

FILE COPY



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

August 7, 1990

Jeff Mortensen, P.E.
Jeff Mortensen & Associates, Inc.
6010-B Midway Park Boulevard, NE
Albuquerque, New Mexico 87109

RE: REVISED DRAINAGE PLAN FOR MANZANO ANIMAL CLINIC
(J-21/D31) REVISION DATED JULY 23, 1990

Dear Mr. Mortensen:

Based on the information provided on your resubmittal of July 24, 1990, revisions as indicated are acceptable.

If the building permit has already been issued, it is your responsibility to make sure that the contractor is given a copy of the revised plan.

If I can be of further assistance, please feel free to call me at 768-2650.

Cordially,

Fred J. Aguirre
for Fred J. Aguirre, P.E.
Hydrologist

BJM:FJA/bsj
(WP+1349)

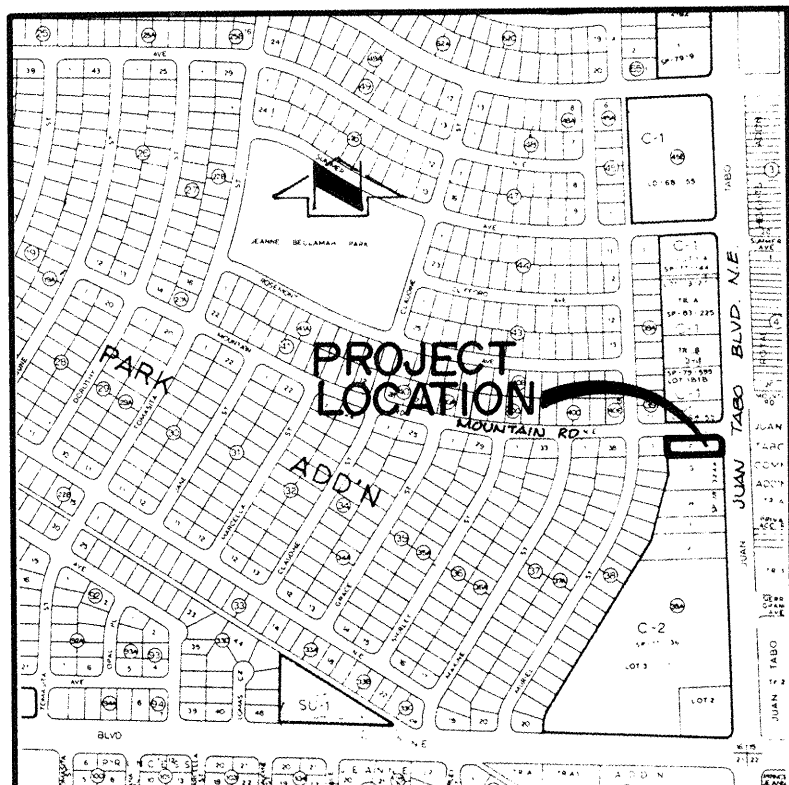
PUBLIC WORKS DEPARTMENT

Walter H. Nickerson, Jr., P.E.
Assistant Director Public Works

ENGINEERING GROUP

Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER



VICINITY MAP

SCALE: 1" = 800'

PROJECT BENCHMARK

B.M. # 5-J 22A - A SQUARE, "I", CHISELED ON TOP OF CONCRETE CURB AT THE S&E RETURN OF THE INTERSECTION OF JUAN TABO BLVD. N.E. AND MOUNTAIN ROAD N.E.
ELEVATION: 5584.86 FEET (M.S.L.D.)

T.B.M.

TOP OF CURB ELEVATION LOCATED AT THE WSW RETURN OF THE INTERSECTION OF MOUNTAIN RD. NE. AND JUAN TABO BLVD. N.E. AS SHOWN ON THE DRAWING BELOW
ELEVATION: 5584.86 FEET (M.S.L.D.)

LEGAL DESCRIPTION

LOT "F", BLOCK 38A, DALE J. BELLAMAH'S PRINCESS JEANNE PARK

LEGEND

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- EXISTING CONTOUR
- PROPOSED CONTOUR
- EXISTING SIDEWALK
- PROPOSED CONCRETE
- PROPOSED ASPHALT
- PROPOSED BUILDING ADDITION
- TOP OF CONCRETE
- FLOWLINE
- BASIN BOUNDARY
- PROPOSED RETAINING WALL

DRAINAGE PLAN

The following items concerning the Manzano Animal Clinic Grading and Drainage Plan are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

As shown by the Vicinity Map, the site is located at the southwest corner of the intersection of Juan Tabo Boulevard N.E. and Mountain Road N.E. At present, the site is developed residentially and commercially making this a modification to an existing site within an infill area. As shown by Plate 21 of the Albuquerque Master Drainage Study, this site does not lie within a designated flood hazard zone. This site does lie adjacent to a designated flood zone in Juan Tabo Boulevard N.E. The proposed development, however, will not contribute runoff to this apparent flooding condition. At present, the runoff generated by Basin 1 drains to a depressed area within the parking lot. Runoff generated by Basin 2 drains from south to north onto Mountain Road N.E. Mountain Road N.E. drains westerly to Muriel Street N.E. From that point, runoff flows south to Iomas Boulevard N.E. where there is a public storm drainage system. No offsite flows are anticipated from the north and east property lines because the existing streets appear to route runoff away from the project site. No offsite flows enter the site along the south and west property lines because the site is topographically higher than the adjacent properties.

The grading plan shows 1) existing grades and proposed grades indicated by spot elevations and contours at 1'0" intervals, 2) the limit and character of the existing improvements, 3) the limit and character of the proposed improvements, and 4) continuity between existing and proposed grades. As shown by this plan, the proposed improvements consist of the construction of a new addition to the existing building along with adjacent paving and landscaping. Runoff generated by Basin 1 will be routed from south to north onto Mountain Road N.E. From that point, the runoff will flow to the west as discussed above. Runoff generated by Basin 2 will be routed from south to north onto Mountain Road N.E. From that point, the runoff will flow west as discussed above. Based upon the fact that this site is a modification to an existing site within an infill area, the proximity of downstream facilities, and the minor increase in runoff anticipated, the free discharge of runoff from this site is appropriate.

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 in Basin 1 will decrease the peak discharge by approximately 0.4 cfs. The increase in runoff from Basin 2 will be approximately 0.7 cfs. The net increase in runoff will be 0.3 cfs.

CALCULATIONS

Ground Cover Information

From SCS Bernalillo County Soil Survey, Plate 32, T8B - Tijeras gravelly fine sandy loam
Hydrologic Soil Group: B
Existing Pervious CN = 70 (DPM Plate 22.2 C-2)
Pasture or Range Land: fair condition
Developed Pervious CN = 61 (DPM Plate 22.2 C-2)
Open Space: good condition

Time of Concentration/Time to Peak

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

$T_p = T_c = 10$ min.

Point Rainfall

$P_g = 2.48$ in. (DPM Plate 22.2 D-1)

Rational Method

Discharge: $Q = CIA$

where C varies

$I = P_g (6.84) T_c^{-0.51} = 5.24$ in/hr
 $P_g = 2.48$ in (DPM Plate 22.2D-1)
 $T_c = 10$ min (minimum)
A = area, acres

SCS Method

Volume: $V = 1.48(DRO)A$

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

Existing Condition

Basin 1

Atotal = 8,820 sf = 0.20 Ac
Roof area = 3,200 sf (0.36)
Paved area = 5,350 sf (0.61)
Landscaped area = 270 sf (0.03)
 $C = 0.91$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.91(5.24)(0.20) = 1.0$ cfs
 $A_{imp} = 8,550$ sf; % impervious = 97 %
Composite CN = 97 (DPM Plate 22.2 C-2)
DRO = 2.1 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630$ (DRO)A = 1,525 cf

Basin 2

Atotal = 6,670 sf = 0.15 Ac
Landscaped area = 655 sf (0.10)
Dirt area = 6,015 sf (0.90)
 $C = 0.39$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.39(5.24)(0.15) = 0.3$ cfs
 $A_{imp} = 8,550$ sf; % impervious = 97 %
Composite CN = 97 (DPM Plate 22.2 C-2)
DRO = 0.2 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630$ (DRO)A = 110 cf

Developed Condition

Basin 1

Atotal = 5,620 sf = 0.13 Ac
Roof area = 400 sf (0.07)
Paved area = 4,670 sf (0.83)
Landscaped area = 550 sf (0.10)
 $C = 0.89$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.89(5.24)(0.13) = 0.6$ cfs
 $A_{imp} = 5,070$ sf; % impervious = 90 %
Composite CN = 94 (DPM Plate 22.2 C-2)
DRO = 1.85 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630$ (DRO)A = 873 cf

Sidewalk Culvert Capacity (1'-0" Opening - Weir Equation)

$Q = CLH^{3/2} = 1.7$ cfs > Q_{100}
Where C = 3.09
 $L = 11'-0"$
 $H = 0.67$

Basin 2

Atotal = 9,870 sf = 0.22 Ac
Roof area = 5,560 sf (0.56)
Paved area = 3,510 sf (0.36)
Landscaped area = 800 sf (0.08)
 $C = 0.86$ (Weighted average per Emergency Rule, 1/14/86)
 $Q_{100} = CIA = 0.86(5.24)(0.22) = 1.0$ cfs
 $A_{imp} = 9,070$ sf; % impervious = 92 %
Composite CN = 95 (DPM Plate 22.2 C-2)
DRO = 1.45 in (DPM Plate 22.2 C-4)
 $V_{100} = 3630$ (DRO)A = 1,160 cf

Comparison

Basin 1
 $Q_{100} = 1.0 - 0.6 = 0.4$ cfs (decrease)
 $\Delta V_{100} = 1,525 - 873 = 652$ (decrease)

Basin 2
 $Q_{100} = 1.0 - 0.3 = 0.7$ cfs (increase)
 $\Delta V_{100} = 1160 - 110 = 1050$ cf (increase)

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.

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 horizontal and vertical location of all potential obstructions. Should a conflict exist, the contractor shall notify the engineer in writing 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 conducted only preliminary investigation of the location, depth, size, or type of existing utility lines, pipelines, or underground utility lines. This investigation is not conclusive, and may not be complete, therefore, 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. The design of planters and landscaped areas is not part of this plan. All planters and landscaped areas adjacent to the building(s) shall be provided with positive drainage to avoid any ponding adjacent to the structure. For construction details, refer to landscaping plan.
7. 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.
8. Backfill compaction shall be according to residential street use.
9. Maintenance of these facilities shall be the responsibility of the owner of the property served.

CONSTRUCTION NOTES:



10-20-85
7-23-90



JEFF MORTENSEN & ASSOCIATES, INC.
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ALBUQUERQUE, NEW MEXICO 87102
TELEPHONE: 505-265-3611

GRADING AND DRAINAGE PLAN MANZANO ANIMAL CLINIC

DESIGN BY: L.P.U.
DRAWN BY: J.M.A.
APPROVED BY: J.G.M.

No.	Date	By	Revision
1	10/19/88	L.P.U.	ADD RETAINING WALL, RAISED PLANTER & REVISE GRADES
2	02/20/90	L.P.U.	DELETE STAIRWELL & REVISE RAMP

JOB NO. 890901

DATE 8-89

SHEET 1 OF 1

