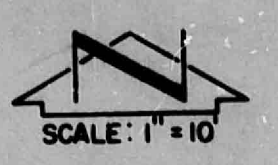




VICINITY MAP  
SCALE: 1" = 800'



SCALE: 1" = 10'

**BENCHMARK:**  
A.C.S. BENCHMARK 2-H/4, A SQUARE, 2, CHISELED ON TOP OF CONCRETE CURB AT THE NINE CURB RETURN, LOCATED AT THE INTERSECTION OF 4TH STREET N.W. AND HANDED AVE. N.W. IN THE NORTHEAST QUADRANT OF THE INTERSECTION. ELEVATION: 4960.292 FEET (M.S.L.D.)

**TEMPORARY BENCHMARK:**  
A "x" ON CURB, AS SHOWN. ELEVATION: 4959.96 FEET (M.S.L.D.)

- LEGEND:**
- ◆ EXISTING SPOT ELEVATION
  - ◇ PROPOSED SPOT ELEVATION
  - - - - - EXISTING CONTOUR
  - - - - - PROPOSED CONTOUR
  - ▭ PROPOSED CONCRETE
  - ▭ EXISTING CHAINLINK FENCE
  - SWALE
  - ▭ PROPOSED ASPHALT
  - ▭ EXISTING TOP OF CURB
  - ▭ EXISTING FLOWLINE
  - ▭ PROPERTY LINE
  - ▭ DRAINAGE BASIN BOUNDARY

**DRAINAGE PLAN**  
The following items concerning the Los Tomases Warehouse Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the west side of Los Tomases Drive N.W. between Bellamah Avenue N.W. and Aspen Avenue N.W. At present, the site is developed residentially.

As shown by Plate J-14 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard zone, however, downstream flooding is a concern. Because of this, runoff generated by this site will be controlled by ponding. Runoff generated by the refuse pad in Basin 1 will be retained in the rear yard by a depression with volume adequate to contain 100% of the runoff generated by that impervious area. Runoff generated by the building and the parking lot is handled as Basin 2 and is routed through a positive discharge pond. The pond will discharge onto the west edge of Los Tomases Drive N.W. As shown on Plate 1 of the Albuquerque Master Drainage Study, there is a storm drain system nearby which serves this area. In general, a portion of the runoff generated by the adjoining parcel to the north may drain onto the rear yard of this site. That runoff will be accepted and will flow uninterrupted as it has prior to the proposed construction.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) continuity between existing and proposed grades, 3) the limit and character of the existing improvements, and 4) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements consist of the removal of an existing building and the construction of a new warehouse along with adjacent paving and landscaping. At present, the site drains from north to south and discharges onto private property. The proposed drainage pattern will improve the existing drainage pattern because it will eliminate the discharge of runoff onto the adjacent lot.

The Calculations which appear below analyze the existing and developed conditions for the 100-year 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with the City of Albuquerque Development Process Manual, Volume II. The analysis of the pond release rate is based upon the Orifice Equation. The analysis of pond volume is based upon the Average End-Area Method. Offsite flows have also been quantified.

**CALCULATIONS**

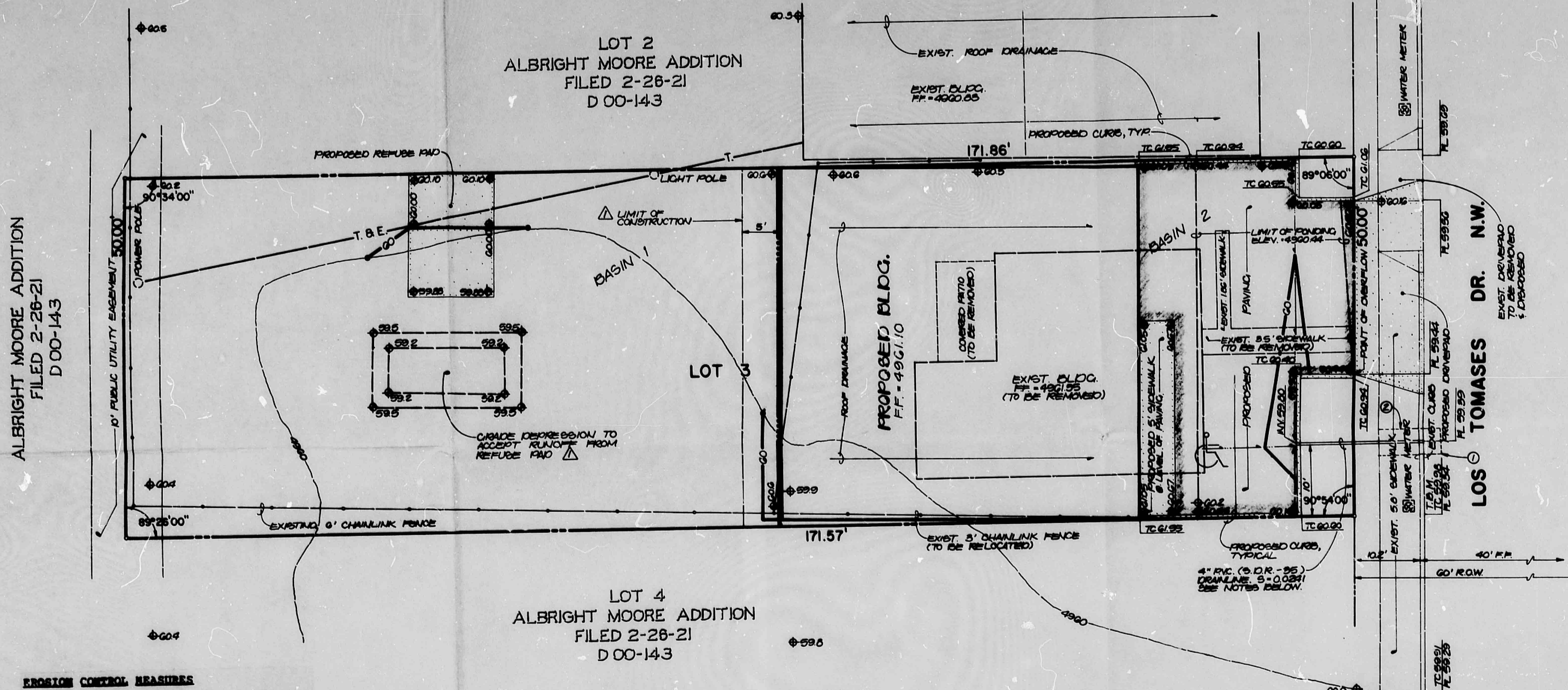
**Ground Cover Information**  
From ACS Bernallillo County Soil Survey, Plate 30:  
GK - Glendale Loam  
Hydrologic Soil Group B

**Rational Method**  
Discharge:  $Q = CIA$   
where C varies  
 $i = P_p(6.84)T^{-0.51} = 4.65 \text{ in/hr}$   
 $P_p = 2.2 \text{ in (DWR Plate 22.2 D-1)}$   
 $T_c = 10 \text{ min (minimum)}$   
 $A = \text{area, acres}$

Volume:  $V = C_pA(1/12)$   
where C varies  
 $P_p = 2.2 \text{ in (DWR Plate 22.2 D-1)}$   
 $A = \text{area, sf}$

**Existing Condition**  
Total = 835 sf = 0.20 Ac  
Impervious = 154  
 $C_p = 0.41 \text{ (DWR Plate 22.2 C-1)}$   
 $Q_{100} = CIA = 0.41(4.65)(0.20) = 0.4 \text{ cfs}$   
 $V_{100} = C_pA = 0.41(2.2/12)(835) = 630 \text{ cf}$

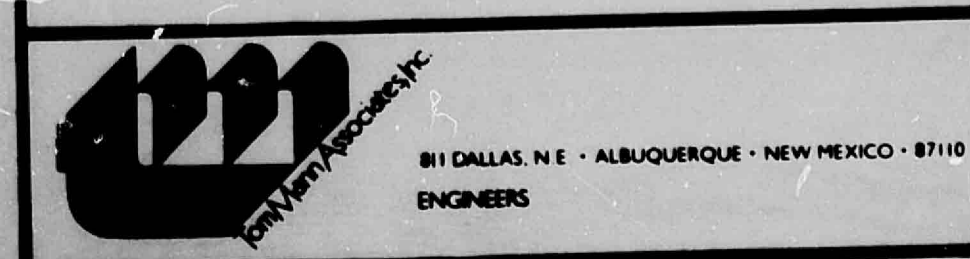
**Developed Condition**  
Basin 1:  
Total = 4500 sf = 0.11 Ac  
Impervious = 46  
 $C_p = 0.35 \text{ (DWR Plate 22.2 D-1)}$   
 $Q_{100} = CIA = 0.35(4.65)(0.11) = 0.2 \text{ cfs}$   
 $V_{100} = C_pA = 0.35(2.2/12)(4500) = 300 \text{ cf}$   
Basin 2:  
Total = 3985 sf = 0.09 Ac  
Impervious = 954  
 $C_p = 0.92 \text{ (DWR Plate 22.2 C-1)}$   
 $Q_{100} = CIA = 0.92(4.65)(0.09) = 0.4 \text{ cfs}$   
 $V_{100} = C_pA = 0.92(2.2/12)(3985) = 670 \text{ cf}$   
 $V_{required} = 40 \text{ cf (based upon Hydrograph Analysis)}$   
 $V_{pond} = \frac{1}{2}(A_{59.00} + A_{60.00})(60.0 - 59.00) + \frac{1}{2}(A_{60.00} + A_{60.44})(60.44 - 60.00) = \frac{1}{2}(10 + 84)(0.20) + \frac{1}{2}(84 + 858)(0.44) = 220 \text{ cf} > V_{required}$   
Orifice:  $C = 0.75$   
 $A = 0.073 \text{ sf (4" dia. pipe)}$   
 $q = 32.2 \text{ ft/sec}$   
 $h = 0.41$



- EROSION CONTROL MEASURES**
1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
  2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.

- CONSTRUCTION NOTES:**
1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
  2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
  3. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
  4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.

- NOTES:**
1. REMOVE & REPLACE STANDARD CURB & CUTTER TO NEAREST JOINT; CONSTRUCT 4" CONC. SIDEWALK PER CITY OF ALBUQUERQUE STD. DRAWING K-15. REMOVE & REPLACE 12" MIN. WIDTH ASPHALT PAVEMENT ADJACENT TO LIP OF NEW CUTTER.
  2. REMOVE & REPLACE EXIST. 4" THICK CONCRETE SIDEWALK TO NEAREST JOINT.



NO.	DATE	BY	REVISIONS
1	6/04	UGM	ADD LIMIT OF CONSTRUCTION, MINIMIZE REAR YARD GRADING.

DESIGNED BY: J.G.M., L.P.U.  
DRAWN BY: L.B.D.  
APPROVED: J.G.M.

JOB NO. 40621  
DATE 5-84

GRADING & DRAINAGE PLAN  
LOS TOMASES WAREHOUSE

J14/D41

APPROVED  
JUN 25 1984  
HYDROLOGY SECTION

FILE NO.  
SHEET 1 OF 1