

DRAINAGE REPORT

for

New Residence

LOT 17, BLOCK 16, TRACT1, UNIT3, NAA

ALBUQUERQUE, NEW MEXICO

February 21, 2000

Rev. 7/31/2000

Rev. 10/10/2000



Prepared by
Larry D. Read, P.E.
12836-B Lomas Blvd., N.E.
Albuquerque, New Mexico 87112
(505) 237-8421

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LOCATION & DESCRIPTION

The proposed site is a single North Albuquerque Acres residential lot located at the northwest quadrant of Glendale Avenue, NE and Ventura Street, NE, as shown on **Exhibit 1**. The site has been designed and analyzed to comply with the master drainage plan North Albuquerque Acres which assumes Developed Condition Land Treatments of 22% "A", 23% "B", 38% "C", and 17% "D". Additional Floodplain criteria are discussed in the Existing Conditions Section of this report.

The site is currently undeveloped and has paved access available from Ventura Street. Glendale Avenue is undeveloped at this time.

FLOODPLAIN STATUS

This project, as shown on FEMA's Flood Insurance Rate Map 35001C0133 D, dated September 20, 1996 shows that a portion at the southeast corner of this lot is within a Zone AO (depth 1') Floodplain. The Grading and Drainage Plan includes a copy of this flood insurance map with the project site delineated. The proposed easement is noted on the Grading and Drainage Plan for review. This easement will be a Floodplain easement granted to AMAFCA.

METHODOLOGY

The hydrology for this project was analyzed using the Quick Calculations of the June 1997 release of the City of Albuquerque Development Process Manual, Section 22.2. **Table 2** summarizes both the proposed conditions and the normal North Albuquerque Acres drainage criteria in order to demonstrate that this development is within the pre approved parameters.

PRECIPITATION

The 100-yr 6-hr duration storm was used as the design storm for this analysis. This site is within Zone 3 as identified in the City of Albuquerque Development Process Manual, Section 22.2. Tables within this section were used to establish the 6-hour precipitation, excess precipitation, and peak discharge.

EXISTING DRAINAGE

The existing site is undisturbed native vegetation. There is a minor arroyo that cuts through the middle of this site *but construction of Ventura Street has cut off the flow from the east and diverted it south to the El Camino Arroyo*. The north side of this property follows the top of a ridge line. Therefore, there is no offsite flow entering this site from the north or east. Since the site slopes from east to west, there is no offsite drainage entering this lot other than the Floodplain located at the southeast corner of the site.

A HEC-RAS analysis has been included in **Appendix A** for the El Camino Arroyo. The anticipated future developed flow of 707-cfs was used to determine the energy grade line adjacent to this property. This flow was established by the Final North Albuquerque Acres Master Drainage Plan prepared by RTI, October 1998. The HEC-RAS cross sections are based on existing topography. Since no grade changes are proposed below the water surface elevation, there is no difference between the existing and proposed conditions for this analysis. **Table 1** is the Lateral Erosion Setback Calculation based on this same flow and the natural channel slope of 3.17%. The existing FEMA Floodplain boundary, energy grade line, and erosion setback are all shown on the Grading and Drainage Plan. As requested by the City of Albuquerque, an easement to AMAFCA can be prepared based on these lines. The Erosion Setback Line controls where construction can occur on this property and the Energy Grade Line plus one-foot (1') controls the elevation for construction.

FULLY DEVELOPED CONDITION

As demonstrated in **Table 2**, the proposed development is in compliance with the accepted Land Treatments for North Albuquerque Acres as shown in the RTI Master Drainage Plan. The development is outside of the Erosion Setback Limit and is set a minimum of three feet (3') above the Energy Grade Line at the upstream end of this property. This exceeds the Energy Grade Line plus one foot criterion for protection against the El Camino Arroyo and provides adequate protection from the flows which exist in Ventura Street. Therefore, the Grading and Drainage Plan included with this report is in compliance with all the previous requirements set by the City of Albuquerque for this property and exceeds the FEMA requirements for flood protection. Although the impervious area exceeds the allowable according to the North Albuquerque Acres Master Drainage Plan, the allowable runoff can be matched by limiting the gravel area to what is shown on the plans for parking. Since a very small portion of the lot will be left undisturbed once construction is complete, the majority of the lot, excluding the structures and driveway, has been analyzed as Type "B" soil. Landscaping will have to meet this soil classification or a small detention pond will be required to maintain the allowable discharge. No ponding is proposed with this plan since the site will be landscaped to accommodate free discharge.

ALL WEATHER ACCESS

The City of Albuquerque requires vehicular access to the site during a 100-year storm. Ventura Avenue, as well as several adjacent north/south streets are paved. Additionally, Elena, Florence west of Ventura, San Diego, and Signal are paved east/west streets. Although most of the streets

discussed above have low water crossings (Elena and Signal are the exceptions), there are numerous choices of paved routing to the site from Paseo del Norte, Wyoming, and Tramway. With the minimal flow depths in the low water crossings and so many alternate routes to the site, access should not be a concern. Although these are all paved streets, they do not meet the 100-year storm event criteria. Therefore, by a separate letter, a variance is being requested to allow this development to commence at this time. This lot is no exception to the rest of North Albuquerque Acres in this area and therefore should not be denied a building permit based on this ordinance.

NAA DRAINAGE MASTER PLAN

In the "Final North Albuquerque Acres Master Drainage Plan", October 1998, prepared by Resource Technology Inc. an 84" storm drain (SD-6) is proposed in Glendale Ave. A copy of Figure 5C is included in Appendix B for reference. The storm drain will begin at a proposed sediment pond located at the southeast corner of Ventura and Glendale and proceed west in Glendale. Once this recommended storm drain is constructed, the El Camino Arroyo will be confined in the storm drain and of no further impact to this site.

- Commercial/Industrial (C/I): The area west of Louisiana Boulevard, north of Modesto Avenue and east of I-25 would develop as high density commercial and industrial. Also used for Paseo del Norte Corridor.
- Medium Density Industrial (MI): Campus type commercial/office facilities and APS schools sites.
- Sandia Tribal Lands (ST): Sandia tribal lands south of Tramway Road and north of the Sandia Pueblo Grant Boundary were allocated land treatments consistent with moderate levels of development even though there are no current plans to develop this area.

The relative weight of each type of Land Treatment is shown in Table 2.

TABLE 2				
FUTURE FULL DEVELOPMENT HYDROLOGIC CONDITION ASSUMPTIONS				
	Land Treatments (%)			
	A	B	C	D
Sandia Heights/Tramway (SH/TB)	20	40	5	35
North Albuquerque Acres (NAA)	22	23	38	17
Low Density Residential (LR)	20	20	34	26
Residential (R)	0	34	16	50
High Density Residential (HR)	0	25	15	60
Commercial/Industrial (C/I)	0	20	10	70
Medium Density Industrial (MI)	0	20	30	50
Sandia Tribal Lands (ST)	20	20	40	20
Primrose Pointe (PP)	0	40	20	40