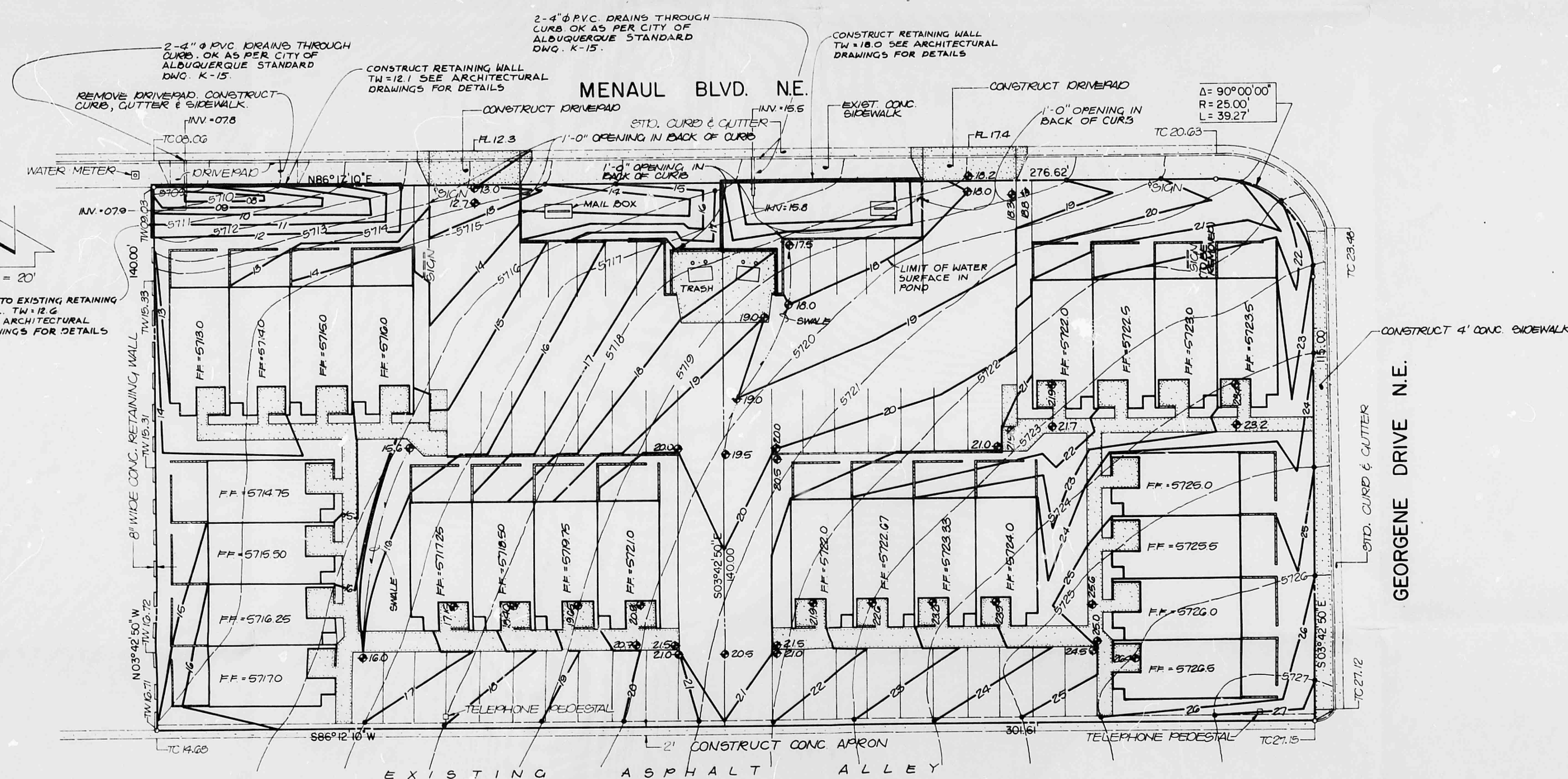




VICINITY MAP  
SCALE: 1" = 800'

H-22



# 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.

## 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 BERM 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.

## LEGEND

EXISTING CONTOUR	— 5722 —
PROPOSED CONTOUR	— 18.1 —
PROPERTY LINE	— — —
PROPOSED SPOT ELEV.	80.0
PROPOSED RETAINING WALL	— — —

## PROJECT BENCHMARK

AT THE INTERSECTION OF MENAU BLVD. AND CHELWOOD DRIVE DR., N.E. IN THE NORTHEAST QUADRANT OF THE INTERSECTION (ALBUQUERQUE B.M. 6-H22) ELEV. = 5705.28 (FEET M.S.L.D.)

## DRAINAGE PLAN

The following items concerning the Menaul Quads Drainage Plan are contained herein:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the south side of Menaul Boulevard N.E. just east of the intersection with Chelwood Road N.E. The site is presently undeveloped, but all the lands surrounding the site are developed.

As shown by Plate H-22 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard Zone. Further study of this plate reveals that the downstream capacity of Menaul Boulevard N.E. is reaching capacity, therefore, a controlled discharge is required. Georgene Drive N.E. to the east diverts all flows from entering the property to the east. The existing alley to the south diverts flows to the west and does not allow them to enter the site. The project site is higher than Menaul Boulevard N.E. on the north and the retail store on the west, therefore, offsite flows to the site are negligible.

The Grading Plans shows 1) existing and proposed grades indicated by spot elevations and contours at 1' 0" intervals, 2) continuity between existing and proposed elevations, 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 construction of six four-plex units. The units are constructed on two separate lots, therefore, two separate drainage outlets are required. All the rainfall and irrigation waters falling on each site is conveyed via swales into ponding areas. The ponding areas each have a four inch diameter PVC pipe at the lowest point of the pond to convey the water under the sidewalk and into Menaul Boulevard.

The Calculations which appear below analyze both the existing, the developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used for this analysis in accordance with City of Albuquerque Development Process Manual, Volume II. As shown by the calculations, the proposed improvements will result in a slight decrease in runoff discharged from the site. The ponds will detain waters such that the discharge from the ponds is less than the existing flows that now exit the site. This pattern of runoff is consistent with the pre-design conference recap which accompanies this submittal.

## CALCULATIONS

### Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 30:  
Embudo Tijeras Complex Etc  
Hydrologic Soil Group B

### Rational Method

Discharge:  $Q = C i A$   
where C varies  
 $i = P (6.84) T^{-0.51} = 5.28 \text{ in/hr}$   
 $P_6 = 6.5 \text{ in (DPM Plate 22.2D-1)}$   
 $T = 10 \text{ min (minimum)}$   
 $A = \text{area, acres}$

Volume:  $V = C P_6 A (1/12)$   
where C varies  
 $P_6 = 2.5 \text{ in (DPM Plate 22.2D-1)}$   
 $A = \text{area, sf}$

### Existing Condition

$A_{\text{total}} = 41,800 \text{ sf} = 0.96 \text{ Ac}$   
 $A_{\text{imp}} = 0 \text{ sf}; \text{ \& impervious} = 0\%$   
 $C = 0.34 \text{ (DPM Plate 22.2C-1)}$   
 $Q_{100} = C i A = 0.34 (5.28) 0.96 = 1.7 \text{ cfs}$   
 $V_{100} = C P_6 A = 0.34 (2.5/12) 41,800 = 2961 \text{ cf}$

### Developed Condition - East

$A_{\text{total}} = 20,900 \text{ sf} = 0.48 \text{ Ac}$   
 $A_{\text{imp}} = 17,350 \text{ sf}; \text{ \& impervious} = 83\%$   
 $C = 0.79 \text{ (DPM Plate 22.2C-1)}$   
 $Q_{100} = C i A = 0.79 (5.28) 0.48 = 2.0 \text{ cfs}$   
 $V_{100} = C P_6 A = 0.79 (2.5/12) 20,900 = 3397 \text{ cf}$

### Outlet Capacity

$Q_r = C A^{0.8} h^{1.48}$   
where C = 0.80  
 $A = \text{area in sf}$   
 $h = \text{head in ft}$

$Q_r = 0.8 (0.0873) 2(32.2) 1.2 = 0.61 \text{ cfs}$

### Pond Volume

$Q_p = 2.0 \text{ cfs}$   $Q_r = 0.6 \text{ cfs}$   
 $T_p = 10 \text{ minutes}$   
 $V = (T_p/60)(Q_p - Q_r) = (10/60)(2.0 - 0.6) = 600 \text{ cf}$   
 $V_2 = V_{100} - V_1 = 3397 - 600 = 2797 \text{ cf}$   
 $V = (T_p/60)(Q_p) = (10/60)(2.0) = 2797 \text{ cf}$   
 $T_p = 47 \text{ min}$   $T_{p1} = 3$   $T_{p2} = 43$   
 $V_{\text{required}} = (43 - 3)(2.0 - 0.6) 60 = 1680 \text{ cf}$

### East Pond

$[(3.5 + 1.5/2)(1) + (1.5 + 1.1/2)(1) + (1.0 + 0.2/2)(0.2)]$   
 $400 = 1568 \text{ cf}$

### West Pond

$[(2.2 + 1.4/2)(1.2) + (1.4 + 1.2/2)(1) + (1.0 + 0.55/2) 1.0 + (0.55 + 0.2/2) 1.0] 400 = 1804 \text{ sf}$

### Comparison

$Q_{100} = 1.7 > 2(0.61)$   
 $V_{100} = 2(1680) < 1568 + 1804$

## APPROVED FOR DRAINAGE

5/24/84  
DATE  
Billy J. Kunkley  
SIGNATURE  
ADVISE DRAINAGE INSPECTOR  
WHEN GRADING EXECUTED



811 DALLAS N.E. • ALBUQUERQUE • NEW MEXICO • 87110  
ENGINEERS

NO.	DATE	BY	REVISIONS

DESIGNED BY: T.M.  
DRAWN BY: J.M.  
APPROVED: T.M.

JOB NO.  
40271  
DATE  
4-84

GRADING & DRAINAGE PLAN  
MENAU QUADS

H22 / D40

FILE NO.  
SHEET 1 OF 1