



# ***City of Albuquerque***

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

**May 3, 1995**

**Jud Lee  
Isaacson & Arfman  
128 Monroe NE  
Albuquerque, NM 87108**

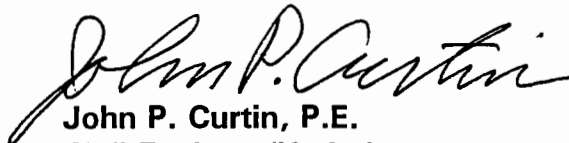
**RE: ENGINEER'S CERTIFICATION FOR MOUNTAIN RIDGE SUBD (REDACTED)  
RECEIVED APRIL 5, 1995 FOR FINANCIAL GUARANTY RELEASE  
ENGINEER'S STAMP DATED APRIL 5, 1995**

**Dear Mr. Lee:**

**Based on the information included in the submittal referenced above, City Hydrology accepts the Engineer's Certification of grading & drainage for City Project Number 4976.90. Contact the DRC Chairman, Billy Goolsby, to obtain the Financial Guaranty Release.**

**If I can be of further assistance, You may contact me at 768-2727.**

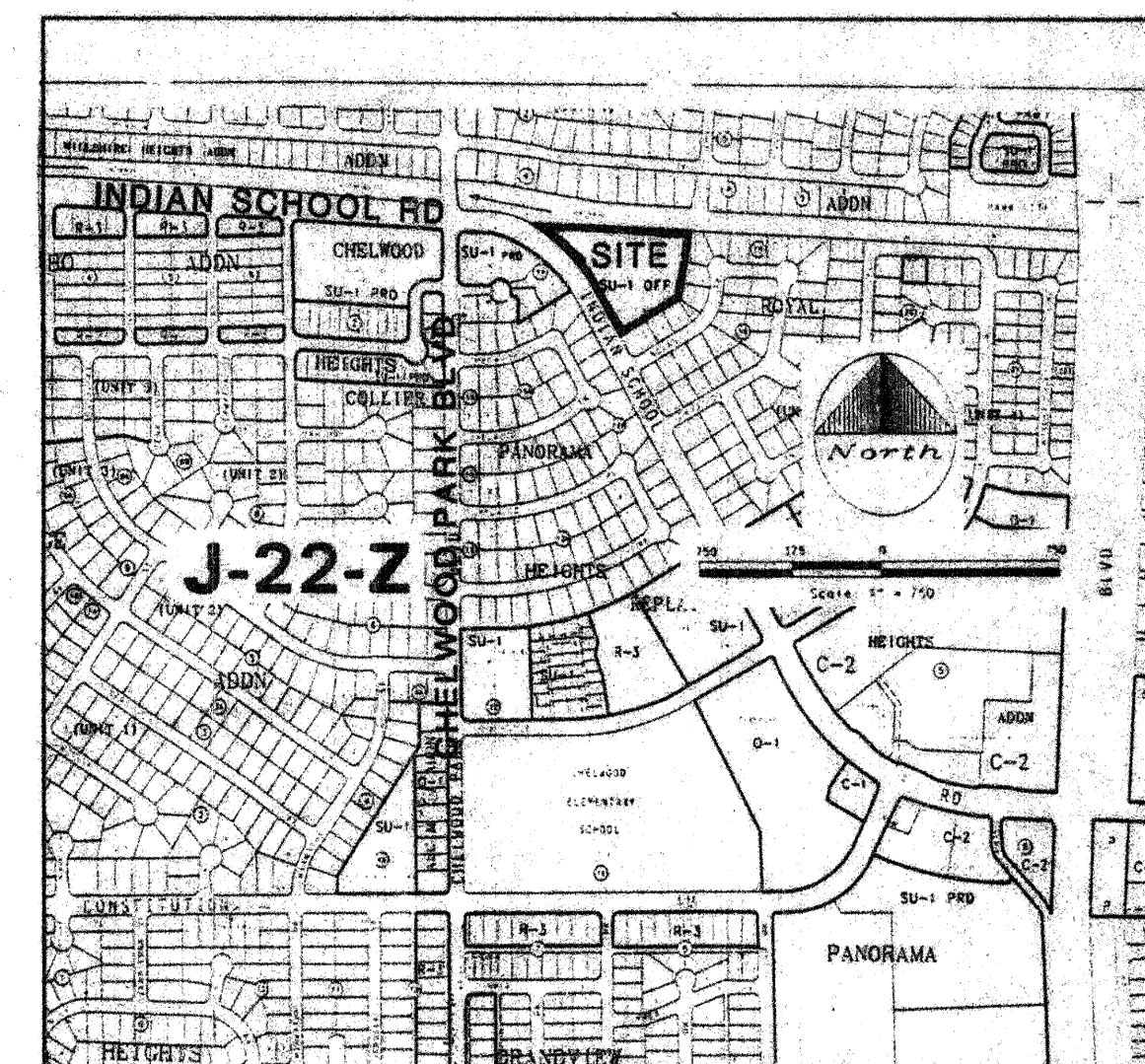
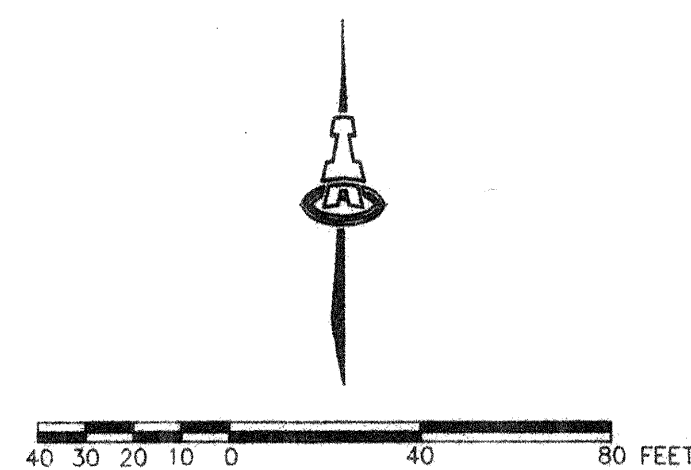
**Sincerely,**

  
**John P. Curtin, P.E.  
Civil Engineer/Hydrology**

**c: Andrew Garcia  
Billy Goolsby, CPN 4976.90**



□	FND. RBR.W/CAP "LS 10025"	—+—	TC EL. OVER FLOWLINE EL.
○	FND. 1" PIPE	----	FUTURE PCC SDOWK.
⊙	SET 5/8" RBR.W/CAP ALS "LS 7719"	~~~~~	PROPOSED CONTOUR
●	FND.1/2" RBR.	◆ 16.2	PROPOSED SPOT ELEV.
●	FND.RBR.W/CAP "LS 6446"	FL	FLOW LINE ELEV.
=	EXISTING CURB & GUTTER	PG:	PAD GRADE
10.44	EXISTING SPOT ELEV.	→	FLOW DIRECTIONAL ARROW
~~~~~	EXISTING CONTOUR	▬▬▬	OFFSITE EARTHEN DRAINAGE SWALE
▬▬▬	PROPERTY LINE/CORNER	----	DRAINAGE BASIN BOUNDARY
▬▬▬	RIGHT-OF-WAY	-----	RETAINING WALL
▬▬▬	CURB & GUTTER	▬▬▬	WATER BLOCK
▬▬▬	STREET CENTERLINE		



VICINITY MAP

SCALE: 1"=750'

## GENERAL NOTES

LEGAL DESCRIPTION: TRACT 1-A, REPLAT OF BLOCK 1 AND LOTS 1 TO 9, BLOCK 2 OF PANORAMA HEIGHTS,  
FILED IN VOL. C7, FOLIO 194 ON JANUARY 29, 1970.

ENGINEER: ISAACSON & ARFMAN, P.A.  
128 MONROE STREET NE  
ALBUQUERQUE, NM 87108

SURVEYOR: ALDRICH LAND SURVEYING  
ATTN: TIM ALDRICH, NMPLS NO. 7719  
(505) 884-1990

BENCHMARK: ACS CONTROL STATION "1-J23A" LOCATED IN THE NORTH MEDIAN OF TRAMWAY BLVD. 182  
FEET NORTH OF THE CENTER LINE OF INDIAN SCHOOL ROAD NE.  
ELEVATION: 5840.71

ZONING: RT.

PROPOSED: 20 SINGLE FAMILY RESIDENTIAL LOTS.

AREA: 3.58 AC.

FLOOD HAZARD: NO PART OF THIS PROPERTY LIES WITHIN A F.E.M.A. 100-YEAR FLOOD BOUNDARY AS DETERMINED BY THE OCTOBER 14, 1983 EDITION OF THE F.E.M.A. MAPS.

LOCATION & DESCRIPTION: THE SITE IS CURRENTLY 100% UNDEVELOPED WITH SPARSE GROUND COVER. THE SITE IS BOUNDED ON THE NORTH BY THE EMBUDO ARROYO, INDIAN SCHOOL ROAD ON THE WEST, AND DEVELOPED PROPERTY TO THE SOUTH AND EAST.

EXISTING CONDITIONS: THE SITE CURRENTLY DRAINS TO THE WEST TO INDIAN SCHOOL ROAD. THE EXISTING 100-YEAR DISCHARGE IS 7.7 CFS.

PROPOSED IMPROVEMENTS: THE AREA WILL BE IMPROVED W/ PAVED STREETS, WATER & SANITARY SEWER ALL BUT THREE OF THE PROPOSED LOTS ARE TO DRAIN TO THE EMBUDO ARROYO BY MEANS OF MOUNTAIN RIDGE COURT. BACKYARD PONDING WILL BE EXECUTED IN A FEW LOTS WHERE BACK PROPERTY ELEVATIONS ARE LOWER THAN THE HOUSE PAD. ALL OTHER LOTS WILL DRAIN 100% TO THE STREET.

HYDROLOGY: THE PROPOSED SUBDIVISION IS WITHIN AN AREA WITH THE FOLLOWING PRECIPITATION VALUES (ZONE 4).

P60 = 2.23 IN  
P360 = 2.90 IN  
P1440 = 3.65 IN

THE LAND TREATMENTS ARE:  
 DENSITY =  $20/3.58 = 5.58$  DU/AC  
 $\%D = 7 \sqrt{(5.58)^2 + 5(5.58)} = 54\%$   
 SPLIT REMAINDER BETWEEN B & C.  
 SO,  
 $Q = 0.54(3.58)(5.25)$   
 $+ 0.23(3.58)(3.73)$   
 $+ 0.23(3.58)(2.92)$   
 $= 15.6$  CFS

THE TOTAL RUNOFF GENERATED BY THE 100-YEAR STORM IS 15.6 CFS FOR THE 3.58 AC AREA. THIS CORRESPONDS TO 0.78 CFS/LOT. OF THIS TOTAL, A VERY SMALL PORTION, 2.2 CFS DRAINS WEST TO INDIAN SCHOOL ROAD. THE REMAINDER, 13.4 CFS, DRAINS TO MOUNTAIN RIDGE CREEK AND ULTIMATELY TO THE EMBUDO ARROYO. THE FLOWS WILL BE TRANSMITTED FROM THE CUL-DE-SAC TO THE ARROYO BY MEANS OF SIDEWALK CULVERTS AND AN ASPHALT LINED DITCH THAT IS DETAILED ON SHEET #5

THE STREET HYDRAULICS FOR MOUNTAIN RIDGE COURT ARE AS FOLLOWS. THE ULTIMATE CAPACITY FOR THE 28" FF SECTION AT 0.5% IS 58.4 CFS. THE NORMAL DEPTH OF THE 100-YEAR FLOW IS ONLY 0.36'. THE EGL ELEVATION AT THIS DEPTH IS 0.48' WITH A VELOCITY OF 2.4 FPS.

ULTIMATE STREET CAPACITY FOR THE 28 F-F SECTION @ S=0.5%.

$$Q = 1.49/n AR^{2/3} S^{1/2}$$
$$A = Z[1/2(14)(0.28) + 14(0.39)] = 14.84 \text{ ft}^2$$
$$R = A/WP = 14.84/2(0.67) + 28 = 0.506$$

$$Q_{CAP} = 1.49 / 0.017 (14.84)(0.506)^{2/3} (0.005)^{1/2} = 58.4 \text{ cfs}$$

NORMAL DEPTH FOR  $Q_{100} = 0.39'$

$$A = Z[1/2(14)(0.28) + (0.11)] = 7.0 \text{ ft}^2$$

$$R = A/WP = 7.0/2(0.39) + 28 = 0.243$$

$$Q_{\text{NORM}} = 1.49 / 0.017 (7.0) (0.243)^{2/3} (0.005)^{1/2} = 16.9 \text{ cfs}$$

$$V_{\text{NORM}} = Q/A = 16.9/7 = 2.41 \text{ FPS}$$

$$\text{EGL} = V^2/2g + D = (2.41)^2/2(32.7) + 0.39 = 0.48'$$

RUNDOWN HYDRAULICS  $\Rightarrow S = 0.55\%$   
 FLOW AREA  $= 2[1/2(5)(0.5)] + 0.5(4) = 4.5 \text{ ft}^2$   
 $WP = 2(5) + 4 = 14'$   $R = 4.5/14 = 0.32'$   
 $Q_{CAP} = 1.49/0.015 (4.5)(0.32)^{2/3} (0.0055)^{1/2} = 16.6 \text{ cfs}$   
 $V = 16.6/4.5 = 3.7 \text{ fps}$

### ENGINEER'S CERTIFICATION

I, Fred C. Arfman, licensed under the laws of the State of New Mexico, do hereby certify that this project was constructed in substantial compliance with those grades and improvements shown on the approved plan for the Mountain Ridge Subdivision dated July 26, 1994 on file with the Hydrology Division, P.W.D., City of Albuquerque (J-22/D57) as field verified by Aldrich Land Surveying on December 12, 1994 in accordance with the "New Mexico Engineering and Surveying Act", Section 61-23-1 through 61-23-32 NMSD (1978).

Retaining walls were required at designated locations along the project perimeter and interior lot lines as shown on said Grading Plan. Said Surveyor field verified wall improvements on March 22, 1998.

Fred C. Arfman  
Fred C. Arfman, NMPE No. 7322

APRIL 5, 1995  
Date

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AGE PLAN													
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