C 18/ D5

1 PLAN

Academy Engineering, Inc.

(505) 821-8008
ALBUQUERQUE, N.M. 87109
5353 WYOMING BLVD. NE. SUITE 3

April 8, 1981

Mr. Chuck Easternling
Principal City Engineer-Hydrology
Engineering Dept.
City of Albuquerque

Re: Drainage Report for Allstate Ready Mix Batch Plant

Dear Chuck:

Please find enclosed 3 copies of the preliminary drainage report for the proposed Allstate Ready Mix Batch Plant.

The project site is located in North Albuquerque Acres on Hollywood Avenue N.E. (formally Sacramento Avenue N.E.). As you can see from the drainage plan, all offsite drainage entering the project site will be diverted back to its natural drainage course in Hollywood Avenue. On-site ponding in accordance with the City of Albuquerque interim drainage criteria of November 1979 will be used to detain the difference in historic and developed runoff.

If you require any further information concerning this matter, please feel free to contact me.

Sincerely,

James E. Blackwell, P.E.
Vice President

JEB/rb
encl.

RECEIVED
APR 13 1981
CITY ENGINEER

HYDRO FILE

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

April 22, 1981

C18-D5

Mr. James E. Blackwell, P.E.
Academy Engineering, Inc.
5353 Wyoming Blvd., N.E., Suite 3
Albuquerque, New Mexico 87104

RE: Drainage Report for Allstate Ready Mix Batch Plant

Dear Mr. Blackwell:

The Hydrology Section received the referenced Drainage Report for review. Unfortunately, we cannot continue to process your report without the following information:

1. Planning Action(s).
2. A contour map as outlined in A.M.A.F.C.A. Resolution 1980-15, Section 7-A.
3. The boundries of the watershed(s) affecting the site: defining the rate of flow, velocity, quantity, and location of storm waters before and after development.
4. The method of treating storm drainage management within the development to satisfy City and A.M.A.F.C.A. requirements.
5. The method of disposal of water off-site to satisfy City and A.M.A.F.C.A. requirements.

Also, in order for us to expedite your Drainage Report and eliminate any unnecessary work on your part we would strongly recommend a pre-design conference to discuss acceptable drainage concepts for this development.

MUNICIPAL DEVELOPMENT DEPARTMENT

Richard S. Heller, P.E., City Engineer ENGINEERING DIVISION Telephone (505) 766-7467

If you have any questions concerning the above, please feel free to call me.

Sincerely,

Charles M. Easterling
Principal Assistant City Engineer/
Hydrology

CME:wdh

DRAINAGE REPORT

ALLSTATE READY MIX BATCH PLANT

ALBUQUERQUE, NEW MEXICO

APRIL 1981

Prepared By:

Academy Engineering Inc.

5353 Wyoming Blvd. N.E.

Albuquerque, New Mexico

(505) 821-8008

ALLSTATE READY MIX BATCH PLANT

SCOPE

The scope of this report is to present the data, analysis, calculations and a proposal plan for drainage management.

SITE LOCATION

The project is located on lots numbered 20 and 21 of Tract A, Unit B, North Albuquerque Acres, Albuquerque, New Mexico; and is adjacent to Hollywood Avenue N.E. (formally Sacramento Avenue N.E.).

NATURAL DRAINAGE

The site in its natural state slopes at 1.0% to the southwest. The area of the site is 17,200 ft. An existing small arroyo intercepts the site on the east property line. The discharge of this small arroyo has historically been into Hollywood Avenue. All historic runoff from the east will be intercepted along the east property line and diverted to Hollywood Avenue. No other off-site flows will enter the project site.

ESTIMATED RUNOFF UNDEVELOPED STATE

Drainage within the boundary of the site is basically overland flow. The historic 5-year discharge from the site is 4.5 cfs. This is the maximum discharge allowed by the City of Albuquerque after development occurs.

ESTIMATED RUNOFF DEVELOPED STATE

As development occurs, the impervious area increases and thereby the amount of runoff also increases. To offset this increase, on site detention of storm waters will be incorporated into the development. This will be accomplished during the grading of the site.

The detention pond will be sized for the volume difference between the 100 year developed volume and the 100 year historic volume. A positive outlet discharge equal to the 5 year historic flow will be incorporated into the detention facility. Also an emergency overflow weir equal to the 100 year developed flows will be incorporated into the detention facility. The detention facility will be located on the west edge of the project site.

DESIGN CRITERIA

In analyzing the storm runoff, the rational formula, Q-CIA is used.

Where:

Q = Runoff Quantity in cubic feet/second.
A = Contributing Area in Acres.

I = Intensity in inches/hour for a duration equal to the time of accumulation (duration) measured in minutes and obtained from exhibit "B", intensity duration frequency curves, Albuquerque area 1961. (Note: Where a time of concentration (Tc) is less than ten minutes from exhibit "B", the intensity value derived from the Tc equal to ten minutes is employed).

C = Runoff coefficient (No unit). This coefficient represents the integrated effects of infiltration detention storage, evaporation, retention, flow routing and interception which all affect the time distribution and peak rate of runoff. (=0.4 pervious and 0.9 impervious)

EXPLANATION OF RESULTS

5 - year undeveloped runoff:
Total flow = 2.00 cfs

100 p year developed runoff:
Total flow = 7.66 cfs

Total Volume of Detention required:
Volume = 6,176 cu. ft.

Outlet Pipe Size:
8" dia pvc = 2.2 cfs discharge

ALLOWABLE DISCHARGE FROM SITE

Q_5 Historic = CIA

5 year storm duration = Tc = 10 min
Weather Bureau Data = 0.47 in ~~(60)~~ (70)

$I = 2.82 \frac{in}{hr}$

C = 0.40
A = 1.77 acres

$Q_5 = 0.40\ (2.82)(1.77) = 2.00$ cfs.

VOLUME OF POND REQUIREMENTS

$$V_p = V_{Developed} - V_{Historic}$$ 100 year flows

100 year Developed Volume

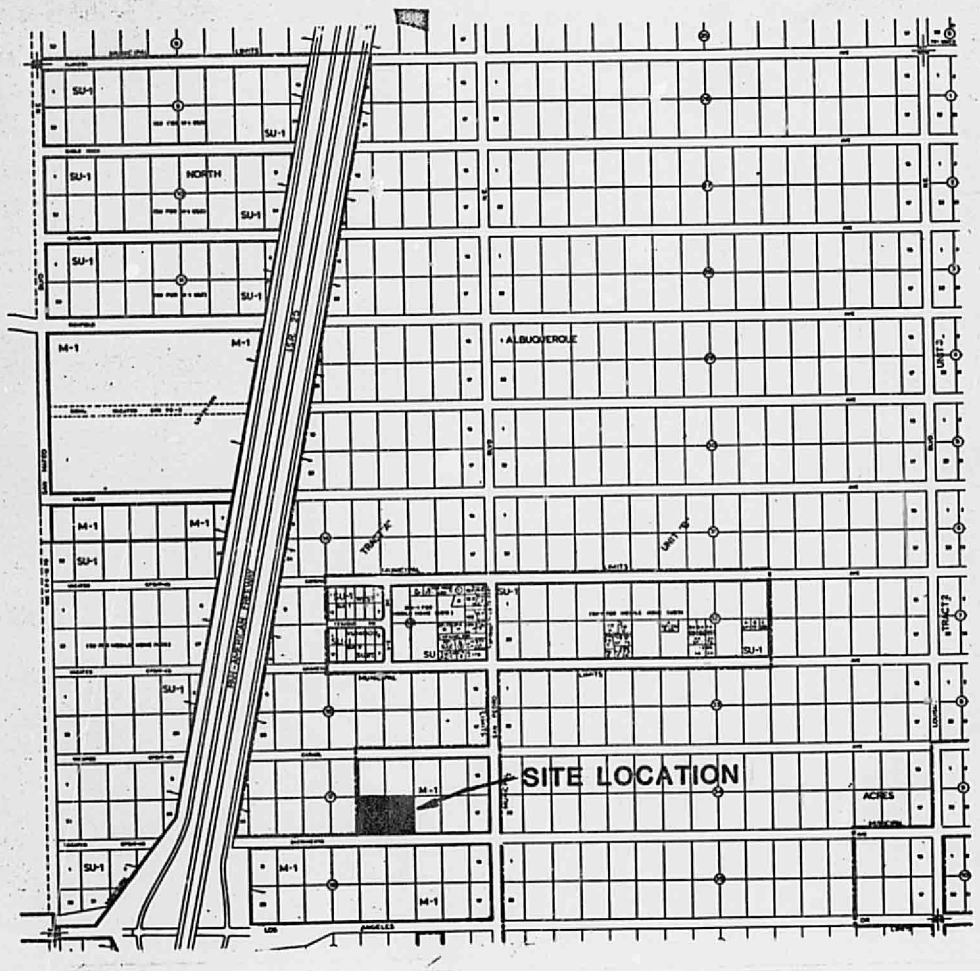
$$V_{100D} = 0.80 \left(\frac{2.4}{12}\right)(77,200) = 12,352 \text{ ft}^3$$

100 year Historic Volume

$$V_{100H} = 0.40 \left(\frac{2.4}{12}\right)(77,200) = 6,176 \text{ ft}^3$$

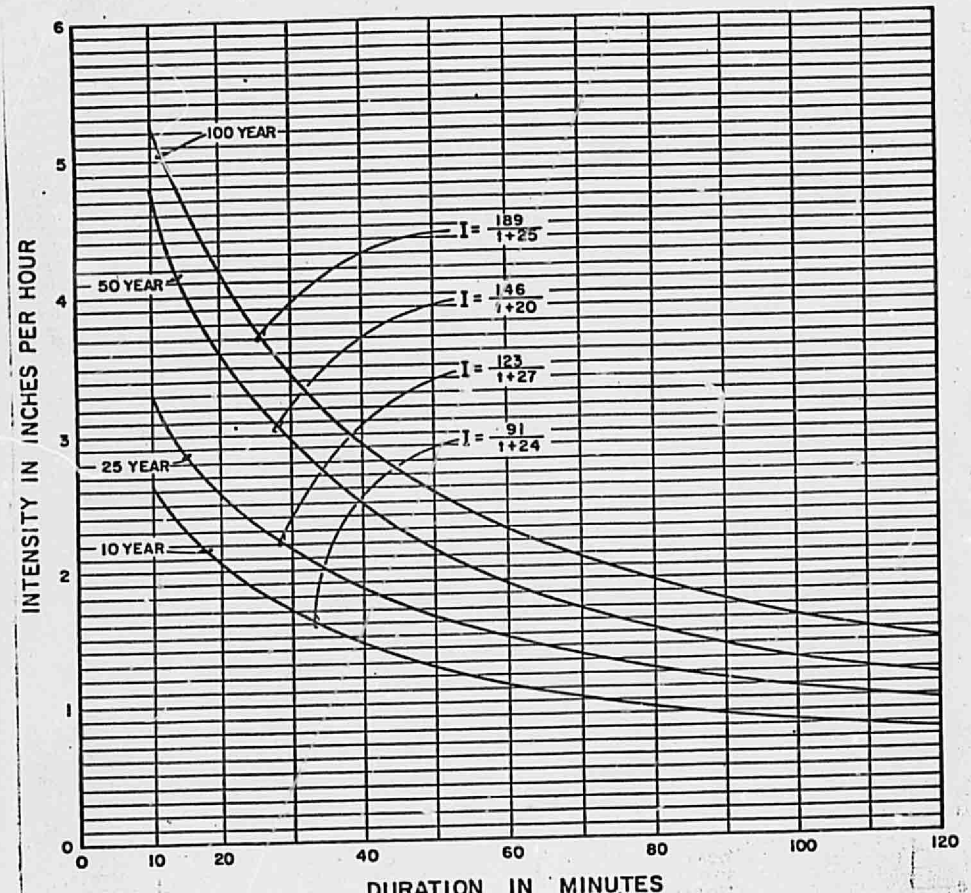
$$V_p = 12,352 - 6,176 = 6,176 \text{ ft}^3$$

Required Pond Size = 6,176 ft^3



C-18-Z

EXHIBIT A



MASTER PLAN OF DRAINAGE
PREPARED BY:
GORDON HERKENHOFF & ASSOCIATES
ALBUQUERQUE, NEW MEXICO

INTENSITY DURATION
FREQUENCY CURVES
(ALBUQUERQUE AREA, 1961)

EXHIBIT B

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

MAYOR
Harry E. Kinney

CHIEF
ADMINISTRATIVE OFFICER
Frank A. Kleinhenz

CITY ENGINEER

RECEIVED
SEP 23 1983

September 21, 1983

Allstate Redi-Mix Concrete Corp.
5915 Hollywood, NE
Albuquerque, New Mexico 87113

Dear Management:

This correspondence shall confirm an inspection was conducted of your premises on September 19, 1983, to ensure compliance with the approved site development plan, ZA-81-49. This inspection has indicated the employee and visitor parking areas are not designated. The approved plan indicates twelve (12) employee parking spaces and the visitor has two (2) spaces. In order to better identify these parking spaces, a total of 14, it is requested that bumper barriers be installed.

Also, it was noted that a drainage problem does exist within City right-of-way. This runoff is draining from your property and creating a "dip" within the public street. This correspondence shall serve as notice to the City Engineer, Hydrology, to follow up on this matter to resolve the deteriorating, washing away, of the road.

A final inspection shall be conducted on October 20, 1983, to ensure bumper barriers have been installed. Should further information be desired, please do not hesitate to contact me at 766-7474.

Respectfully,

Lenora Chavez

Lenora Chavez
Asst. Zoning Enforcement Officer

LC/ddd
xc: L. Barlow, Planning
F. Aguirre, Hydrology