



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

September 18, 2002

Daniel S. Aguirre, P.E.
Wilson & Company
2600 The American Rd. SE, Suite 100
Rio Rancho, NM 87107

Attn: Kristine Susco

Re: Core-Mark Facility - Grading & Drainage Plan, Engineer's stamp dated 9-03-02 (F15/D1)

Dear Mr. Aguirre,

Based on the information in your submittal dated September 5, 2002, Hydrology approves the above referenced plan for Paving Permit. Please attach a copy of this approved plan to the construction sets before sign-off by Hydrology.

In addition, the submittal is approved for SO-19 permit, which is required for construction within the city right-of-way.

Before Hydrology's acceptance of the Engineer's Certification of the grading and drainage plan per the DPM checklist, a copy of the plan with SO-19 approval sign-off by the City's field inspector will be required.

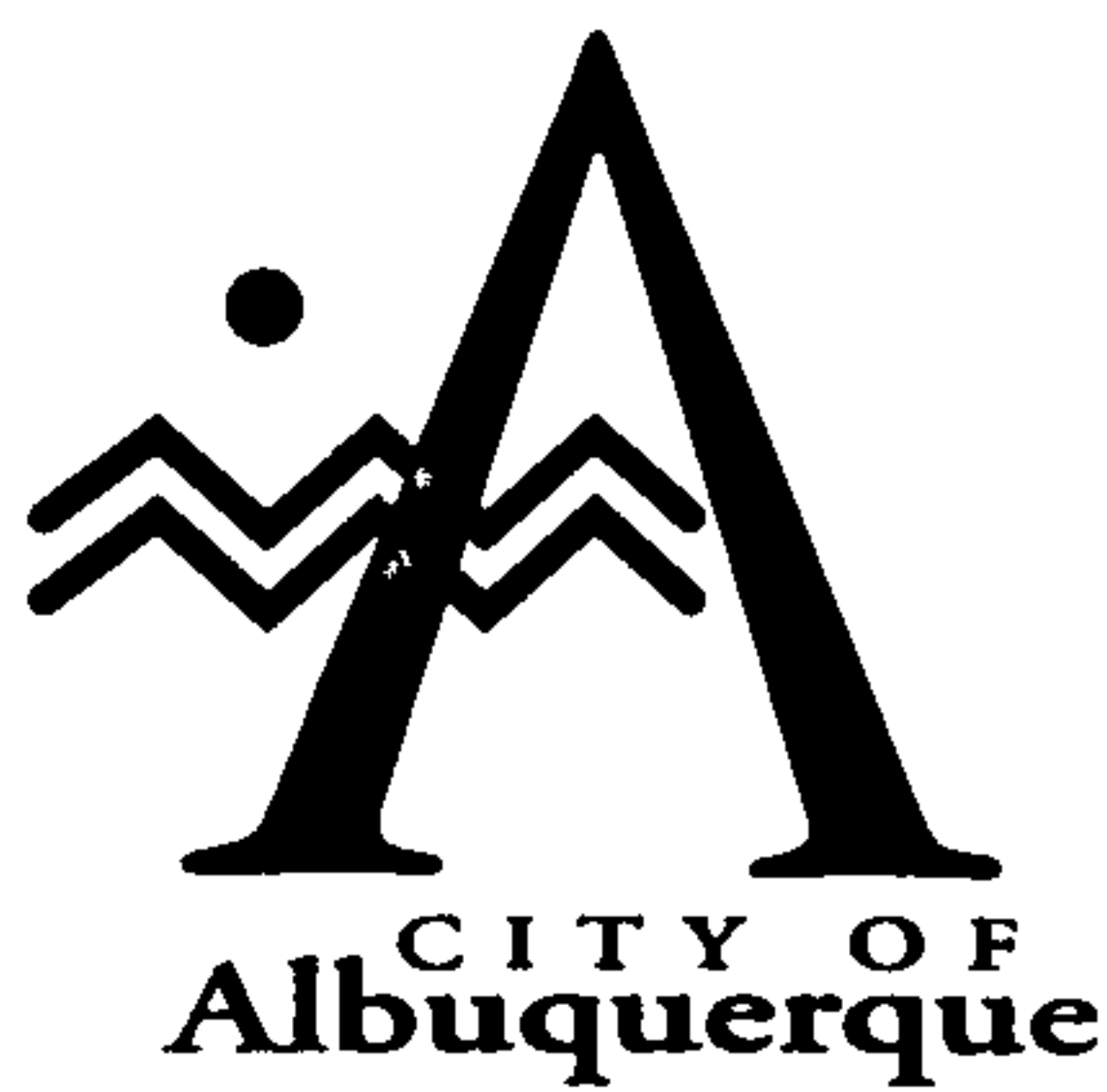
If you have any questions, please call me at 924-3988.

Sincerely,

Nancy Musinski, P.E.
Hydrology/Utility Development
City of Albuquerque Public Works

xc: Matt Cline – Storm Drainage Inspector (w/plan)
Pam Lujan – Permits

File



October 24, 1996

Martin J. Chávez, Mayor

Joe P. Kelley
Chavez-Grievies Engineering
5639 Jefferson NE
Albuquerque, NM 87109

**RE: DRAINAGE PLAN FOR CORE-MARK BUILDING ADDITION
(F15-D1A) ENGINEER'S STAMP DATED 10/10/96.**

Dear Mr. Kelley:

Based on the information provided on your October 11, 1996 submittal, the above referenced site is approved for Grading/Paving and Building Permit.

Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology.

Prior to Certificate of Occupancy release, Engineer Certification per the D.P.M. checklist will be required.

If I can be of further assistance, please feel free to contact me at 768-2667.

Sincerely,

Bernie J. Montoya, CE
Engineering Associate

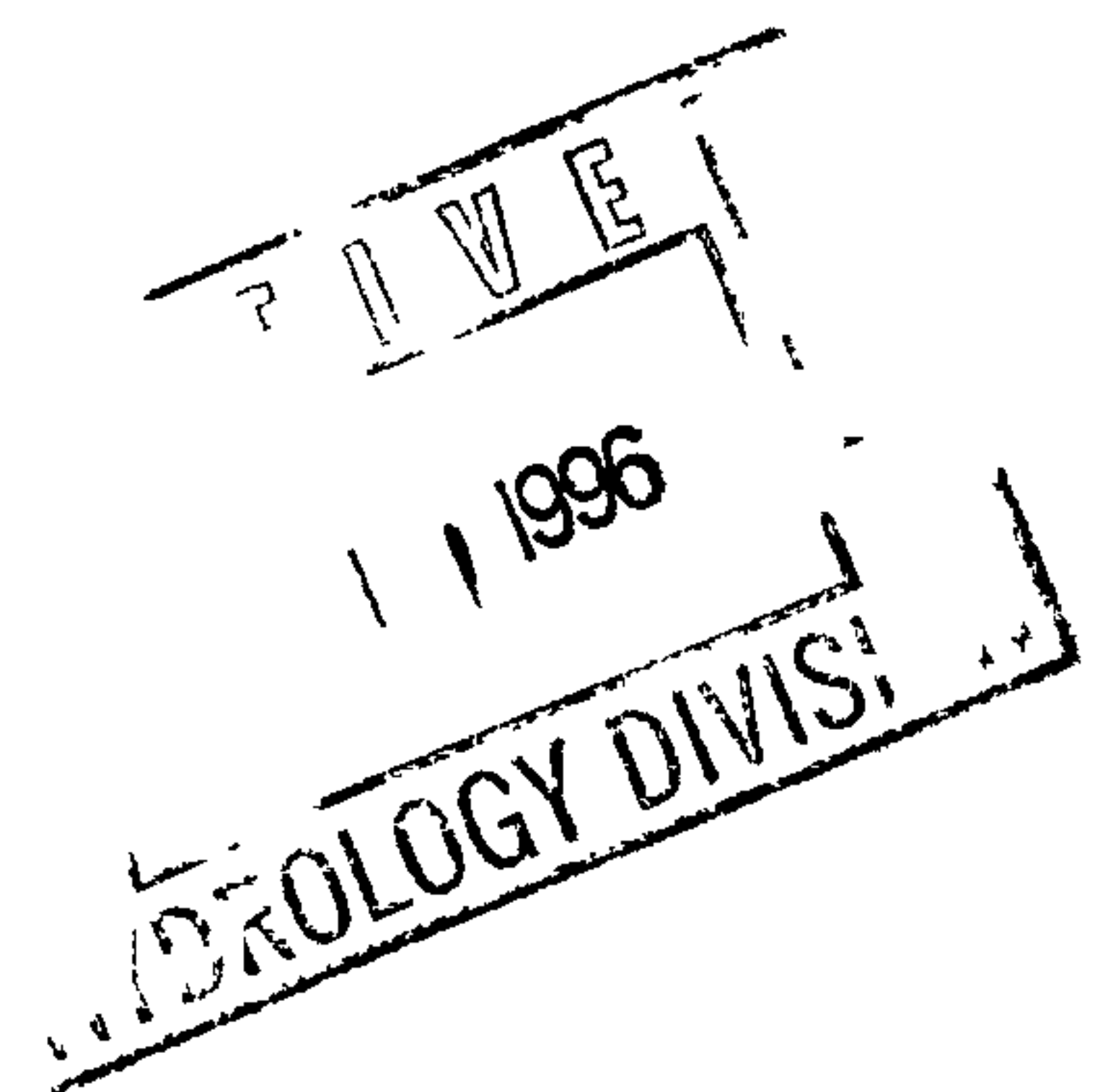
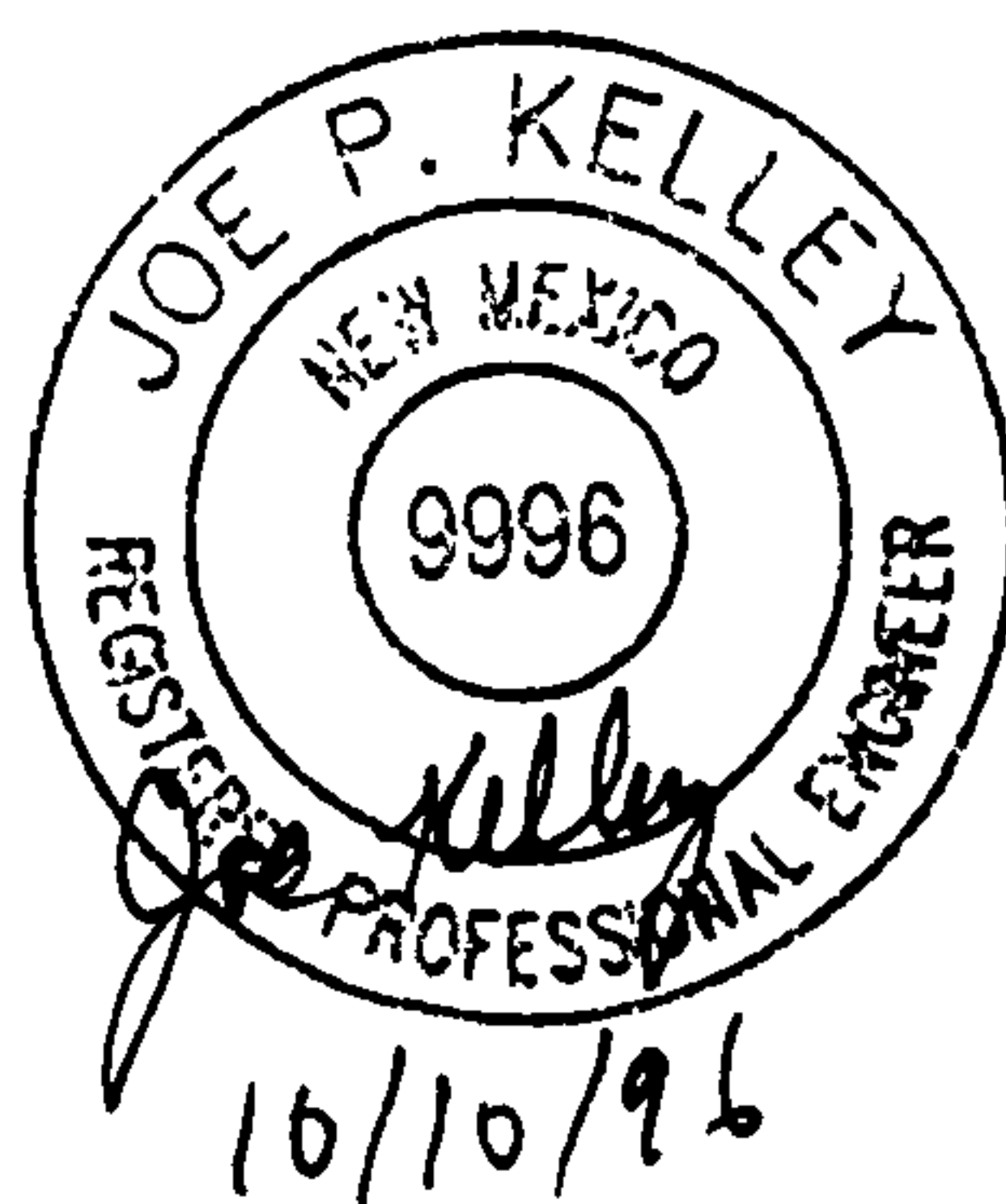
BJM/dl

c: Andrew Garcia
File

Good for You, Albuquerque!



GRADING AND DRAINAGE PLAN
CORE-MARK ADDITION
TO THE ASSOCIATED GROCERS SITE



October, 1996

LOCATION AND SURROUNDING DEVELOPMENT

This site is located in Albuquerque's north valley at the northeast corner of Second and Montañó. It is bounded on the west by the AT&SF railroad tracks, on the north by a developed residential area, and on the west and south by fully-developed City of Albuquerque streets.

LEGAL DESCRIPTION

A portion of the Associated Grocers Tract.

FLOOD HAZARD ZONES

As shown by Panel 3500020016 of the National Flood Insurance Rate Maps for the City of Albuquerque, dated October 14, 1983, the site is outside the study area.

Off-site to the east, east of the railroad tracks, is an AH flood hazard zone (EL 4977). Zone AH designates "areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined."

EXISTING SITE CONDITIONS AND DRAINAGE PATTERN

The site is in a low-lying area, but it has been graded with a high perimeter so that no storm runoff enters or exits the site on the surface. The eastern two-thirds of the site, as shown on the Drainage Basin Map, discharges into low-lying areas on-site and is dispersed by means of evaporation and infiltration. The finished floors of the main buildings are all elevated 4' above the adjacent ground, so this drainage pattern doesn't endanger the buildings.

The western third of the site discharges to a detention pond system that is connected to the public City storm drain system. The ponds are sodded, and appear to soak up a portion of the runoff, while the remainder enters the storm drain system. As shown on page A-6, the detention pond system attenuates the peak runoff such that it is only 0.65 cfs by the time it enters the storm drain system.

This drainage pattern was established in 1981 when the site was originally built. Bovay Engineers prepared a grading plan that is on file at City Hydrology (F15/D1), and the site appears to have been built accordingly. However, no drainage calculations were on file

at City Hydrology.

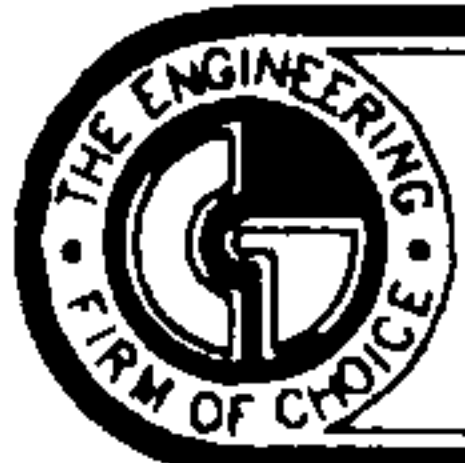
PROPOSED SITE CONDITIONS AND DRAINAGE PATTERN

The proposed drainage pattern is identical to the existing pattern. The only change is the addition of impervious parking area in Basin C. However, as shown on page A-12, by the time the runoff discharges through the detention pond system, the effect of the increased impervious area has been minimized. The developed runoff has been attenuated to 0.65 cfs, which is identical to the existing runoff. Therefore, this established drainage pattern is still appropriate for the site. No special measures need to be taken to mitigate the effect of the new impervious surfaces.

HYDROLOGY/HYDRAULICS

The runoff calculations and design have been done in accordance with Section 22.2 of the Development Process Manual of the City of Albuquerque, January 1993.

The computerized hydrologic model, AHYMO, was used to calculate storm volumes in accordance with Section 22.2. The 1-hour, 6-hour, and 24-hour precipitation depths were derived from figures C-1, C-2, and C-3 of Section 22.2.



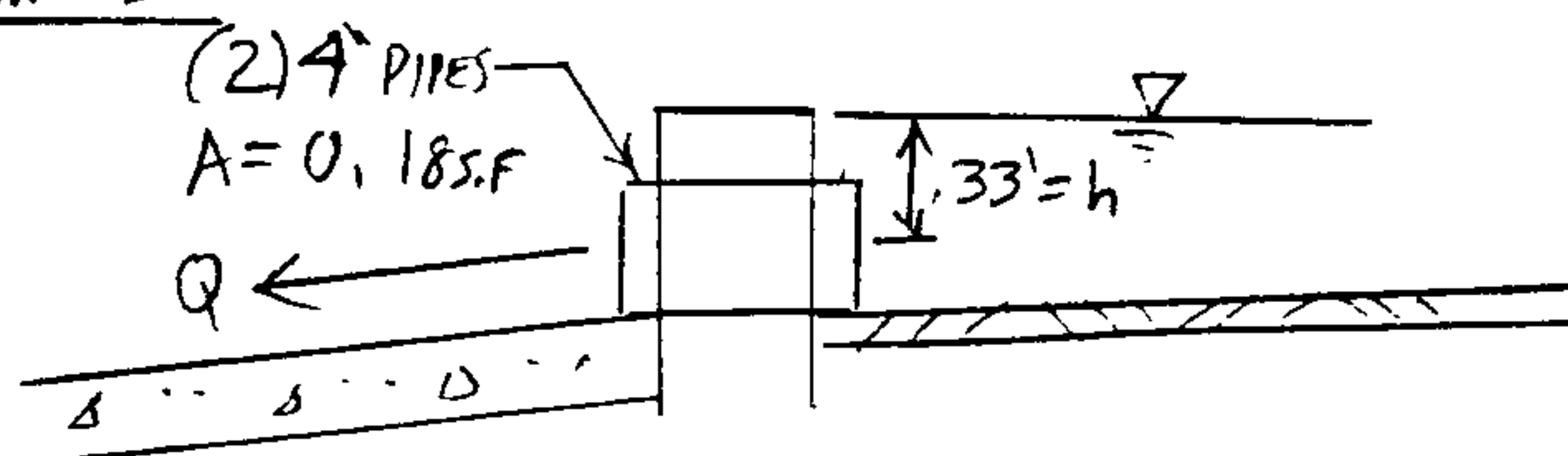
CHAVEZ • GRIEVES CONSULTING ENGINEERS, INC.

5639 JEFFERSON STREET N.E. • ALBUQUERQUE, NEW MEXICO 87109
PHONE (505) 344-4080 • FAX (505) 343-8759

SHEET NO. _____ OF _____
JOB CORE-MARK ADDITION
SUBJECT _____
CLIENT _____
JOB NO. _____
BY JK DATE 10/9/96

CONTROLLED OUTLETS FROM DETENTION PONDS

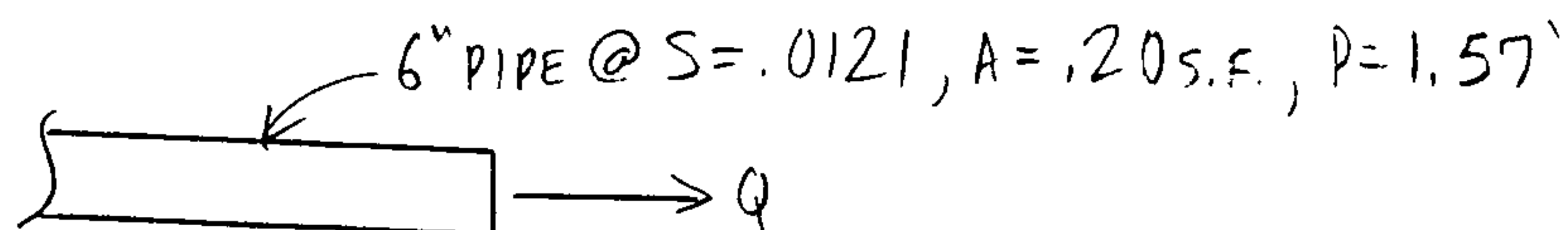
ANALYSIS POINT 2



USE ORIFICE EQ'N TO DETERMINE Q:

$$Q = 0.6 A \sqrt{2gh}$$
$$= 0.6 (1.18) \sqrt{2(32.2)(.33)} = 0.50 \text{ CFS}$$

ANALYSIS POINT 5 (FROM THE COMBINED POND SYSTEM)



USE MANNING'S EQ'N TO DETERMINE CAPACITY:

$$Q = \frac{1.486}{n} A \left(\frac{A}{P} \right)^{2/3} S^{1/2}$$
$$= \frac{1.486}{.013} (20) \left(\frac{.20}{1.57} \right)^{2/3} (.0121)^{1/2} = .64 \text{ CFS}$$