Y.C.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

October 30, 1986

David Thompson
Bohannan-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: TOWN PARK PHASE III, FINAL PLAT AND CERTIFICATE OF OCCUPANCY APPROVALS (K-21/D8)

Dear David:

It has been brought to my attention that to date two tie-ins have been made into the existing 54" RCP storm drain in Chico Road without the contractor obtaining an Excavation Permit. This is in violation of the Excavation Ordinance and DPM requirements. Designs were approved for these tie-in's by the City Engineer's office as S.O. #19 items C-138 approved November 8, 1983, and F-51 approved August 10, 1986.

Until Excavation Permits have been obtained for these two tie-ins, and this office receives an Engineer's Certification that construction was done in accordance with the approved designs, no further platting actions, Building Permits, or Certificates of Occupancy will be approved by this office for Town Park. These storm drain tie-ins are a very critical part of the overall approved drainage scheme for development of Town Park, since they are the only outlets for drainage of Town Park.

If you have any questions, call me at 768-2650.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

cc: Andre Houle, DRC
Rick Duran, Drainage Inspector
Bill Hooten

RAG/bsj

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

October 3, 1986

David Thompson, P.E.
Bohannan-Huston, Inc.
7500 Jefferson Street, NE
Albuquerque, New Mexico 87109

RE: GRADING PLAN SUBMITTAL OF TOWN PARK, PHASE III RECREATIONAL PARK, RECEIVED SEPTEMBER 29, 1986 FOR BUILDING PERMIT APPROVAL (K-21/D8)

Dear Dave:

The above referenced submittal, dated September 29, 1986, is approved for Building Permit sign-off by Hydrology for the pool building. Include this approved plan with the construction sets routed for permit sign-off.

My previous memo, dated April 18, 1986, approving Phases III & IV for Preliminary Plat and Rough Grading Permit failed to require that a separate "Permit to Construct Private Storm Drain Improvements" (S.O. #19) is required to connect the private 18" RCP in Chico Road.

If you have any questions, call me at 768-2650.

Cordially,

Roger A Green, PE

Roger A. Green, P.E.
C.E./Hydrology Section

cc: Bill Hooten, Town Park, Inc.

RAG/bsj

X.C.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

April 15, 1986

Dave Thompson
Bohannan-Huston, Inc.
4125 Carlisle Blvd., NE
Albuquerque, New Mexico 87107

RE: DRAINAGE REPORT SUBMITTAL OF TOWN PARK PHASE III & IV RECEIVED APRIL 3, 1986 FOR PLATTING APPROVAL AND ROUGH GRADING PERMIT (K-21/D/8)

Dear Dave:

The above referened submittal revised April 2, 1986, is approved for Preliminary Plat and Rough Grading Permit.

Prior to Final Plat sign-off by City Engineer, an executed Subdivision Improvements Agreement will be required along with a Drainage Covenant for the pond and storm drain system.

Permit for construction of private utilities is from Code Administration. A separate retaining wall permit will also be required.

Bring in the Grading and Drainage plan mylars for approval signature granting Rough Grading permit. Prior to site grading, a Top Soil Disturbance permit is required from Environmental Health Section.

If you have any questions, call me at 766-7644.

Cordially,

Roger A. Green, PE

Roger A. Green, P.E.
C.E./Hydrology

cc: Bill Hooten
Towne Park, Inc.

RAG/bsj

ADDENDUM TO
DRAINAGE REPORT
FOR
TOWNE PARK

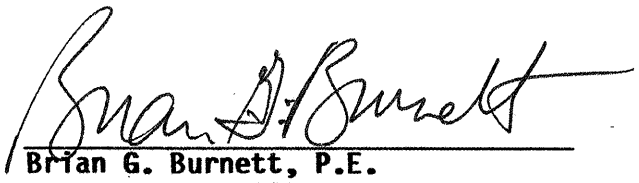
PREPARED FOR:

TOWNE PARK, INC.
1114 PENNSYLVANIA N.E.
ALBUQUERQUE, NEW MEXICO 87110

PREPARED BY:

BOHANNAN-HUSTON, INC.
4125 CARLISLE BOULEVARD N.E.
ALBUQUERQUE, NEW MEXICO 87107

Job Number 5 262 2
April 1986



Brian G. Burnett, P.E.
N.M.P.E. No. 8541

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PLATES

APPENDIX

INTRODUCTION

The purpose of this report is to update the original Towne Park Drainage Report (K21-D8 approved July 11, 1983) for Phases III and IV. This addendum is required to a) obtain preliminary plat approval and b) reflect changes made to the original site plan in Phase III. The main access road is now routed to Chico Road instead of Morris Street. The drainage concepts discussed in this addendum closely follow those of the original report.

SITE LOCATION AND DESCRIPTION

The site is located at the southwest corner of Chico Road and Morris Street. It is bounded on the west by existing Phase II of Towne Park and on the south by the Longfield Addition. The site at a 1" = 50' scale is shown on Plates 1 & 2 (in rear pocket).

Towne Park Phases III and IV is approximately 34 acres of vacant land vegetated by sparse grass and small shrub. The site slopes from east to west at 1 1/2 - 2%. The SCS soil type for this site is Tijeras gravely fine sandy loams, Type "B" hydrologic soil group.

METHOD OF ANALYSIS

On-site flows were analyzed using the procedures outlined in the Development Process Manual Section 22.2 (Appendix A). The runoff coefficient for lots (including one-half of the adjacent streets) was estimated to be 0.69 (see Appendix A, Sheet 2) from Plate 22.2 C-1. The runoff coefficient for the recreational areas was estimated to be 0.43 from Plate 22.2 C-1 (assuming 20% impervious).

Times of concentration were calculated using the appropriate velocities from Plates 22.2 B-1 and 22.2 B-2. The 100-year, six-hour storm, according to Plate 22.2 D-1, is 2.4".

Volumes were calculated using the rainfall values for the 100-year, six-hour storm (2.4 inches), the runoff coefficient and the drainage basin area. Hydrographs for each basin were prepared and combined to determine the inflow hydrograph to the Phase III detention pond (Appendix A, Sheets 3-10).

EXISTING CONDITIONS

Off-Site Flows

Flows generated east of the Towne Park site are collected at the intersection of Chico Road and Morris Street. Most of the flows (Q_{100} = 189 cfs) are carried from this point to Eubank Boulevard in a storm sewer beneath Chico Road. The residual flow (Q_{100} = 43 cfs) is conveyed on the surface of Chico Road to Eubank Boulevard. The AMDS indicates that the depth in Chico Road is estimated to be 7.5" during the 100-year storm.

The land south of Towne Park and north of Central during a 100-year storm generates a runoff of 27.4 cfs and volume of 0.76 acre-ft. At the present time, 12.77 cfs of the total runoff generated from this site is accepted into Towne Park Phases I and II through the block wall on the south property line. These flows are then conveyed to the Phase I pond. The remaining flows will be handled in a similar manner in Phases III and IV (refer to letter in Appendix E addressing this issue).

On-Site Flows

Most of the runoff from Towne Park Phases I and II collect in a detention pond located in Phase I. The runoff from the pond discharges at a controlled rate into the storm sewer in Chico Road. The maximum water surface elevation in the detention pond is set so that at the time the storm sewer in Chico Road is at capacity, there is no discharge from the Phase I pond.

At the present time, much of Phases III and IV drains in a sheet flow manner and collects in two temporary detention ponds located at the Phase II boundary. The detention ponds then drain through a 4" PVC to drainage paths in Phase II. The water is collected in the permanent detention pond in Phase I and then discharged to the Chico storm sewer.

The peak undeveloped flow rate from Phases III and IV is approximately 34.1 cfs (see Appendix A, Sheet 1 for calculation).

PROPOSED CONDITIONS

Off-Site Flows

The 100-year storm runoff (14.6 cfs) generated from the area south of Phases III and IV will be accepted to the site through an opening in the block wall. A 4' wide concrete rundown will be constructed to convey the flows to Street H. The capacity of this rundown is 23.42 cfs based on Manning's Conditions (see Appendix C, Sheet 1 for detail). The runoff will be routed to the detention facility in Phase I along with the runoff from Basin D. In Phases I and II the off-site flows from this area were handled in a similar manner. These flows were allowed to flow into Towne Park through the block wall by setting a certain number of blocks on edge. The runoff was then conveyed in the streets and asphalt parking areas to the detention pond in Phase I.

On-Site Flows

o Flow Analysis

As stated in the original Towne Park Drainage report, the Phase III pond is allowed to discharge at a controlled rate (Q_{max} = 15 cfs) through a storm drain to the Chico Road storm sewer. In this addendum, the Phase III storm sewer, which accepts flows from the detention pond

and Basin A, discharges a maximum flow of 16 cfs (see Phase III combined outflow hydrograph in Appendix A, Sheets 10 and 11). As documented in the original report, these flows have limited effect on the Chico Road storm sewer capacity.

All runoff generated from Basins B, C and N will be collected in a detention pond in Phase III. The volume of the graded pond is approximately 2.76 acre/ft. The maximum ponding elevation during the 100-year storm is 5481.5 feet. No structure is located within 15' of this maximum water surface elevation. The volume available for ponding exceeds the total 100-year inflow volume (2.57 acre/ft) generated from Basins B, C and N (see Appendix A, Sheet 10 for inflow hydrograph). Therefore, for a 100-year storm, no spillway is required. However, any overflow for storms greater than the 100-year event will be directed through the parkway section to the detention pond in Phase I.

The Phase III pond will discharge at a controlled rate (Q Max = 3.6 cfs) through an 8" diameter private storm sewer in Street D. The outflow time of the Phase III pond is less than 24 hours. Basin A runoff (Q_{100} = 14 CFS) will be collected by a total of 4 type "D" catch basins (2 inlets connected in series on both sides of the street), located at Clyburn Park Drive and Towne Park Drive intersection (see Plate 1 for location). At a slope of 1.5%, the depth of flow in Street A is .32 ft. From Plate 22.3 D-5 in the DPM, the capacity of each Type "D" inlet is 3.5 cfs. The flow collected by these inlets will be discharged to the storm sewer in Towne Park Drive through a 15" PVC (see Plate 1 in rear pocket). From this point an 18" storm sewer in Towne Park Drive discharges into the 54" storm sewer located in Chico Road. The 18" RCP will be installed by "construction of private drainage facilities in public right-of-way" procedure.

All flows in the Towne Park Drive storm sewer are by gravity since the maximum flow in each pipe is less than the capacity of the pipes (refer to Appendix B, Sheet 1). The flowrate in the 8" pipe is controlled by the Phase III pond depth with Q_{max} = 3.6 cfs.

By ponding the 100-year storm runoff in Towne Park, the impact on downstream storm sewers at the time of peak flows is greatly reduced compared to allowing the site to freely discharge to adjacent streets. Also, compared to the undeveloped Towne Park site 100-year storm flows (34.2 cfs) the developed site actually contributes less flows (17 cfs) to the downstream facilities. The ponding area also doubles as a landscaped recreation area for resident's use.

The runoff from Basins E, F, G, H and I will be collected in the detention pond in Phase I. As can be seen from the drainage/grading plan (Plates 1 and 2 in rear pocket), these basins have smaller land area than the previous basins discussed in the Towne Park Drainage Report, therefore, the impact on Phase I and II has been reduced. The volume of the detention pond in Phase III is adjusted to include the additional runoff from the basin boundary adjustments.

Basin D runoff and the off-site flows from the property south of Towne Park runoff will be routed to Phase I detention pond as defined previously in the original report.

o Nuisance Flows

A catch basin (see Appendix C, Sheets 3 and 4) will be located south of the pond in Street E to intercept nuisance flows before they enter the detention facility. A 6" PVC pipe will carry the nuisance flows to the storm sewer in Towne Park Drive.

o Pond Characteristics

The perimeter of the detention pond has a side slope greater than 5:1 (horizontal:vertical), therefore, it is recommended that fencing not be included. This approach has been used on other projects such as Guadalupe Plaza and we believe it insures a safe condition. A fence also reduces the attractive nature of the park/pond.

o Street Capacities

All streets, except Towne Park Drive, shall be 30 feet from back of curb to back of curb with a 2" crown. Towne Park Drive shall be 44 feet from back of curb to back of curb with a 3" crown. The following list details the type of curb and gutter which will be used in each street:

Four Inch High Mountable Curb

- Clyburn Park Drive
- Swope Park Avenue
- Pennyback Park Drive
- Seward Park Avenue
- Central Park Drive (west of Towne Park Drive)
- Lagrange Park Drive (west of the parking area)
- Griffith Park Drive (west of the parking area)

Eight Inch High Standard Curb

- Towne Park Drive
- Fairmount Park Avenue
- Echo Park Drive
- Central Park Drive (east of Towne Park Drive)
- Lagrange Park Drive (east of the parking area)
- Griffith Park Drive (east of the parking area)

Appendix D shows the computed capacities of each street.

As the output indicates, the capacity of each street is not exceeded during the 100-year storm.

o Facilities Maintenance

All drainage facilities within the site will be private. These facilities, including the pond, will be maintained by the home owner's association. The Phase III pond will also be landscaped by the home owner's association.

GRADING PLANS

Detailed grading plans for Phases III and IV are included in the rear pocket. Drainage facilities and runoff conditions described above are also indicated.

UNDEVELOPED RUNOFF PHASES III + IV

C = 0.34 TYPE "B" SOIL AREA = 34 ACRES

LENGTH = 1300 ft ground S = .0162

VELOCITY = 0.75 FPS

T_C = 28.9 MIN

$I = 2.4(6.84)(28.9)^{-.51} = 2.95$

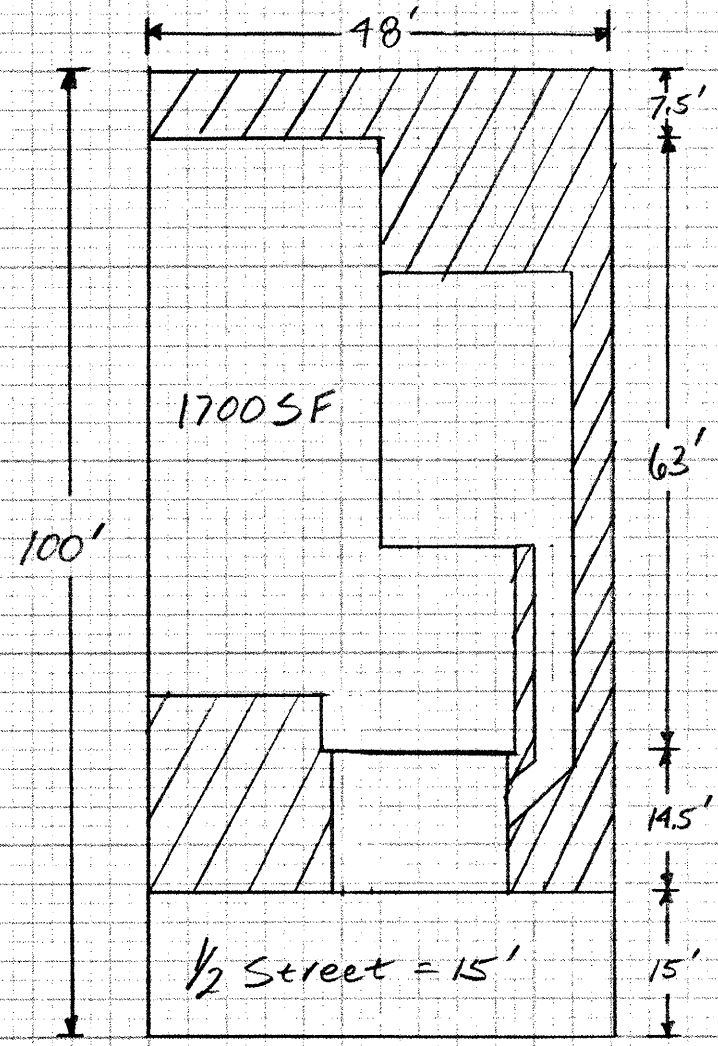
$Q_{100} = .34(2.95)(34) = 34.1$ CFS

BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 1 OF

PROJECT NO. 52622 BY DBT DATE 1-8-86

SUBJECT UNDEVELOPED RUNOFF CALCS CH'D DATE



TYPICAL LOT

Total lot area w/½ Street

100 x 48 = 4800 SF

PERCENT IMPERVIOUS

1700 + 20(19.5) + 20(28)

+9(28) + 15(48) = 3382 SF

3382/4800 = 70% IMPERVIOUS

PLATE 22.2 C-1 GIVES;

C factor = .69

Soil group B

BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 2 OF

PROJECT NO. 52622 BY DBT DATE 1-9-86

SUBJECT COEFFICIENT OF RUNOFF CALCS CH'D DATE

BASIN A

AREA = 4.00 ACRES
LENGTH = 850 ft
Δ ELEV = 13'

S = .0153 ft/ft

FROM PLATES 22.2 B-1 + 22.2 B-2

100 LF ON GRASS	V = .72 fps	TC = 2.3 MIN
750 LF ON STREET	V = 3.32 fps	TC = 3.8 MIN
		TC = 6.1 MIN

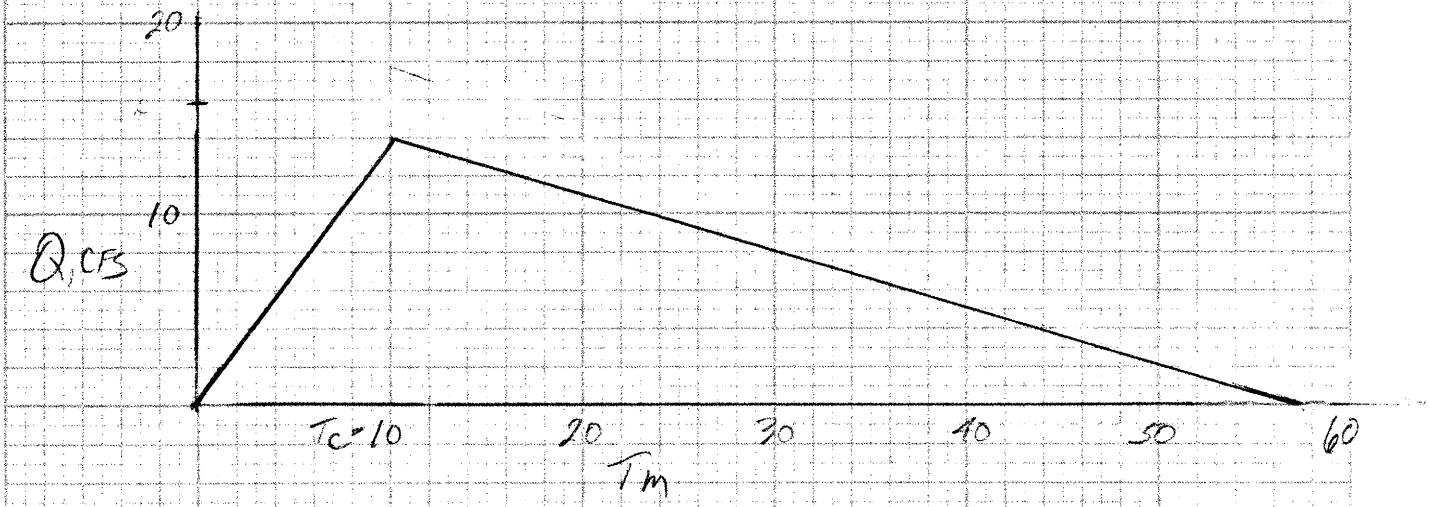
USE Tc = 10 MIN

I_{6HRS} = 2.4 inches

$I = (2.4)6.84(10)^{-.51} = 5.07$

100% of AREA IS LOTS C = .69 (70% IMPERVIOUS)

$Q_{100} = CIA = .69(5.07)4.00 = 14.0$ CFS
$Q_{10} = .657\, Q_{100} = 9.2$ CFS
$Vol = \frac{24}{12} \times .69 \times 4.00 = 0.55$ AC-ft



$T = 2(Vol)(43560) \div Q_P \div 60$
$= 2(.55)(43560) \div 14.0 \div 60 = 57.0$ min

PROJECT NAME TOWNE PARK PHASES III+IV SHEET 3 OF
PROJECT NO. 52622 BY PBT DATE 1-8-86
SUBJECT RUNOFF CALCS CH'D DATE

BOHANNAN HUSTON INC.

BASIN B

AREA 6.55 ACRES
LENGTH 1000 LF
Δ ELEV 9 ft

S = .0090 ft/ft

100 lf on grass V = 0.55 fps Tc = 3.0
900 lf on street V = 2.55 fps Tc = 5.9
Tc = 8.9

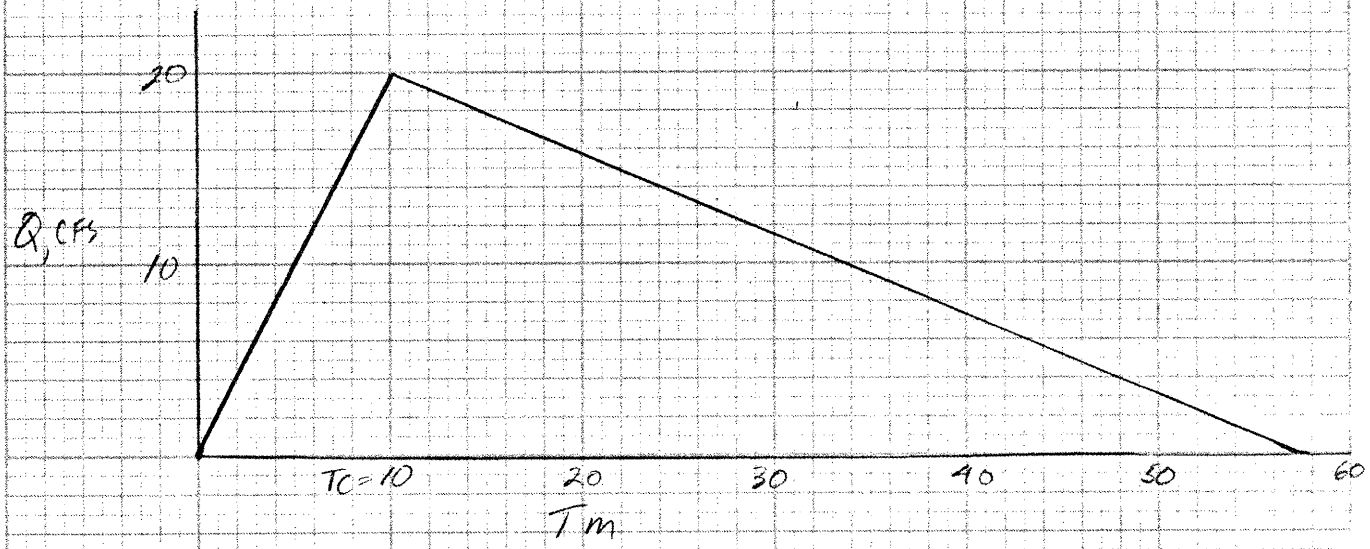
USE Tc = 10.0

I_{6HRS} = 2.4 IN

I = 5.07
35% OPEN SPACE C = .43
65% LOTS C = .69 → C = .60

Q_{100} = .60 (5.07)(6.55) = 19.9 cfs

Q_{10} = .657 (19.9) = 13.1 CFS
VOL = $\frac{2.4}{12}$ × .60 × 6.55 = 0.79 ACRES



$T = \frac{2(.79)43560}{(19.9)(60)}$ = 57.6 MIN

PROJECT NAME JONNE PARK PHASES III + IV SHEET 4 OF
PROJECT NO. 52622 BY DBT DATE 1-8-86
SUBJECT RUNOFF CALCS. CH'D DATE

BASIN C

AREA = 8.74 ACRES
LENGTH = 1175 ft
ΔELEV = 10 ft

S = .0085 ft/ft

100 LF ON GRASS	V = .55 fps	Tc = 3.0 MIN
975 LF IN STREET	V = 2.49 fps	Tc = 6.5 MIN
100 LF ON PAVED AREA	V = 1.27 fps	Tc = 1.3 MIN
		Tc = 10.8 MIN

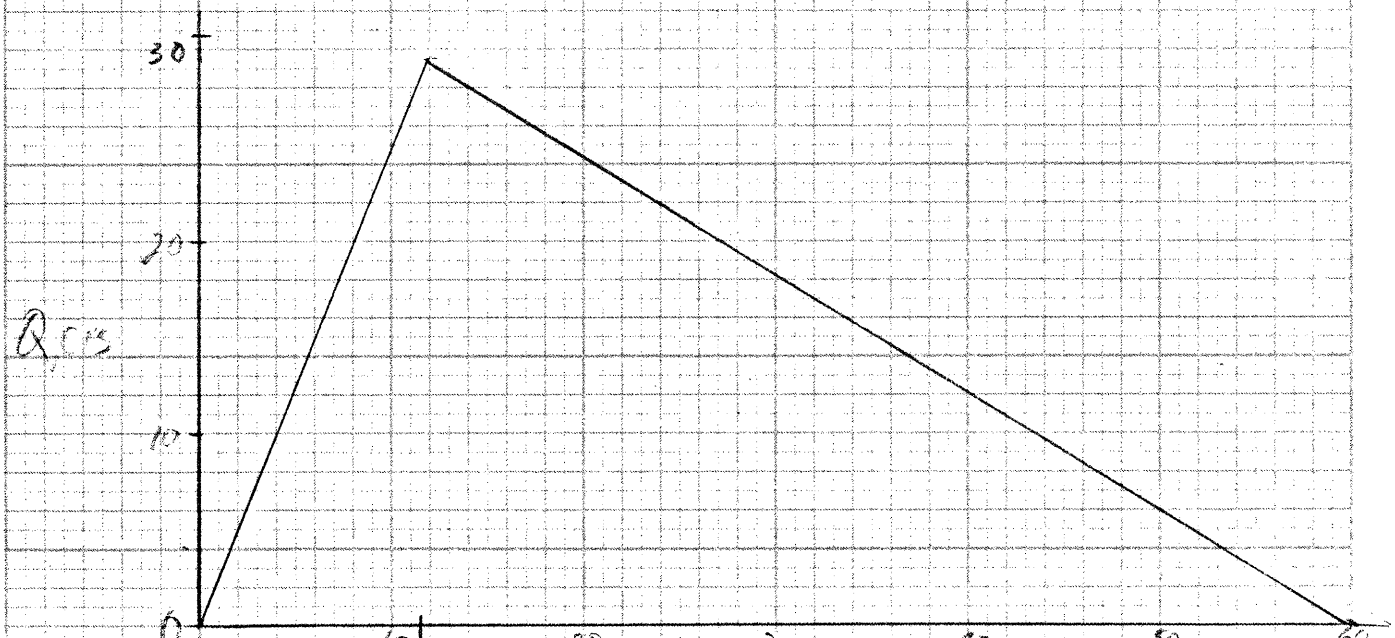
$I_{6HRS} = 2.4$ INCHES

$I = 2.4(6.84)(10.8)^{-.51} = 4.88$

100% OF AREA IS LOTS C = .69 (70% IMPERVIOUS)

$Q_{100} = .69(4.88)(8.74) = 29.4$ CFS
$Q_{10} = .1657(29.4) = 19.3$ CFS

VOL = $\frac{2.9}{12} \times .69 \times 8.74 = 1.21$ AC-FT



$T = \frac{2(1.21)(43,560)}{29.4(60)} = 59.8$ MIN

BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 5 OF
PROJECT NO. 52622 BY DBT DATE 1-8-86
SUBJECT RUNOFF CALCS CH'D DATE

BASIN N

AREA = 4.29 ACRES
LENGTH = 900 ft
Δ ELEV = 7

$S = .0078$ ft/ft

100 LF ON GRASS	V = .50 FPS	T_c = 3.3 MIN	
800 LF ON STREET	V = 2.35 FPS	T_c = 5.7 MIN	
		T_c = 9.0 MIN	
		USE T_c = 10 MIN	

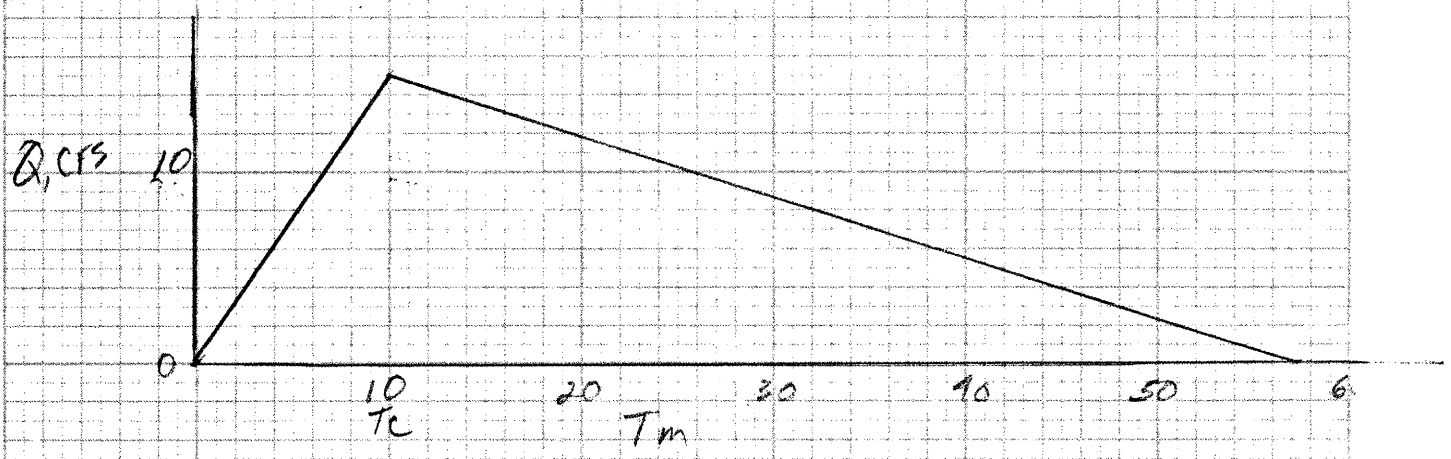
$I_{6\,HRS} = 2.4$ INCHES

$I = (2.4)\,6.89\,(10)^{-.51} = 5.07$

100% OF AREA IS LOTS C = .69 (70% IMPERVIOUS)

$Q_{100} = .69\,(5.07)(4.29) = 15.0$ CFS
$Q_{10} = .657\,Q_{100} = 9.9$ CFS

$VOL = \frac{2.4}{12} \times .69 \times 4.29 = 0.59$ AC-ft



$T = \frac{2\,(0.59)\,43,560}{(15.0)\,60} = 57.1$

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 6 OF
PROJECT NO. 52622 BY DBT DATE 1-8-86
SUBJECT RUNOFF CALCS CH'D DATE

BASIN D

AREA = 4.83 ACRES
LENGTH = 775 LF
Δ ELEV = 8

S = .0103 ft/ft

100 lf on grass V = .57 fps Tc = 2.9 MIN
675 lf on street V = 2.7 fps Tc = 4.2 MIN
Tc = 7.1 MIN

USE Tc = 10 MIN

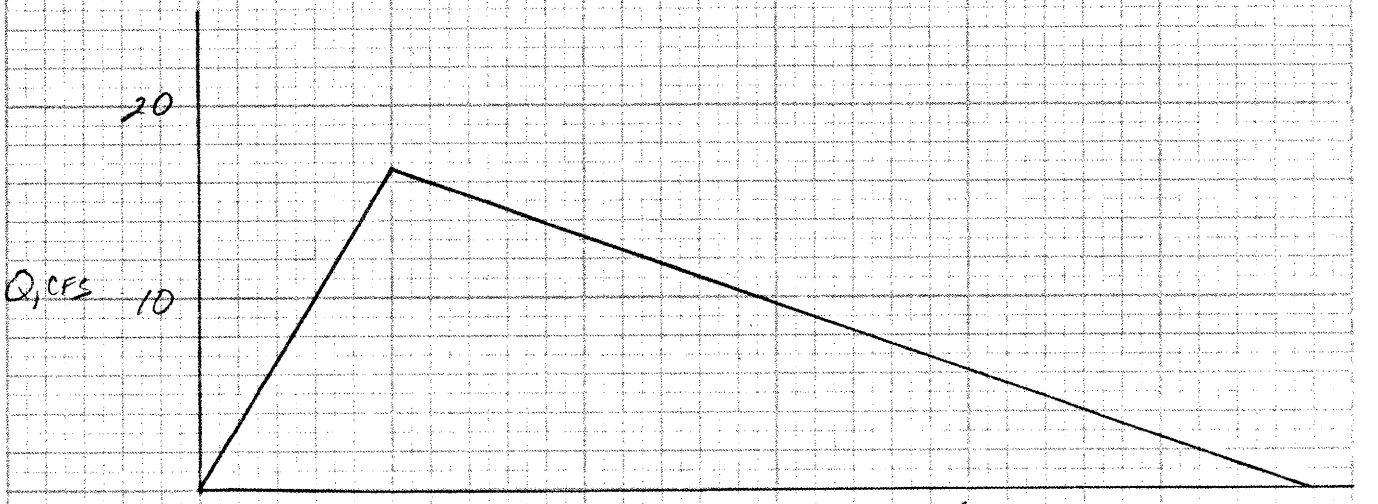
$I_{6\,HRS} = 2.4$ IN

$I = 5.07$

100 % LOTS C = .69

$Q_{100} = .69(5.07)(4.83) = 16.9$ CFS
$Q_{10} = .1657(16.9) = 11.1$ CFS

$VOL = \frac{2.4}{12} \times .69 \times 4.83 = 0.67$ ACRES



$T = \frac{2(.67)(43,560)}{16.9\ (60)} = 57.6$ MIN

PHASE III DETENTION POND CALCULATIONS

TIME	Q BASINS A	B	C	N	Q IN ΣB,C,N	Σ VOL IN	Q OUT	Σ VOL OUT	DETAINED VOLUME
2	2.8	4	5.4	3	12.4	.0342	0	0	.0342
4	5.6	8	10.9	6	24.9	.1028	0.60	.0016	.1012
6	8.9	12	16.3	9	37.3	.2055	0.88	.0040	.2015
8	11.2	16	21.8	12	49.8	.3427	1.40	.0078	.3349
10	14.0	19.9	27.2	15	62.1	.5138	1.84	.0129	.5009
12	13.4	19	28.7	14.3	62.0	.6846	2.13	.0188	.6658
14	12.8	18.2	27.5	13.7	59.4	.8482	2.38	.0254	.8228
16	12.2	17.3	26.3	13.1	56.7	1.0049	2.57	.0324	.9719
18	11.6	16.5	25.1	12.4	54.0	1.1532	2.72	.0399	1.1133
20	11.0	15.6	23.9	11.8	51.3	1.2945	2.86	.0478	1.2467
22	10.4	14.8	22.7	11.2	48.7	1.4287	2.98	.0560	1.3727
24	9.8	13.9	21.5	10.5	45.9	1.5551	3.07	.0645	1.4906
26	9.2	13.1	20.3	9.9	43.3	1.6744	3.15	.0732	1.6012
28	8.6	12.2	19.1	9.3	40.6	1.7862	3.22	.0821	1.7041
30	8.0	11.4	17.9	8.6	37.9	1.8906	3.29	.0912	1.7994
32	7.4	10.5	16.7	8.0	35.2	1.9876	3.35	.1004	1.8872
34	6.8	9.7	15.5	7.4	32.6	2.0774	3.40	.1098	1.9676
36	6.2	8.8	14.3	6.7	29.8	2.1595	3.45	.1193	2.0402
38	5.6	8.0	13.1	6.1	27.2	2.2344	3.49	.1289	2.1055
40	5.0	7.1	11.9	5.5	24.5	2.3019	3.52	.1386	2.1633
42	4.4	6.3	10.7	4.8	21.8	2.3620	3.55	.1484	2.2136
44	3.8	5.4	9.5	4.2	19.1	2.4146	3.57	.1582	2.2564
46	3.2	4.6	8.3	3.6	16.5	2.4601	3.59	.1681	2.2920
48	2.6	3.7	7.1	2.9	13.7	2.4978	3.61	.1780	2.3198
50	2.0	2.9	5.9	2.3	11.1	2.5284	3.62	.1880	2.3404
52	1.4	2.0	4.7	1.7	8.4	2.5515	3.63	.1980	2.3535
54	0.8	1.2	3.5	1.0	3.9	2.5623	3.64	.2080	2.3543
56	0.2	0.3	2.3	0.4	3.0	2.5705	3.64	.2180	2.3525
58	0	0	1.1	0	1.1	2.5736	3.64	.2280	2.3456
60			0		0	2.5736			

BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III+IV SHEET 8 OF _____

PROJECT NO. 52622 BY DBT DATE 1-8-86

SUBJECT PHASE III DETENTION POND CALCS CH'D _____ DATE _____

DETENTON POND - PHASE III

ELEVATION	DEPTH	AREA	VOLUME
76.5	0	0	0
77.0	.5	6550	.0752
78.0	1.5	19,875	.3211
79.0	2.5	20,850	.7312
80.0	3.5	25,625	1.2646
81.0	4.5	32,500	1.9318
82.0	5.5	39,625	2.7597

ORIFICE SIZE = 8" AREA = 0.3491
C = .60
MAXIMUM ELEVATION = 81.5
REQUIRED POND VOLUME = 2.35 ACRE-FT

BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III+IV SHEET 9 OF
PROJECT NO. 52622 BY DBT DATE 1-8-96
SUBJECT AVAIL. VOLUME FOR PHASE III POND CH'D DATE

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 10 OF

PROJECT NO. 52622 BY DBT DATE 1-8-86

SUBJECT OUT FLOW HYDROGRAPHS CH'D DATE

INFLOWS FROM TOWNE PARK TO CHICO

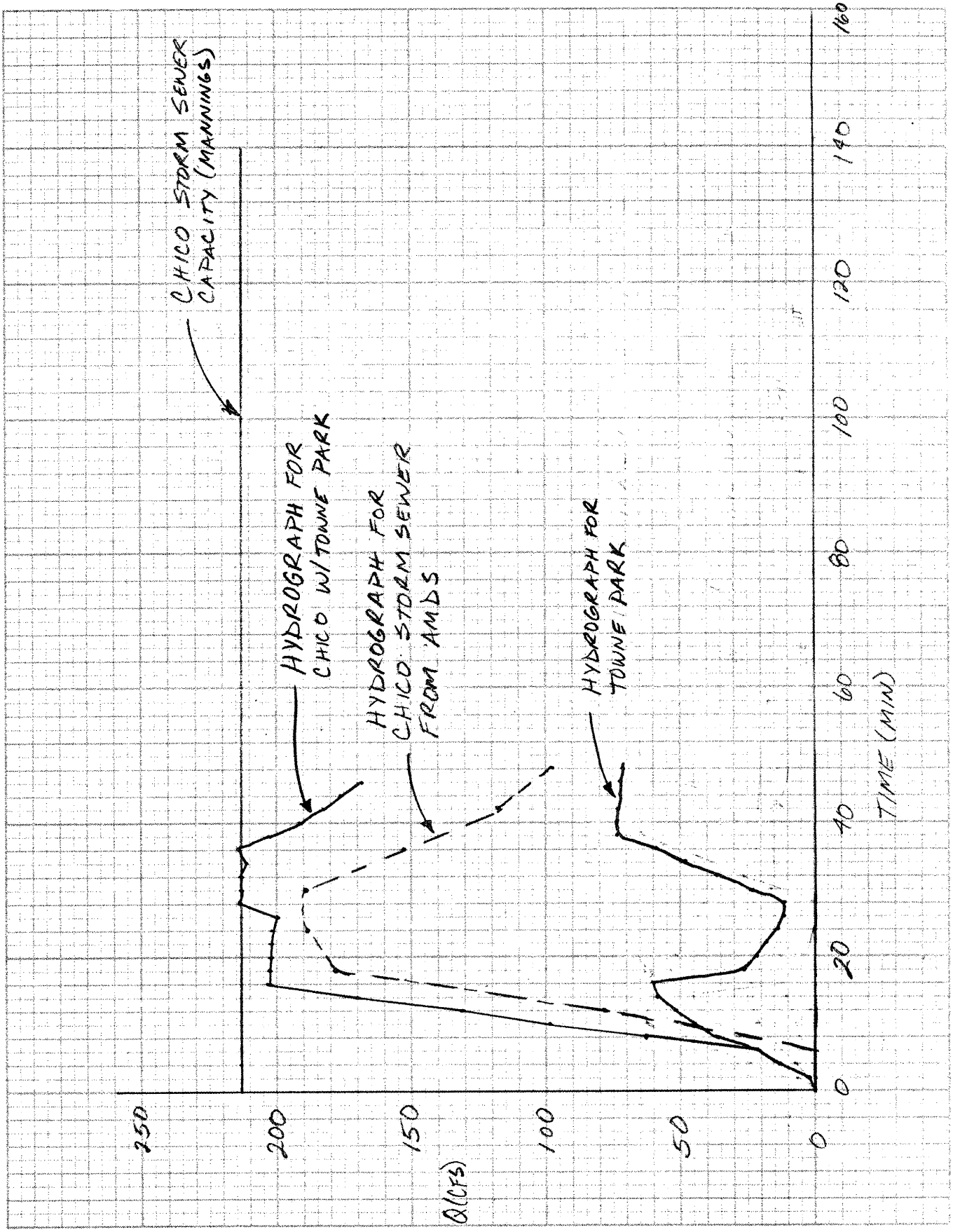
TIME	E A + PHASE II POND	PHASE I POND	CHICO SD	TOWNE PARK	CHICO W/ TOWNE PARK
2	2.8	0	0	3	3
4	6.2	7.3	0	14	14
6	9.3	13.7	1	23	24
8	12.6	23.5	27.0	36	63
10	15.8	29.3	53.0	45	98
12	15.5	36.3	79.0	52	131
14	15.2	42.4	112.0	58	170
16	14.8	45.0	145.0	60	205
18	14.3	12.0	178.0	26	204
20	13.9	8.3	181.3	22	203
22	13.4	4.7	189.6	18	203
24	12.9	1.0	188.0	14	202
26	12.4	0.0	188.3	12	201
28	11.8	0.0	188.6	12	200
30	11.3	13.3	189.0	24.6	213.6
32	10.8	25.7	176.7	36	213
34	10.2	38.0	164.3	48	213
36	9.7	49.3	152.6	59	211
38	9.1	64.6	140.7	73.7	214.4
40	8.5	64.7	129.3	73	203
42	8.0	64.7	118.0	73	191
44	7.4	69.7	111.0	72	183
46	6.8	64.7	104.0	72	176
48	6.2	64.7	97.0	71	169

BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III+IV SHEET 11 OF

PROJECT NO. 52622 BY DBT DATE 1-8-86

SUBJECT TOWNE PARK IMPACT ON CHICO FLOWS CH'D DATE



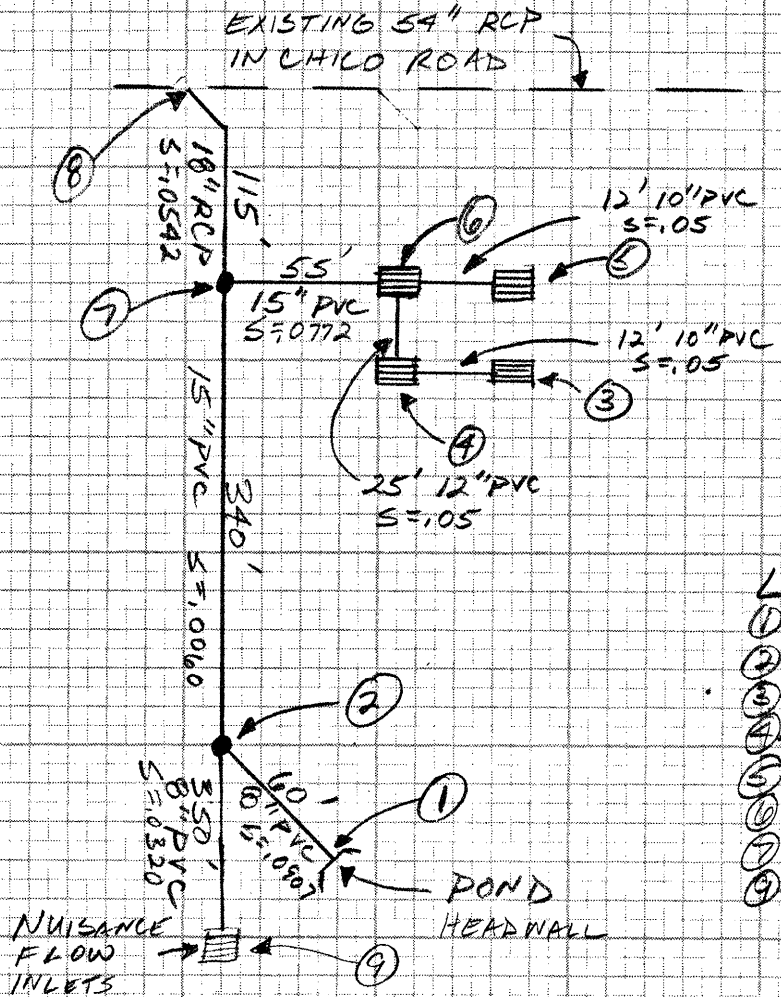
PROJECT NAME TOWNE PARK PHASES III + IV SHEET 12 OF

PROJECT NO. 52622 BY DBT DATE 1-8-86

SUBJECT CHICO HYDROGRAPHS W/TOWNE PARK CH'D DATE

BOHANNAN HUSTON INC.

HYDRAULIC CALCULATIONS



INFLOW DATA

①	3.16 CFS
②	3.16 CFS
③	3.5 CFS
④	3.5 CFS
⑤	3.5 CFS
⑥	3.5 CFS
⑦	15.8 CFS
⑧	15.8 CFS
⑨	1.3 CFS

LINE	CAPACITY	FLOW	
①-②	3.65 CFS	3.6	OK
②-⑦	5.0 CFS	5.0	OK
③-④	4.9 CFS	3.5	OK
④-⑥	20.1 CFS	7.0	OK
⑤-⑥	4.9 CFS	3.5	OK
⑥-⑦	18.0 CFS	14.0	OK
⑦-⑧	24.5 CFS	17.1	OK
⑨-②	2.2 CFS	1.3	OK

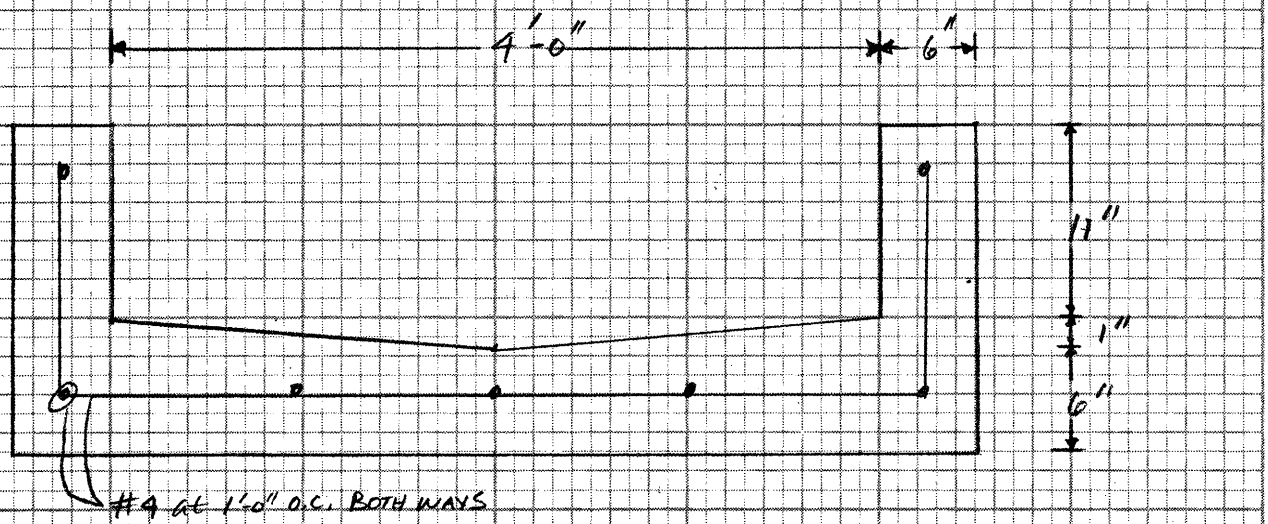
ROMANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 1 OF

PROJECT NO. 52622 BY DBT DATE 2-27-86

SUBJECT HYDRAULIC CALCS CH'D DATE

CONCRETE RUNDOWN DETAILS

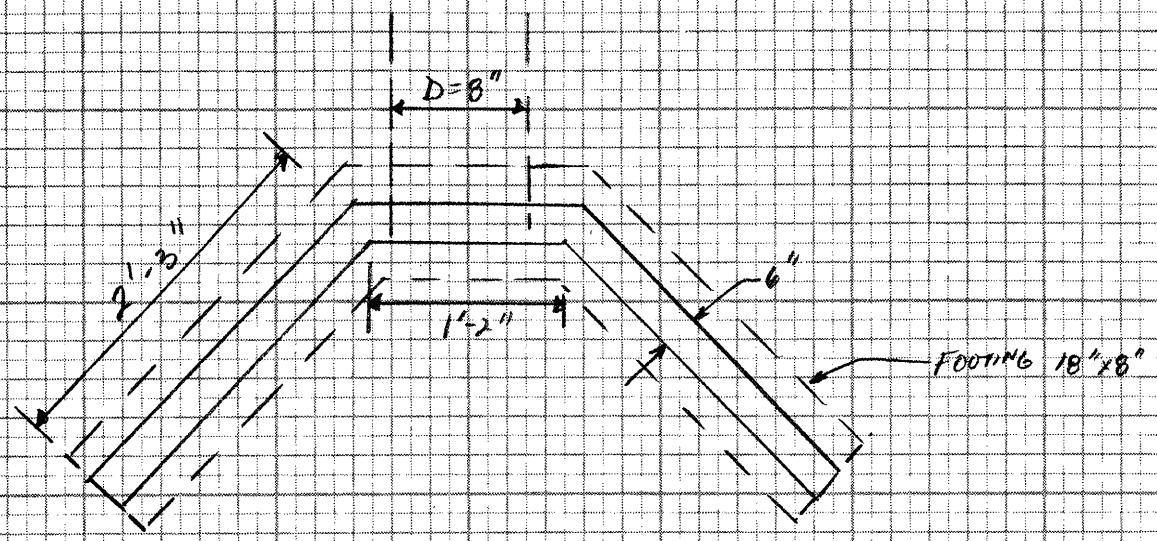


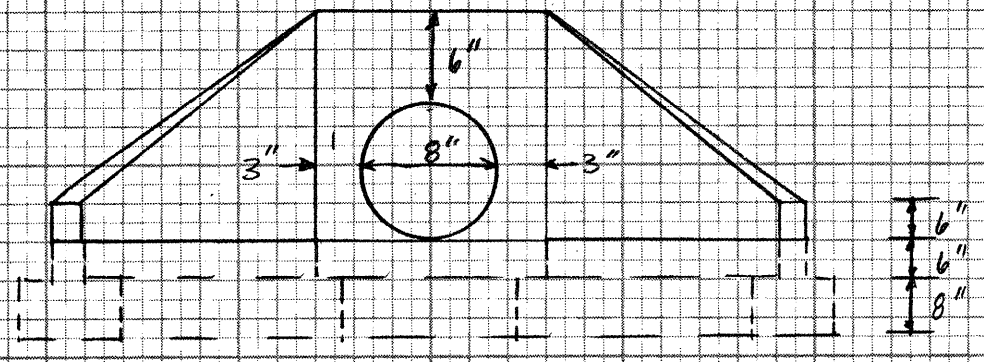
BOHANNAN HUSTON INC.

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 1 OF

PROJECT NO. 52622 BY DBT DATE 1-8-86

SUBJECT CONCRETE RUNDOWN DETAILS CH'D DATE



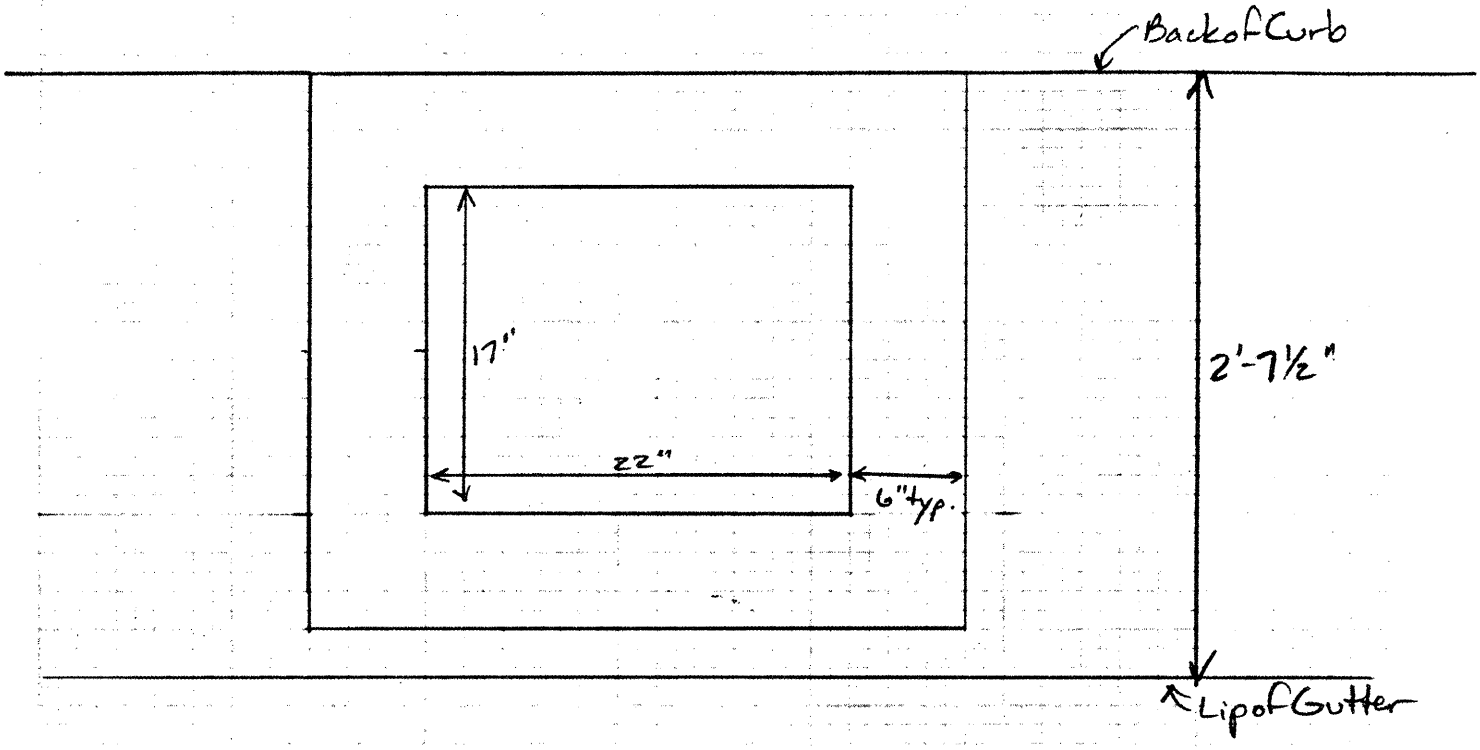


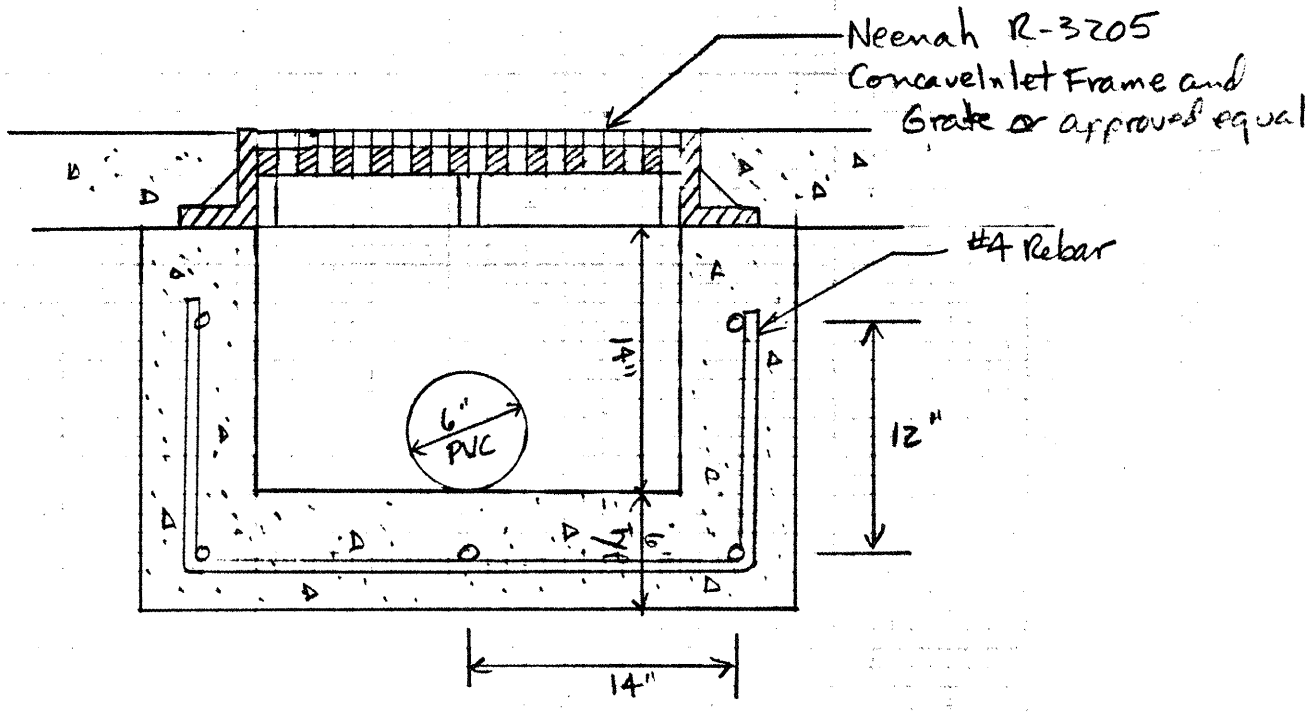
NOTES: 1. INSTALL #4 REBAR AT 12" O.C.
2. 3/4" CHAMFER ALL EXPOSED EDGES

HEAD WALL DETAIL

BOHANNAN HUSTON INC.

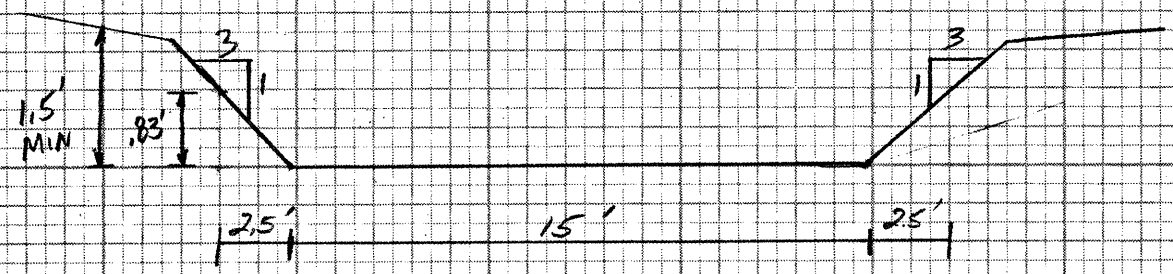
PROJECT NAME TOWNE PARK PHASES III+IV SHEET 2 OF
PROJECT NO. 52622 BY DBT DATE 1-8-86
SUBJECT HEAD WALL DETAIL CH'D DATE





Nuisance Flow Inlet Detail

PROJECT NAME		SHEET 3	OF
PROJECT NO.		BY	DATE
SUBJECT		CH'D	DATE



SPILLWAY DETAILS

PROJECT NAME TOWNE PARK PHASES III + IV SHEET 5 OF

PROJECT NO. 52622 BY DRT DATE 1-8-86

SUBJECT SPILLWAY DETAIL CH'D DATE

BOHANNAN HUSTON INC.

TOWNE PARK DRIVE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0050

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	4	22.00	0.45	7	44.00	0.67
2	0.17	0.00	5	41.83	0.12			
3	2.17	0.12	6	43.83	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.03	0.01	1.51	0.46	1.44
	0.09	0.09	0.12	0.09	3.01	0.73	2.88
	0.13	0.13	0.28	0.24	5.17	0.88	4.97
	0.17	0.17	0.60	0.55	10.37	0.92	10.10
	0.21	0.21	1.14	1.23	15.56	1.08	15.22
	0.25	0.25	1.89	2.37	20.76	1.25	20.35
	0.30	0.30	2.87	4.08	25.96	1.42	25.48
	0.34	0.34	4.06	6.44	31.15	1.59	30.61
	0.38	0.38	5.47	9.56	36.35	1.75	35.74
	0.42	0.42	7.10	13.50	41.54	1.90	40.87
	0.47	0.47	8.92	18.86	44.64	2.11	43.90
	0.51	0.51	10.79	25.84	44.73	2.40	43.92
	0.55	0.55	12.66	33.68	44.81	2.66	43.94
	0.59	0.59	14.52	42.30	44.90	2.91	43.96
	0.64	0.64	16.39	51.69	44.99	3.15	43.98
TC	0.67	0.67	17.82	59.36	45.06	3.33	44.00

Depth of flow for Q_{100} = 15.0 CFS is .43 feet

CLYBURN PARK DRIVE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0153

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.33	4	15.00	0.25	7	30.00	0.33
2	1.70	0.00	5	28.00	0.08			
3	2.00	0.08	6	28.30	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.02	0.01	0.76	0.82	0.75
	0.09	0.09	0.06	0.07	1.83	1.15	1.79
	0.13	0.13	0.29	0.32	8.89	1.10	8.84
	0.17	0.17	0.82	1.21	15.95	1.49	15.90
	0.21	0.21	1.64	3.05	23.02	1.86	22.95
	0.25	0.25	2.76	6.19	29.30	2.24	29.23
	0.30	0.30	4.02	11.43	29.75	2.85	29.67
TC.	0.33	0.33	4.99	16.26	30.09	3.26	30.00

Depth of flow for Q_{100} = 14 CFS is .32 feet

CENTRAL PARK DRIVE STREET CAPACITY WEST OF TOWNE PARK DRIVE

MANNINGS N=.0170 SLOPE =.0160

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.33	4	15.00	0.25	7	30.00	0.33
2	1.70	0.00	5	28.00	0.08			
3	2.00	0.08	6	28.30	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.02	0.01	0.76	0.83	0.75
	0.09	0.09	0.06	0.08	1.83	1.18	1.79
	0.13	0.13	0.29	0.33	8.89	1.13	8.84
	0.17	0.17	0.82	1.24	15.95	1.52	15.90
	0.21	0.21	1.64	3.12	23.02	1.90	22.95
	0.25	0.25	2.76	6.33	29.30	2.29	29.23
	0.30	0.30	4.02	11.68	29.75	2.91	29.67
TC	0.33	0.33	4.99	16.63	30.09	3.34	30.00

Depth of flow for Q_{100} = 4.9CFS is .23 feet

CENTRAL PARK DRIVE EAST OF TOWNE PARK DRIVE

MANNINGS N=.0170 SLOPE =.0067

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	4	15.00	0.30	7	30.00	0.67
2	0.17	0.00	5	27.83	0.12			
3	2.17	0.12	6	29.83	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.03	0.02	1.51	0.53	1.44
	0.09	0.09	0.12	0.10	3.01	0.84	2.88
	0.13	0.13	0.28	0.28	5.34	1.00	5.13
	0.17	0.17	0.63	0.64	11.49	1.03	11.21
	0.21	0.21	1.23	1.49	17.63	1.21	17.29
	0.25	0.25	2.10	2.97	23.78	1.42	23.37
	0.30	0.30	3.22	5.21	29.93	1.62	29.45
	0.34	0.34	4.49	8.97	30.37	2.00	29.83
	0.38	0.38	5.75	13.55	30.46	2.36	29.85
	0.42	0.42	7.02	18.86	30.55	2.69	29.88
	0.47	0.47	8.29	24.83	30.63	2.99	29.90
	0.51	0.51	9.56	31.43	30.72	3.29	29.92
	0.55	0.55	10.84	38.63	30.81	3.57	29.94
	0.59	0.59	12.11	46.40	30.90	3.83	29.96
	0.64	0.64	13.38	54.71	30.99	4.09	29.98
TC	0.67	0.67	14.36	61.42	31.05	4.28	30.00

Depth of flow for Q_{100}=15 CFS is .39 feet.

PENNEY BACK PARK DRIVE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0170

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.33	4	15.00	0.25	7	30.00	0.33
2	1.70	0.00	5	28.00	0.08			
3	2.00	0.08	6	28.30	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.02	0.01	0.76	0.86	0.75
	0.09	0.09	0.06	0.08	1.83	1.22	1.79
	0.13	0.13	0.29	0.34	8.89	1.16	8.84
	0.17	0.17	0.82	1.28	15.95	1.57	15.90
	0.21	0.21	1.64	3.21	23.02	1.96	22.95
	0.25	0.25	2.76	6.53	29.30	2.36	29.23
	0.30	0.30	4.02	12.04	29.75	3.00	29.67
TC	0.33	0.33	4.99	17.14	30.09	3.44	30.00

Depth of flow for Q_{100} = 3.0cfs is .21 feet

SEWARD PARK AVENUE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0166

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.33	4	15.00	0.25	7	30.00	0.33
2	1.70	0.00	5	28.00	0.08			
3	2.00	0.08	6	28.30	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.02	0.01	0.76	0.85	0.75
	0.09	0.09	0.06	0.08	1.83	1.20	1.79
	0.13	0.13	0.29	0.33	8.89	1.15	8.84
	0.17	0.17	0.82	1.26	15.95	1.55	15.90
	0.21	0.21	1.64	3.18	23.02	1.94	22.95
	0.25	0.25	2.76	6.45	29.30	2.33	29.23
	0.30	0.30	4.02	11.90	29.75	2.96	29.67
TC	0.33	0.33	4.99	16.94	30.09	3.40	30.00

Depth of flow for Q_{100} = 10 CFS is .29 feet.

SWOPE PARK AVENUE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0180

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.33	4	15.00	0.25	7	30.00	0.33
2	1.70	0.00	5	28.00	0.08			
3	2.00	0.08	6	28.30	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.02	0.01	0.76	0.88	0.75
	0.09	0.09	0.06	0.08	1.83	1.25	1.79
	0.13	0.13	0.29	0.35	8.89	1.20	8.84
	0.17	0.17	0.82	1.32	15.95	1.61	15.90
	0.21	0.21	1.64	3.31	23.02	2.02	22.95
	0.25	0.25	2.76	6.72	29.30	2.43	29.23
	0.30	0.30	4.02	12.39	29.75	3.09	29.67
TC	0.33	0.33	4.99	17.64	30.09	3.54	30.00

Depth of flow for Q_{100} = 2.9 CFS is .20 feet

ECHO PARK DRIVE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0090

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	4	15.00	0.30	7	30.00	0.67
2	0.17	0.00	5	27.83	0.12			
3	2.17	0.12	6	29.83	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.03	0.02	1.51	0.62	1.44
	0.09	0.09	0.12	0.12	3.01	0.98	2.88
	0.13	0.13	0.28	0.32	5.34	1.16	5.13
	0.17	0.17	0.63	0.75	11.49	1.19	11.21
	0.21	0.21	1.23	1.73	17.63	1.41	17.29
	0.25	0.25	2.10	3.44	23.78	1.64	23.37
	0.30	0.30	3.22	6.03	29.93	1.88	29.45
	0.34	0.34	4.49	10.39	30.37	2.32	29.83
	0.38	0.38	5.75	15.71	30.46	2.73	29.85
	0.42	0.42	7.02	21.86	30.55	3.11	29.88
	0.47	0.47	8.29	28.78	30.63	3.47	29.90
	0.51	0.51	9.56	36.43	30.72	3.81	29.92
	0.55	0.55	10.84	44.77	30.81	4.13	29.94
	0.59	0.59	12.11	53.78	30.90	4.44	29.96
	0.64	0.64	13.38	63.41	30.99	4.74	29.98
TC	0.67	0.67	14.36	71.19	31.05	4.96	30.00

Depth of flow for Q_{100} = 19.9CFS is .41feet

GRIFFITH PARK DRIVE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0100

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	4	15.00	0.30	7	30.00	0.67
2	0.17	0.00	5	27.83	0.12			
3	2.17	0.12	6	29.83	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.03	0.02	1.51	0.65	1.44
	0.09	0.09	0.12	0.13	3.01	1.03	2.88
	0.13	0.13	0.28	0.34	5.34	1.22	5.13
	0.17	0.17	0.63	0.79	11.49	1.26	11.21
	0.21	0.21	1.23	1.83	17.63	1.48	17.29
	0.25	0.25	2.10	3.63	23.78	1.73	23.37
	0.30	0.30	3.22	6.36	29.93	1.98	29.45
	0.34	0.34	4.49	10.95	30.37	2.44	29.83
	0.38	0.38	5.75	16.56	30.46	2.88	29.85
	0.42	0.42	7.02	23.04	30.55	3.28	29.88
	0.47	0.47	8.29	30.33	30.63	3.66	29.90
	0.51	0.51	9.56	38.40	30.72	4.02	29.92
	0.55	0.55	10.84	47.19	30.81	4.36	29.94
	0.59	0.59	12.11	56.68	30.90	4.68	29.96
	0.64	0.64	13.38	66.84	30.99	4.99	29.98
TC	0.67	0.67	14.36	75.04	31.05	5.23	30.00

Depth of flow for Q_{100} = 29.4 CFS is .46 feet

LA GRANGE PARK DRIVE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0100

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	4	15.00	0.30	7	30.00	0.67
2	0.17	0.00	5	27.83	0.12			
3	2.17	0.12	6	29.83	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.03	0.02	1.51	0.65	1.44
	0.09	0.09	0.12	0.13	3.01	1.03	2.88
	0.13	0.13	0.28	0.34	5.34	1.22	5.13
	0.17	0.17	0.63	0.79	11.49	1.26	11.21
	0.21	0.21	1.23	1.83	17.63	1.48	17.29
	0.25	0.25	2.10	3.63	23.78	1.73	23.37
	0.30	0.30	3.22	6.36	29.93	1.98	29.45
	0.34	0.34	4.49	10.95	30.37	2.44	29.83
	0.38	0.38	5.75	16.56	30.46	2.88	29.85
	0.42	0.42	7.02	23.04	30.55	3.28	29.88
	0.47	0.47	8.29	30.33	30.63	3.66	29.90
	0.51	0.51	9.56	38.40	30.72	4.02	29.92
	0.55	0.55	10.84	47.19	30.81	4.36	29.94
	0.59	0.59	12.11	56.68	30.90	4.68	29.96
	0.64	0.64	13.38	66.84	30.99	4.99	29.98
TC	0.67	0.67	14.36	75.04	31.05	5.23	30.00

Depth of flow for Q_{100} = .13 CFS is .36 feet

FAIRMOUNT PARK AVENUE STREET CAPACITY

MANNINGS N=.0170 SLOPE =.0060

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1	0.00	0.67	4	15.00	0.30	7	30.00	0.67
2	0.17	0.00	5	27.83	0.12			
3	2.17	0.12	6	29.83	0.00			

	WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS
	0.04	0.04	0.03	0.02	1.51	0.50	1.44
	0.09	0.09	0.12	0.10	3.01	0.80	2.88
	0.13	0.13	0.28	0.26	5.34	0.94	5.13
	0.17	0.17	0.63	0.61	11.49	0.97	11.21
	0.21	0.21	1.23	1.41	17.63	1.15	17.29
	0.25	0.25	2.10	2.81	23.78	1.34	23.37
	0.30	0.30	3.22	4.93	29.93	1.53	29.45
	0.34	0.34	4.49	8.48	30.37	1.89	29.83
	0.38	0.38	5.75	12.82	30.46	2.23	29.85
	0.42	0.42	7.02	17.84	30.55	2.54	29.88
	0.47	0.47	8.29	23.50	30.63	2.83	29.90
	0.51	0.51	9.56	29.74	30.72	3.11	29.92
	0.55	0.55	10.84	36.56	30.81	3.37	29.94
	0.59	0.59	12.11	43.91	30.90	3.63	29.96
	0.64	0.64	13.38	51.77	30.99	3.87	29.98
TC	0.67	0.67	14.36	58.13	31.05	4.05	30.00

Depth of flow for Q_{100} = 31.5 is .52 feet.

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

March 13, 1984

Mr. Michial M. Emery, P.E.
Vice President
Bohannan-Huston, Inc.
4125 Carlisle Blvd. NE
Albuquerque, New Mexico 87107

RE: SKYLINE RD. DRAINAGE SCHEME (Addendum to K21-D8) DATED MARCH 6, 1984

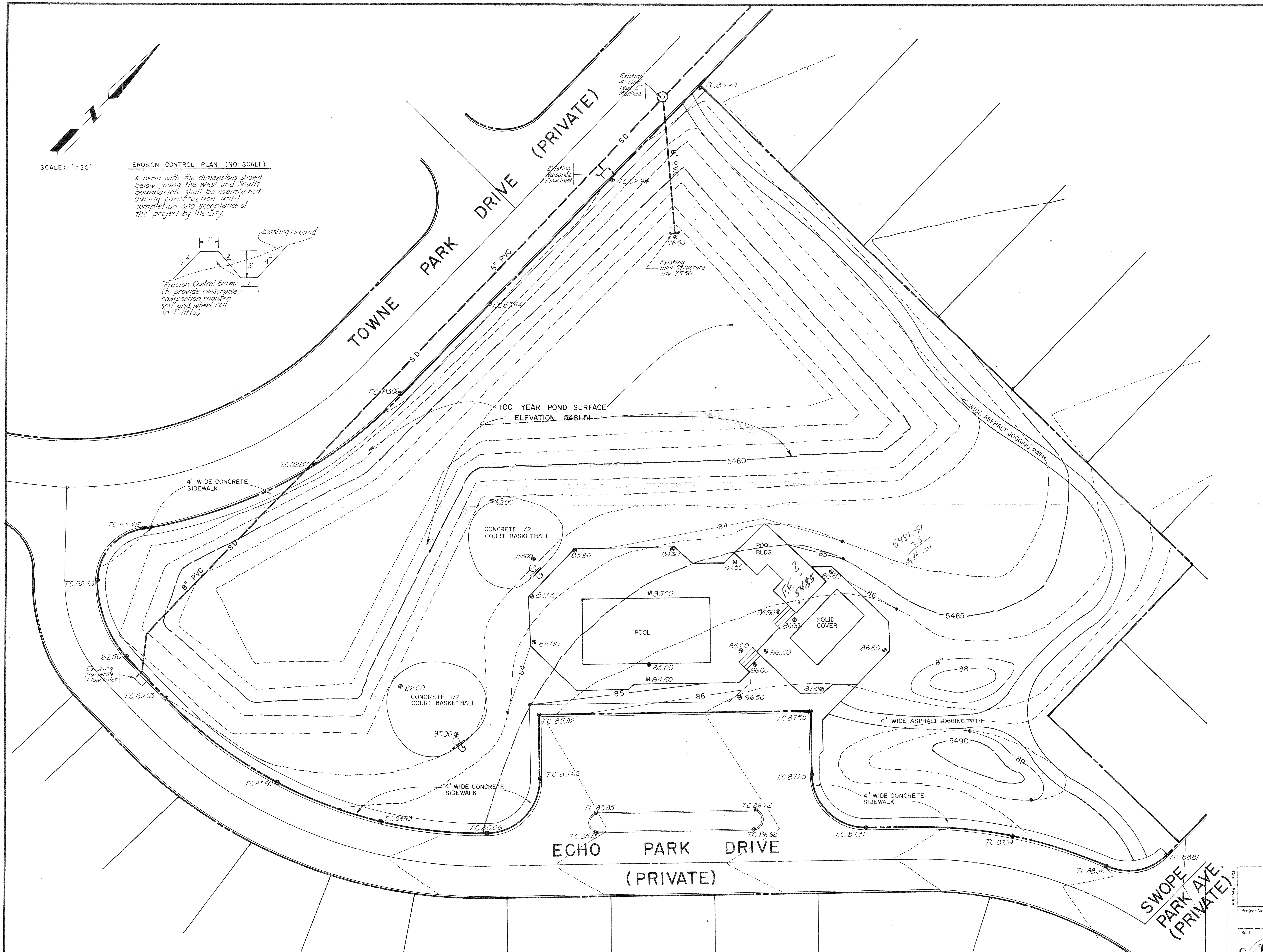
Dear Mike:

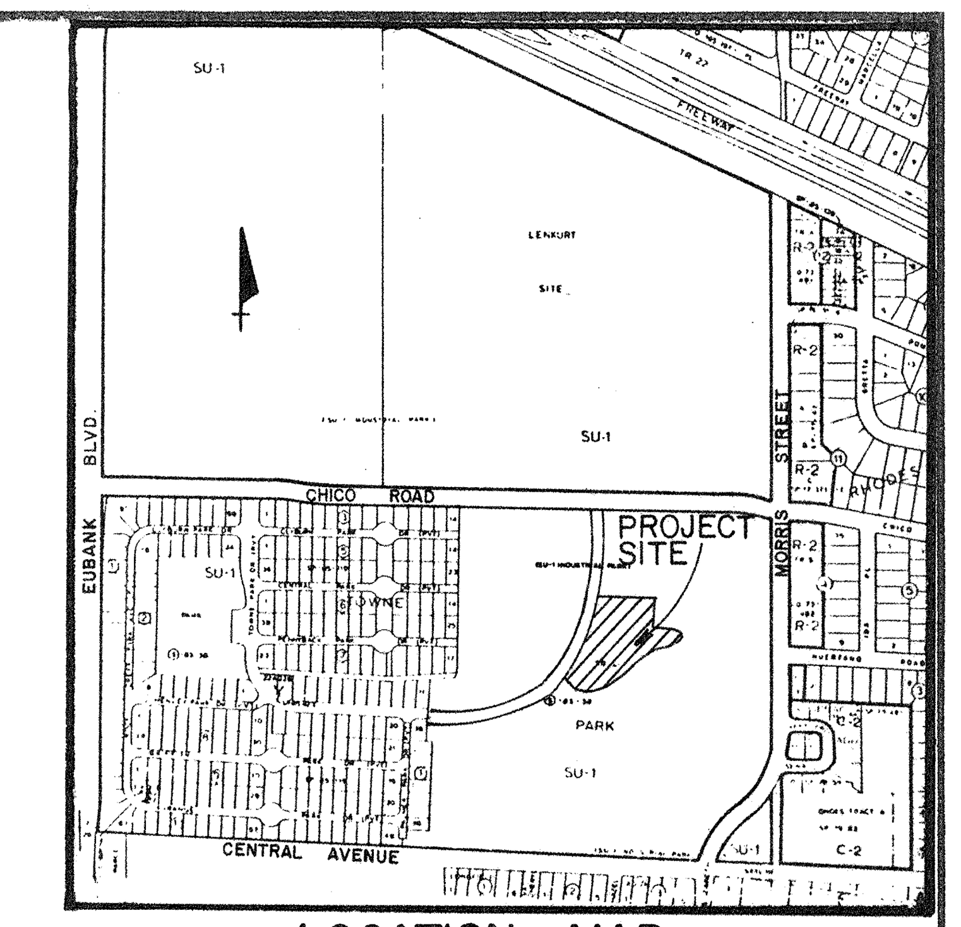
The subject addendum for the handling of off site flows is in accordance with our discussion and subsequent field inspection, therefore, this submittal is approved. If you have any questions please call me.

Sincerely yours,

Fred J. Aguirre, P.E.
Design Hydrologist

FJA/fs





LOCATION MAP

ZONE ATLAS PAGE K-21-Z

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BENCH MARK
THE STATION IS IN THE SOUTHEAST QUADRANT OF
THE INTERSECTION, ON TOP OF THE SOUTH CURB OF
CENTRAL AVE. AND EUBANK BLVD. THE STATION
MARK IS A STANDARD ACS BRASS CAP, STAMPED
"5-L21 RESET 1974", CEMENTED IN A DRILL HOLE IN
TOP OF THE CONCRETE CURB AT THE E·S·E RETURN.
ELEV. 5466.54

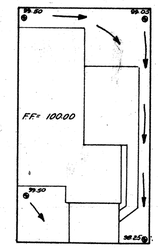
LEGEND

- EXISTING STORM DRAIN
- EXISTING STORM DRAIN MANHOLE
- EXISTING CONTOUR
- 88 PROPOSED CONTOUR
- EXISTING INLET
- 86.30 EXISTING SPOT ELEVATION
- 76.50 PROPOSED SPOT ELEVATION

TOWNE PARK PHASE III RECREATIONAL PARK	
GRADING PLAN	
Job No. 62161	Sheet Of
Drawn By: JDM	Date: 9/86
Checked By: DBT	Scale: 1" = 20'

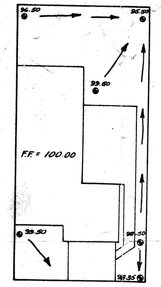
9-29-86

BRUNING 44-132 64256



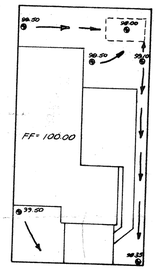
STREET ℄

TYPICAL LOT DRAINAGE
NOT TO SCALE



STREET ℄

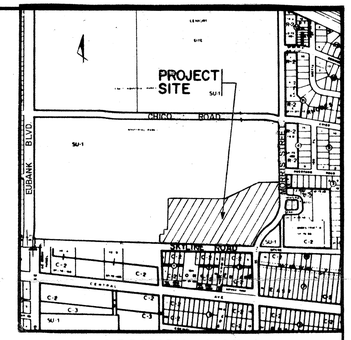
TYPICAL LOT DRAINAGE
BLOCK 13
LOTS 1-7
NOT TO SCALE



TYPICAL LOT DRAINAGE
BLOCK 10 LOTS 1-7
BLOCK 4 LOTS 1-15
NOT TO SCALE

TYPICAL BACKYARD PONDING REQUIREMENTS

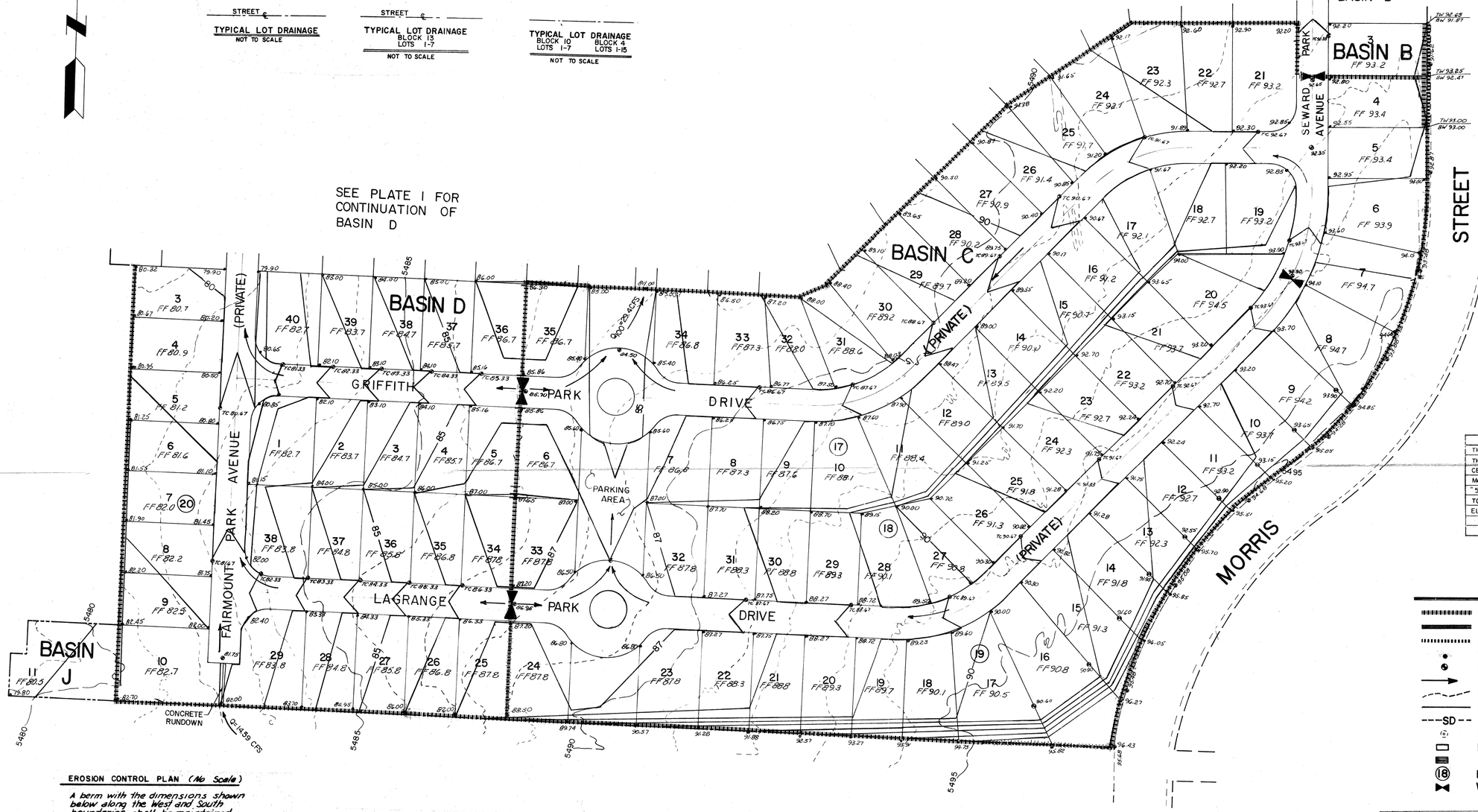
- LOTS 1-7, BLOCK 10
  LOTS 1-12, 15, BLOCK 4
  REQUIRED VOLUME= 120 Cu. Ft.
  TYPICAL DIMENSIONS = 12'x 10'x 1' DEEP
- LOTS 13,14, BLOCK 4
  REQUIRED VOLUME = 386 Cu. Ft.
  TYPICAL DIMENSIONS = 25' x 15' x 1' DEEP



LOCATION MAP
ZONE ATLAS PAGE K-21-Z

SEE PLATE I FOR CONTINUATION OF BASIN B

SEE PLATE I FOR CONTINUATION OF BASIN D



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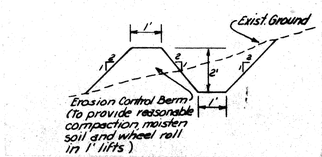
ELEV. 5466.54

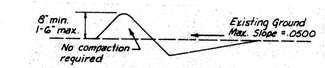
LEGEND

- DRAINAGE BASIN BOUNDARY
- PREVIOUS DRAINAGE BASIN BOUNDARY
- RETAINING WALL
- LOT CORNER ELEVATION
- SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING CONTOUR
- PROPOSED CONTOUR
- ---SD--- EXISTING STORM DRAIN
- EXISTING STORM DRAIN MANHOLE
- EXISTING INLET
- PROPOSED INLET
- (18) BLOCK NUMBER
- WATER BLOCK

EROSION CONTROL PLAN (No Scale)

A berm with the dimensions shown below along the West and South boundaries shall be maintained during construction until completion and acceptance of the project by the City.





Note: This wind-row shall only be used to divert minor run off on Cross Slopes less than 5%. In no case shall the water surface exceed ½ the nominal height.

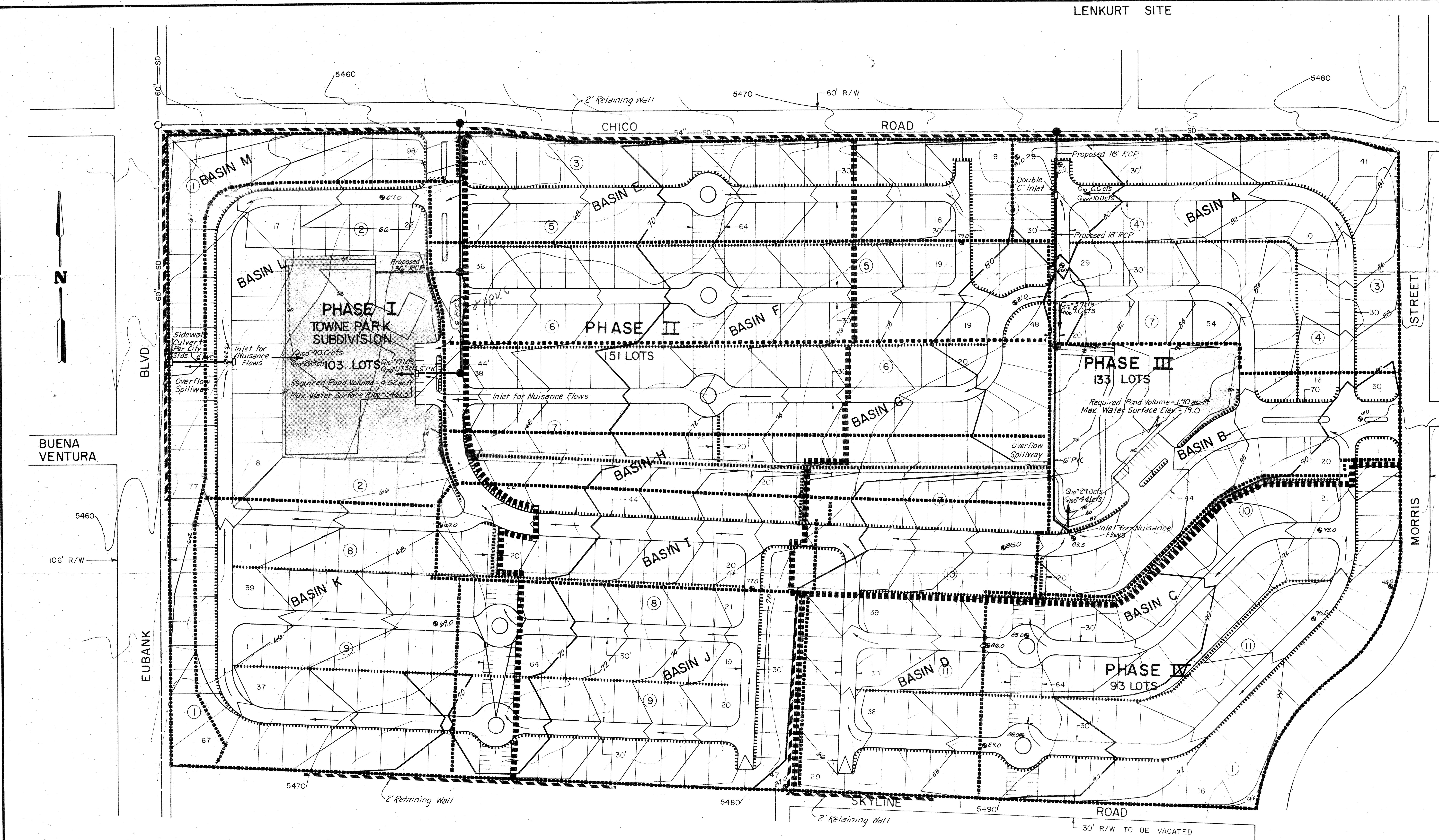
TYPICAL BLADED WIND-ROW
No Scale

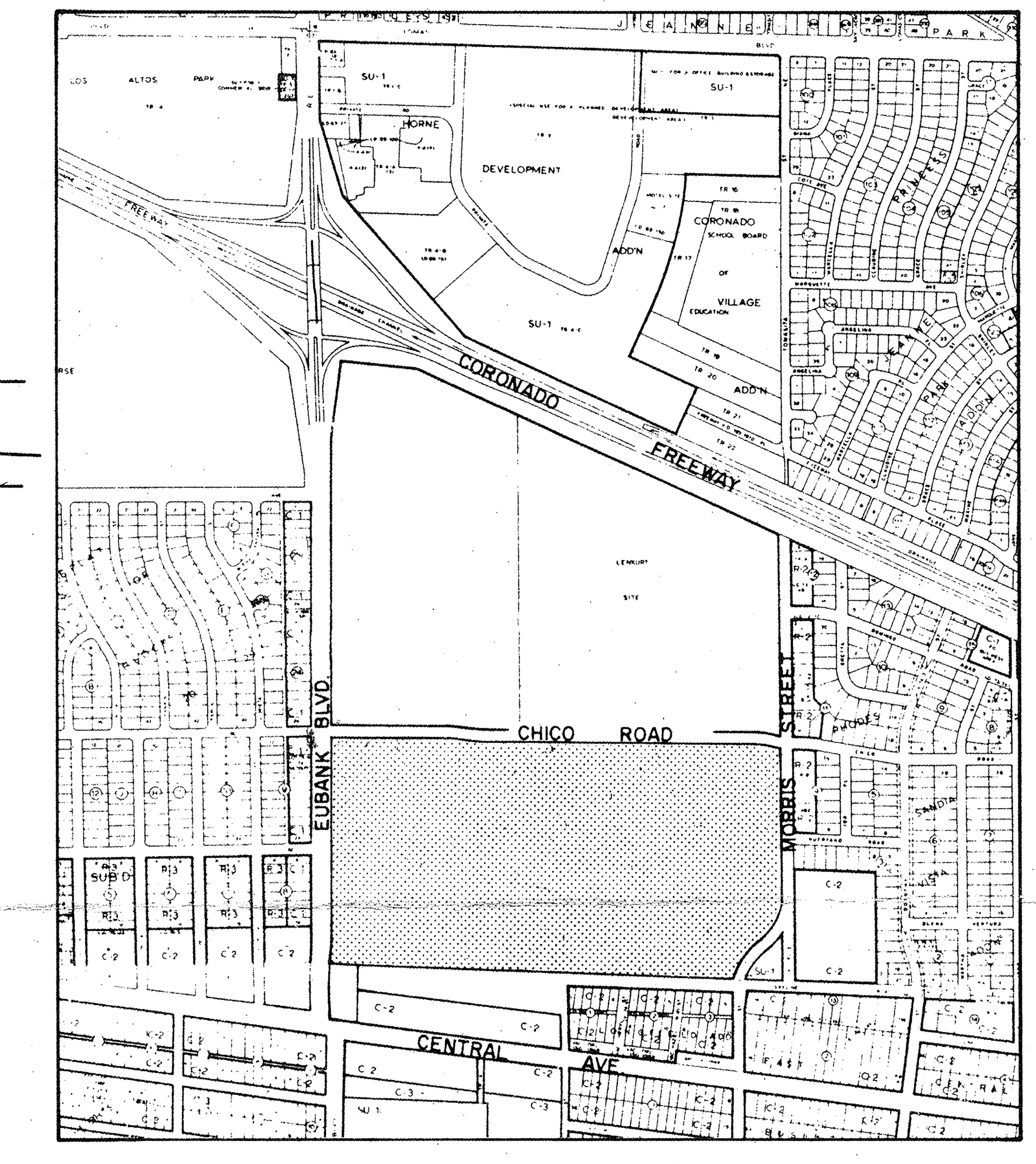
K-21 10-8 Rev

RECEIVED
APR 03 1986
HYDROLOGY SECTION

Date / Revision	
Project No.	TOWNE PARK PHASE IV
Seal	PROPOSED GRADING AND DRAINAGE PLAN
	PLATE 2
Job No. 52622	Sheet Of
Drawn By LAD	Date 1/86
Checked By DBT	Scale 1"= 50'

BRUNING 44 132 64256





VICINITY MAP

NO SCALE

AP K-21

LEGEND

- EXISTING CONTOUR
- PROPOSED CONTOUR
- 2' RETAINING WALL
- DRAINAGE BASIN BOUNDARY
- PROPOSED PHASE BOUNDARY
- PROPOSED SIDEWALK LOCATION
- DIRECTION OF FLOW
- Q_{100}=44.1cfs DEVELOPED PEAK FLOW RATE (100-YEAR STORM)
- Q_{10}=29.0cfs DEVELOPED PEAK FLOW RATE (10-YEAR STORM)

JOB No. 31103

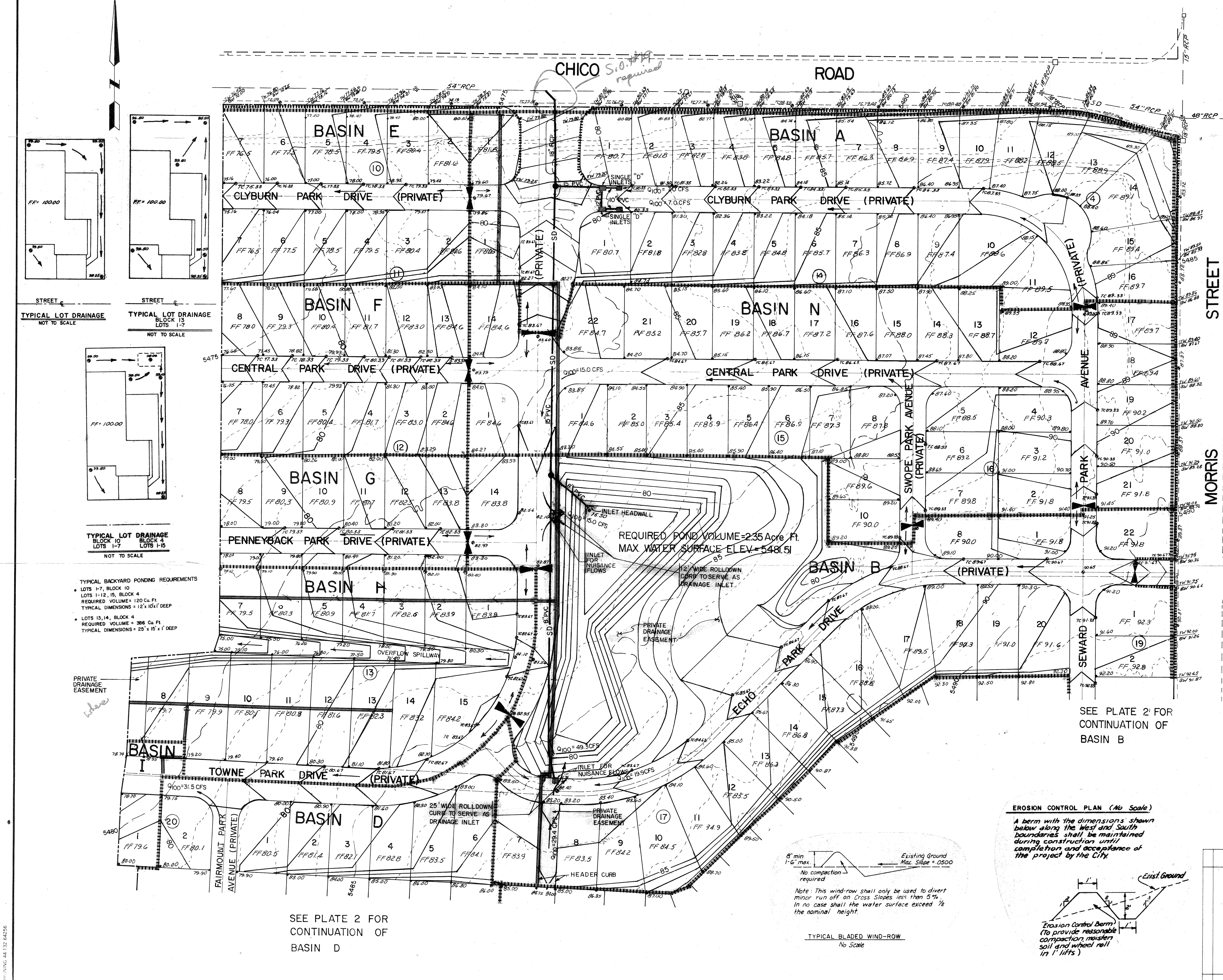
TOWNE PARK

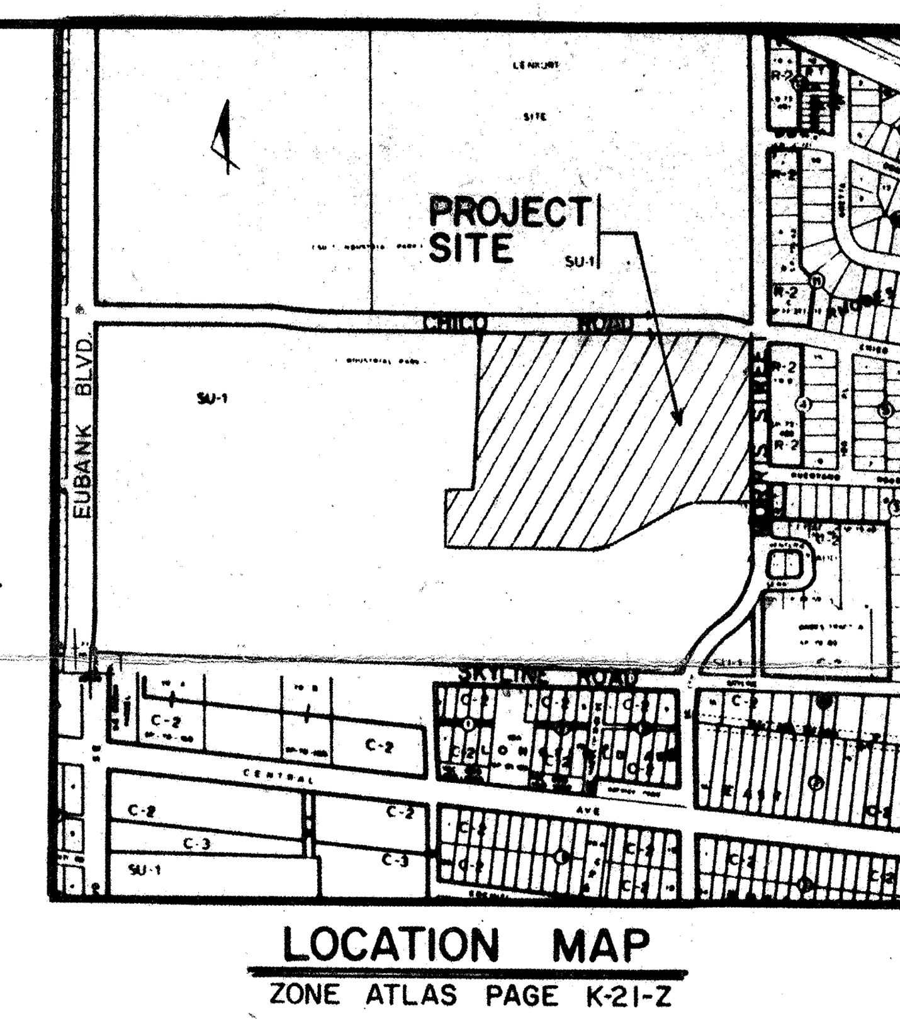
DRAINAGE REPORT

PLATE 2

PROPOSED GRADING & DRAINAGE PLAN

Drawn By:	Date: 5/83	
Checked By: DMYM	Scale: 1"=100'	





LOCATION MAP

ZONE ATLAS PAGE K-21-Z

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LEGEND

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- PREVIOUS DRAINAGE BASIN BOUNDARY
- RETAINING WALL
- LOT CORNER ELEVATION
- SPOT ELEVATION
- DIRECTION OF FLOW
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING STORM DRAIN
- EXISTING STORM DRAIN MANHOLE
- EXISTING INLET
- PROPOSED INLET
- BLOCK NUMBER
- WATER BLOCK

K-21/D-8 Repo.

RECEIVED APR 03 1986 HYDROLOGY SECTION

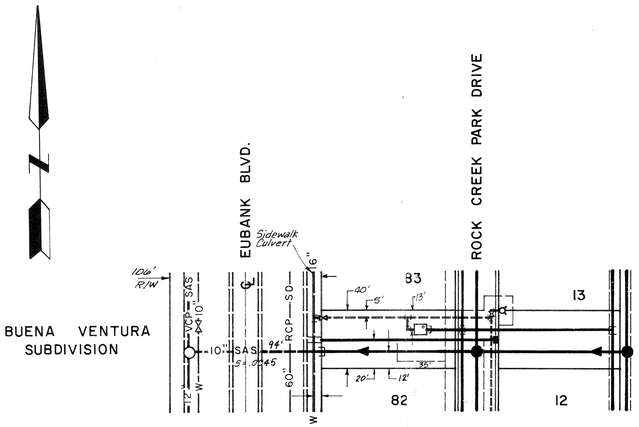
TOWNE PARK PHASE III

PROPOSED GRADING AND DRAINAGE PLAN

PLATE I

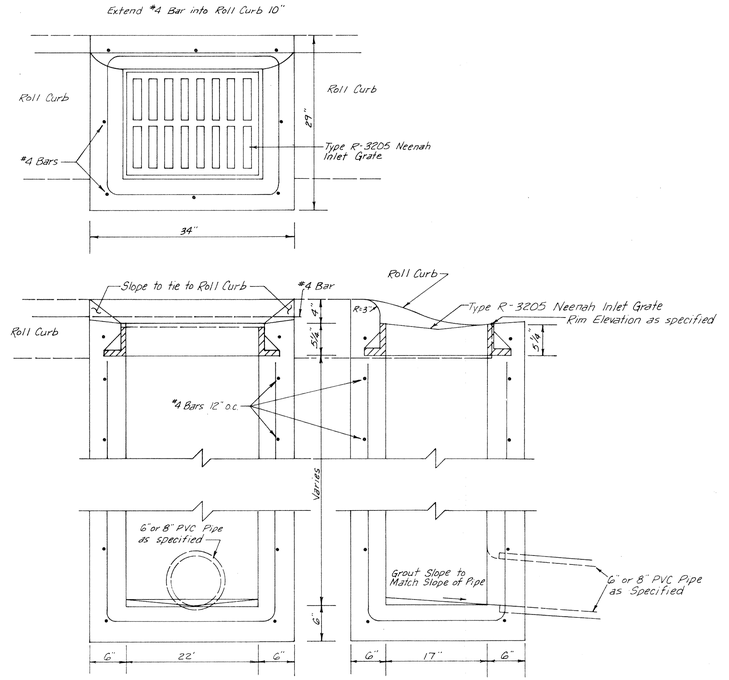
Job No. 52622	Sheet Of
Drawn By LAD	Date 1/86
Checked By DBT	Scale 1" = 50'

Bua Everett 1/10/86 4-2-86



STREET LOCATION MAP

PRIVATE STORM DRAIN CONSTRUCTION
40' DRAINAGE & UTILITY EASEMENT



NUISANCE FLOW INLET DETAIL
SCALE: 1" = 1'

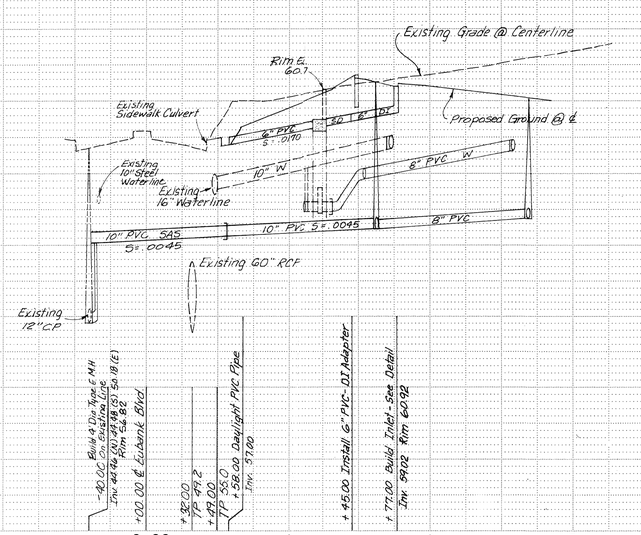


PLATE 1 SINGLE PLAN - PROFILE - DOTTED
CHARLES BRUNING COMPANY
MADE IN U.S.A.

SCALE:
1" = 50' HOR.
1" = 5' VERT.

PREPARED UNDER THE DIRECTION OF
David McMillan
7-20-83

APPROVED FOR CONSTRUCTION
CITY ENGINEER DATE

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION

TITLE: TOWNE PARK-PHASE I
40' DRAINAGE & UTILITY EASEMENT

APPROVALS	ENGINEER	DATE	APPROVALS	ENGINEER	DATE
City Engineer			Liquid Waste		
A.C.E. Design			Traffic		
A.C.E. Hydrology			Water		

DRAWING NO. 1858
SHEET 6 OF 9

AS-BUILT INFORMATION
CONTRACTOR
WORK STAKED BY — DATE
ACCEPTANCE — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICRO-FILM INFORMATION
RECORDED BY — DATE
NO.

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ELEV. 5466.54

SURVEY INFORMATION
BY | DATE | NO.

REFERENCES
MAP NO. K-21-Z
EST. NO. | W.O. NO.

REVISIONS
NO. | DATE | BY | REMARKS

DESIGNED BY DWW DATE 7/83
DRAWN BY McQ DATE 7/83
CHECKED BY DMYM DATE 7/83

PLAN: SURVEYED, PLOTTED, ALIGNMENT CHECKED, RT. OF WAY CHECKED, NOTE BOOK, NO., BY, DATE

PROFILE: SURVEYED, PLOTTED, GRADES CHECKED, B. M. NOTED, STRUCTURE NOTATNS CH'KD, NOTE BOOK, NO., BY, DATE

BRUNING 44-132 52753