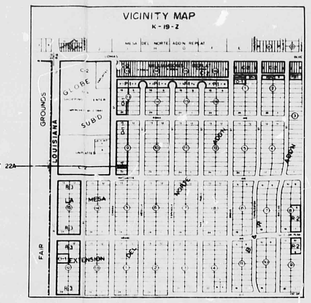
HYDROLOGY K19/D38 508 & 512 CHAMA N.E.

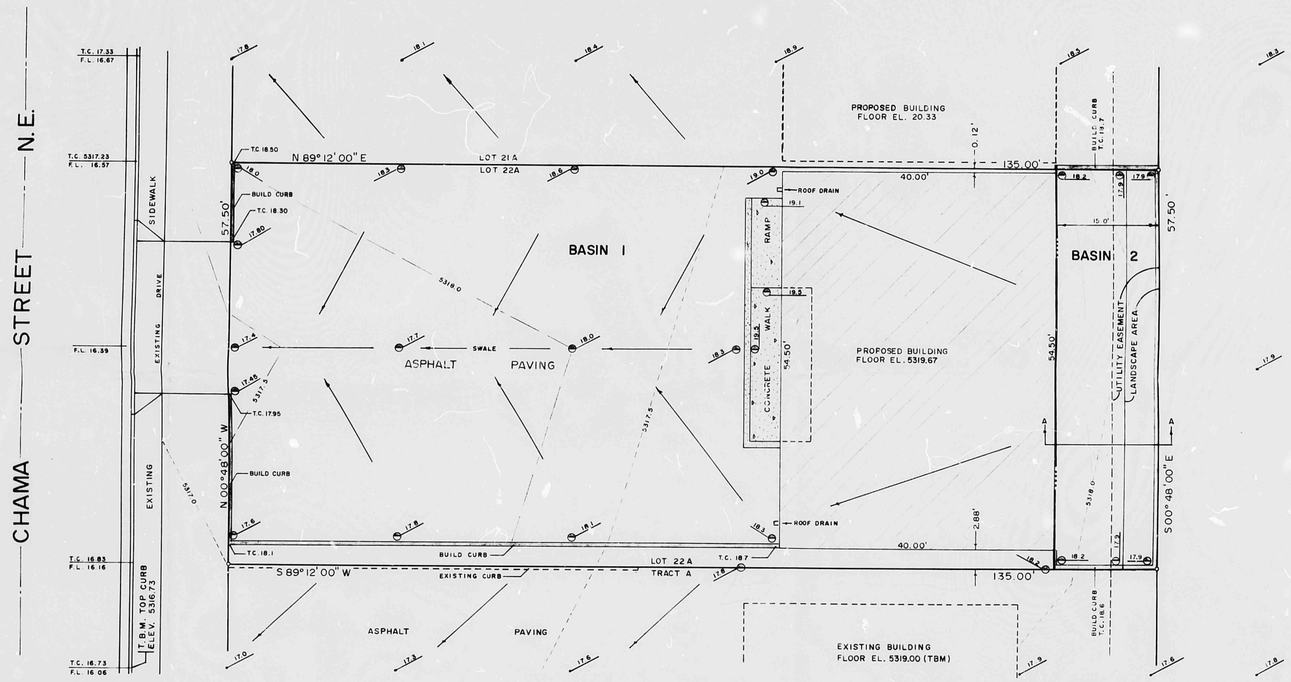
K 19/1038

508 + 512 Chamc

N.E.

1 Plan





Drainage Plan

The following items concerning the Drainage Plan for 508 Chama Street N.E. are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed improvements, as shown by the Vicinity Map, are located on the east side of Chama Street N.E. between Lomas Boulevard N.E. and Marquette Avenue N.E. The site is more particularly described as Lot 22A, Block 9, Del Norte Addition. At present, the site is undeveloped. Much of the surrounding area is already developed.

Research has revealed that the site does not lie within a designated flood hazard zone. In fact, the site discharges runoff to the recently constructed Fairground Storm Water Relief System Phase I. It is because of this that a free discharge of runoff from the site has been permitted. At present, the site drains from east to west onto Chama Street. Once in Chama Street, storm water flows to the south and is collected by the aforementioned storm drainage facility. This pattern of runoff will not be altered by construction.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations and contours at 0' 6" intervals, 2) continuity between existing and proposed elevations, and 3) limit and character of the proposed improvements. As shown by this plan, the proposed improvements include the construction of an office building along with paved parking and landscaping. This proposed construction will be coordinated with the construction of a similar office building at 512 Chama Street N.E., a site which lies due north of this project.

The calculations which appear below analyze both the existing and proposed 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, only a minor increase in runoff is anticipated to leave the site. This observation pertains to Basin 1. Basin 2 is composed entirely of landscaped area in which all runoff generated will be contained. As shown by the calculations below, the runoff anticipated for Basin 2 is negligible.

LEGEND

- EXISTING CONTOUR
- EXISTING SPOT ELEVATION
- FINISH GRADE
- FINISH CONTOUR

BENCH MARK

ELEVATIONS SHOWN HEREON WERE ESTABLISHED FROM CITY OF ALBUQUERQUE BENCHMARK 1-K19 AT THE SOUTHWEST CORNER OF LOMAS AND ESPANOLA. ELEV. 5320.17 FEET (MSLD)

TBM

FINISHED FLOOR ELEVATION OF EXISTING BUILDING ON TRACT A TO THE SOUTH OF PROJECT SITE AS SHOWN ON PLAN AT LEFT. ELEVATION: 5319.00 FEET (MSLD)

LEGAL DESCRIPTION

LOT 22A AS SHOWN ON THE SUMMARY PLAT OF LOTS 19A, 20A, 21A, AND 22A, BLOCK 9, DEL NORTE ADDITION, ALBUQUERQUE, N.M.

Calculations

Ground Cover Information

1. From SCS Bernalillo County Soil Survey, Plate 31:
   EMB Embudo Gravelly Fine Sandy Loam
   Hydrologic Soil Group B
2. Existing Condition
   A_{total} = 7762 sf = 0.18 Ac
   A_{imp} = 0 sf
   % impervious = 0%
   'C' = 0.34 (DPM Plate 22.2C-1)
3. Developed Condition
   a. Basin 1
   A_{total} = 6900 sf = 0.16 Ac
   A_{imp} = 6600 sf
   % impervious = 6600/6900 = 96%
   'C' 0.92 (DPM Plate 22.2C-1)
   b. Basin 2
   A_{total} = 862 sf = 0.02 Ac
   A_{imp} = 0 sf
   % impervious = 0%
   'C' = 0.34 (DPM Plate 22.2C-1)

Rational Method

1. Discharge: $Q = CiA$
   where C varies
   $i = P_6 (6.0/T_c)^{-0.51} = 4.86$ in/hr
   P_6 = 2.3 in (DPM Plate 22.2D-1)
   T_c = 10 min (minimum)
   A = Area, acres
2. Volume: $V = CP_6A(1/12)$
   where C varies
   P_6 = 2.3 in (DPM Plate 22.2D-1)
   A = area, sf

Existing Condition

$Q_{100} = CiA = 0.34(4.86)(0.18) = 0.3$ cfs

$V_{100} = CP_6A = 0.34(2.3)(7762)(1/12) = 506$ cf

Developed Condition

1. Basin 1
   $Q_{100} = CiA = 0.92(4.86)(0.16) = 0.7$ cfs
   $V_{100} = CP_6A = 0.92(2.3/12)(6900) = 1217$ cf
2. Basin 2
   $Q_{100} = 0.34(4.86)(0.02) = 0.03$ cfs ≈0
   $V_{100} = 0.34(2.3/12)(862) = 56$ cf

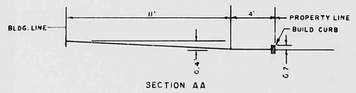
Comparison

$Q_{100} = 0.3 - 0.7 = 0.4$ cfs (increase)

$V_{100} = 506 - 1217 = 711$ cf (increase)

1. No offsite flows.
2. Existing grades @ PL will not be altered.

JGM
7-25-89



SECTION AA

TOPOGRAPHY AND PLAT BY:

William P Pettit
WILLIAM P PETTIT
N.M.L.S. NO. 3243

GRADING AND DRAINAGE PREPARED UNDER THE SUPERVISION OF:

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEW MEXICO
THOMAS
7792
LAND SURVEYOR

JOB NO. 30781

DRAINAGE PLAN FOR PROPOSED OFFICE BLDG

508 CHAMA ST. N.E.
ALBUQUERQUE, N.M.

K19/D38