0.55	1.89	0.51
SAMAR RD.	15+50	25 Mount	2.64	18.00	0.32	0.40	4.22	2.81	4.26	26.12	0.59	1.84	0.81
MADABA RD.	20+50	25 Mount	5.44	16.00	0.28	0.38	5.03	2.72	3.18	25.72	0.67	2.52	0.52
YADUDA PL.	26+60 (INT. Irbid Rd.)	26 Stand	3.21	32.00	0.43	0.57	5.59	3.41	5.73	26.22	0.91	2.11	0.80
YADUDA PL.	28+00	26 Stand	3.21	37.00	0.45	0.60	5.92	3.56	6.25	26.23	0.99	2.14	0.85
YADUDA PL.	28+67	26 Stand	1.00	43.10	0.58	0.64	4.44	3.78	9.71	26.29	0.88	1.29	0.92
YADUDA PL.	28+89	26 Stand	1.00	23.90	0.47	0.50	3.50	3.12	6.83	26.24	0.66	1.21	0.69
NOOR AVE.	10+25 (INT. Wadi Musa Dr.)	27 Mount	4.00	7.000	0.22	0.28	3.63	2.04	1.93	20.31	0.43	2.40	0.36
JARASH PL.	12+75	27 Mount	3.46	21.00	0.32	0.42	4.72	2.91	4.45	28.16	0.67	2.10	0.58
*ANTON CIRCLE (N)	11+50	27 Mount	3.18	19.00	0.32	0.4	4.43	2.79	4.29	28.1	0.62	2	0.55
IRBID RD.	24+75	27 Mount	1.63	3.500	0.20	0.22	2.18	1.79	1.61	18.49	0.28	1.58	0.28
*ANTON CIRCLE (S)	9+75	28 Stand	0.50	32.11	0.56	0.56	3.34	3.1	9.62	27.28	0.73	1.01	0.75
JARASH PL.	10+25 (INT. Irbid Rd.)	28 Stand	3.98	27.00	0.40	0.52	5.42	3.17	4.98	28.20	0.85	2.27	0.72
KARAK RD.	10+25 (INT. Holbrook St.)	28 Stand	1.42	28.50	0.47	0.47	4.05	3.22	7.03	28.24	0.72	1.43	0.73
ES SALT RD.	10+25 (INT. Irbid Rd.)	28 Stand	4.00	9.700	0.30	0.37	4.04	2.28	2.4	21.18	0.55	2.43	0.47
*ANTON CIRCLE (N)	11+00	28 Stand	3.18	20.72	0.38	0.47	4.56	2.88	4.55	28.19	0.7	2	0.63
ES SALT RD.	13+10	28 Stand	2.53	16.80	0.37	0.44	3.91	2.72	4.29	28.19	0.61	1.77	0.58
*ANTON CIRCLE (S)	4+25	28 Stand	2.89	10.50	0.32	0.38	3.62	2.33	2.90	23.43	0.52	1.58	0.49
*ANTON CIRCLE (S)	6+50	28 Stand	1.04	17.90	0.43	0.45	3.07	2.76	5.83	28.22	0.57	1.19	0.6
ES SALT RD.	14+76	28 Stand	2.53	20.00	0.39	0.47	4.20	2.85	4.77	28.2	0.66	1.80	0.63
ES SALT RD.	15+15	28 Stand	2.53	35.56	0.46	0.59	5.27	3.44	6.75	28.23	0.89	1.90	0.82
MA'AN DR.	15+25	28 Stand	0.58	37.80	0.60	0.60	3.54	3.46	10.69	28.30	0.79	1.01	0.83
IRBID RD.	15+70 (INT. Es Salt Rd.)	28 Stand	3.37	14.40	0.34	0.42	4.13	2.59	3.480	25.8	0.61	2.07	0.55
WADI MUSA DR. (N)	15+75 (INT. Karak Rd.)	28 Stand	1.29	20.30	0.41	0.47	3.69	2.86	5.500	28.21	0.63	1.47	0.63
MA'AN DR.	16+50 (INT. Irbid Rd.)	28 Stand	1.29	35.20	0.51	0.58	4.28	3.43	8.220	28.26	0.79	1.40	0.81
IRBID RD.	18+30	28 Stand	3.37	14.70	0.34	0.42	4.16	2.61	3.540	26.01	0.61	2.07	0.55
IRBID RD.	18+75	28 Stand	3.37	26.70	0.41	0.53	5.25	3.23	5.470	28.21	0.84	2.10	0.73
ES SALT RD.	21+25 (INT. Irbid Rd.)	28 Stand	2.53	20.75	0.39	0.47	4.26	2.88	4.870	28.20	0.67	1.81	0.63
IRBID RD.	22+25	28 Stand	3.37	36.89	0.44	0.60	5.79	3.47	6.370	28.23	0.97	2.15	0.83

*POOL DEPTH = $D_c + (1.25V_c)^{0.22}/(2g)$

*INT. - Intersection *≠ STREET CAPACITY FLOW IN UNIT 4 THAT HAVE BEEN MODIFIED

TABLE 3:

STREET CAPACITY FLOW CHARACTERISTICS AT KEY LOCATIONS

STREET	LOCATION	ST. WIDTH & CURB TYPE	% SLOPE	Q100	Dn	Dc	Vn	Vc	AREA	TOP WIDTH	EG	F	*POOL DEPTH
WADI MUSA DR. (S)	23+50	28 Stand	0.65	31.20	0.55	0.55	3.32	3.31	9.410	28.28	0.72	1.01	0.76
IRBID RD.	24+00	28 Stand	3.37	31.65	0.42	0.56	5.49	3.32	5.760	28.21	0.89	2.14	0.77
MA'AN DR.	14+28	28 Stand	1.60	25.50	0.44	0.51	4.02	3.11	6.340	28.23	0.69	1.50	0.70
MA'AN DR.	15+75	28 Stand	0.58	46.30	0.56	0.65	4.77	3.78	9.710	28.29	0.92	1.43	0.93
*JORDAN AVE.	27+25	29 Mount	4.25	14.84	0.28	0.37	4.46	2.54	3.33	26.83	0.59	2.35	0.50
*AMMAN AVE.	21+00	29 Mount	1.00	10.5	0.32	0.33	2.41	2.26	4.36	30.12	0.41	1.12	0.43
RUSEIFA DR.	10+50	30 Stand	1.50	4.93	0.55	0.65	4.98	3.77	9.890	30.28	0.93	1.54	0.93
CORONADO AVE.	12+00	30 Stand	3.62	35.2	0.43	0.57	5.70	3.36	6.180	30.22	0.93	2.22	0.79
*AMMAN AVE.	11+25 (INT NOOR)	30 Stand	1.50	51.70	0.56	0.67	5.08	3.83	10.180	30.28	0.96	1.54	0.95
*AMMAN AVE.	13+75	30 Stand	2.48	45.60	0.49	0.63	5.63	3.68	8.1	30.25	0.98	1.92	0.89
*AMMAN AVE.	15+75	30 Stand	3.93	38.00	0.43	0.59	6.02	3.43	6.310	30.22	0.99	2.32	0.82
*RUSEIFA DR.	10+00	30 Stand	1.50	55.70	0.57	0.69	5.23	3.91	10.650	30.29	1.00	1.55	0.99
*RUSEIFA DR.	14+50	30 Stand	0.50	48.60	0.67	0.65	3.57	3.75	12.950	30.33	0.87	0.94	0.92
*RUSEIFA DR.	15+00	30 Stand	0.50	28.60	0.55	0.52	2.88	3.16	9.06	30.26	0.68	0.89	0.71
*RUSEIFA DR.	16+00	30 Stand	0.50	24.90	0.52	0.49	2.73	3.02	8.250	30.25	0.64	0.88	0.67
*RUSEIFA DR.	16+50	30 Stand	0.50	44.52	0.65	0.62	3.45	3.65	12.200	30.32	0.83	0.93	0.88
*RUSEIFA DR.	12+50	30 Stand	0.50	42.40	0.63	0.61	3.39	3.59	11.800	30.31	0.81	0.93	0.86
*RUSEIFA DR.	12+75	30 Stand	0.50	25.60	0.53	0.50	2.76	3.05	8.400	30.25	0.64	0.88	0.68
CORONADO AVE.	18+75	30 Stand	3.62	37.00	0.43	0.58	5.81	3.40	6.37	30.22	0.96	2.23	0.80
CORONADO AVE.	23+10	30 Stand	3.42	39.50	0.44	0.59	5.86	3.51	6.74	30.23	0.98	2.19	0.83
*JORDAN AVE.	18+50	30 Stand	3.43	37.10	0.44	0.58	5.72	3.41	6.48	30.22	0.94	2.18	0.81
*JORDAN AVE.	25+00	30 Stand	0.50	18.76	0.47	0.45	2.44	2.75	6.83	30.23	0.56	0.85	0.6
HOLBROOK ST.	12+75	32 Stand	0.50	19.80	0.46	0.46	2.73	2.44	7.25	32.24	0.58	1.02	0.58
HOLBROOK ST.	16+50	32 Stand	0.50	40.50	0.63	0.6	8.23	3.46	2.55	32.3	0.79	0.91	0.78
QUINTESENCE RD.	21+00	32 Stand	0.50	21.50	0.48	0.48	2.79	2.52	7.70	32.24	0.60	1.01	0.6
QUINTESENCE RD.	22+30	32 Stand	2.95	32.90	0.44	0.56	5.09	3.23	6.46	32.22	0.84	2.01	0.76
QUINTESENCE RD.	14+25 (INT. Karak Rd.)	32 Stand	0.50	9.000	0.36	0.36	2.21	1.81	4.06	27.97	0.44	1.10	0.42
QUINTESENCE RD.	20+10 (INT. Ramtha St.)	32 Stand	0.50	5.000	0.30	0.30	1.96	1.56	2.56	21.89	0.36	1.22	0.35
QUINTESENCE RD.	26+75	32 Stand	2.95	45.00	0.48	0.63	5.77	3.59	7.80	32.24	1.00	2.07	0.88
QUINTESENCE RD.	28+45 (INT. Wadi Musa Dr.)	32 Stand	2.95	43.00	0.48	0.62	5.66	3.54	7.59	32.24	0.97	2.06	0.78

POOL DEPTH = $D_c + (1.25V_c)^{0.25}/(2g)$

INT. = Intersection * = Street capacity flow in Unit 4 that have been modified.

TABLE 4: SUMMARY OF STORM SEWER INLET CAPACITIES

INLET NO.	STREET	STREET WIDTH AND CURB TYPE	LOCATION (stations)	Q100 (cfs)	SLOPE %	DEPTH (ft)	Qintercepted (cfs)	TOTAL Qintercepted (cfs)	Qbypass (cfs)
1&2	Irbid Rd.	28 Stand	22+25	36.9	3.37	0.44	8.6	17.2	19.7
3&4	Irbid Rd.	28 Stand	18+75	28.7	3.37	0.41	7	14	14.7
5&6	Irbid Rd.	28 Stand	18+26, 18+20	14.7	3.37	0.34	4.2	8.4	6.3
7&8	Es Salt Rd.	28 Stand	15+25	35.6	2.53	0.46	8.6	17.2	18.4
9&10	Es Salt Rd.	28 Stand	14+76	20	2.53	0.39	6.2	12.4	7.6
11&12	Es Salt Rd.	28 Stand	13+00	16.8	2.53	0.37	5.5	11	5.8
19	Ma'an Dr.	28 Stand	15+25	37.8	0.58	0.6	8.4	8.4	29.4
20,21&22 Sump	Ma'an Dr.	28 Stand	15+75	46.3	0.58	0.56	15.4	46.3	0
23&24	Ma'an Dr.	28 Stand	14+28	25.5	1.60	0.44	4.3	8.6	16.9
26&27	Yaduda Pl.	26 Stand	28+56, 28+70	43.1	1.00	0.58	9.6	19.2	23.9
28&29 Sump	Yaduda Pl.	26 Stand	28+93	23.9	1.00	0.47	12	23.9	0
*35&36	Anton Cir.	28 Stand	10+00	32.1	0.50	0.56	7.6	15.2	16.9
*37&38	Anton Cir.	28 Stand	10+25, 10+60	20.7	3.18	0.38	6.4	12.8	7.9
*39&40	Ruseifa Dr.	30 Stand	14+50	48.6	0.50	0.67	10	20	28.6
*41&42	Ruseifa Dr.	30 Stand	15+25	28.6	0.50	0.55	6.8	17.6	11
*43&44	Ruseifa Dr.	30 Stand	16+00	24.9	0.50	0.52	7.6	15.2	9.7
*45&46	Ruseifa Dr.	30 Stand	16+32, 16+10	44.5	0.50	0.65	9.8	19.6	24.9
*50&51	Ruseifa Dr.	30 Stand	10+00	55.7	1.50	0.57	10	20	35.7
*52&53	Ruseifa Dr.	30 Stand	12+50	42.4	0.50	0.63	8.4	16.8	25.6
*54&55	Ruseifa Dr.	30 Stand	12+75	25.6	0.50	0.53	5.6	11.2	14.4
56&57	Wadi Musa Dr.	28 Stand	23+50	31.2	0.65	0.55	8	16	15.2
60&61	Quintessence Rd.	32 Stand	26+75	45	2.95	0.46	9.6	19.2	25.8
64&65	Quintessence Rd.	32 Stand	22+35	32.9	2.95	0.47	8.2	16.4	16.5
66&67	Ramtha St.	24 Stand	11+13	21.2	1.25	0.43	6.2	12.4	8.8
68&69	Ramtha St.	24 Stand	11+35	8.8	1.25	0.34	3.5	7	1.8
70&71 Sump	Quintessence Rd.	32 Stand	21+00	21.5	0.50	0.48	10.75	21.5	0
87, 88&89 Sump	Holbrook St.	32 Stand	16+50	37.5	0.50	0.59	12.5	37.5	0
93&94	Holbrook St.	32 Stand	12+75	19.8	0.50	0.46	5.4	10.8	9
108&109	Coronado Ave.	30 Stand	18+75	37	3.62	0.43	8.6	17.2	19.8
110&111	Coronado Ave.	30 Stand	23+05	39.5	3.42	0.45	9	18	21.5

* Inlet capacities in Unit 4 that have been modified

QUINTESSENCE UNIT 4

TYPICAL SECTION FOR REAR YARD PONDS

$$\text{AREA} = 70' \times 44' = 3080 \text{ s.f.}$$

$$\begin{array}{l} \text{Impervious} \approx 10\% \quad (\text{Treatment D}) \\ \text{Slopes + Desert Landscaping} \approx 65\% \quad (\text{C}) \\ \text{Irrigated lawns} \approx 25\% \quad (\text{B}) \\ \hline 100\% \end{array}$$

Zone # 3 (from table A-1)

6h Excess Precipitation (from table A-8)

$$D = 2.36$$

$$C = 1.29$$

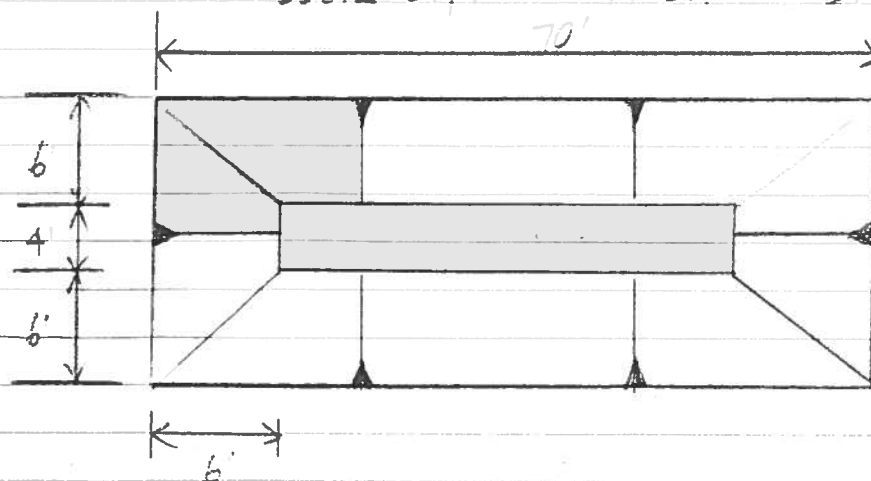
$$B = 0.92$$

$$\begin{aligned} \text{Average Excess } (\bar{E}) &= (0.1 \times 2.36) + (0.65 \times 1.29) + (0.25 \times 0.92) \\ &= 1.31'' \quad (6h) \end{aligned}$$

$$V_{360} = \frac{1.31''}{12 \text{ in./ft}} \times 3080 \text{ s.f.} = 336.2 \text{ c.f.}$$

$$P_{360} = 2.60 \quad P_{10 \text{ days}} = 4.90 \quad (\text{from table A-2})$$

$$\begin{aligned} V_{10 \text{ days}} &= 336.2 \text{ c.f.} + (0.1 \times 3080 \text{ s.f.}) (4.90 - 2.60) \left(\frac{\text{ft}}{12 \text{ in.}} \right) \\ &= 336.2 \text{ c.f.} + 59.1 \text{ c.f.} = 395.3 \text{ c.f.} \end{aligned}$$



$$\begin{aligned}\text{Actual Pond Volume} &= lwh \\ &= (70' - 6') * 10' * 2' \\ &= 1280 \text{ c.f.} > 395.3 \text{ c.f.}\end{aligned}$$

$$h = 2'$$

depth of water

$$\begin{aligned}395.3 \text{ c.f.} &= 64' * 10' * h \\ h &= 4.62'\end{aligned}$$

$$\text{freeboard} = 1.4'$$

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
INPUT FILE = QUIN_100.DAT

RUN DATE (MON/DAY/YR) =02/29/1996
USER NO.= DAGGETTK.S94

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1	NOTATION
START											TIME= .00
*S*** QUINTESSENCE UNIT 4 JOB NO 323-010											
*S*** PROPOSED SUB-DIVISION DESIGN DRAINAGE CONDITIONS											
*S*** INPUT FILE: QUIN_10.DAT JMN 2/27/96											
*S*** LAND TREATMENT VALUES DEVELOPED RESIDENTIAL AREAS:A=0,B=25,C=25,D=50											
*S*** LTV BASED ON TYPICAL SINGLE FAMILY RES. WHERE %D=7*((N*N)+(5*N))^5)											
*S*** 10-YEAR 6-HOUR STORM EVENT											
RAINFALL TYPE= 1											
RAIN6= 2.700											
*S*** SUB-DRAINAGE AREA 150 *****											
COMPUTE NM HYD	150.60	-	1	.00359	9.61	.346	1.80502	1.517	4.183	PER IMP=	50.00
COMPUTE NM HYD	150.11	-	2	.01800	48.10	1.733	1.80502	1.517	4.175	PER IMP=	50.00
*S COMBINE DA 150.6 & 150.11											
ADD HYD	150.11	1& 2	3	.02159	57.71	2.078	1.80500	1.517	4.177		
COMPUTE NM HYD	150.80	-	4	.01069	28.58	1.029	1.80502	1.517	4.177	PER IMP=	50.00
COMPUTE NM HYD	150.70	-	5	.00142	3.54	.127	1.68013	1.517	3.892	PER IMP=	50.00
*S COMBINE DA 150.8 & 150.7											
ADD HYD	150.80	4& 5	6	.01211	32.11	1.156	1.79034	1.517	4.143		
COMPUTE NM HYD	150.50	-	7	.00775	20.72	.746	1.80502	1.517	4.178	PER IMP=	50.00
*S COMBINE DA 150.8, 150.7 & 150.5											
ADD HYD	150.80	6& 7	8	.01986	52.83	1.902	1.79605	1.517	4.157		
COMPUTE NM HYD	150.30	-	9	.00525	14.04	.505	1.80502	1.517	4.180	PER IMP=	50.00
*S COMBINE DA 150.3 & 150.11											
ADD HYD	150.30	9& 2	1	.02325	62.15	2.238	1.80500	1.517	4.176		
*S COMBINE DA 150.3, 150.11 & 150.8											
ADD HYD	150.30	1& 8	2	.04311	114.98	4.141	1.80088	1.517	4.167		
COMPUTE NM HYD	150.40	-	3	.01666	44.52	1.604	1.80502	1.517	4.176	PER IMP=	50.00
*S COMBINE DA 150.3 & 150.4											
ADD HYD	150.40	2& 3	4	.05977	159.50	5.744	1.80203	1.517	4.170		
FINISH											