

DRAINAGE PLAN

The following items concerning the Van Ausdal Residence Drainage Plan are contained hereon:

1. Vicinity Map 2. Grading Plan 3. Calculations

As shown by the Vicinity Map, the site is located on the south side of Laguna Blvd. S.W. between West Central Avenue S.E. and Chacoma Place S.W. As shown by Plate J-13 of the Albuquerque Master Drainage Study, (AMDS), this site does not lie within or adjacent to a designated Flood Hazard Zone, however, downstream flooding is shown. It appears that this situation has been alleviated by construction of System 125-01A (AMDS) which had the purpose of lowering the hydraulic grade line in the Laguna Boulevard storm sewer.

The Grading Plan shows 1) existing and proposed grades indicated by spot elevations, 2) continuity between existing and proposed grades, and 3) the limit and character of the proposed improvements. At present, the site drains from northwest to southeast onto Laguna Boulevard S.W. From that point, the runoff drains southwest into an existing inlet on the northwest corner of Laguna Boulevard S.W. and Chacoma Place S.W. No offsite flows enter the site from the northwest or southwest because of an existing wall that borders the property line. An existing 4" FVC drainline carries runoff from an existing detention pond adjacent to the north property corner. This pipe carries runoff under and across the project site onto Laguna Boulevard S.W. No offsite flows enter the site to the southeast due to the presence of the adjacent developed street.

As shown by this plan, the proposed improvements consist of a building, landscaping, and minor paving. The runoff generated from the proposed improvements will continue to drain in the same fashion as existing. The existing 4" PVC drain line will be relocated 12' to the northeast and will continue to drain into Laguna Boulevard S.W. This will be accompanied by a vacation

The Calculations which appear hereon analyze both the existing and developed conditions for the 100-year, 6-hour rainfall event. The Rational Method has been used to quantify the peak rate of discharge and the SCS Method has been used to quantify the volume of runoff. Both Methods have been used in accordance with the City of Albuquerque Development Process Manual, Volume II, and the Mayor's Emergency Rule adopted January 14, 1986. As shown by these calculations, the proposed improvements will result in a negligible net increase in peak runoff by 0.2 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 30: Bt - Brazito Hydrologic Soil Group: A Existing Pervious CN = 54 (DPM Plate 22.2 C-2 Pasture or Range Land: fair condition)

Developed Pervious CN = 39 (DPM Plate 22.2 C-2 Time of Concentration/Time to Peak

 $T_C = 0.0078 L^{0.77}/S^{0.385}$ (Kirpich Equation)

 $T_p = T_c = 10 \text{ min.}$

Point Rainfall

 $P_6 = 2.22$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: Q = CiA

where C varies $i = P_6 (6.84) T_C^{-0.51} = 4.69 in/hr$ $P_6 = 4.69 \text{ in (DPM Plate 22.2D-1)}$ $T_C = 10 \text{ min (minimum)}$

SCS Method

Volume: V = 3630(DRO) A

A = area, acres

Where DRO = Direct runoff in inches A = area, acres

Existing Condition

 $A_{total} = 5,760 \text{ sf} = 0.13 \text{ Ac}$ Undeveloped area = 5,760 sf (1.0) C = 0.40 (Weighted average per Emergency Rule, 1/14/86)

 $Q_{100} = CiA = 0.2 cfs$ Composite CN = 54 (DPM Plate 22.2 C-3) DRO = 0.05 in (DPM Plate 22.2 C-4)

 $V_{100} = 3630 \text{ (DRO)} A = 24 \text{ cf}$

Developed Condition

Atotal = 5,760 sf = 0.13 Ac Roof area = 3,345 sf (0.58)

Paved area = 610 sf (0.11)Landscaped area = 1.805 sf (0.31)

C = 0.70 (Weighted average per Emergency Rule, 1/14/86) $Q_{100} = CiA = 0.4 cfs$ $A_{imp} = 3,955 \text{ sf; } impervious = 69$

Composite CN = 79 (DPM Plate 22.2 C-3) DRO = 0.68 in (DPM Plate 22.2 C-4)

V100 = 3630 (DRO)A = 320 cf

Comparison

 $\triangle Q_{100} = 0.4 - 0.2 = 0.2 \text{ cfs (increase)}$ $\Delta V_{100} = 320 - 24 = 296$ (increase)

CONSTRUCTION NOTES:

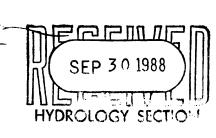
- 1. TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE 765-1234, FOR LOCATION OF EXISTING UTILITIES.
- 2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HOPIZONTAL AND VERTICAL LOCATION OF ALL POTENTIAL OBSTRUCTIONS. SHOULD A CONFLICT EXIST. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
- 3. 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.
- 4. ALL CONSTRUCTION WITHIN PUBLIC RIGHT-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE STANDARDS AND PROCEDURES.
- 5. IF ANY UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES ARE SHOWN ON THESE DRAWINGS, THEY ARE SHOWN IN AN APPROXIMATE MANNER ONLY, AND SUCH LINES MAY EXIST WHERE NONE ARE SHOWN. IF ANY SUCH EXISTING LINES ARE SHOWN, THE LOCATION IS BASED UPON INFORMATION PROVIDED BY THE OWNER OF SAID UTILITY, AND THE INFORMATION MAY BE INCOMPLETE, OR MAY BE OBSOLETE BY THE TIME CONSTRUCTION COMMENCES. THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE, OR TYPE OF EXISTING UTILITY LINES, PIPELINES, OR UNDERGROUND UTILITY LINES, MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM ITSELF OF THE LOCATION OF ANY UTILITY LINE, PIPELINE, OR UNDERGROUND UTILITY LINE IN OR NEAR THE AREA OF THE WORK IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. IN PLANNING AND CONDUCTING EXCAVATION, THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES, MUNICIPAL AND LOCAL ORDINANCES, RULES AND REGULATIONS IF ANY, PERTAINING TO THE LOCATION OF THESE LINES AND FACILITIES.
- 6. AN EXCAVATION/CONSTRUCTION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY. AN APPROVED COPY OF THESE PLANS MUST BE SUBMITTED AT THE TIME OF APPLICATION FOR THIS PERMIT.
- 7. BACKFILL COMPACTION SHALL BE ACCORDING TO RESIDENTIAL STREET USE.
- 8. MAINTENANCE OF THESE FACILITIES SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY

EROSION CONTROL MEASURES

- 1. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE SITE INTO PUBLIC RIGHT-OF-WAY OR ONTO PRIVATE PROPERTY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AT THE PROPERTY LINES AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
- 2. THE CONTRACTOR SHALL PROMPTLY CLEAN UP ANY MATERIAL EXCAVATED WITHIN THE PUBLIC RIGHT-OF-WAY SO THAT THE EXCAVATED MATERIAL IS NOT SUSCEPTIBLE TO BEING WASHED DOWN THE STREET.
- 3. THE CONTRACTOR SHALL SECURE "TOPSOIL DISTURBANCE PERMIT" PRIOR TO BEGINNING CONSTRUCTION.

APPROVALS	<u>NAME</u>	DATE
A.C.E./ DESIGN		
INSPECTOR		
A.C.E./FIELD		





JOB NO. 880743

9 - 1988



GRADING & DRAINAGE PLAN

G.C.J. DESIGN BY C.V.M. J. G. **M**. APPROVED BY

VAN AUSDAL RESIDENCE

