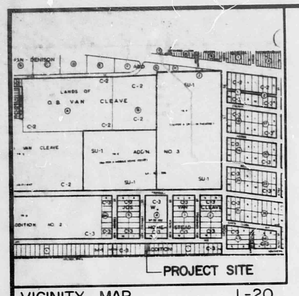
HYDROLOGY

L20/D20
ONE PLAN

L20/D20

1 PLAN



VICINITY MAP L-20

SCALE 1" = 800'

SCALE : 1" = 10'

LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING CONTOUR
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPERTY LINE
- SWALE

PROJECT BENCHMARK:

ACS STA. 5-K20
ELEVATION : 5423.26 FEET (MSLD)

TBM:

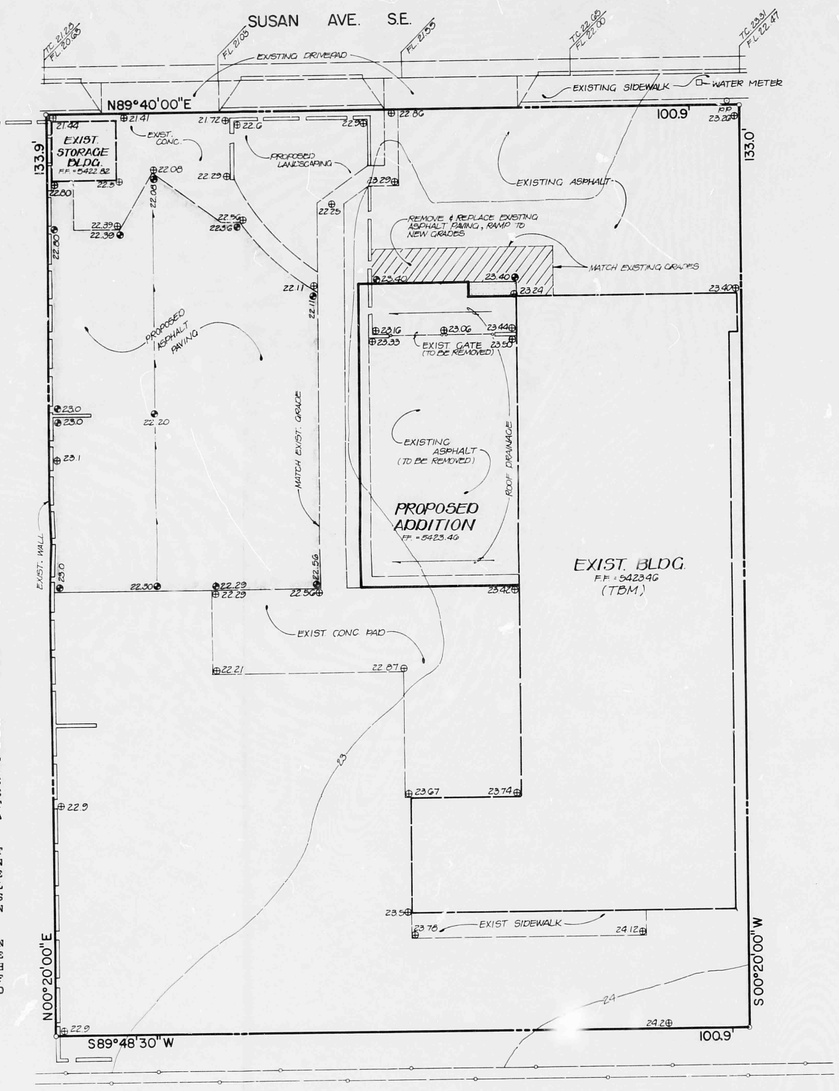
FINISH FLOOR OF EXISTING BUILDING AS SHOWN.
ELEVATION : 5423.46 FEET (MSLD)

STREET ADDRESS:

9308 SUSAN SE.

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 LOCATIONS 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.



KIRTLAND AIR FORCE BASE

DRAINAGE PLAN

The following items concerning the R.M. Unthank and Associates 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 south side of Susan Avenue S.E. between Wyoming Boulevard S.E. and Moon Street S.E. At present, the site is developed. The surrounding parcels are also developed. In addition, the Kirtland Air Force Base lies immediately south of the site.

As shown by Plate L-20 of the Albuquerque Master Drainage Study, the site does not lie within a designated Flood Hazard Zone. Further study of this plate reveals that downstream flooding does exist and that offsite flows do not enter the site. This latter conclusion is drawn based upon the fact that flooding is not shown in Susan Avenue S.E. and that the flows generated within the Kirtland Air Force Base are intercepted by an arroyo which is located well within in the Air Force Base property and a small swale which is located along the south property line of the site, on the Air Force Base property.

The grading plan shows 1) existing grades indicated by spot elevations and contours at 1' 0" intervals, 2) proposed grades indicated by spot elevations, 3) continuity between existing and proposed elevations 4) the limit and character of the existing improvements, and 5) the limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of a building addition along with adjacent paving. This construction will also require the removal and disposal of some of the existing asphalt paving. At present, the site discharges its runoff to Susan Avenue S.E. The proposed construction will not alter this trend.

The calculations which appear below analyze both 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. As shown by these calculations, the proposed improvements will only increase the peak runoff from the site by 0.1 cfs. This increase will have a negligible effect on downstream conditions therefore, interim ponding has not been provided. The runoff created by the newly created impervious areas will be discharged from the site via the existing driveped as shown.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 31/32:
EmB Embudo gravelly fine sandy loam
Hydrologic Soil Group B

Rational Method

Discharge: $Q = CiA$

where C varies
$i = P_6 (6.84) T_c^{-0.51} = 5.07$ in/hr
$P_6 = 2.4$ in (DPM Plate 22.2D-1)
$T_c = 10$ min (minimum)
A = area, acres

Volume: $V = CP_6A(1/12)$

where C varies
$P_6 = 2.4$ in (DPM Plate 22.2D-1)
A = area, sf

Existing Condition

$A_{total} = 13{,}465$ sf $= 0.31$ Ac
$A_{imp} = 6550$ sf; % impervious = 49%
$C = 0.57$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.57\ (5.07)\ (0.31) = 0.9$ cfs
$V_{100} = CP_6A = 0.57\ (2.4/12)\ (13{,}465) = 1535$ cf

Developed Condition

$A_{total} = 13{,}465$ sf $= 0.31$ Ac
$A_{imp} = 8650$ sf; % impervious = 64%
$C = 0.65$ (DPM Plate 22.2C-1)
$Q_{100} = CiA = 0.65\ (5.07)\ (0.31) = 1.0$ cfs
$V_{100} = CP_6A = 0.65\ (2.4/12)\ (13{,}465) = 1750$ cf

Comparison

$Q_{100} = 0.9 - 1.0 = 0.1$ cfs (increase)
$V_{100} = 1535 - 1750 = 215$ cf (increase)

HYDROLOGY SECTION

REGISTERED PROFESSIONAL ENGINEER — STATE OF NEW MEXICO — LAND SURVEYOR

2/24/84

Unthank Associates P.C. 811 DALLAS, N.E. · ALBUQUERQUE · NEW MEXICO · 87110 ENGINEERS	NO. / DATE / BY / REVISIONS	DESIGNED BY JGM DRAWN BY CGC APPROVED TTM	JOB NO. 3-1591 DATE 2/84	GRADING & DRAINAGE PLAN R.M. UNTHANK & ASSOCIATES	L20/D20	FILE NO. SHEET 1 OF 1