

NOTES:

- Improve swale to the elevations shown.
- Construct low height wall to the elevation shown.
- Construct swale or place roof gutter to direct water as shown.
- Pavers with open joints.
- Landscaped area.
- Parking area, (gravel or asphalt surface)

PURPOSE:

The purpose of this grading and drainage plan is to obtain approval for a occupancy of apartment dwellings on lot 408-A.

DISCUSSION:

A. Lot 408-A has been platted from lots 408, 409, 410, and a portion of lot 411. A copy of the plat is included in this Grading and Drainage Plan.

B. Individual apartment buildings have been constructed on lot 408-A as shown on the drawings. The total area of the dwellings is about 3200 SF.

C. The lot fronts on Mountain Road, NW a platted public street, with pavement, and standard curbs and gutters. The rear of the lot faces a platted, 16 feet wide, dead-end alley, with access about 100 feet to the east to 7th Street, NW. Currently there is no sidewalk on the lot frontage, and the existing driveway cut is in need of repair. The owner states that he has been told that the sidewalks and drive cuts are to be replaced by a future city project.

D. A separate community parking area is provided for the apartments, providing for a total of 6 parking spaces. Access to the parking area is from Mountain Road. Currently the parking area is surfaced with gravel. There are no immediate plans for surfacing the parking area with impervious materials, but this drainage plan includes the parking area as impervious in the event it is to be paved in the future.

DRAINAGE CONSIDERATIONS:

A. The site is not located within the limits of the 100-year flood, see Flood Insurance Rate Map, panel 332 of 825. The site is within a Zone X, areas of 500 year flood; areas of 100 year flood with average depths of less than one foot or drainage areas of less than one square mile; and areas protected by levees from 100 year flood.

B. Prior to current building construction, the site was a vacant lot, as shown on the March 1976 aerial photograph. Any use of the lot prior to the aerial photograph of 1976 has not been determined. The aerial photograph shows that the historic flow path from the vacant lot was to the south, across the platted alley, through the private lot adjacent to the alley on the south, and onto Granite Street, then to the south on 8th Street. The alley is a dead end alley extending from the intersection with 7th Street to the east, and ending directly behind lot 408-A. The alley appears to have been platted as a dead end alley. A search of land records shows no alley having ever been platted, and existing buildings on the lots on Granite Avenue show no sign of a spacing indicating an alley. From this it is deduced that there can be no runoff discharge into the alley right-of-way because there is no drainage flow path exit from the alley over public right-of-way because the valley slopes downhill from its intersection with 7th Street to the end at the rear of lot 408-A. The drainage scheme presented in this plan does not require drainage into the alley except for very minor trickles which will be much less than any historic flow.

C. The buildings on the lot have all been constructed in locations as shown. The finished floor elevations of all buildings vary from 1.15 feet to 1.25 feet above the Mountain Road gutter flow line, measured from the high point on Mountain Road near the northeast corner of lot 408-A, and .43 feet higher than that at the low end of the gutter, near the northwest corner of the lot. There are paving block patios and paths within the lot providing a walkway from the parking area on Mountain Road to the surface of the pathway has a gentle slope towards the parking area. The parking area itself is presently gravelled. The rest of the lot is depressed from 4 to 8 inches below the path and patio elevations, up to one foot below the finished floor elevations of the buildings. The depressed areas are all landscaped with a variety of trees, shrubs, grass and other plantings.

D. As presently graded, there is some runoff which leaves the lot. The estimate of total runoff from the lot for the 100 year-6 hours storm is 1315.6 cubic feet (CF), which distributed evenly over the landscaped area (5474 SF) would be about 4 inches deep. The lack of walls or berms on all sides of the lot would allow some runoff to leave, and at the same time some runoff would enter from the adjacent lots to the east and west of lot 408-A.

E. Minor additions are suggested which will improve the on-site grading without the considerable expense of walling the compound. On the west side a short wall should be added between buildings 1 and 3, and on the east side a similar wall added between buildings 2 and 4. Roof runoff from the west side of buildings 1 and 3, and from the east side of buildings 2 and 4 should be directed by means of down spouts or swales to the landscaped areas interior to the new walls. The walls need only be to a height of the finished floor elevations or 2 to 3 inches less. Runoff will then accumulate within the landscaped areas until a surface elevation is reached which will permit the water to flow to the north between buildings 1 and 2, with the path providing an overflow channel toward the parking area. In the present condition, the gravelled parking area will then pass the flow to the Mountain Road gutter over the present driveway cut, which has an elevation of 4956.79. Overflow from the landscaped swales as presently exist along the south, east and west sides of the parking area will flow into the parking area and over the driveway cut.

F. When the sidewalk and new driveway are constructed on Mountain Road, care must be taken that the new driveway is placed at a correct low elevation. Criteria as stated in Albuquerque Standard Drawing 2425 would place the elevation of the driveway at the property line at 4957.20 (top of curb plus 2% times the distance from the back of the curb to the property line, or 57.06+1.14 at the center of the driveway). The top of the new driveway should be placed at elevations shown, 56.80 on the sides, 56.60 in the center. The parking area should also be graded to elevations as shown, particularly so if a hard surface is provided.

G. Runoff along the portions of the lot south of buildings 3 and 4 is also directed to landscaped areas within the area. The landscaped swale between buildings 3 and 4 should be kept at an elevation with will permit overflow from heavy precipitation to flow toward the north, and not into the alley. Runoff from the east and west sides of the buildings along the property lines will be collected within the landscaping adjacent to these buildings.

H. Runoff which enters the Mountain Road right-of-way will flow to the west to the inlets to the sub-surface storm drain system at Mountain Road and 8th Street, then into the major 66" pipe which flows to the south and west.



LEGAL DESCRIPTION: Lot numbered 408-A in Block 37, Perfecto Armijo and Brothers Addition, recorded June 12, 1992, V 92C, F117.

BENCHMARK: Station 12-J14A, a square cut into top of the WSW curb at the intersection of 7th Street and Mountain Road, NW, in the SW quadrant. Elevation 4957.76

SOILS:

Soils on the subdivision are identified by reference C as Glendale loam (Gk). The soils are suited for residential buildings and associated infrastructure. The soils have moderate shrink and swell characteristics, so care must be taken to direct runoff and landscape watering away from building foundations, or provide adequate foundation depth and waterproofing of footers.

CONCLUSIONS:

A. The proposed construction is not within a designated 100 year floodplain.

B. Construction as proposed will not increase the hazard from flooding to downstream facilities.

C. The proposed grading and construction will protect the property from any off-site or on-site runoff.

REFERENCES:

A. Standard Specifications for Public Works Construction, City of Albuquerque.

B. Section 22.2, Hydrology, of the Development Process Manual, Volume 2, Design Criteria, for the City of Albuquerque...Bernalillo County...AMAFA, January 1993.

C. Soil Survey of Bernalillo County and Parts of Sandoval and Valencia Counties, New Mexico, USDA-SCS.

D. Flood Insurance Rate Map, City of Albuquerque, Bernalillo County, Federal Emergency Management Agency, Panel 332 of 825, effective date: September 20, 1996.

RUNOFF FOR LOT 408-A, BLOCK 37, PERFECTO ARMIJO AND BROTHERS ADDITION DECEMBER 5, 1997

TABLE A

Runoff Estimate: For On-site Basin of .2611 acres

Land use	Runoff Factors		CURRENT USE				PROPOSED USE			
	Peak	Total	Area Percent	Peak Runoff	Total Runoff	Area Percent	Peak Runoff	Total Runoff	Area Percent	Peak Runoff
	CFS/acre	inches	SF	CFS	CF	SF	CFS	CF	SF	CFS
1 A	1.56	0.53	11374.00	100.0	0.4	502.4	0.00	0.0	0.0	0.0
2 B	2.28	0.78	0.00	0.0	0.0	0.0	5474.00	48.1	0.3	355.8
3 C	3.14	1.13	0.00	0.0	0.0	0.0	1000.00	8.8	0.1	94.2
4 D	4.70	2.12	0.00	0.0	0.0	0.0	4900.00	43.1	0.5	865.7
TOTALS			11374.00	100.000	0.4	502.4	11374.00	100.000	0.9	1315.6
			0.2611 acre				0.2611 acre			

NOTES:

a. Runoff factors from Section 22.2, DPM, January, 1993

b. Land use descriptions: A. Uncompacted soil

B. Lawn, shrubs

C. Compacted soil

D. Impervious areas

c. Peak runoff = Area (acres) x factor (CFS/acre) = CFS

d. Total runoff = Area (SF) x factor (inches) / 12 (inches / foot) = CF

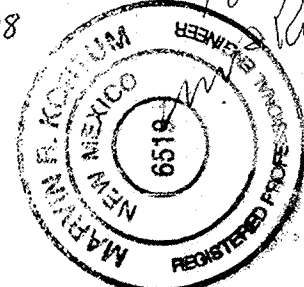
e. Peak and total runoff is based on 6 hour, 100 year frequency storm

I Certify that the construction as shown on this drawing reflects the as-built conditions of the work and that the construction is in substantial compliance with the design for Grading and Drainage Plan Number J14/D125. As-built elevations are as noted.

Marvin R. Kortum  
NMPE 6519

Date

FEB 11, 1998



LEGEND

	Existing	Proposed
Spot Elevation	4957	64.25
Top of Curb	4957	TC
Flow Line Invert	4957	FL
Finished Floor Elevation	4957	FFE
Contour Line	4957	64
Property Line		
Lot Number		5
Structure		
Curb and Gutter		
Driveway		

PRELIMINARY  
APPROVALS REVISIONS  
BY DATE  
MARVIN R. KORTUM, P.E.  
Civil Engineering  
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GRADING AND DRAINAGE PLAN  
LOT 408-A  
718 MOUNTAIN RD. NW