City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DESIGN HYDROLOGY SECTION
123 Central NW, Albuquerque, NM 87102
(505) 766-7644

February 6, 1986

Tom Mann
Tom Mann & Associates, Inc.
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR GEORGIA PROFESSIONAL GARDENS
RECEIVED FEBRUARY 3, 1986 (G-18/D14)

Dear Mr. Mann:

The referenced plan dated February 3, 1986, is approved for Building Permit sign-off.

Please attach a copy of this approved drainage plan to the construction sets prior to sign-off by Hydrology.

If you have any questions or comments, call me at 766-7644.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

BJM:CAM/bsj

EASEMENT

83 35611

727

This indenture made and executed this 23rd day of May, 1983, by John J. Burwinkle, Jr. and Angelina M. Burwinkle, the owners of lots 1C, 1D, and 1E of Altamont Unit No. 6, as shown on the plat filed in the Office of the County Clerk of Bernalillo County, New Mexico on July 29, 1977, in Vol. C12, Folio 87, hereinafter called the Grantors.

The Grantors do hereby grant unto all other lots a non-exclusive, common, private drainage and access easement over, under, and across all areas herein described for the purpose of conveyance of storm flows and for the purpose of allowing for the free movement of all traffic.

The land affected by this grant of easement within Lot 1E of Altamont Unit No. 6 is more particularly described as follows:

> Beginning at the southwest corner of Lot 1-E, Block K, Altamont Unit No. 6; thence N 27°00'00" W a distance of 221.97 feet; thence due East a distance of 160.00 feet; thence S 63°00'00" W a distance of 113.00 feet; thence S 27°00'00" E a distance of 140.69 feet; thence along an arc of a curve to the right with Δ = 03°05'46", R = 570.00 feet and L = 30.80 feet to a point of beginning and containing 0.2174 acres more or less.

The land affected by this grant of easement within Lot 1C consists of two parcels, which are more particularly described as follows:

> Parcel #1: Beginning at the northeast corner of Lot 1-C, Block K, Altamont Unit No. 6; thence due south a distance of 51.94 feet; thence N 27°00'00" W a distance of 52.93 feet;thence N 78°45'00" E a distance of 24.50 feet to the point of beginning and containing 0.0143 acres more or less.

> Parcel #2: Beginning at the northwest corner of Lot 1-C, Block K, Altamont Unit No. 6; thence N 78°38'22" E a distance of 179.05 feet; thence S 00°56'00" W a distance of 18.00 feet; thence S 78°38'22" W a distance of 126.00 feet; thence S 27°00'00" E a distance of 110.00 feet; thence due west a distance of 55.59 feet;thence N 27°00'00" W a distance of 29.00 feet; thence N 24°13'33" W a distance of 80.42 feet; thence N 00°56'00" E a distance of 6.38 feet to the point of beginning and containing 0.1876 acres more or less.

The undersigned owners of the land described hereon do hereby consent to this grant of easements including the right of ingress and egress and the right to trim interfering trees.

John J. Burwinkle, Jr.

Angelina M. Burwinkle

STATE OF NEW MEXICO)
SS
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 23 day of May, 1983, by John V. Burwinkle Jr. and Angelina M. Burwinkle.

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

'83 JUN -2 P3 :41

BK Misc 19-A PG 727

DOLORES C. WALLER
COUNTY CLERK & RECORDER

DEPUTY

Notary Public

My Commission Expires 3-6-85

VICINITY MAP G-18
SCALE 1"= 800'

•LEGEND•

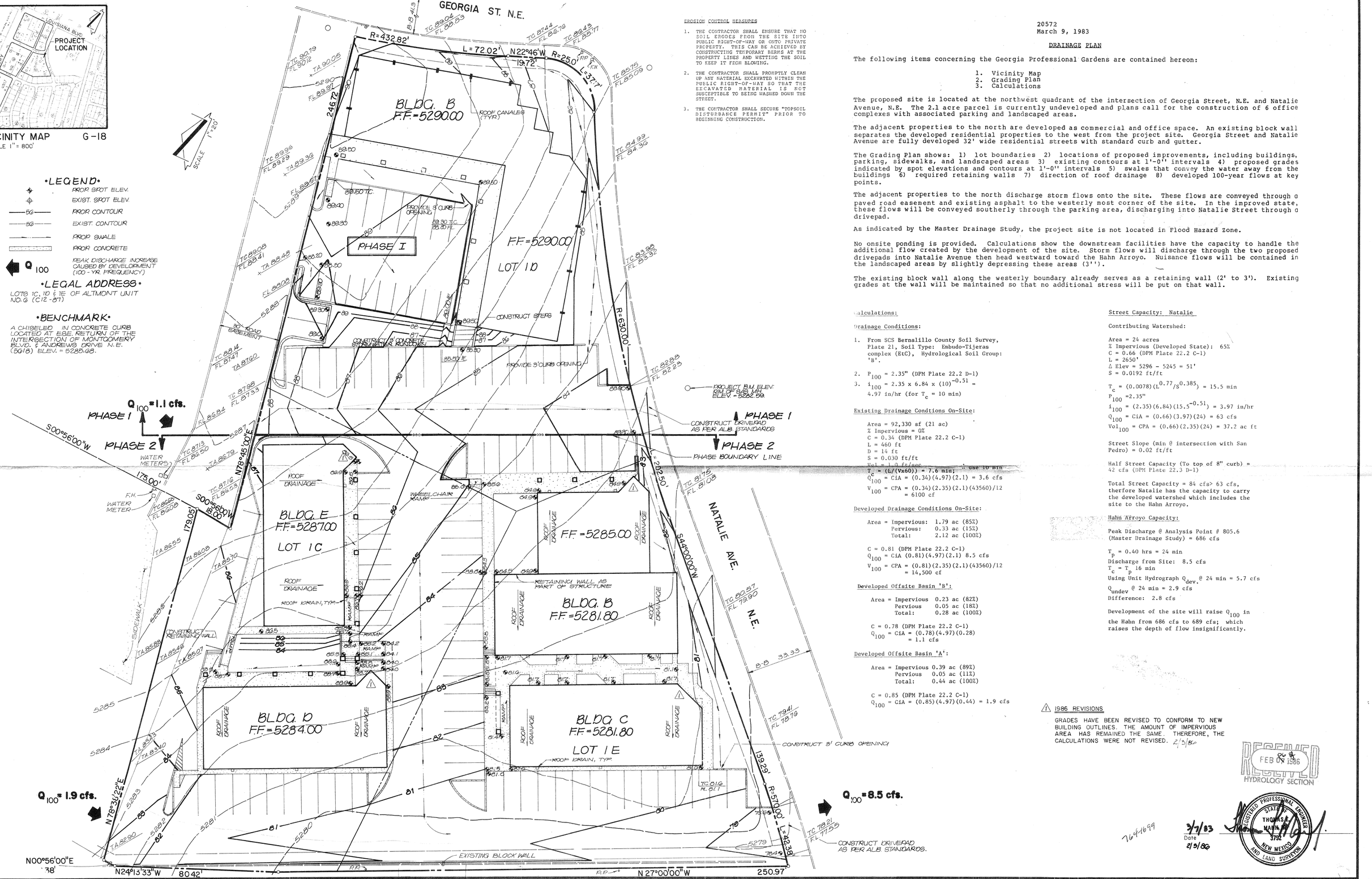
- PROP SPOT ELEV.
- EXIST. SPOT ELEV.
- 5G PROP CONTOUR
- 5G EXIST. CONTOUR
- PROP SWALE
- PROP CONCRETE
- Q 100 PEAK DISCHARGE INCREASE CAUSED BY DEVELOPMENT (100-YR FREQUENCY)

•LEGAL ADDRESS•

LOTS 1C, 1D & 1E OF ALTMONT UNIT NO. 6 (C12-87)

•BENCHMARK•

A CHISELED IN CONCRETE CURB LOCATED AT ESE. RETURN OF THE INTERSECTION OF MONTGOMERY BLVD. & ANDREWS DRIVE N.E. (5G18) ELEV. = 5288.68.



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.

20572
March 9, 1983

DRAINAGE PLAN

The following items concerning the Georgia Professional Gardens are contained hereon:

1. Vicinity Map
2. Grading Plan
3. Calculations

The proposed site is located at the northwest quadrant of the intersection of Georgia Street, N.E. and Natalie Avenue, N.E. The 2.1 acre parcel is currently undeveloped and plans call for the construction of 6 office complexes with associated parking and landscaped areas.

The adjacent properties to the north are developed as commercial and office space. An existing block wall separates the developed residential properties to the west from the project site. Georgia Street and Natalie Avenue are fully developed 32' wide residential streets with standard curb and gutter.

The Grading Plan shows: 1) lot boundaries 2) locations of proposed improvements, including buildings, parking, sidewalks, and landscaped areas 3) existing contours at 1'-0'' intervals 4) proposed grades indicated by spot elevations and contours at 1'-0'' intervals 5) swales that convey the water away from the buildings 6) required retaining walls 7) direction of roof drainage 8) developed 100-year flows at key points.

The adjacent properties to the north discharge storm flows onto the site. These flows are conveyed through a paved road easement and existing asphalt to the westerly most corner of the site. In the improved state, these flows will be conveyed southerly through the parking area, discharging into Natalie Street through a drivepad.

As indicated by the Master Drainage Study, the project site is not located in Flood Hazard Zone.

No onsite ponding is provided. Calculations show the downstream facilities have the capacity to handle the additional flow created by the development of the site. Storm flows will discharge through the two proposed drivepads into Natalie Avenue then head westward toward the Hahn Arroyo. Nuisance flows will be contained in the landscaped areas by slightly depressing these areas (3'').

The existing block wall along the westerly boundary already serves as a retaining wall (2' to 3'). Existing grades at the wall will be maintained so that no additional stress will be put on that wall.

alculations:

Drainage Conditions:

1. From SCS Bernalillo County Soil Survey, Plate 21, Soil Type: Embudo-Tijeras complex (EtC), Hydrological Soil Group: 'B'.
2. P_{100} = 2.35" (DPM Plate 22.2 D-1)
3. i_{100} = 2.35 x 6.84 x $(10)^{-0.51}$ = 4.97 in/hr (for T_c = 10 min)

Existing Drainage Condtions On-Site:

Area = 92,330 sf (21 ac)
% Impervious = 0%
C = 0.34 (DPM Plate 22.2 C-1)
L = 460 ft
D = 14 ft
S = 0.030 ft/ft
Vel = 1.0 ft/sec ∴ use 10 min
T_c = (L/(Vx60)) = 7.6 min; ∴ use 10 min
Q_{100} = CiA = (0.34)(4.97)(2.1) = 3.6 cfs
V_{100} = CPA = (0.34)(2.35)(2.1)(43560)/12 = 6100 cf

Developed Drainage Conditions On-Site:

Area = Impervious: 1.79 ac (85%)
Pervious: 0.33 ac (15%)
Total: 2.12 ac (100%)

C = 0.81 (DPM Plate 22.2 C-1)
Q_{100} = CiA (0.81)(4.97)(2.1) 8.5 cfs
V_{100} = CPA = (0.81)(2.35)(2.1)(43560)/12 = 14,500 cf

Developed Offsite Basin 'B':

Area = Impervious 0.23 ac (82%)
Pervious 0.05 ac (18%)
Total: 0.28 ac (100%)

C = 0.78 (DPM Plate 22.2 C-1)
Q_{100} = CiA = (0.78)(4.97)(0.28) = 1.1 cfs

Developed Offsite Basin 'A':

Area = Impervious 0.39 ac (89%)
Pervious 0.05 ac (11%)
Total: 0.44 ac (100%)

C = 0.85 (DPM Plate 22.2 C-1)
Q_{100} = CiA = (0.85)(4.97)(0.44) = 1.9 cfs

Street Capacity: Natalie

Contributing Watershed:

Area = 24 acres
% Impervious (Developed State): 65%
C = 0.66 (DPM Plate 22.2 C-1)
L = 2650'
Δ Elev = 5296 - 5245 = 51'
S = 0.0192 ft/ft

T_c = $(0.0078)(L^{0.77}/S^{0.385})$ = 15.5 min
P_{100} =2.35"
i_{100} = $(2.35)(6.84)(15.5^{-0.51})$ = 3.97 in/hr
Q_{100} = CiA = (0.66)(3.97)(24) = 63 cfs
Vol_{100} = CPA = (0.66)(2.35)(24) = 37.2 ac ft

Street Slope (min @ intersection with San Pedro) = 0.02 ft/ft

Half Street Capacity (To top of 8" curb) = 42 cfs (DPM Plate 22.3 D-1)

Total Street Capacity = 84 cfs> 63 cfs, therfore Natalie has the capacity to carry the developed watershed which includes the site to the Hahn Arroyo.

Hahn Arroyo Capacity:

Peak Discharge @ Analysis Point # 805.6 (Master Drainage Study) = 686 cfs

T_p = 0.40 hrs = 24 min
Discharge from Site: 8.5 cfs
T_c = T_p 16 min
Using Unit Hydrograph $Q_{dev.}$ @ 24 min = 5.7 cfs
Q_{undev} @ 24 min = 2.9 cfs
Difference: 2.8 cfs

Development of the site will raise Q_{100} in the Hahn from 686 cfs to 689 cfs; which raises the depth of flow insignificantly.

⚠ 1986 REVISIONS

GRADES HAVE BEEN REVISED TO CONFORM TO NEW BUILDING OUTLINES. THE AMOUNT OF IMPERVIOUS AREA HAS REMAINED THE SAME. THEREFORE, THE CALCULATIONS WERE NOT REVISED. 2/3/86

RECEIVED FEB 07 1986 HYDROLOGY SECTION

7641699

3/7/83
Date
2/3/86

REGISTERED PROFESSIONAL ENGINEER STATE OF NEW MEXICO THOMAS T. MANN JR. 3792 AND LAND SURVEYOR

Tom Mann Associates Inc
811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110
ENGINEERS

NO.	DATE	BY	REVISIONS
1	1-18-86	T.M.	CHANGED BUILDING FOOTPRINTS IN PHASE 2.

DESIGNED BY: T.T.M.
DRAWN BY: B.S.
APPROVED: T.T.M.

JOB NO. 2·0572
DATE 1·86

GRADING & DRAINAGE PLAN
GEORGIA PROFESSIONAL GARDENS

FILE NO.
SHEET 1 OF 1

N08294