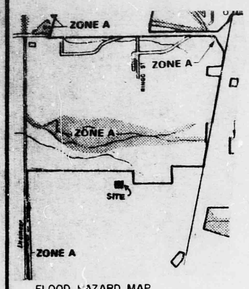
HYDROLOGY

D17/D13
1 PLAN

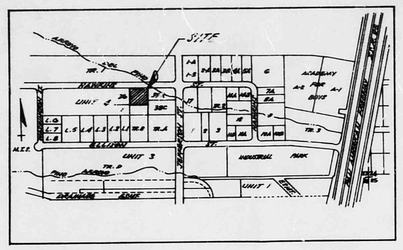
D17/D13

1 PLAN

ZONE ATLAS D-17-Z



FLOOD HAZARD MAP



VICINITY MAP

D-17-Z

NOTE: POND VOLUME CALCULATIONS

THE POND IS CAPABLE OF HANDLING MORE VOLUME THAN THE SITE GENERATES; PLEASE REFER TO THE FOLLOWING CALCULATIONS.

UNDEVELOPED VOLUME (LOTS 37-A & 37-B)
TOTAL AREA = 300' X 200' = 60,000 SQ. FT.

$0.4 \times \frac{2.4}{12} \times 60{,}000 = 4{,}800\ ft.^3$

DEVELOPED VOLUME AND LOT 37- B DRAINING INTO POND
DEVELOPED AREA CONTRIBUTING TO HEADER = 30,828 SQ. FT.

$0.9 \times \frac{2.4}{12} \times 30{,}828\ ft.^2 = 5549\ ft.^3$

LOT 37-B (100' X 100') AND AREA OF 49' X 125'

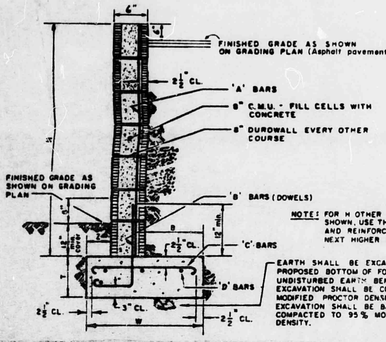
$0.4 \times \frac{2.4}{12} \times 5{,}125 = 2{,}090\ ft.^3$

THE POND VOLUME REQUIRED

$[5549\ ft.^3 + 2090\ ft.^3] - 4800\ ft.^3 = 2839\ ft.^3$

THE ACTUAL VOLUME OF POND: END AREA = 35.0 $ft.^2$
LENGTH = 110' (AVERAGE)
VOLUME OF POND = 35.0 $ft.^2$ X 110.0' = 3850 $ft.^3$

WE HAVE ALLOWED FOR A SAFE OVER-RUN VALUE OF 1,011 $ft.^3$

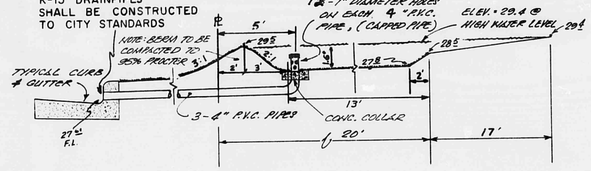


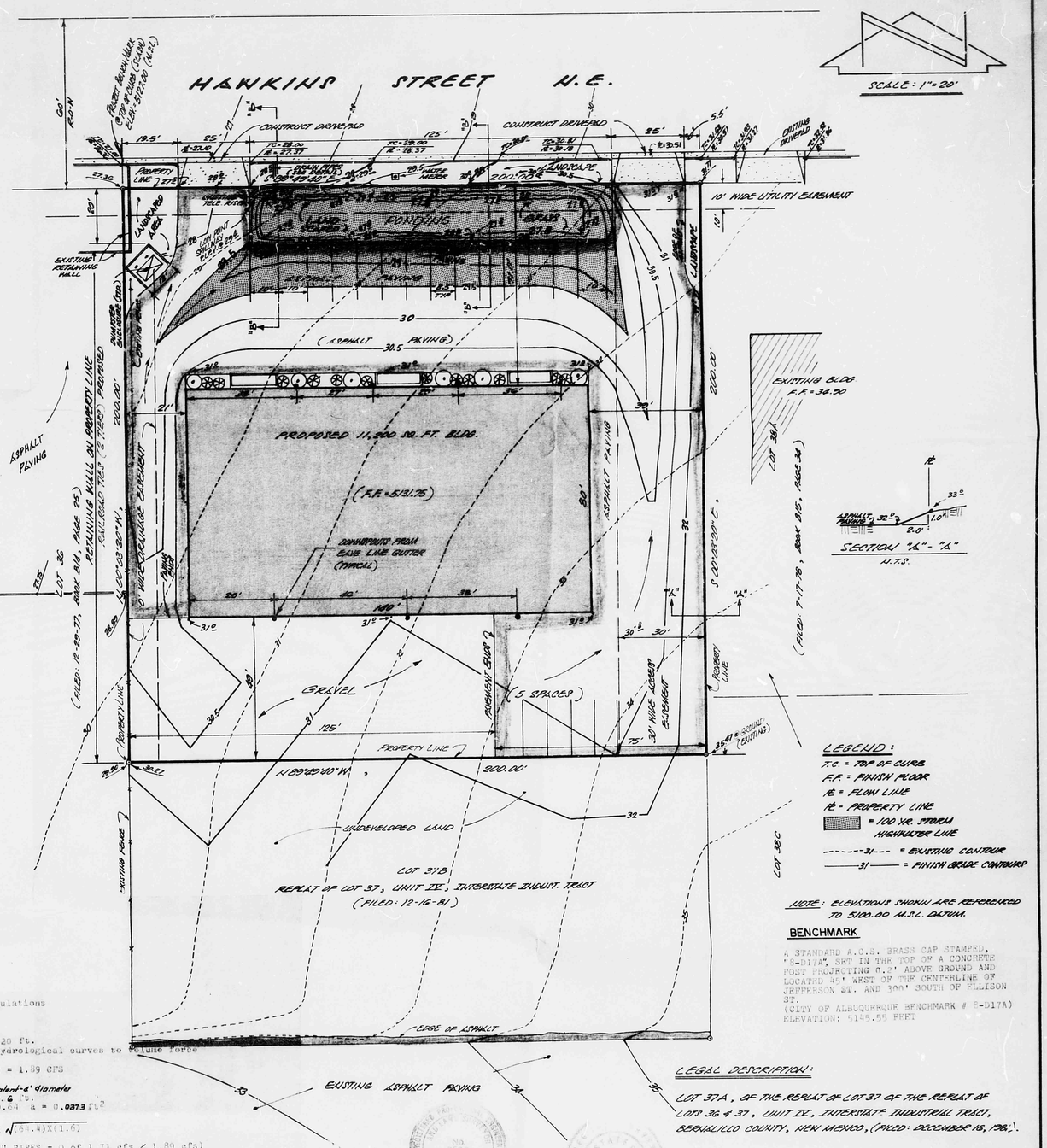
GENERAL NOTES:

1. Design soil bearing capacity: 3000 Lbs./Sq.Ft.
2. Retained earth weight: 100 Lbs./Cu.Ft.
3. Loading Condition: No surcharge.
4. P.C. concrete shall be 3000 P.S.I., 5.5 bag mix.
5. All footings shall be poured against undisturbed soil.
6. All C.M.U. cells shall be filled with concrete and rodded.
7. Reinforcement steel shall be grade 40 (min.).
8. Masonry block shall be hollow block Grade A.
9. "A" bars may be replaced with "B" bars running the full height of the wall.

Conditional
APPROVED FOR DRAINAGE
2-2-82
DATE
SIGNATURE TITLE
ADVISE DRAINAGE INSPECTOR WHEN GRADING EXECUTED
Contingent on:
① Special Order 19 submittal
② Advise contractor to have compaction test available for the proposed pond berm at the time the field inspection is requested

POND SECTION "B"-"B"
(NOT TO SCALE)





SECTION "X"-"X"
N.T.S.

LEGEND:
T.C. = TOP OF CURB
F.F. = FINISH FLOOR
FL = FLOW LINE
PL = PROPERTY LINE
= 100 YR. STORM HIGHWATER LINE
-------31--- = EXISTING CONTOUR
———31——— = FINISH GRADE CONTOUR

NOTE: ELEVATIONS SHOWN ARE REFERENCED TO 5100.00 M.S.L. DATUM.

BENCHMARK

A STANDARD A.C.S. BRASS CAP STAMPED, "8-D17A", SET IN THE TOP OF A CONCRETE POST PROJECTING 0.3' ABOVE GROUND AND LOCATED 45' WEST OF THE CENTERLINE OF JEFFERSON ST. AND 300' SOUTH OF ELLISON ST.
(CITY OF ALBUQUERQUE BENCHMARK # 8-D17A)
ELEVATION: 5145.55 FEET

LEGAL DESCRIPTION:

LOT 37A, OF THE REPLAT OF LOT 37 OF THE REPLAT OF LOTS 36 & 37, UNIT IV, INTERSTATE INDUSTRIAL TRACT, BERNALILLO COUNTY, NEW MEXICO, (FILED: DECEMBER 16, 1981).

CONCRETE BLOCK RETAINING WALL								
DIMENSIONS					REINFORCEMENT			
H	W	B	Z	T	'A' BARS	'B' BARS	'C' BARS	'D' BARS
2'-0"	1'-8"	8"	4"	8"	#3 @ 48" OC	#3 @ 48" OC	#3 @ 32" OC	4 - #3 Cont.
4'-0"	2'-8"	1'-6"	6"	10"	#4 @ 32" OC	#4 @ 32" OC	#3 @ 24" OC	4 - #4 Cont.

DRAINAGE PLAN

The following items required by the City of Albuquerque Drainage Section concerning the drainage plan for Lot 37A of Unit IV - Interstate Industrial Tract and contained hereon;

A. Vicinity Map
B. Flood Hazard Map
C. Grading & Drainage Plan
D. Calculations

The site is located about 300 feet west of the intersection of Jefferson and Hawkins Street and front on Hawkins Street NE. At present the site is undeveloped and is a storage yard. No significant offsite watershed flows are contributing onto the subject property, subject site accepts and allows offsite flows to continue as they are in their present condition. The parcel to the south, Lot 37B (0.459 acres) is undeveloped and its runoff drains into the south portion of this lot. Lot 37B is owned by the same developers and its runoff will flow to north pond. On the north the site fronts on Hawkins and the flows within Hawkins will stay within the limits of its pavement.

The site does not lie within a designated flood hazard zone as shown by Flood Hazard Map, Page 3 of 15.

The grading - drainage plan shows one drainage area "A". Drainage Area "A" consists of the entire site as Lot 37B. The plan also shows that the total runoff for Area "A" or this project is ponded along the north property line, landscaped area and a portion of the front parking lot, having positive discharge by means of drain pipes draining into the curbs and gutter.

The plan shown:

A. Existing contours at one foot intervals.
B. Proposed grades indicated by contours and spot elevations.
C. Swales as indicated by the legend.

Drainage Area "A" has a developed area of 30,828 square feet consisting of pavement and roof area. The increased run-off generated by this area is

30,828 sq. ft. x 0.10 feet = 3082.8 cu. ft.

The volume of runoff generated by the development of this site will be ponded in the north portion of this site. More particularly being the 20 feet by 125 feet landscaped area and a potion of the parking lot as is shown on the plan. The pond has been designed as a changing rate orifice retention basin for a 100-year frequency storm. Storm water will drain from the pond at a maximum rate equivalent to a 5-year storm calculated for the undeveloped condition. Pond averages 1.2 feet in depth and drains through the existing curb and gutter as is shown on details hereon. The portion of the parking lot area utilized for ponding will flood through elevation 29.2 under maximum design conditions. This area is designed however to drain into the pond mentioned above causing the parking lot area to be free from water as soon as the drain outlet conditions area met. The runoff will then flow westerly along the southerly curb and gutter of Hawkins Street.

Pond Drain Pipe Calculations

$Q = CIA$
$A = 1.38$ acres
$H = 35.0 - 27.8 = 7.20$ ft.
$I = 3.43$ from NOAA Hydrological curves to volume forbe
$C = .40$
$Q = .4 \times 3.43 \times 1.38 = 1.89$ CFS
Drain Pipe $D = 4"$
Orifice Opening equivalent-4" diameter
$H = 27.8 - 29.4 = 1.6$ ft.
$Q = CA\sqrt{2gH}$; $C = 0.64$ $a = 0.0873\ ft^2$

$Q = 0.64 \times (0.0873) \times \sqrt{(64.4) \times (1.6)}$

$Q = 0.57$ cf (3 - 4" PIPES = Q of 1.71 cfs < 1.89 cfs)

Therefore, since the pond contains 3200 cf, the pond will drain out into the streets curb and gutter with three 4" pipes, each pipe containing twelve orifice holes, the pond will be drained in 8 hours or less.

E·R & ASSOCIATES
1930 SAN PEDRO, N.E. - SUITE 101
ALBUQUERQUE, NEW MEXICO 87110 (505-266-8791)

NO.	DATE	BY	REVISIONS
	2/18/82	J.F.E.	Revised Pond drain Computations
	1-27-82	G.T.R.	

DESIGNED BY: J.F.E.
DRAWN BY: G.T.R.
APPROVED: I.C.
DATE: 1/8/82

GRADING & DRAINAGE PLAN
HAWKINS GRANT PARTNERSHIP BUILDING
ALBUQUERQUE, NEW MEXICO

FILE NO.
SHEET 1 OF 1
T-03