

**DRAINAGE CERTIFICATION:**

I, LEVI J. VALDEZ, N.M.P.E. NO. 5693, HEREBY CERTIFY THAT THIS PROJECT HAS BEEN GRADED AND WILL DRAIN IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED PLAN DATED OCTOBER 2, 2006. THE RECORD INFORMATION EDITED ONTO THE ORIGINAL DESIGN DOCUMENT HAS BEEN OBTAINED BY ME OR UNDER MY DIRECT SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. THIS CERTIFICATION IS SUBMITTED IN SUPPORT OF A REQUEST FOR PERMANENT CERTIFICATION OF OCCUPANCY.

THE RECORD INFORMATION PRESENTED HEREON IS NOT NECESSARILY COMPLETE AND INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THE GRADING AND DRAINAGE ASPECTS OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSES.

Levi J. Valdez  
LEVI J. VALDEZ, N.M.P.E. NO. 5693

06-27-06  
DATE

"AS-BUILT" ELEVATIONS  
MINOR TYPED (5782)

SEAL

**TABLE A-1. PRECIPITATION ZONES**

| ZONE | LOCATION  |
|------|---|
| 1    | West of the Rio Grande  |
| 2    | Between the Rio Grande and San Mateo  |
| 3    | Between San Mateo and Eubank, North of Interstate 40, and between San Mateo and the East boundary of Range 4 East, South of Interstate 40 |
| 4    | East of Eubank, North of Interstate 40, and East of the East boundary of Range 4 East, South of Interstate 40                             |

**TABLE A-4. LAND TREATMENTS**

| Treatment | Land Condition   |
|-----------|--|
| A         | Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. Unfertilized Arroyos.   |
| B         | Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.  |
| C         | Soil uncompacted by human activity. Minimal vegetation. Upward parking, roads, trails. Most vacant lots. Gravel or rock on plastic (except landscaping). Irrigated lawns and parks with slopes greater than 10 percent. Native grasses, weeds, and shrubs, and soil uncompacted by human activity with slopes at 20 percent or greater. Native grass, weed and shrub areas with clay or clay loam soils and other soils of very low permeability as classified by SCS Hydrologic Soil Group D. |
| D         | Impervious areas, pavement and roofs.  |

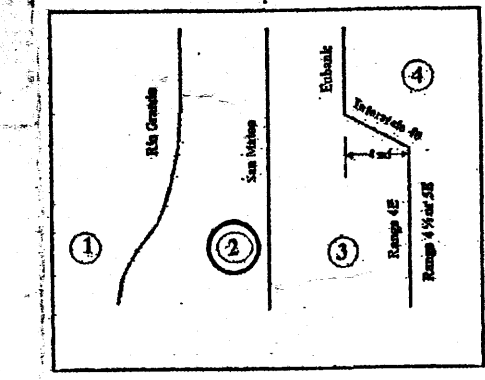
Most watersheds contain a mix of land treatments. To determine proportional treatments, measure respective subareas. In lieu of specific measurement for treatment D, the area percentages in TABLE A-5 may be employed.

**TABLE A-10. PEAK INTENSITY (IN/Hr AT 1-10-2 hour)**

| Zone | Intensity | 100-YR (2-YR, 10-YR) |
|------|-----------|----------------------|
| 1    | 4.70      | (1.84, 3.14)         |
| 2    | 5.05      | (2.04, 3.41)         |
| 3    | 5.38      | (2.31, 3.65)         |
| 4    | 5.61      | (2.34, 3.87)         |

**TABLE A-9. PEAK DISCHARGE (cfs/acre)**

| Zone | Treatment            |                      |                       |                      |
|------|----------------------|----------------------|-----------------------|----------------------|
|      | A                    | B                    | C                     | D                    |
| 1    | 2.29<br>(0.00, 0.24) | 2.03<br>(0.33, 0.76) | 2.87<br>(0.47, 1.49)  | 4.37<br>(1.69, 2.89) |
| 2    | 1.36<br>(0.03, 0.38) | 2.28<br>(0.08, 0.95) | 3.14<br>(0.60, 1.71)  | 4.70<br>(1.86, 3.14) |
| 3    | 1.87<br>(0.00, 0.58) | 2.60<br>(0.21, 1.19) | 3.45<br>(0.78, 2.009) | 5.02<br>(2.04, 3.39) |
| 4    | 2.20<br>(0.05, 0.87) | 2.92<br>(0.38, 1.45) | 3.73<br>(0.00, 2.25)  | 5.25<br>(2.17, 3.57) |



**EROSION CONTROL MEASURES:**

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT OF STORM RUNOFF DURING CONSTRUCTION. HE SHALL ENSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

- ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY CONSTRUCTION OF BERMS, DIKES, SWALES, PONDS, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUNOFF FROM LEAVING THE SUBJECT SITE AND ENTERING ADJACENT PROPERTIES.
- ADJACENT PUBLIC RIGHT-OF-WAYS SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUNOFF FROM THE SUBJECT SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER PUBLIC STREET RIGHT-OF-WAYS.
- THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY AND ALL SEDIMENT FROM PUBLIC STREETS THAT HAS BEEN ERODED FROM THE SUBJECT SITE AND DEPOSITED THEREON.

- CONSTRUCTION NOTES:**
- TWO WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 260-1990 FOR THE ACTUAL FIELD LOCATION OF THE EXISTING SURFACE OF SUB-SURFACE UTILITIES.
  - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION(S) OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM OF DELAY.
  - ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
  - ALL CONSTRUCTION WITHIN PUBLIC STREET RIGHT-OF-WAY(S) SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE/BERNALILLO COUNTY STANDARDS AND PROCEDURES.

**LEGEND:**

TOP OF CURB ELEVATION = 72-57.22  
CURB FLOWLINE ELEVATION = 72-56.58  
EXISTING SPOT ELEVATION = 72-56.3  
EXISTING CONTOUR ELEVATION = 72-56.0  
PROPOSED SPOT ELEVATION = 72-56.52  
PROPOSED CONTOUR ELEVATION = 72-56.0  
PROPOSED OR EXISTING CONCRETE SURFACE = 72-56.0  
EXISTING FENCE LINE = 72-56.0

**GENERAL NOTES:**

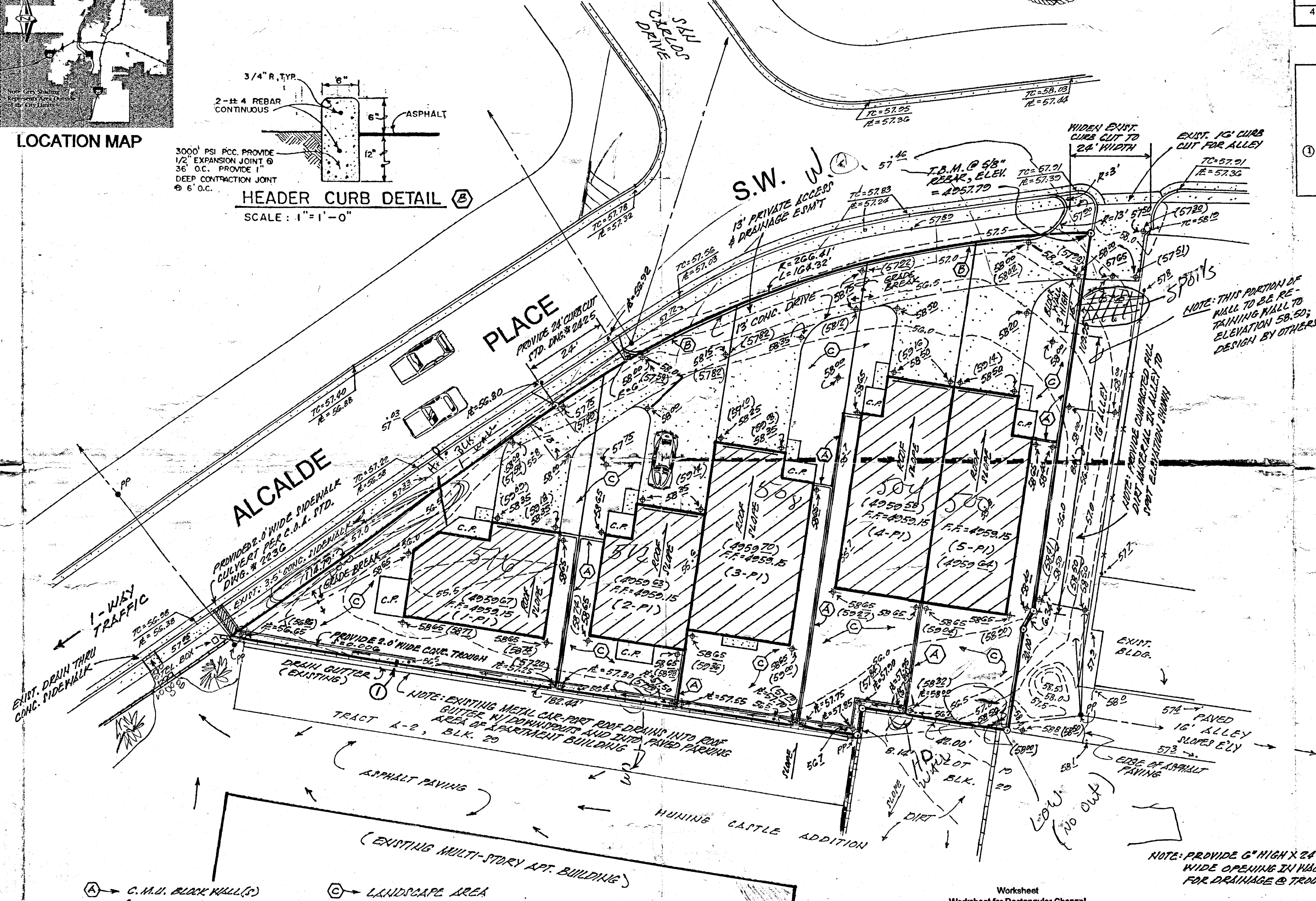
- NO PERIMETER BOUNDARY CORNERS HAVE BEEN FIELD ESTABLISHED PER THIS SURVEY OF THE SUBJECT PROPERTY.
- NO SEARCH HAS BEEN MADE FOR EASEMENTS OF RECORD OTHER THAN SHOWN HEREON.

Drainage Facilities within City Right-of-Way Notice to Contractor

- An excavation permit will be required before beginning any work within City Right-Of-Way.
- All work on this project shall be performed in accordance with applicable federal, state and local laws, rules and regulations concerning construction safety and health.
- Two working days prior to any excavation, the contractor must contact the line locating service, New Mexico One Call 260-1990, for the location of existing utilities.
- Prior to construction, the contractor shall excavate and verify the locations of all obstructions. Should a conflict exist, the contractor shall notify the engineer so that the conflict can be resolved with a minimum amount of delay.
- Backfill compaction shall be according to traffic/street use.
- Maintenance of the facility shall be the responsibility of the owner of the property being served.
- Work on arterial streets shall be performed on a 24-hour basis.

| APPROVALS           | NAME | DATE |
|---------------------|------|------|
| HYDROLOGY INSPECTOR |      |      |

**NOTE:** ALL WORK WITHIN PUBLIC EASEMENT SHALL BE PERFORMED UNDER SEPARATE PERMIT.



**DRAINAGE COMMENTS:**

As shown on the Vicinity Map hereon, the subject site is located on the South side of Alcalde Place S.W., one-half block North of Coal Avenue S.W., in the City of Albuquerque, New Mexico, (Zone Atlas Map "K-13-Z").

The subject site is presently a vacant lot. The proposed plan as shown hereon, is to construct Five (5) townhome units on said property together with associated improvements thereon.

The subject site, 1, is located within Zone "X" and is not located within a Special Flood Hazard Boundary as indicated by F.E.M.A. Firm Panel 333 of 825, 2, does not contribute to off-site flows of adjacent properties, 3, accepts minimal off-site flows from the adjacent 16' underground public alley lying East of the subject site, 4, developed flows to be free-discharged will not have an adverse impact to downstream flooding conditions (Zone A.O. Depth 1').

**CALCULATIONS:**

Per Section 22.2, Hydrology of the Development Process Manual, Vol.2, Design Criteria for the City of Albuquerque, Bernalillo County, New Mexico.

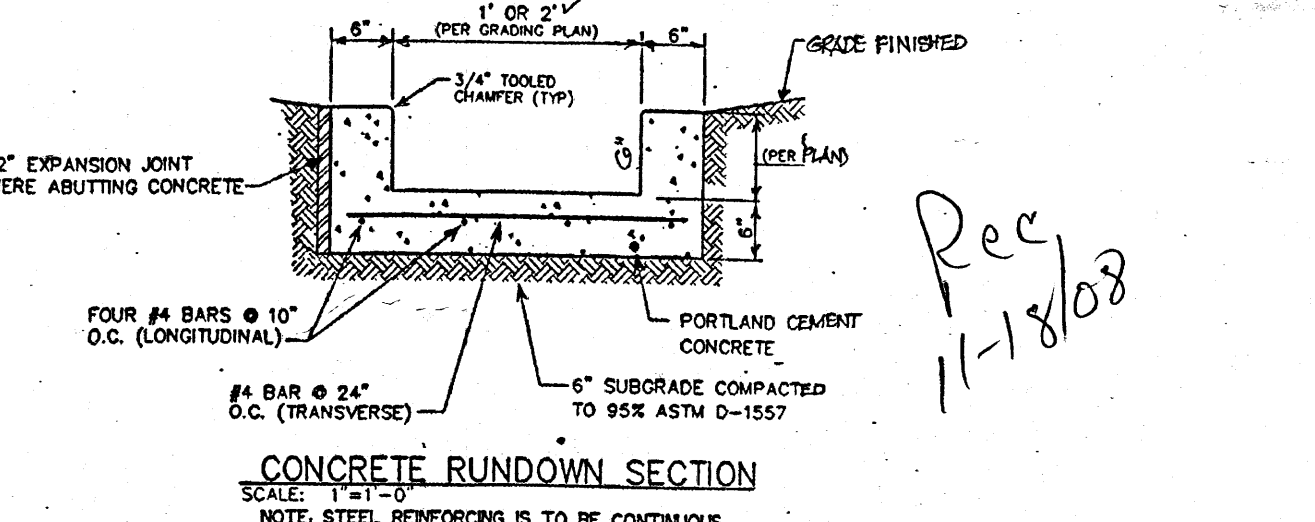
Site Area: 0.48 Acre  
Precipitation Zone: Two (2)  
Peak Intensity: 10.14 in/hr at Tc = Twelve (12) Min., 100-Yr. 6Hr = 5.05  
Land Treatment Method for the Calculations of "Qp", Tables A-8 & A-9.  
Land Treatment Factors, Table A-4

**EXISTING CONDITIONS:**

| TREATMENT       | AREA/ACRES | FACTOR | CFS         |
|-----------------|------------|--------|-------------|
| C               | 0.48       | X      | 3.14 = 1.51 |
| D               | 0.00       | X      | 4.70 = 0.00 |
| "Qp" = 1.51 CFS |            |        |             |

**PROPOSED DEVELOPED CONDITIONS:**

| TREATMENT           | AREA/ACRES | FACTOR | CFS         |
|---------------------|------------|--------|-------------|
| C                   | 0.19       | X      | 3.14 = 0.60 |
| D                   | 0.29       | X      | 4.70 = 1.36 |
| "Qp" = 1.96 CFS     |            |        |             |
| INCREASE = 0.45 CFS |            |        |             |



**GRADING AND DRAINAGE PLAN**

"ENGINEER'S CERTIFICATION"

A PROPOSED PLAN  
FOR  
ALCALDE TOWNHOMES  
(ALCALDE PLACE S.W.)  
ALBUQUERQUE, NEW MEXICO  
AUGUST, 2006

Rec 11-18-08

516 ALCALDE S.W.

795280

**Project Description**

|              |                           |
|--------------|---------------------------|
| Project File | c:\asst\firm\winning c.m2 |
| Worksheet    | CHANNEL 1                 |
| Flow Element | Rectangular Channel       |
| Method       | Manning's Formula         |
| Solve For    | Channel Depth             |

**Input Data**

|                       |          |
|-----------------------|----------|
| Manning's Coefficient | 0.013    |
| Channel Slope         | 0.8410 % |
| Bottom Width          | 2.00 ft  |
| Discharge             | 0.98 cfs |

**Results**

|                       |               |
|-----------------------|---------------|
| Depth                 | 0.10 ft       |
| Flow Area             | 0.20 ft²      |
| Wetted Perimeter      | 2.20 ft       |
| Top Width             | 2.00 ft       |
| Critical Depth        | 0.10 ft       |
| Critical Slope        | 0.00022 ft/ft |
| Velocity              | 1.83 ft/s     |
| Velocity Head         | 0.05 ft       |
| Specific Energy       | 0.15 ft       |
| Froude Number         | 1.03          |
| Flow is supercritical |               |

**LEGAL DESCRIPTION:**

Lots 1-P1 thru 5-P1, inclusive, of the Replat of Tract A-1, Block 29, of HUNING CASTLE ADDITION, Albuquerque, New Mexico.

**BENCHMARK REFERENCE:**

ACS Station "7-K13" located at the intersection of Alcalde Drive S.W. and Tingley Drive S.W.; Elevation = 4996.95 (Project T.B.M. as shown on the plan hereon).

