



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

FILE COPY

January 13, 1984

Mr. Ed Kiess
Enchantment Engineering, Inc.
9910 Indian School Road NE, Suite 105
Albuquerque, NM 87112

REF: DRAINAGE REPORT FOR MAXIMILLIAN COMPOUND (J12-D2A) RECEIVED
DECEMBER 30, 1983

Dear Mr. Kiess:

The above referenced plan with the revision date of December 28, 1983
is approved.

A copy of this plan will need to be attached to the construction plans.

Also, financial security for private and public infrastructures will
have to be provided prior to final sign-off.

Enclosed herewith is the previous report as per your request.

If I can be of further assistance, please contact me at 766-7644.

Yours truly,

Billy J. Goolsby

Billy J. Goolsby, PE
City/County Flood Plain Administrator

BJG:mrk

Enclosure



CITY OF ALBUQUERQUE
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 24, 1983

Mr. Ed Kiess
Enchantment Engineering
9910 Indian School Rd. NE, Suite 105
Albuquerque, NM 87112

RE: DRAINAGE REPORT FOR MAXIMILLIAN COMPOUND (J12-D2a)

Dear Mr. Kiess:

I have reviewed the above referenced drainage plan and forward the following comments:

1. Need to submit an erosion control plan as per D.P.M.
2. The backyard ponding is not allowable. Therefore, the runoff will have to be directed toward the street. Since the City cannot enforce the maintenance and provision of the backyard ponds, these are not allowed as ponding areas. However, if the rain that falls in the backyard is contained in the backyard, the City has no objections but, the runoff from the roof must be directed to the City right-of-way.

In reference to the plan drawing:

3. Need a legend on the plan.
4. Identify existing City top of curb and flowline elevations if any exist, i.e., Montoya Road N.W.
5. 100 year water surface elevations for ponds.
6. Finished floor elevations with complete MSL designations.
7. Engineers stamp, signature and date.

A financial security for drainage structures, utilities and streets will have to be provided prior to construction plan sign-off.

Should you have any questions or comments concerning this review, please contact me.

Yours truly,

Billy J. Goolsby P.E.

Billy J. Goolsby, P.E.
Civil Engineer/Hydrology

BJG/tsl

AN EQUAL OPPORTUNITY EMPLOYER

RESTRICTIVE COVENANTS, RESERVATIONS
AND RESTRICTIONS IMPOSED UPON

MAXIMILLIAN COMPOUND

AN ADDITION TO THE CITY OF ALBUQUERQUE
BERNALILLO COUNTY, NEW MEXICO

KNOW ALL THESE MEN BY THESE PRESENTS:

The undersigned MAX M. SANCHEZ JR. and ANTHONY E. DECK, being the owners of certain tracts of land located in Maps 35 and 38 of the Middle Rio Grande Conservancy District, in the City of Albuquerque, New Mexico, and more particularly described as follows:

Tract 310a and Tracts A and B of Rundles Subdivision, Map 38, MRGCD, and Tracts 331-A2B and 330 Map 35 MRGCD have established a general plan for the improvement and development of such premises, and do hereby establish the covenants, reservations and restrictions upon which and subject to which all lots and portions thereof shall be improved or sold and conveyed. All the covenants, reservations and restrictions hereinafter set forth shall run with the land and are made for the benefit of each and every subsequent owner of any portion of the land in said subdivision or any interest therein and shall inure to and bind all subsequent owners thereof.

1. No lot in this subdivision may be redivided so as to increase the number of lots contained therein or materially reduce the size of any such lot. This provision shall not prevent the combination of two or more lots for one dwelling.
2. No lot shall be used except for residential purposes. No building shall be erected, altered, placed or permitted to remain on any lot other than one single-family dwelling and a private garage for not more than two cars. No residence shall be a full two story structure in height except by specific approval of the Architectural Control Committee. All improvements shall be of new construction.
3. No building shall be erected, placed or altered on any lot until two complete sets of the construction plans and specifications, including specifications for exterior finish and color schemes, and a plan showing the location and elevation of the structure have been provided for and approved by the Architectural Control Committee as to quality of workmanship and materials, harmony of external design with existing structures, compatability of roofs and exterior color schemes and as to location with respect to

topography and finish grade elevation. Furthermore, no existing building shall be altered, remodeled or changed until plans for such change, alterations or remodeling have been approved by the Architectural Control Committee. Approval shall be as provided in Paragraph 12 hereof.

4. No swimming pool, wall, carport, outbuildings, sheds, barns, fences, porch, visible air conditioner or heater or duct or antennas: radio, television or others, or any other structure shall be erected upon any lot without prior approval of the Architectural Control Committee. Approval shall be as provided in Paragraph 12 hereof.

5. The heated floor area of the main structure, exclusive of garages, one story open porches or other appurtenant structures, shall not be less than 1200 square feet.

6. No building shall be located on any lot nearer to the front line or nearer to the side street line than the minimum building set-back lines shown on the recorded plat. In any event, no building shall be located on any lot nearer than 20 feet to the front lot line. On cul-de-sacs, courts and other unusually shaped lots, the dwelling may be located 20 feet from the front lot line. No dwelling shall be constructed on any lot so that the sum of the side yard set-backs is less than 20% of the lot width at the minimum set-back line and, in no event, less than 10 feet on one side, nor shall any structure be erected nearer than 10 feet to an inside property line. For the purposes of this covenant, eaves, steps, fireplaces and open porches shall not be considered as part of the building; provided, however, that eaves, steps, fireplaces or open porches may not be constructed nearer than 10 feet to an inside property line, nor shall this be construed to permit any porch of a building on a lot to encroach upon another lot. However, said 10 feet inside lot line set-back may be waived by written agreement between adjoining property owners and/or developers, said agreement being filed with the City of Albuquerque at the same time application is made to the City for a building permit, as long as a 10' permanent easement is left and maintained to the back yard for purposes of access and maintenance of the rear lot ponding areas.

7. No fence or garden wall shall be erected between the front building set-back line and the front property line. On corner lots no side street fence or wall, except necessary retaining walls of minimum height, shall be erected or allowed to remain nearer

to the front street than the rear of the dwelling, except by written permission of the Architectural Control Committee, nor nearer the side street than the property line.

8. Easements for installation and maintenance of utilities and drainage facilities are reserved as indicated on the plat of said addition, and subsequent owners are put on notice that the ponding profiles and gradients must be maintained as to area, depth, drainage patterns and erosion control materials as well as the afore mentioned 10' permanent access to such ponding areas. Authority to monitor and control such easements shall reside in the Architectural Control Committee, not to exclude individual lot owners as provided in paragraph #19.

9. No trade, business or noxious or offensive activity shall be carried on upon any lot, nor shall anything be done thereon which may be or may become an annoyance or nuisance to the neighborhood. It shall be the responsibility of owners of lots, including vacant lots, to keep said lots clear of trash, rubbish, noxious material or weeds.

10. No animals, livestock, or poultry of any kind shall be raised, bred, or kept on any lot, except that dogs, cats, or other household pets may be kept; provided that they are not kept, bred, or maintained for commercial purposes.

11. No sign of any kind shall be displayed to the public view on any lot except one professional sign of not more than one square foot, one sign of not more than five square feet advertising the property for sale or rent, or signs used by a builder to advertise the property during the construction and sales period.

12. No structure of a temporary character, trailer, mobile home, modular or prefab home, basement, tent, storage building, shack, garage, barn or other outbuilding shall be placed or used on any lot at any time as a resident either temporarily or permanently. All construction shall be completed within eight months from the date of commencement.

13. In the event that a structure is destroyed, wholly or partially by fire or any other casualty, said structure shall be properly rebuilt or repaired to conform to this declaration, or all the remaining structures, including the foundations and all debris, shall be removed from the lot.

14. Notwithstanding any provisions herein contained to the contrary, it shall be expressly permissible for the original owner and/or builder may choose, such facilities as, in the sole opinion of such owner or builder shall be reasonably required, convenient or incidental to the construction and sale of said property, including but without limitation, a sales office, construction and storage area, signs, and model houses.

15. The Architectural Control Committee is composed of Max M. Sanchez Jr., Anthony F. Deck, David A. Grady, Gary Saxton; all of Albuquerque, New Mexico. A majority of the Committee may designate a representative to act for it. In the event of death or resignation of any member of the Committee, the remaining members shall have full authority to designate a successor: provided, however, that lot owners shall be notified of such a vacancy in writing and shall have thirty (30) days to select by majority vote other appointees in their stead. The Architectural Control Committee is authorized to charge not more than \$50.00 for review of plans for structures and alterations. An initial fee in the amount of \$25.00 must be included at the time of submission of the plans to the owners for transmission to the Architectural Control Committee. The Committee shall approve or disapprove said plans and specifications within thirty (30) days from the receipt thereof.

16. Residential style and design throughout the subdivision shall be of a southwestern motif, such as territorial, pueblo, traditional or contemporary adobe, mediterranean or other harmonious styles. Plans and specifications for other construction and styles contrary to the spirit and intent of these covenants will not be permitted or approved. The decision of the Committee in any of these matters shall be final and no improvements may be constructed without written permission of the Committee. The Architectural Control Committee shall not be responsible in any manner whatsoever for any defect in any plans or specifications submitted, or as revised, or for any work done pursuant to any requested changes of said plans and specifications.

17. The Committee's approval or disapproval as required in these covenants shall be in writing. In the event the Committee, or its designated representative, fails to approve or disapprove within thirty (30) days after plans and specifications have been submitted to it, or in any event, if no suit to enjoin the construction has been commenced prior to

the completion thereof, approval will not be required and the related covenants shall be deemed to have been fully complied with, provided that no building or other structure shall be erected which violates any of the covenants herein contained.

18. Upon completion of construction of a residential structure on the last remaining building site in the subdivision or ten (10) years from the date of recordation thereof, whichever first, the above named members of the Architectural Control Committee shall be deemed to have resigned; and after that date, all their privileges, powers, right and authority shall be vested in a Committee to be selected by the owners of a majority of the lots in the subdivision.

19. These covenants are to run with the land and shall be binding on all parties and all persons claiming under them for a period of thirty (30) years from the date these covenants are recorded, after which time said covenants shall be automatically extended for successive periods of ten (10) years. These covenants may be modified, changed, altered or revoked at any time after ten (10) years from the date of recordation hereof by an instrument duly signed, acknowledged and recorded by a three-quarters majority of the then owners of the lots in the subdivision.

20. In the event of a breach or violation of any of these covenants and restrictions, other lot owners, or the original owners, or any member of the Architectural Control Committee, shall have the right to proceed at law or in equity to compel a compliance with the terms hereof or to prevent the violation or breach of any of them, to recover damages for such breach, or both.

21. No delay or omission on the part of the original owners, or any member of the Architectural Control Committee, or of the owners of other lots in the subdivision in exercising any right, power or remedy herein provided for in the event of any breach of the restrictions, covenants or conditions herein contained, shall be construed as a waiver thereof or acquiescence therein; and no right of action shall accrue, nor shall any action be brought or maintained by anyone whatsoever against the undersigned, its successors or assigns, or against the members of the Architectural Control Committee for and on account of failure of neglect to exercise any right, power, or remedy herein provided for in the event of breach of any of said covenants, restrictions, or conditions.

22. Invalidation of any one of these covenants by judgement of court order shall in no way affect any of the other provisions which shall remain in full force and effect.

23. All mineral rights and all water rights on, in, and under the entire subdivision premises currently held by the original owners, Max M. Sanchez and Anthony E. Deck, are reserved and retained for themselves and their successors and assigns.

IN WITNESS WHEREOF, the undersigned owners have hereunder set their hands and seals this _____ day of _____, 19____.

ATTEST:

By: _____ By: _____

Max M. Sanchez Jr.
2504 LaCharles Drive NE
Albuquerque, New Mexico

Anthony E. Deck
3533 Campbell Ct. NW
Albuquerque, New Mexico

DRAINAGE REPORT

MAXIMILLIAN COMPOUND

PREPARED BY

ENCHANTMENT
ENGINEERING Inc.

9910 INDIAN SCHOOL RD. N.E., Suite 108
ALBUQUERQUE, N. M. Ph. 234-8839



DRAINAGE REPORT

MAXIMILLIAN COMPOUND

PREPARED BY

ENCHANTMENT
ENGINEERING Inc.

3910 INDIAN SCHOOL RD. N.E., Suite 105
ALBUQUERQUE, N. M. Ph. 234-8859



PURPOSE

This report is prepared with the intent of complying with Section 21.B of the Albuquerque Subdivision Ordinance and any special restrictions applicable to the control of stormwater runoff within the proposed development. Included within are a complete drainage analysis of the site and its environs together with proposed measures for the mitigation and containment of expected stormwater generated on the developed site.

LOCATION

The proposed Maximillian Compound is located in the Northwest Quadrant of the City and lies about 1/2 mile west of Rio Grande Boulevard and one-eighth mile north of Mountain Road. The assembled site consists of Tracts 'A' and 'B' of the RUNDLE'S SUBDIVISION (Plat of which was filed April 19, 1968 in Book B4, page 136) together with Tracts 310-a, 330 and 331a2b as they appear on Middle Rio Grande Conservancy District Property Map No. 35 and includes a total area of 5.0291 acres. It is bounded on the South by the JOE AZAR SUBDIVISION, a single-family, detached dwelling residential area; on the West by the Duranes Ditch; on the North by cultivated and grazing land; and on the East by Montoya Road.

TERRAIN

As it exists, the site shows no evidence of previous earthwork except for one pile of fill dirt at the southeast corner (it appears on the contour map.)

Otherwise, the site has little relief. The total fall across the site (from west to east) amounts to three feet. Water appears to pond in several areas of the site. The obviously wet or depressed areas are shown hatched on the survey of existing conditions. Vegetation consists of several older, large trees and a scattering of saplings, taller grasses and common weeds. From all appearances, the site has in the past been used for agriculture.

According the USDA Soil Survey of Bernalillo County and parts of Sandoval and Valencia Counties, the soils on this site consist of three types: Gila loam, Gila clay loam, and Glendale clay loam. (see plates 1 and 2) Both Gila loam (Gb) and Gila clay loam (Ge) are non-plastic stratified to sandy loams, exhibit 0.6 to 2.0 inch per hour rates of permeability, moisture capacities of 0.13 to 0.18 inch per inch of soil and low shrink/swell coefficients. Glendale clay loam (Gm) is likewise a non-plastic stratified soil. It has a permeability rate of 0.2 to 0.6 inch per hour, a moisture capacity of 0.16 to 0.20 inch per inch of soil, and has moderate shrink/swell characteristics. The east two-thirds of the proposed development is included within the Glendale clay loam soil type. All three of the aforementioned soils belong to hydrologic soil group B.

DEVELOPMENT

See the development plan included with this report. The proposed use of the site is for seventeen (17) single-family, detached residences. Aside from specific grading requirements as presented within this report, the lots are intended to be built upon

by individual builders or owners one at a time. No overall building development is envisioned. Average proposed lot sizes excepting Lot 17 (the westernmost lot) will be 8500 square feet with 8000 square feet being the minimum for rectangular lots. The street (Maximillian Road) appearing on the overall development plan will be asphalt-surfaced with estate-type curbing and a two percent center crown. Total width of the street from back of curb to back of curb will be 23 feet. (see street section, plate 3)

Due to the lack of any discernible surface patterns on the area and to the potential negative effect released runoff waters could have upon abutting areas, all stormwaters generated onsite will be contained thereon. The nearest storm drain lies some 800 feet south of the site and runs parallel to Mountain Road, NW. Note on the orthophoto that there is no difference in elevation from the center of the proposed development and the intersection of Montoya Road and Mountain Road. The area which would likely suffer the most from released storm runoff appears on the Flood Hazard Boundary Map to the southeast of the site.

Evidence on-site indicates that no runoff currently enters the site from adjoining areas. The JOE AZAR SUBDIVISION to the south has been graded to throw runoff to the fronts of the residences and into Lulac Avenue or Azar Place. North of the site, the agricultural and grazing lands are graded for irrigation and containment.

Internal drainage and containment areas are to be arranged and set aside as follows:

CALCULATIONS

100-YEAR RAINFALL 2.2 INCHES

COEFFICIENTS OF RUNOFF IMPERVIOUS 1.00
OPEN, LANDSCAPED .40

EACH LOT IS ASSUMED TO HAVE 3000 SQ. FT. OF IMPERVIOUS AREA WHEN DEVELOPED

STREET - 10 FT. ASPHALT, 2.5 FT. CURB EA. SIDE
CUL-DE-SAC RADIUS 41.5 FT. TO BACK OF CURB

THE DEVELOPMENT IS DIVIDED INTO INTERNAL BASINS WHICH HAVE BEEN DESIGNED TO ACCOMMODATE THE FULL VOLUME OF RUNOFF GENERATED BY A 100-YEAR FREQUENCY STORM WITHIN EACH. FIGURES DO NOT INCLUDE INFILTRATION RATE MENTIONED IN NARRATIVE. REFER TO GRADING PLAN W/ PATTERN OVERLAY INCLUDED IN PACKET.

KEYED AREAS ROUNDED TO NEAREST 50 SQ. FT.

(A) LOTS 1 THROUGH 8 EXCLUDING THE FRONT 7 FEET OF EACH
61000 SQ. FT. TOTAL

24000 S.F. IMPERVIOUS (3000 S.F./LOT)
43000 S.F. PERVIOUS

$$VOL. = \frac{[24000 + (43000 \times .4)] \times 2.2}{12} = \underline{1653 \text{ CU. FT.}}$$

CROSS-SECTIONAL AREA PER SECTION (B)

$$\left(\frac{3 \times 1.5}{2}\right) + (7 \times 1.5) = 12.75 \text{ SQ. FT., MAXIMUM. ASSUME 12 S.F. AVG.}$$

LENGTH OF RETENTION POND ALONG SOUTH SUBDIVISION BOUNDARY
LESS 10-FOOT SEPARATION FROM WEST R.O.W. LINE OF MONTOLA ROAD
AND END GUTTERS: 640 L.F.

$$POTENTIAL CAPACITY = 12 \text{ S.F.} \times 640 \text{ L.F.} = \underline{1680 \text{ CU. FT.}}$$

(B) ALL OF LOTS 9 THROUGH 14

49300 SQ. FT. TOTAL

18000 S.F. IMPERVIOUS (3000 S.F./LOT)
31300 S.F. PERVIOUS

$$VOL. = \frac{[18000 + (31300 \times .4)] \times 2.2}{12} = \underline{5995 \text{ CU. FT.}}$$

CROSS-SECTIONAL AREA PER SECTION (B) SAME AS ABOVE, 12 S.F.

TOTAL LENGTH OF RETENTION POND 550 L.F.

$$POTENTIAL CAPACITY = 12 \text{ S.F.} \times 550 \text{ L.F.} = \underline{6600 \text{ CU. FT.}}$$

⑥ MAXIMILLIAN ROAD SOUTH + FRONT 7 FEET OF LOTS 1 - 3.

20030 SQ. FT. TOTAL
10750 IMPERVIOUS INCLUDES 4' SIDEWALK
9280 PERVIOUS

$$VOL. = \frac{[10750 + (9280 \times .4)] \times 2.2}{12} = \underline{2083 \text{ CU. FT.}}$$

CROSS-SECTIONAL AREA PER SECTION ⑥

$$\frac{4.5}{2} \times 3 + \frac{3}{2} = 9.75 \text{ SQ. FT. MINIMUM}$$

LENGTH OF RETENTION POND LESS DRIVEWAY GRADING, 400 LIN. FT.

$$POTENTIAL CAPACITY = 9.75 \times 400 = \underline{2700 \text{ CU. FT.}}$$

10' MUTUAL RETENTION AND UTILITY EASEMENT SHALL APPEAR ON
FILED PLAT. SEE COPY OF PROPOSED PLAT INCLUDED IN PACKET.

⑦ NORTH SIDE OF MAXIMILLIAN ROAD EAST OF AND INCLUDING
EAST CUL-DE-SAC.

15030 SQ. FT. TOTAL
11400 IMPERVIOUS
4530 PERVIOUS

$$VOL. = \frac{[11400 + (4530 \times .4)] \times 2.2}{12} = \underline{2424 \text{ CU. FT.}}$$

CROSS-SECTIONAL AREA PER SECTION ⑦

$$\frac{4.5 \times 1.5}{2} + (2 \times 1.5) + \frac{3 \times 1.5}{2} = 8.6 \text{ SQ. FT.}$$

LENGTH OF RETENTION POND PARALLEL TO STREET R.O.W. LESS END
GRADING: 310 LIN. FT.

$$POTENTIAL CAPACITY = 8.6 \times 310 = \underline{2666 \text{ CU. FT.}}$$

⑧ NORTH SIDE OF MAXIMILLIAN ROAD BETWEEN CULS-DE-SAC AND
INCLUDING WEST BULB.

5000 SQ. FT. TOTAL
3450 IMPERVIOUS
1550 PERVIOUS

$$VOL. = \frac{[3450 + (1550 \times .4)] \times 2.2}{12} = \underline{746 \text{ CU. FT.}}$$

CROSS-SECTIONAL AREA PER SECTION ⑧

$$\frac{3 \times 1.5}{2} + (3.5 \times 1.5) + \frac{3 \times 1.5}{2} = 9.75 \text{ SQ. FT.}$$

LENGTH OF RETENTION POND: 80 FT.

$$POTENTIAL CAPACITY = 9.75 \times 80 = \underline{780 \text{ CU. FT.}}$$

LOTS 15, 16 AND 17

RUNOFF FROM EACH LOT WILL BE CONTAINED THEREON.
3000 SQ. FT. IMPERVIOUS AREA ASSUMED PER LOT.
INFILTRATION CHARACTERISTICS OF SOIL NOT INCLUDED
IN COMPUTATIONS.

LOT - 15 1274.1 SQ. FT.

$$VOL. = \frac{[3000 - (974 \times .4)] \times 2.2}{12} = \underline{\underline{1264 CU. FT.}}$$

PLAN SHOWS 40' x 40' x 1' DEEP BASIN

LOT - 16 1279.4 SQ. FT.

$$VOL. = \frac{[3000 + (979.4 \times .4)] \times 2.2}{12} = \underline{\underline{1268 CU. FT.}}$$

SAME AS LOT - 15. 40' x 40' x 1' D. BASIN

LOT - 17 2341.6 SQ. FT.

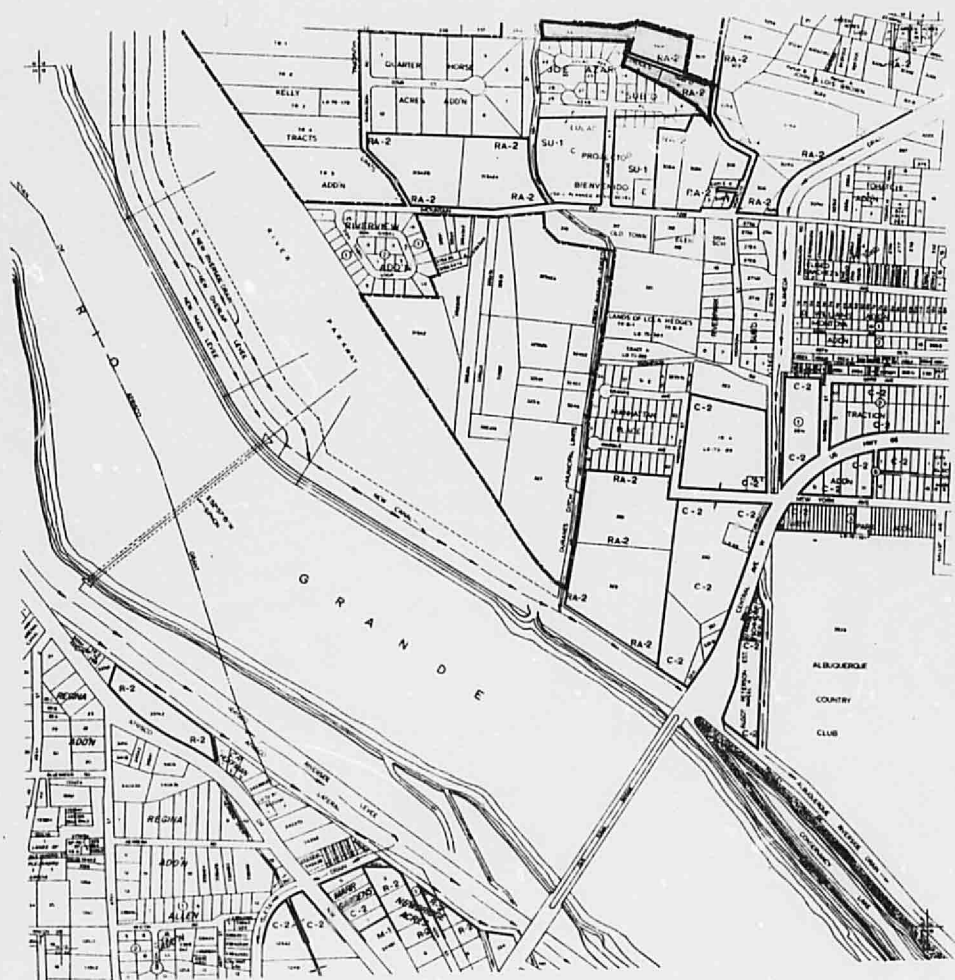
$$VOL. = \frac{[3000 + (2041.6 \times .4)] \times 2.2}{12} = \underline{\underline{2047 CU. FT.}}$$

PLAN SHOWS 50' x 50' x 1' D. BASIN

BASINS AS INDICATED SHALL BE CONSTRUCTED NO CLOSER THAN
10 FEET TO THE NORTH OR EAST PROPERTY LINES NOR 15 FEET
TO ANY FOOTING OF ANY PERMANENT BUILDING.

The design of the street, as outlined, will serve to direct the stormwater runoff into ditches running along either side of it. Since there isn't enough distance from the back of curb to the property line around the two culs-de-sac, the curbing used on them will be mountable roll-type and the head of the circle will be canted up to throw runoff towards the tangent stretch of street and into the side ditches. This design intends to provide adequate capacity of the ditches within the right-of-way where possible. Where such containment isn't possible (the south side of the street) the extent of ponding beyond the right-of-way line has been delineated and the dimension will be reflected on the final subdivision plat. This overlap will be noted on the plat as a "MUTUAL DRAINAGE EASEMENT". Volume is determined by runoff generated by the paved area contributing to each lineal portion of the ditch with infiltration characteristics of the soils given consideration. (see calculations) Note that there will be no culverts under drive turnouts and that each length of ditch constitutes a separate retention area and is designed to contain flows entering it.

Runoff from the remainder of the development will be directed to the perimeter. For the sake of sizing the perimeter retention areas each lot is assumed to have 3000 square feet of impervious contributory area. Since no compaction for building pads or drives is anticipated in this area, consideration for infiltration is taken into account. As with the easements along the street, the final plat will dedicate these areas as a "MUTUAL RETENTION EASEMENT" and they will be delineated thereon as sized and specified within this report. Lots will be graded gently to the rear to convey flows to these areas.



LOCAL DESCRIPTION
T. 1 N. 2 E.
R. 1 E.
S. 1 E.
T. 1 N. 2 E.
R. 1 E.
S. 1 E.

ALBUQUERQUE COUNTRY CLUB

J-12-Z

inches or more is pale brown sand. The soil is moderately alkaline throughout.

Permeability is moderate. Available water capacity is 8 to 11 inches. Effective rooting depth is about 60 inches.

Gila soils are used for irrigated alfalfa, row crops, and pasture. They are also used for range, wildlife habitat, watershed, and community development.

Representative profile of Gila loam, about 625 feet east of the Isleta Drain, in the northeast corner of SW $\frac{1}{4}$ sec. 11, T. 9 N., R. 2 E.

- Ap-0 to 7 inches, brown (7.5YR 5/4) loam, dark brown (7.5YR 4/4) moist; moderate, fine, subangular blocky structure; soft, friable, slightly sticky and slightly plastic; common medium and fine roots; many very fine interstitial pores; moderately calcareous; moderately alkaline; clear, smooth boundary.
- C1-7 to 16 inches, brown (7.5YR 5/4) sandy loam, dark brown (7.5YR 4/4) moist; weak, fine, granular structure; soft, very friable; many fine and very fine roots; many very fine interstitial pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.
- C2-16 to 25 inches, brown (7.5YR 5/4) very fine sandy loam, dark brown (10YR 4/3) moist; weak, medium, subangular blocky structure; slightly hard, friable, slightly sticky; many fine and very fine roots; many very fine interstitial pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.
- C3-25 to 32 inches, light yellowish brown (10YR 6/4) very fine sandy loam, brown (10YR 5/3) moist; massive; slightly hard, friable, slightly sticky; many fine and very fine roots; common very fine tubular pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.
- C4-32 to 44 inches, light yellowish brown (10YR 6/4) very fine sandy loam, dark brown (10YR 4/3) moist; massive; slightly hard, very friable; many fine and very fine roots; common very fine tubular pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.
- IIC-44 to 60 inches, pale brown (10YR 6/3) sand, brown (10YR 5/3) moist; single grained; loose; few fine roots; common very fine interstitial pores; slightly calcareous; moderately alkaline.

The A horizon has hue of 7.5YR or 10YR, value of 4 to 6 dry and 4 or 5 moist, and chroma of 2 to 4 dry and moist. It is loam, clay loam, or silty clay loam. The C horizon has hue of 7.5YR or 10YR, value of 5 to 7 dry and 4 to 6 moist, and chroma of 3 or 4 dry and moist. It is sandy loam, very fine sandy loam, silt loam, loam, or fine sandy loam that is 10 to 18 percent clay. A seasonal water table is at a depth of 45 to 60 inches in some areas. The soil is nonsaline to slightly saline and nonalkali to moderately alkali affected.

On about 20 percent of the acreage Gila soils are 18 to 24 percent clay and are therefore finer textured than is defined as the range for the series. This difference, however, does not alter use or management. In areas of mapping unit GH west of the Rio Puerco, the mean annual temperature is a few degrees cooler than is defined as the range for the series.

GA—Gila fine sandy loam. This level or nearly level soil is in and at the mouth of the Tijeras Arroyo. It has a profile similar to that described as representative of the series, but it has lenses of 5 to 15 percent gravel and has a surface layer that differs in texture. Stream-washed sand and gravel are in the channels. Slopes are 0 to 2 percent. Included in mapping are a few small areas, near the mountains, where the surface layer is darker colored than is typical. Also included are small areas of Embudo, Bluepoint, and Glendale soils.

Runoff is slow, and flooding is a hazard. The hazards of water erosion and soil blowing are moderate.

This soil is used for wildlife habitat, watershed, and community development. Dryland capability subclass VIIc; native plant community 4.

GB—Gila loam. This level soil is in the irrigated Rio Grande Valley. It has the profile described as representative of the series. Slopes are 0 to 1 percent. Included in mapping are small areas of Gila clay loam and fine sandy loam, areas of Brazito soils, and, along the margin of the valley floor, a few small areas of Gila loam, 1 to 3 percent slopes.

Runoff is slow, and the hazard of water erosion is slight.

This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. Irrigated capability unit I.

GC—Gila loam, slightly saline. This level soil is in the irrigated Rio Grande Valley. It has a profile similar to that described as representative of the series, but it is slightly saline and has a seasonal water table at a depth of 45 to 60 inches. White crusts of salt are common on the surface, and crop failure because of salinity is common. Available water capacity is 4 to 7 inches. Slopes are 0 to 1 percent.

Included with this soil is mapping are areas of Gila clay loam, slightly saline or moderately alkali, which make up to 20 percent of the unit. Also included are small areas of Glendale and Vintea soils.

Runoff is slow, and the hazard of water erosion is slight.

This soil is used for irrigated alfalfa, row crops, and permanent pasture. It is also used for wildlife habitat and community development. Where this soil is used for community development, the failure of septic tank filter fields is a common problem because of the seasonal high water table. Irrigated capability unit IIs-5.

GD—Gila loam, moderately alkali. This level soil is in the irrigated Rio Grande Valley. It has a profile similar to that described as representative of the series, but on about 30 percent of the acreage the surface layer is light brown, about 8 inches thick, strongly to very strongly alkaline, and more than 15 percent exchangeable sodium. Available water capacity is about 4 to 7 inches. The soil is dispersed, cruds easily, and has a moderately slow intake rate. Slopes are 0 to 1 percent. Included in mapping are areas of Armijo and Glendale soils and Gila clay loam.

Runoff is slow, and the hazard of water erosion is slight.

This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. Irrigated capability unit IIIs-10.

GE—Gila clay loam. This level soil is in the irrigated Rio Grande Valley. It has a profile similar to that described as representative of the series, but the surface layer differs in texture and is about 10 inches thick. In about 1 percent of the mapped area this soil is moderately saline, and in about 0.5 percent it is moderately alkali affected. Slopes are 0 to 1 percent.

Included with this soil in mapping are small areas of a Gila soil that has a sandy clay loam surface layer and areas of Brazito fine sandy loam.

Runoff is slow, and the hazard of water erosion is slight.

This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. Irrigated capability unit I.

GF—Gila complex, moderately alkali. This mapping unit is 70 percent a Gila soil that has a loamy sand or sandy loam surface layer and 15 percent a Gila soil that has a sandy clay loam surface layer. These soils have profiles similar to the one described as representative of the series, but they are 15 percent gravel. Slopes are 0 to 2 percent.

This mapping unit is east of the Albuquerque Main Canal on low terraces of the Rio Grande where runoff is medium, the hazard of water erosion is moderate, and the hazard of soil blowing is severe. Windblown hummocks, 6 to 18 inches high, of loamy sand and sandy loam are in about 70 percent of the unit. Local flooding from side drainages occurs in places. On about 30 percent of the acreage the soils are strongly to very strongly alkali affected and are more than 15 percent exchangeable sodium. The soils are dispersed and crust easily.

Included in this unit in mapping are areas of Embudo, Bluepoint, and Glendale soils, which make up about 15 percent of the unit.

This mapping unit is used for community development, watershed, and wildlife habitat. Dryland capability subclass VIIe; native plant community 1.

GH—Gila-Hantz complex. This nearly level mapping unit is about 60 percent Gila silty clay loam and 35 percent Hantz silty clay loam. Slopes are 0 to 2 percent.

The Gila soil has a profile similar to that described as representative of the Gila series, but the surface layer is silty clay loam. In small areas the Hantz soil is slightly saline or moderately alkali affected, or both, and has slow permeability. On both soils, runoff is medium and the hazard of erosion is moderate or severe. On about 25 percent of the acreage the soil temperature is slightly cooler than is typical for the Gila and Hantz series.

Included in this unit in mapping are areas of Bluepoint and Penistaja soils, which make up about 5 percent of the unit.

This mapping unit is used for range, watershed, and wildlife habitat. Dryland capability subclass VIIe; native plant community 1.

Glendale Series

The Glendale series consists of deep, well drained soils that formed in stratified recent alluvium on the flood plain along the Rio Grande. Slopes are 0 to 1 percent. The native vegetation is principally alkali sacaton, inland saltgrass, vine-mesquite, and fourwing saltbush. Elevations range from 4,850 to 5,050 feet. The mean annual precipitation is 7 to 10 inches, the mean annual air temperature is 58° to 60° F, and the frost-free season is 165 to 185 days. Glendale soils are associated with Gila, Vinton, Armijo, and Anapra soils.

In a representative profile, the surface layer is brown clay loam about 6 inches thick. Below this to a depth of 60 inches or more is mainly stratified light brown to gray silt loam and clay loam. The soil is mildly alkaline or moderately alkaline.

Permeability is moderately slow. Available water capacity is 11 to 12.5 inches. Effective rooting depth is 60 inches or more.

Glendale soils are used for irrigated alfalfa, row crops, and pasture. They are also used for wildlife habitat and community development.

Representative profile of Glendale clay loam, in SE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 1, T. 9 N., R. 2 E.

Ap—0 to 6 inches, brown (7.5YR 5/2) clay loam, dark brown (7.5YR 4/2) moist; weak, fine, subangular blocky structure; hard, firm, sticky and plastic; many very fine, fine, medium, and coarse roots; many fine interstitial pores; moderately calcareous; mildly alkaline; abrupt, smooth boundary.

C1—6 to 13 inches, light brown (7.5YR 6/4) silt loam, brown (7.5YR 5/2) moist; moderate, medium, subangular blocky structure; hard, friable, slightly sticky and slightly plastic; many very fine, fine, medium, and coarse roots; common fine interstitial pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.

C2—13 to 16 inches, pale brown (10YR 6/3) fine sand, pale brown (10YR 6/3) moist; single grained; loose; few fine roots; many fine vesicular pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.

C3—16 to 38 inches, pinkish gray (7.5YR 6/2) silt loam, brown (7.5YR 5/2) moist; moderate, medium, subangular blocky structure; hard, friable, slightly sticky and slightly plastic; few very fine roots; few fine tubular pores; moderately calcareous; moderately alkaline; abrupt, smooth boundary.

C4—38 to 46 inches, brown (7.5YR 5/2) clay, brown (7.5YR 4/2) moist; massive; very hard, firm, sticky, and plastic; few very fine roots; few fine tubular pores; moderately calcareous; mildly alkaline; abrupt, smooth boundary.

C5—46 to 60 inches, gray (10YR 5/1) clay loam, very dark gray (10YR 3/1) moist; massive; extremely hard, firm, sticky and plastic; few very fine roots and tubular pores; moderately calcareous; moderately alkaline.

The soil is highly stratified alluvium that averages 25 to 35 percent clay. The A horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 4 or 5 moist, and chroma of 2 to 4 dry and moist. It is loam, sandy clay loam, or clay loam and is non-saline to slightly saline and nonalkaline to moderately alkaline. The C horizon has hue of 7.5YR or 10YR, value of 4 to 6 dry and 3 to 6 moist, and chroma of 1 to 4 dry and moist. A seasonal water table is at a depth of 45 to 60 inches in some profiles.

Gk—Glendale loam. This level soil is in the irrigated Rio Grande Valley. It has a profile similar to that described as representative of the series, but the surface layer differs in texture and is about 10 inches thick. On about 1 percent of the acreage the soil is slightly saline, and on 7 percent it is moderately alkali affected. Slopes are 0 to 1 percent. Included in mapping are a few small areas of Gila and Anapra soils.

Runoff is very slow, and the hazard of water erosion is slight.

This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. The failure of septic tank filter fields and the cracking of foundations can be problems where this soil is used for community development. Irrigated capability unit 1.

Gm—Glendale clay loam. This level soil is in the Rio Grande Valley. It has the profile described as representative of the series. Slopes are 0 to 1 percent. Included in mapping are small areas of Glendale loam and Gila and Anapra soils.

Runoff is slow, and the hazard of water erosion is slight.

This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. The failure of septic tank filter fields and the cracking of foundations can be problems where this soil is used for community development. Irrigated capability unit is I.

Gs—Glendale clay loam, slightly saline. This level soil is in the irrigated Rio Grande Valley. It has a profile similar to that described as representative of the series, but it is slightly saline. White crusts of salt are common on the surface, and crop failure because of salinity is common. In most years, this soil has a seasonal water table at a depth of 45 to 60 inches. Available water capacity is 5 to 7 inches. Slopes are 0 to 1 percent. Included in mapping are a few small areas of Glendale loam and Anapra and Armijo soils.

Runoff is slow, and the hazard of water erosion is slight. This soil is used for irrigated alfalfa, row crops, and pasture. It is also used for wildlife habitat and community development. The failure of septic tank filter fields and the cracking of foundations can be problems where this soil is used in community development. Irrigated capability unit IIs-5.

Hantz Series

The Hantz series consists of deep, well drained soils that formed in alluvium on the flood plain along the Rio Puerco and its tributaries. Slopes are 0 to 2 percent. The native vegetation is principally alkali sacaton and galleta. Elevations range from 5,000 to 6,000 feet. The mean annual precipitation is 10 to 14 inches, the mean annual air temperature is about 58° to 60° F, and the frost-free season is 165 to 180 days. Hantz soils are associated with Gila, Shingle, Kim, and Travessilla soils.

In a representative profile, the surface layer is pale brown silty clay loam about 4 inches thick. Below this to a depth of 60 inches or more is light gray and light brownish gray silty clay. The soil is moderately calcareous and strongly alkaline.

Permeability is very slow. Available water capacity is 6 to 7 inches. Effective rooting depth is 60 inches or more.

Hantz soils are used for range, wildlife habitat, and watershed.

Representative profile of Hantz silty clay loam, 1,715 feet west and 520 feet north of the southeast corner of sec. 28, T. 10 N., R. 1 W.

- A1—0 to 4 inches, pale brown (10YR 6/3) silty clay loam, brown (10YR 4/3) moist; weak, fine, subangular blocky structure; slightly hard, friable, slightly sticky and slightly plastic; many fine and very fine roots; common fine tubular pores; moderately calcareous; strongly alkaline; abrupt, smooth boundary.
- C1—4 to 10 inches, light gray (10YR 7/2) silty clay, grayish brown (10YR 5/2) moist; massive; very hard, firm, very sticky and very plastic; common fine and medium roots; common very fine tubular pores; moderately calcareous; strongly alkaline; clear, smooth boundary.
- C2—10 to 40 inches, light brownish gray (10YR 6/2) silty clay, brown (10YR 5/3) moist; massive; extremely hard, very firm, very sticky and very plastic; few fine and very fine roots and tubular pores; moderately calcareous; strongly alkaline; clear, wavy boundary.
- C3—40 to 65 inches, light brownish gray (10YR 6/2) silty clay, grayish brown (10YR 5/2) moist; massive; extremely hard, very firm, sticky and very plastic; few fine tubular pores; moderately calcareous; strongly alkaline.

The A horizon has hue of 7.5YR or 10YR, value of 5 or 6 dry and 3 to 5 moist, and chroma of 2 to 4. It is silt loam, clay loam, or silty clay loam and is nonsaline to slightly saline and nonalkali to moderately alkali affected. The C horizon has hue of 7.5YR to 10YR, value of 5 to 7 dry and 4 to 5 moist, and chroma of 2 to 4.

In areas of mapping units GHI and Ha west of the Rio Puerco, the mean annual temperature is a few degrees cooler than is defined as the range for the series. This difference, however, does not alter use or management.

Ha—Hantz silty clay loam. This soil is level or nearly level; slopes are 0 to 2 percent. In some areas in the northernmost valley of the Montano Grant the soil is slightly saline and slightly alkali affected and in some areas it has a clay loam surface layer. On about 15 percent of the acreage the soil temperature is slightly cooler than is typical for the Hantz series. Areas adjacent to major drainageways are rarely flooded, but small tributaries are frequently flooded. Included in mapping are small areas of Gila and Vinton soils.

Runoff is medium, and the hazards of water erosion and soil blowing are moderate.

This soil is used for range, watershed, and wildlife habitat. Dryland capability subclass VII; native plant community 1.

Ildefonso Series

The Ildefonso series consists of deep, well drained soils that formed in gravelly, stratified, calcareous alluvium on alluvial fans. Slopes are 1 to 30 percent. The native vegetation is principally black grama, blue grama, and one-seed juniper. Elevations range from 6,000 to 7,000 feet. The mean annual precipitation is 10 to 14 inches, the mean annual air temperature is 53° to 55° F, and the frost-free season is 145 to 155 days. Ildefonso soils are associated with Scholle and Witt soils.

In a representative profile, the surface layer is brown gravelly loam about 6 inches thick. Next is about 23 inches of light brown or pinkish gray gravelly sandy loam. Below this to a depth of 60 inches or more is light brown very gravelly coarse sandy loam. The soil is strongly calcareous and moderately alkaline or strongly alkaline.

Permeability is moderately rapid. Available water capacity is 3.5 to 5 inches. Effective rooting depth is 60 inches or more.

Ildefonso soils are used for range, wildlife habitat, and watershed.

Representative profile of Ildefonso gravelly loam, from an area of Scholle-Ildefonso association, in SE 1/4 NW 1/4 sec. 2, T. 11 N., R. 6 E.

- A1—0 to 6 inches, brown (7.5YR 4/4) gravelly loam, dark brown (7.5YR 4/3) moist; weak, medium, subangular blocky structure; soft, very friable, slightly sticky and slightly plastic; many fine and very fine roots; many microinterstitial pores; 25 percent gravel and 5 percent cobblestones; strongly calcareous; strongly alkaline; clear, wavy boundary.
- AC—6 to 14 inches, light brown (7.5YR 6/4) gravelly heavy sandy loam, brown (7.5YR 5/4) moist; weak, medium, subangular blocky structure; soft, very friable, slightly sticky; common fine and medium roots; many fine interstitial pores; 45 percent gravel and 5 percent cobblestones; strongly calcareous; strongly alkaline; gradual, smooth boundary.
- C1ca—14 to 29 inches, pinkish gray (7.5YR 7/2) gravelly sandy loam, brown (7.5YR 5/4) moist; massive; slightly hard, friable; few fine roots; 40 percent gravel and

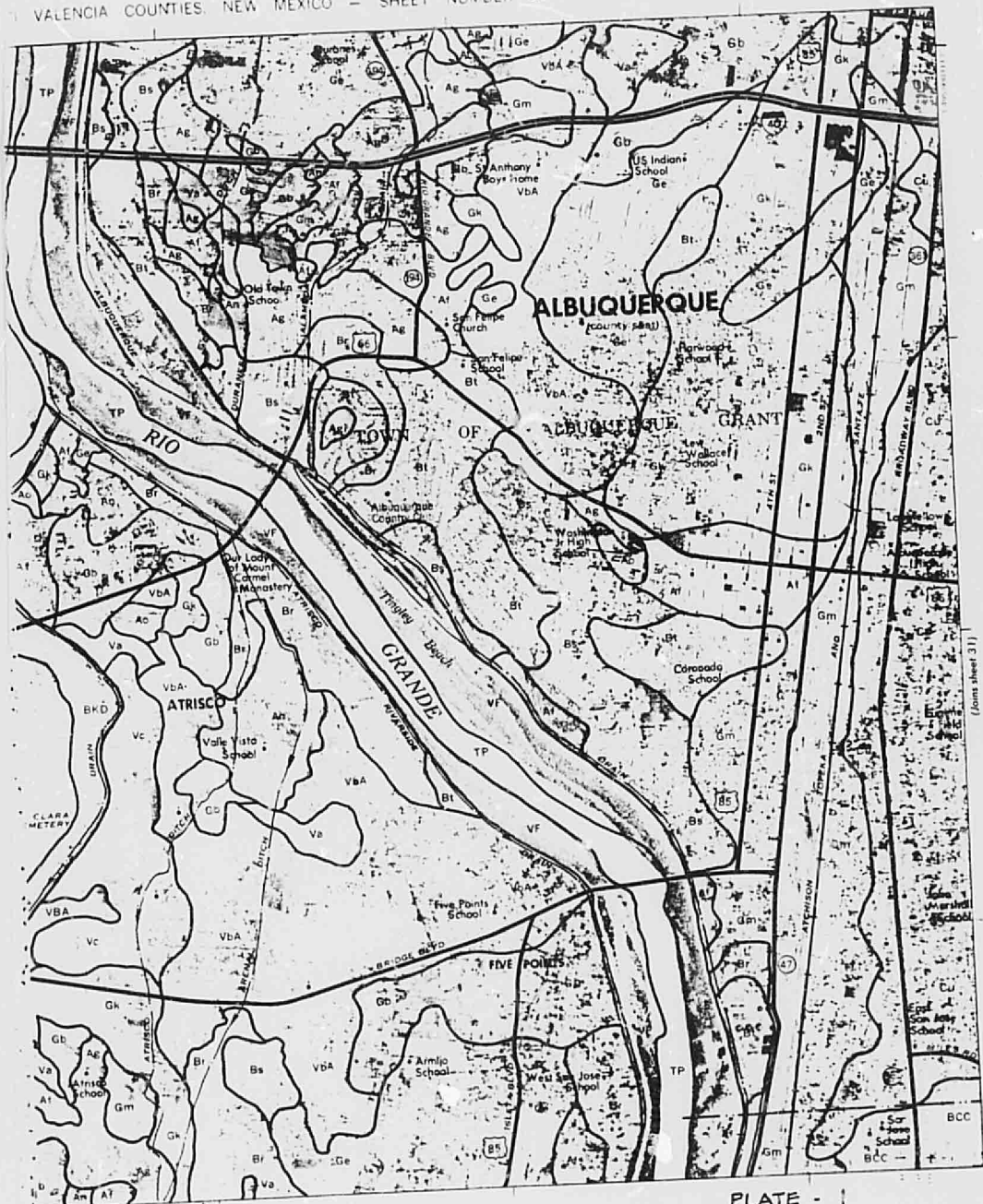


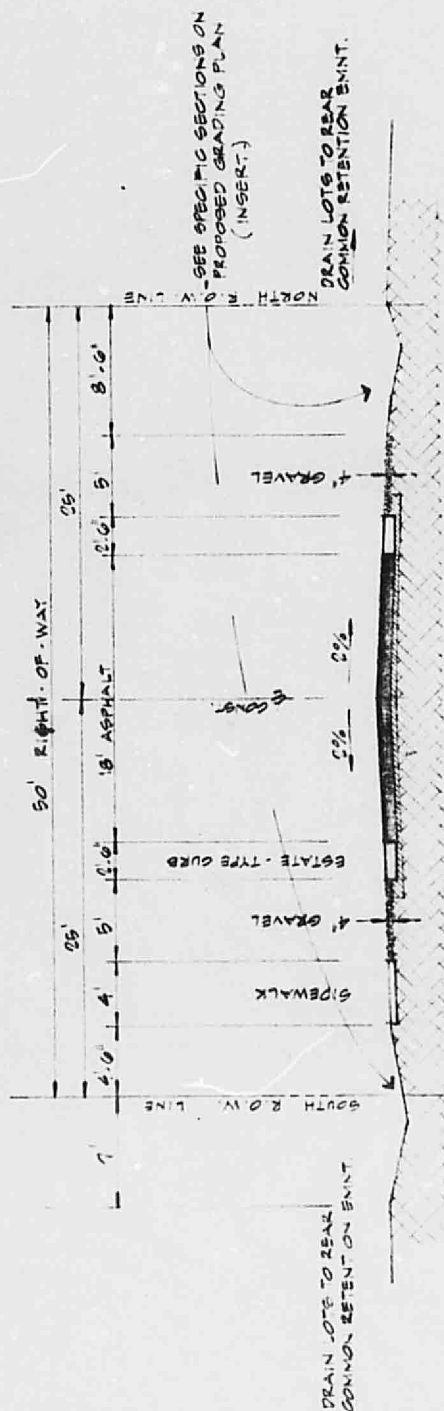
PLATE - 1



TABLE 7.—Engineering classification and estimated properties—Continued

Soil series and map symbols	Depth to—		USDA texture of representative profile	Classification		Percentage passing sieve—				Liquid limit	Plasticity index	Permeability inches per hour at 25°C	Available water capacity inches per foot of soil at 25°C	Reaction pH	Salinity millimhos per centimeter at 25°C	Shrink-swell potential	Risk of corrosion to—	
	Bedrock	Seasonal high water table		Unified	AASHTO	No. 4 (4.75 mm)	No. 10 (2.0 mm)	No. 40 (0.425 mm)	No. 200 (0.075 mm)									
Brazito: Br, Bt, Bt ₁	>5	>5	0-9 Fine sandy loam to silty clay loam.	SM, CL-ML, or CL	A-4 or A-6	100	70-100	40-95	15-35	NP	0-15	0.6-2.0	0.13-0.21	7.9-8.4	0-1	Low to moderate.	Moderate...	Low.
Burnae: BU ₁	>5	>5	0-6 Gravelly loam and very gravelly loam.	GM	A-2 or A-4	40-70	35-65	20-50	<30	NP	NP	0.6-2.0	0.05-0.07	7.9-8.4	0-1	Low	Low	Low.
			6-14 Gravelly sandy clay loam.	SC-SM or CH	A-2, A-4, or A-6	70-80	65-75	20-40	20-35	NP	5-15	0.6-2.0	0.12-0.14	6.1-6.5	0-1	Low	Low	Low.
			14-60 Clay.	CH	A-7	90-100	85-95	70-85	50-65	NP	25-35	<0.06	0.14-0.16	6.1-7.3	0-1	High	High	Low.
Carlito: CAF	>5	>5	0-4 Stony loam.	CL-ML or CL	A-4	95-100	90-100	60-90	20-30	NP	5-10	0.2-0.6	0.14-0.18	7.4-7.8	0-1	High	High	Low.
			4-60 Clay and silty clay.	CL or CH	A-7	100	90-100	75-95	40-55	NP	20-30	0.06-0.2	0.13-0.18	7.8-8.4	0-1	High	High	Low.
Cut and fill land: Co ₁ No valid estimates; material too variable.	>5	>5	0-20 Gravelly fine sandy loam and gravelly sandy loam.	SM	A-2, A-4	85-95	70-85	25-50	NP	NP	NP	0.6-0.2	0.07-0.09	7.9-8.4	0-1	Low	Low	Low.
*Embudo: Em B, Etc. For Tigras part of Etc. see Tigras series.	>5	>5	20-60 Gravelly loamy coarse sand.	SM	A-1	80-95	50-70	10-25	NP	NP	NP	>20	0.04-0.06	7.9-8.4	0-1	Low	Low	Low.
Escabosa: Mapped only with Laporte soils and Rock outcrop.	1.5-3.5	>5	0-15 Loam.	CL-ML or ML	A-4	100	85-95	60-70	20-35	NP	5-10	0.6-2.0	0.16-0.18	7.9-8.4	0-1	Low	High	Low.
			15-23 Gravelly loam to Bedrock.	GM or CL-ML	A-4	65-95	60-90	40-65	20-30	NP	0-5	0.6-2.0	0.13-0.15	7.9-8.4	0-1	Low	High	Low.
*Gila: G ₁ , G ₂ , G ₃ , G ₄ For Hantz part of G ₁ , see Hantz series.	>5	>5	0-44 Stratified loam to sandy loam.	SM or ML	A-4	100	95-100	40-60	NP	NP	NP	0.6-2.0	0.13-0.18	7.9-8.4	0-1	Low	Moderate...	Low.
			44-60 Sand.	SP or SP-SM	A-3	100	50-90	0-10	NP	NP	NP	0.6-2.0	0.05-0.07	7.9-8.4	0-1	Low	Low	Low.
Ge, G ₁ , G ₂	>5	>5	0-60 Stratified loam to sandy loam.	SM or ML	A-4	100	95-100	40-75	NP	NP	NP	0.6-2.0	0.07-0.12	7.9-9.0	4-8	Low	High	Low.
Glendale: G ₁ , G ₂ , G ₃	>5	>5	0-6 Clay loam or loam.	CL-ML or CL	A-4 or A-6	100	90-100	60-80	25-35	NP	5-15	0.2-0.6	0.16-0.20	7.4-7.8	1-4	Moderate	High	Low.
			6-38 Silt loam.	CL	A-6	100	90-100	75-90	30-40	NP	10-15	0.2-0.6	0.19-0.21	7.9-8.4	1-4	Moderate	High	Low.
			38-60 Clay loam.	CL	A-6	100	90-100	70-80	30-40	NP	10-15	0.2-0.6	0.19-0.21	7.4-8.4	1-4	Moderate	High	Low.
Hantz: Ha	>5	>5	0-65 Silty clay.	CL or MH	A-7	100	95-100	90-95	40-65	NP	20-30	<0.06	0.10-0.12	8.5-9.0	4-8	High	High	Low.
Idolcuso: IL ₁	>5	>5	0-60 Gravelly and very gravelly sandy loam.	GM or SM	A-1 or A-2	40-75	35-60	10-30	20-25	NP	0-4	2.0-6.0	0.06-0.08	7.9-9.0	2-4	Low	High	Low.
*Kima: Ka ₁ , Ka ₂ , K ₃ , K ₄ No valid estimates for Badland part of K ₃ .	>5	>5	0-60 Loam and clay loam.	CL-ML or CL	A-4 or A-6	100	85-100	60-80	25-35	NP	5-15	0.6-2.0	0.16-0.20	7.4-8.4	0-1	Moderate	Moderate...	Low.
*Kokan: Ko ₁ , Ko ₂ , Ko ₃ No valid estimates for Rock outcrop part of Ko ₃ .	>5	>5	0-60 Gravelly sand and very gravelly sand.	GP, GP-GM, or GM	A-1	45-60	40-55	20-45	0-20	NP	NP	>20.0	0.03-0.05	7.4-7.8	0-1	Low	High	Low.

See foot notes at end of table.



STREET SECTION
MAXIMILIAN ROAD

1" = 1'-0"

SUBGRADING & PAVEMENT TO BE PER STD PNG. P. 5-2