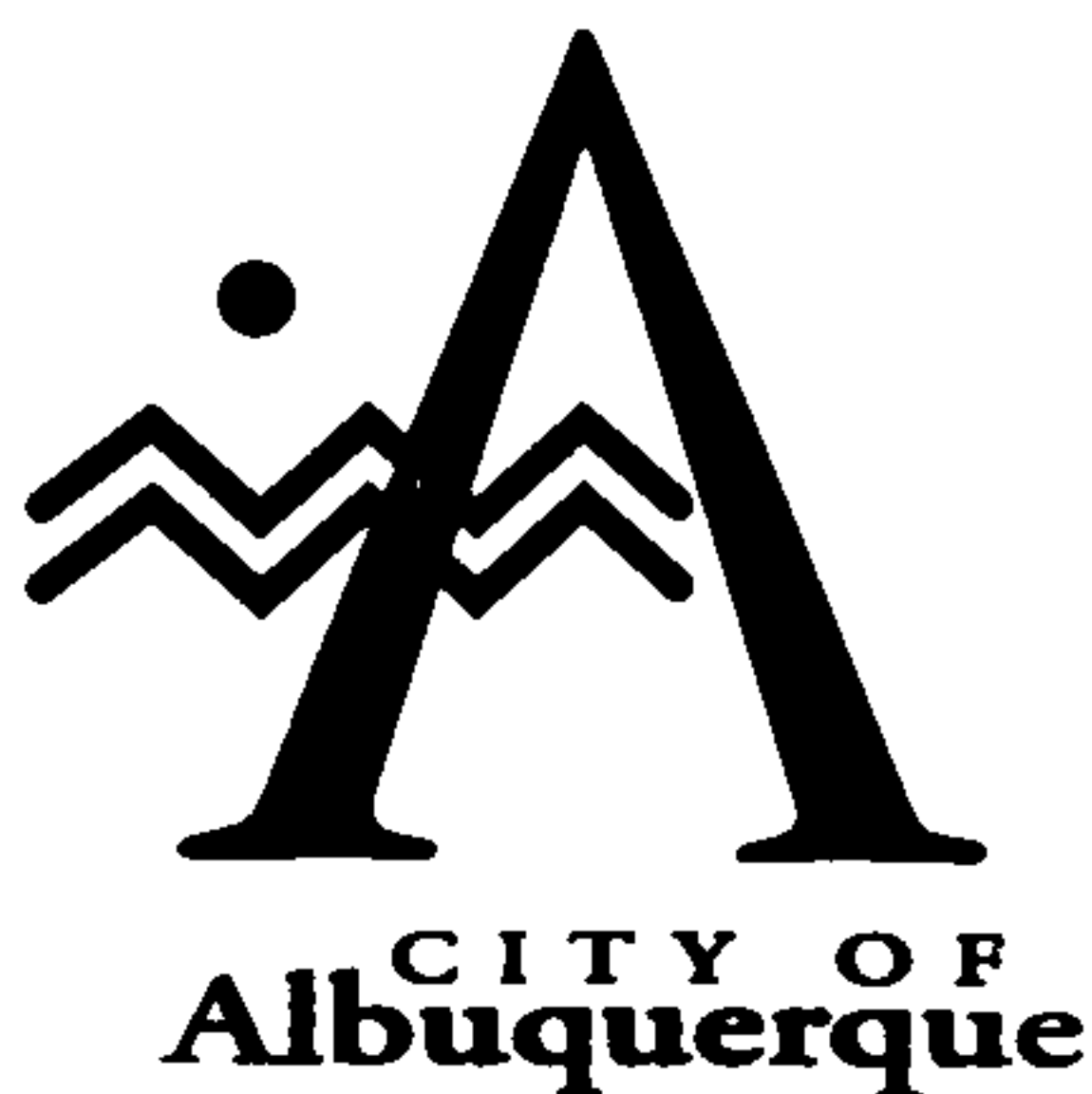




Martin J. Chávez, Mayor

October 30, 1996

John MacKenzie, P.E.
Mark Goodwin & Associates
Post Office Box 90606
Albuquerque, New Mexico

RE: CONCEPTUAL GRADING & DRAINAGE PLAN FOR **CIRCLE K** AT ALAMEDA AND SAN PEDRO, (C18/D22A) SUBMITTED FOR SITE DEVELOPMENT PLAN FOR SUBDIVISION, SITE DEVELOPMENT PLAN FOR BUILDING PERMIT, AND PRELIMINARY AND FINAL PLAT APPROVAL, ENGINEER'S STAMP DATED 10/17/96.

Dear Mr. MacKenzie:

Based on the information provided in the submittal of October 17, 1996, the above referenced plan is approved for Site Development Plan for Subdivision, Site Development Plan for Building Permit, and Preliminary and Final Plat approval.

Please make the appropriate submittal prior to approval for Building Permit release.

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

Sincerely,

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

c: File

Good for You, Albuquerque!



DRAINAGE INFORMATION SHEET

PROJECT TITLE: Circle K @ Alameda & SP ZONE ATLAS/DRNG, FILE#: C-18/D22A

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Lot 22D, Block 12, Tract A, Unit B, NAA

CITY ADDRESS: _____

ENGINEERING FIRM: Mark Goodwin & Assoc. CONTACT: John MacKenzie

ADDRESS: Box 90606 PHONE: 345-2010

OWNER: Circle K Corporation CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: George Rainhart Architects CONTACT: George Rainhart

ADDRESS: _____ PHONE: 884-9110

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

CHECK TYPE OF APPROVAL SOUGHT:

- ☐ DRAINAGE REPORT
- ☐ DRAINAGE PLAN
- ☒ CONCEPTUAL GRADING & DRAINAGE PLAN
- ☐ GRADING PLAN
- ☐ EROSION CONTROL PLAN
- ☐ ENGINEER'S CERTIFICATION
- ☐ OTHER

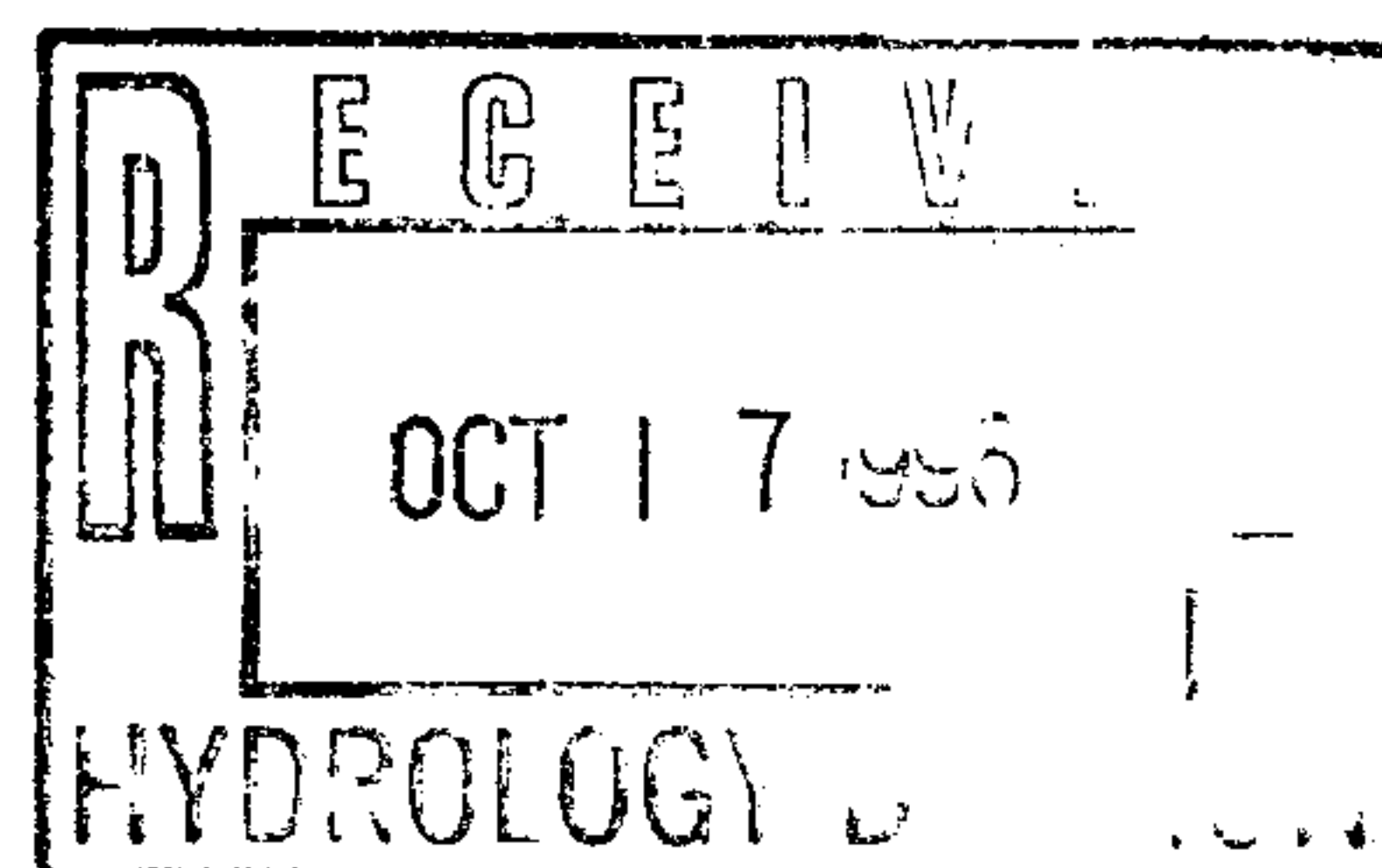
- ☐ SKETCH PLAT APPROVAL
- ☒ PRELIMINARY PLAT APPROVAL
- ☒ S. DEV. PLAN FOR SUB'D APPROVAL
- ☒ S. DEV. PLAN FOR BLDG PERMIT APPROVAL
- ☐ SECTOR PLAN APPROVAL
- ☒ FINAL PLAT APPROVAL
- ☐ FOUNDATION PERMIT APPROVAL
- ☐ BUILDING PERMIT APPROVAL
- ☐ CERTIFICATION OF OCCUPANCY APPROVAL
- ☐ GRADING PERMIT APPROVAL
- ☐ PAVING PERMIT APPROVAL
- ☐ S.A.D. DRAINAGE REPORT
- ☐ DRAINAGE REQUIREMENTS
- ☐ OTHER _____ (Specify)

PRE-DESIGN MEETING:

- ☐ YES
- ☒ NO
- ☐ COPY PROVIDED

DATE SUBMITTED: 10/17/96

BY: John M. MacKenzie
John M. MacKenzie, P.E.





D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

P.O. BOX 90606, ALBUQUERQUE, NM 87199
(505) 345-2010

October 10, 1996

Ms. Susan Calongne, PE
Hydrology Division, PWD
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Circle K @ Alameda and San Pedro (C18/D22A)

Dear Ms. Calongne:

In response to your letter issuing comments on the referenced project, dated June 26, 1996, I would like to emphasize that this is a conceptual grading and drainage plan submittal. With all due respect, it's not worthy of detailed design and detailed review. I found some of your comments to be more appropriate at the final grading and drainage plan review level.

1. *The plan statement with respect to downstream developments is somewhat incorrect. Presently, runoff from this site reaches the access drive to Alameda Blvd between the two sites, and then it all flows into Alameda Blvd at the undeveloped rate. Some of the undeveloped runoff sheet flows directly north onto Alameda Blvd.*

All runoff from developments in the vicinity of this project eventually reaches the Alameda Blvd storm drain. During my design of the developments just downstream of this site, I tried to obtain as-built information on this storm drain from the City, but none was available because it was designed and constructed by the Highway Department in conjunction with the Alameda/I-25 interchange construction. The District III office could not locate their as-built drawings when I visited them.

The shopping center just below this site, the American Toyota north of Alameda, and the Ramada Inn just north and west of the interchange all restrict their developed discharge to the undeveloped rate before discharging into Alameda Blvd, so our approach follows a well-established pattern. In fact, upon review of the Bordenave design of the Ramada Inn (C18/D7) I found that historical discharge flowed northwest away from the Alameda Blvd storm drain but the final design directed developed discharge into the storm drain.

2. *The outfall from pond A is into Alameda Blvd as now shown in more detail on the plan. From the attached reservoir routing, peak discharge from this site's primary basin is 0.4 cfs, a relatively negligible quantity with respect to the question of downstream capacity and the basin's developed rate of 2.3 cfs.*
3. *Pond B has been eliminated because it's not needed. From AHYMO, the whole site's undeveloped rate is 2.34 cfs. The site's peak discharge is 4.33 cfs under developed conditions, but with ponding the peak rate has been reduced to 2.29 cfs.*
4. *As with the Chevron station I designed west of this site, all fueling area comments can be addressed at the building permit stage.*

Ms. Susan Calongne, PE
Hydrology Division
October 10, 1996
Page 2

Please note that an infrastructure list for this site has already been provided by BPLW and approved by DRC (project no. 503790, see attached). In my judgment, development of this site does not justify additional infrastructure since drainage has been sufficiently dealt with on-site.

If I can be of further assistance please contact me.

Sincerely,

MARK GOODWIN & ASSOCIATES, P.A.



John M. MacKenzie, PE

JMM/sb

Attachment

b:\circle-k.ala\comments.1

RECEIVED

11/10/96



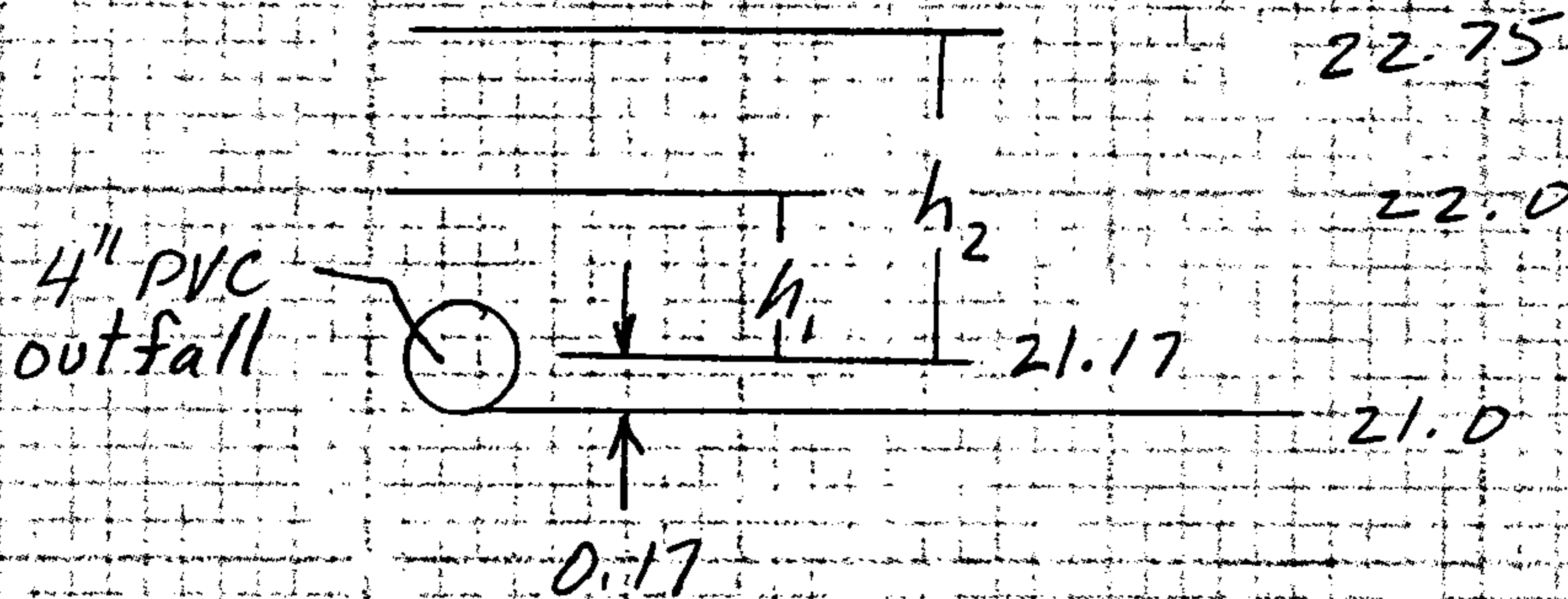
OUTFALL CALCULATIONS

Drainage Basin A

$$Q = 0.6(A) \sqrt{2gh}$$

$$\text{Area} = \frac{\pi d^2}{4}$$

$$A = 0.0871$$



@ Elev 22 $h_1 = 0.83'$

$$Q = 0.6(0.0871) \sqrt{2g(0.83)}$$

$$Q = 0.382 \text{ cfs}$$

@ Elev 22.75 $h_2 = 1.58'$

$$Q = 0.6(0.0871) \sqrt{2g(1.58)}$$

$$Q = 0.527 \text{ cfs}$$



D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Circle K - Alameda
SUBJECT Drainage
BY Jmm DATE 10/10/96
CHECKED _____ DATE _____
SHEET 1 OF 2

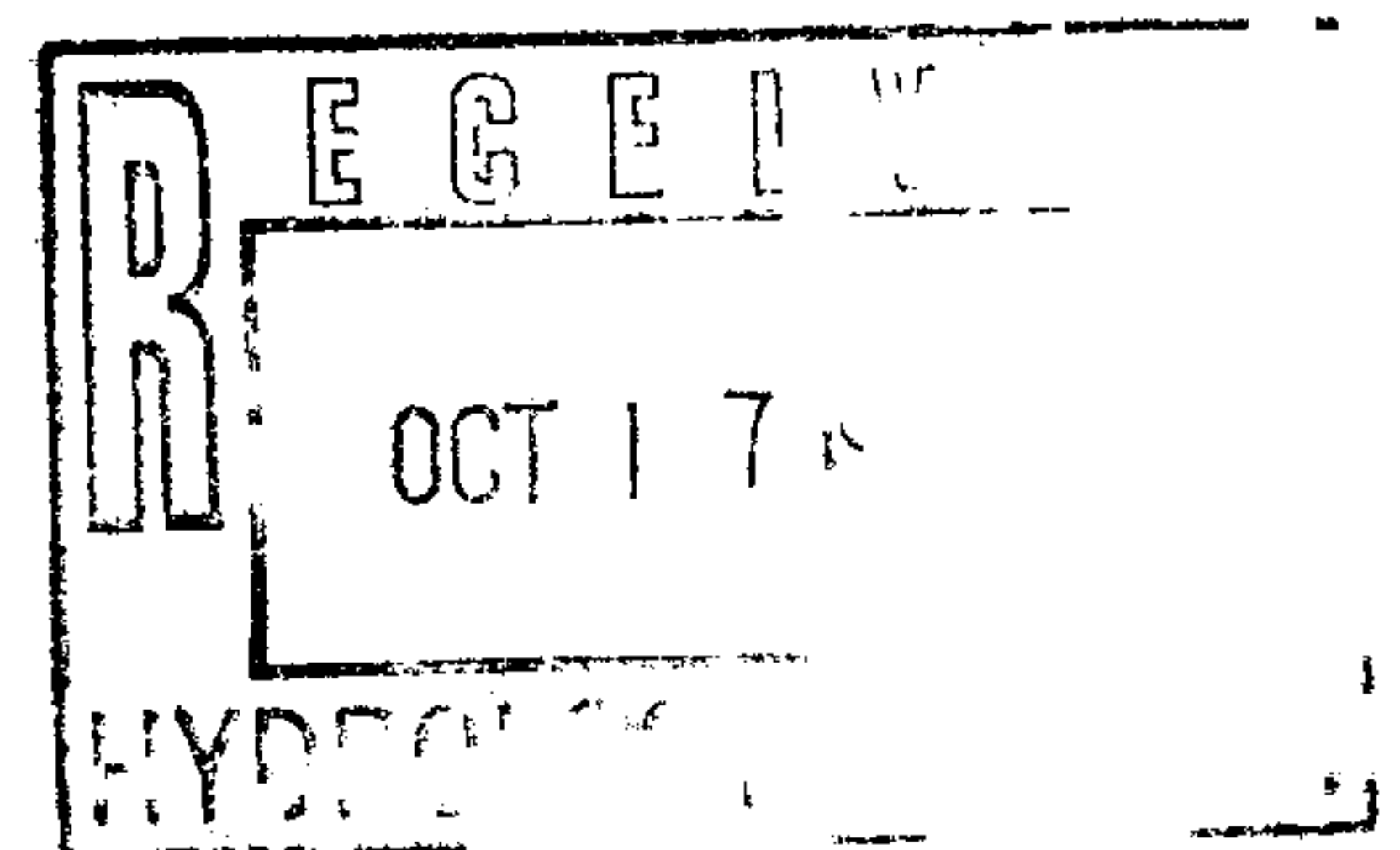
PONDING CAPACITIES

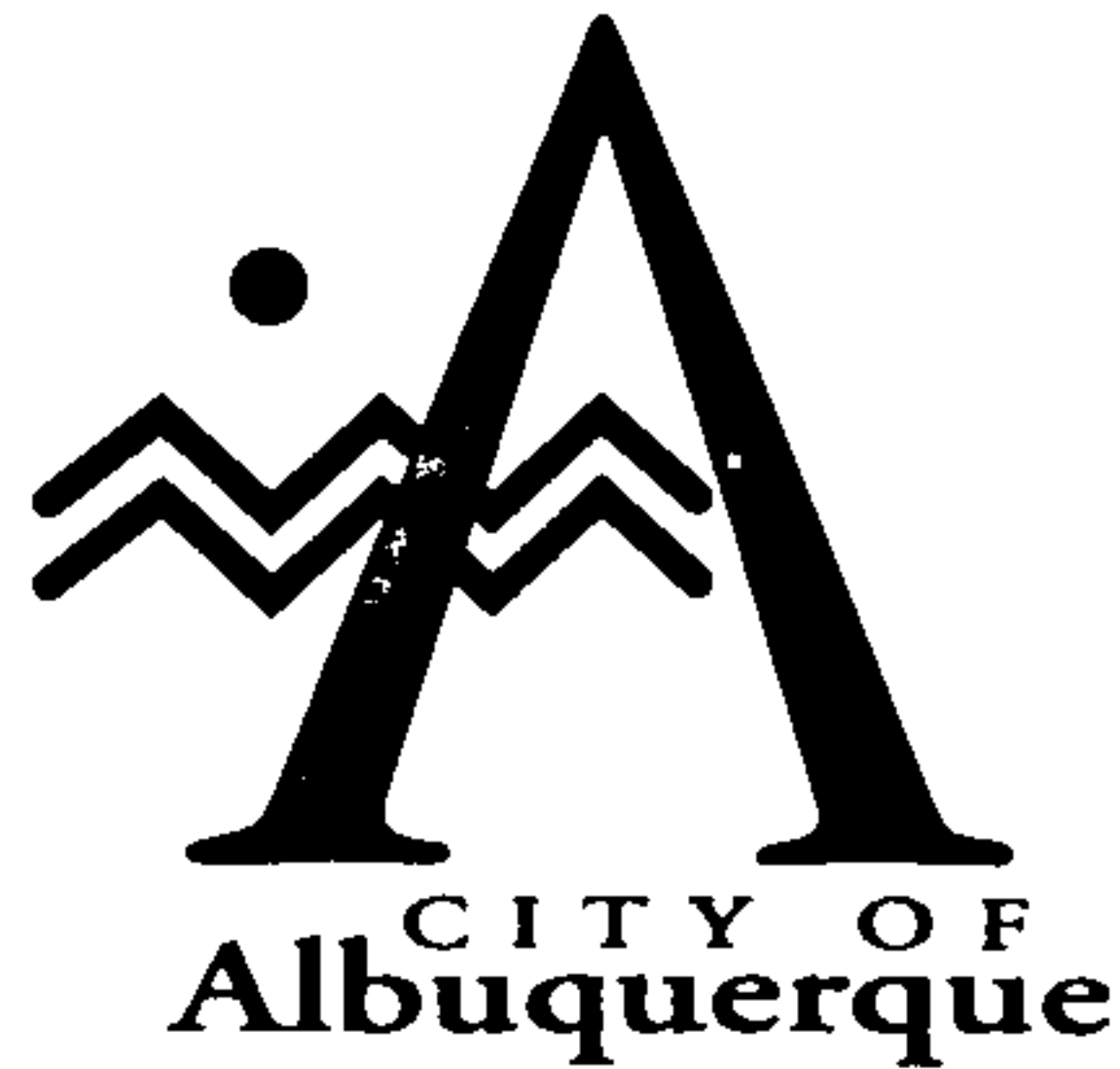
Pond Area A

Elev.	Area ft ²	Avg Area	Depth	Vol.
21.80	140	150	0.5	75
22.30	160	2430	0.5	1215
22.80	4700			
				1290

Ponding Area B

Elev.	Area	Avg Area	Depth	Vol. ft ³	Cum. Vol. (Ac Ft)
21.0	328	1448	1	1448	0.033
22.0	1120	5560	.95	5282	.1877
22.95	10,000				





Martin J. Chávez, Mayor

June 26, 1996

John MacKenzie, P.E.
Mark Goodwin & Associates
Post Office Box 90606
Albuquerque, New Mexico

RE: CONCEPTUAL GRADING & DRAINAGE PLAN FOR CIRCLE K AT ALAMEDA AND SAN PEDRO, (C18/D22A) SUBMITTED FOR SITE DEVELOPMENT PLAN FOR SUBDIVISION AND BUILDING PERMIT APPROVAL, ENGINEER'S STAMP DATED 5/20/96.

Dear Mr. MacKenzie:

Prior to approval for Site Development for the above referenced site, the following comments must be addressed:

1. The plan states that downstream developments will accept the undeveloped runoff from this site. Please identify the off-site storm drain systems, with the locations and capacities which accept this runoff. It appears that some of the runoff flows to the west toward the shopping center and some of it flows out into Alameda. Please clarify.
2. Where is the outfall for pond A? Please identify the downstream capacity for this outfall.
3. How large is the pond for area B? Please show the limits of the ponding area. What is proposed to restrict the flow at the sidewalk culvert? What is the Q exiting this area? What Q is allowed? N/A

With respect to the fueling area, Loren Mainz has the following comments:

4. The rundown to detention pond A, as well as pond A, should be lined with cobblestone or landscape rock for removal of floating oils/fuels.
5. The City suggests that the area around the fueling bays and under the canopy be graded so that in the future the fueling area can be contained and all washdown water collected and routed to an oil/water separator (such as Pond A as shown). This separator should be connected directly to the sanitary sewer, not the storm drain system.

Good for You, Albuquerque!

DRB 96-487

94-411



John MacKenzie, P.E.

Page 2

6. It is recommended that a trap inlet be used at the curb opening at pond A. The trap would be designed to contain the volume from 3 gallons per proposed fuel pump, in case of spills. Higher flows would bypass this inlet. I have attached a detail of this spill trap inlet for your use.
7. The on-site manager of the station should have a regular maintenance schedule for maintaining the detention basin area.

If you should have any questions regarding these comments, please call me at 768-2666, or call Loren Mainz at 768-2650.

Sincerely,



Susan M. Calongne, P.E.

City/County Floodplain Administrator

c: 

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Circle K @ Alameda & SP ZONE ATLAS/DRNG, FILE#: C-18/022A

DRB #: _____ EPC #: _____ WORK ORDER #: _____

LEGAL DESCRIPTION: Lot 22D, Block 12, Tract A, Unit B, NAA

CITY ADDRESS: _____

ENGINEERING FIRM: Mark Goodwin & Assoc. CONTACT: John MacKenzie

ADDRESS: Box 90606 PHONE: 345-2010

OWNER: Circle K Corporation CONTACT: _____

ADDRESS: _____ PHONE: _____

ARCHITECT: George Rainhart Architects CONTACT: George Rainhart

ADDRESS: _____ PHONE: 884-9110

SURVEYOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

CONTRACTOR: _____ CONTACT: _____

ADDRESS: _____ PHONE: _____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT
____ DRAINAGE PLAN
☒ CONCEPTUAL GRADING & DRAINAGE PLAN
____ GRADING PLAN
____ EROSION CONTROL PLAN
____ ENGINEER'S CERTIFICATION
____ OTHER

PRE-DESIGN MEETING:

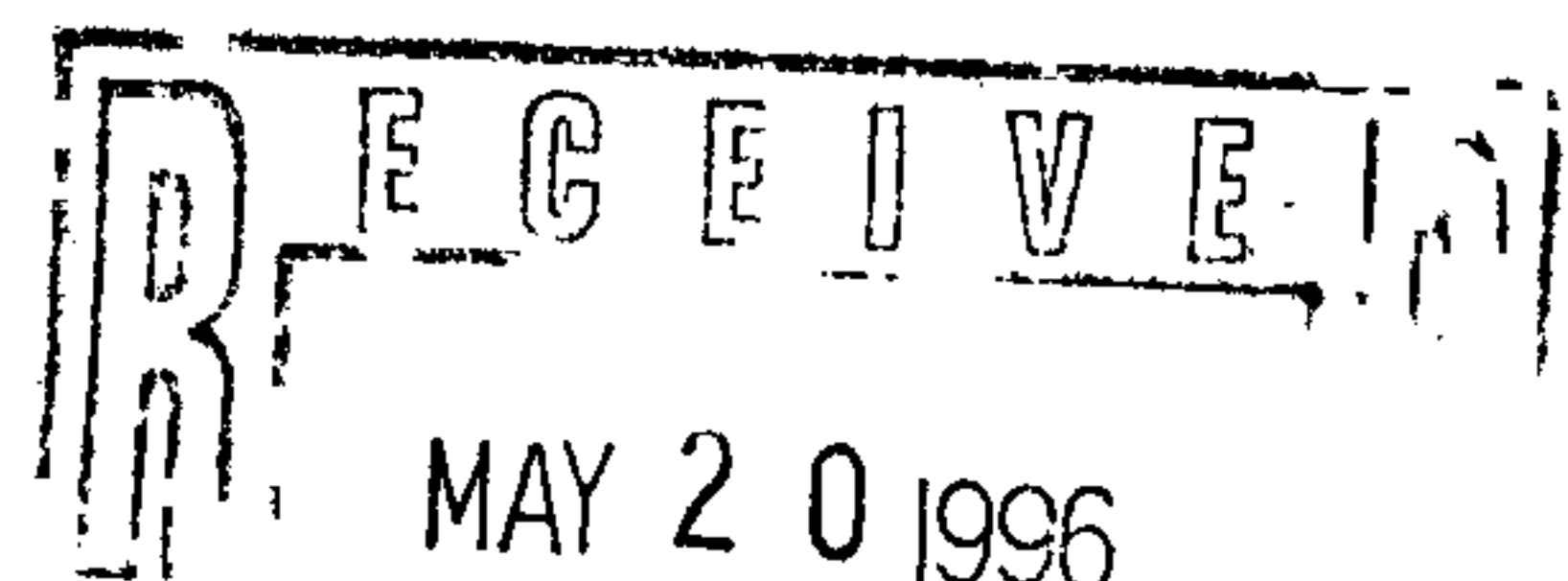
____ YES
☒ NO
____ COPY PROVIDED

CHECK TYPE OF APPROVAL SOUGHT:

____ SKETCH PLAT APPROVAL
____ PRELIMINARY PLAT APPROVAL
☒ S. DEV. PLAN FOR SUB'D APPROVAL
☒ S. DEV. PLAN FOR BLDG PERMIT APPROVAL
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____ GRADING PERMIT APPROVAL
____ PAVING PERMIT APPROVAL
____ S.A.D. DRAINAGE REPORT
____ DRAINAGE REQUIREMENTS
____ OTHER _____ (Specify)

DATE SUBMITTED: 5/20/96

BY: John M. MacKenzie
John M. MacKenzie, P.E.





D. Mark Goodwin & Associates, P.A.
Consulting Engineers and Surveyors

PROJECT Circle K - Alameda
SUBJECT Drainage
BY JMM DATE 5.20.96
CHECKED _____ DATE _____
SHEET _____ OF _____

From AHVMO, this site generates 2.05 cfs and 0.059 AF in the undeveloped condition. With its development, the site will generate a peak discharge of 3.44 cfs and a volume of 0.1250 Ac-ft.

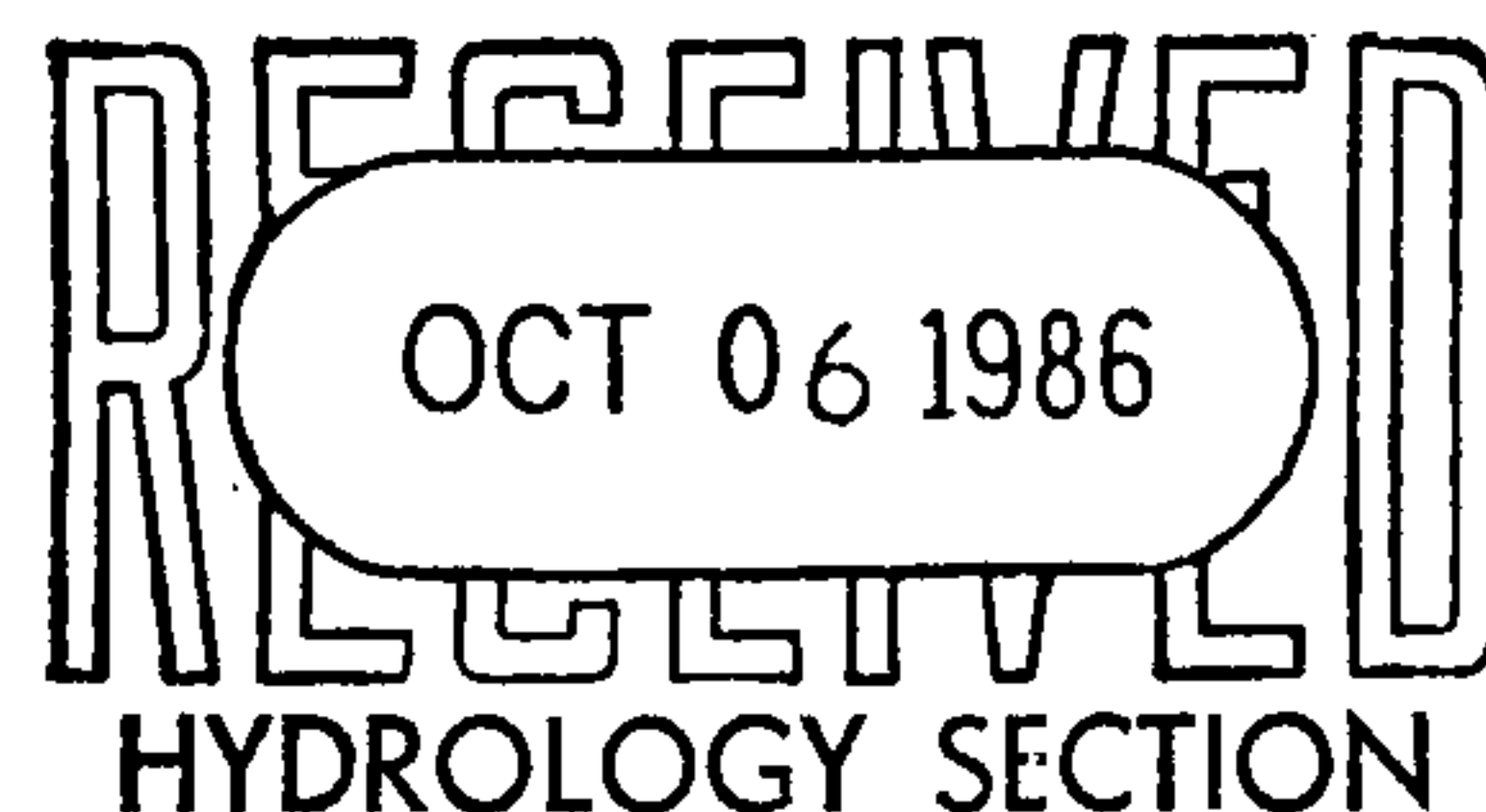
The new 2892 CF of runoff volume will be temporarily detained in on-site ponding areas A and B. Peak discharge from the site will be throttled to the historical rate of 2.05 cfs through private flow restriction devices to be maintained by the property owner. Presentation of detailed hydraulic design will be provided in the final grading and drain plan submittal for building permit.

RECEIVED

MAY 20 1996



Downstream Analysis



Introduction

This analysis is performed in order to determine the excess storm run-off generated from the proposed American Toyota site, and its impact on downstream capacity as exists today. An existing ^{54"}~~66"~~ storm drain in San Pedro is assumed to intercept all flows upstream. Methods as outlined in the City of Albuquerque's Development Process Manual (D.P.M.), Chapter 22 are used in this analysis.

The overall storm drain system in Richfield was initially analysed @ locations of minimum capacity. The section of slope = 0.6% with 30" SD diameter was determined as the control point, AP#1, see profile, FIGURE 4. Table I. depicts hydrologic calcs. for the separate basins. Table II. determines capacities of pipe system & drop inlets. Table III. analyses the the control point, AP#1.



Am. Toyota

TABLE I - Hydrologic Calculations

Basin	Area	tc	L100	L10	% imp.	Cder.	Q100	Q10
I.	3.4	10 min.	4.86	3.19	74	0.90	14.9	9.8
II.	5.0	10	4.86	3.19	83	0.79	19.2	12.6
①	1.4	10	4.86	3.19	-0-	0.34	2.3	1.5
②	6.4	15 min	3.95	2.6	90	0.86	21.7	14.3
③	2.8	10	4.86	3.19	85	0.80	11	7
④	6.5	10 min.	4.86	3.19	85	0.80	25	17
⑤	1.75	10	4.86	3.19	85	0.80	6.8	4.5
⑥	1.4	10	4.86	3.19	-0-	0.34	2.3	1.5
TOTAL	28.7	15	3.95	2.6	-	0.75	85 #	66 #

Design Criteria -

$$P_{100} = 2.3 \text{ in.} \quad P_{10} = 1.51 \text{ in.}$$

Soil - Embudo - Type B'

$$t_c = 0.0078 L^{0.77} / 50.385$$

$$L = P_{6.84} t_c^{-0.51}$$

$$Q = C L^A$$

$$V_{OL} = PCA$$

= TOTAL RUN-OFF Based on longer TC @ APRIL

Downstream Analysis

SHEET 3 OF 3 BY FWC
DATE 3/3/86 CK BY

TABLE II. Det. Capacities of Inlets/Pipe	INLET TYPE					
	Q100	Q10	Street Slope	Street d100, d10	Pipe Cap.	Q100 Q100 Res. Q
@ Basin I.	14.9	9.8	directly into	pipe (proposed)		14.9 -0-
@ Basin II.	19.2	12.6	3%	0.47, 0.41	A 8 40	8 11
@ (5)	6.8	4.5	3%	0.34, 0.30	C 4 40	4 3
@ (3)	11	7	3%	0.39, 0.34	A 6 40	6 5
@ (6)	2.3	1.5	area drain	—	D 19 5%, 50	19 -0-
@ (1)	2.3	1.5	area drain	—	D 19 5%, 50	19 -0-
@ (2) (portion)	10	7	2.5%	0.39, 0.30	C 5 2.5%, 35	5 5

75.9 24 & 24

TABLE III. - Analysis

@ AP #1	85	56	1.5%	0.54, 0.39	A -0- 1.5%, 40	40 45
Immediately downstream	85	56	0.5%	0.70, 0.53	*.6%, 32	32 53

* 30" ϕ

85-32 = 53 cfs residual

Conclusion: Capacity of 24" ϕ & 30" ϕ pipe @ AP #1 is maxed out.
a max. depth of Q10 is 0.53' - request waiver of
0.03' d10 criteria (7.1 ordinance).