City of Albuquerque

P.O. BOX 1293   ALBUQUERQUE, NEW MEXICO 87103

ALBUQUERQUE
NEW MEXICO
1706

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

August 26, 1986

Steve Clark
Weiss/Hines Engineering, Inc.
1100 Alvarado, NE   Suite B
Albuquerque, New Mexico   87110

> RE: DRAINAGE & GRADING PLAN SUBMITTAL OF VISTA MONTANO NORTH
>   SUBDIVISION - RECEIVED AUGUST 15, 1986 FOR PRELIMINARY PLAT
>   APPROVAL (E-11/D15A)

Dear Steve:

The above referenced submittal, dated August 15, 1986, is approved for
Preliminary Plat.

Before Final Plat sign-off by the City Engineer, the following items
are required:

1. An executed Subdivision Improvements Agreement.

2. The downstream Drainage Easement across Tract 25D
   for the 30" S.D. must be granted to the City of
   Albuquerque. Bellamah Development Company
   currently has an easement from the owners of
   Tract 25D, but this needs to be assigned to the
   City as a public drainage easement. This is
   presently in the process of being done.

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

Cordially,

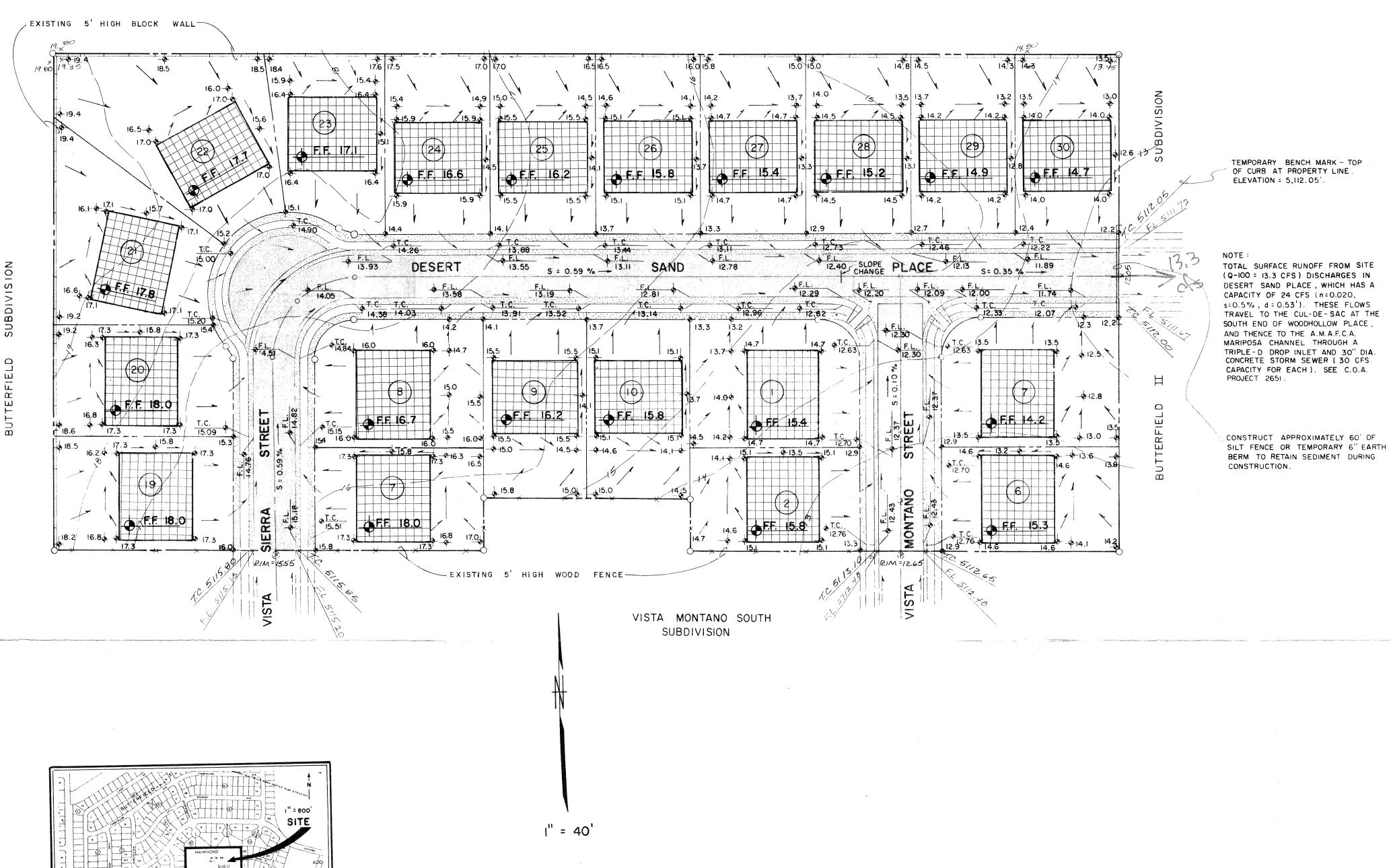Roger A. Green, PE

Roger A. Green, P.E.
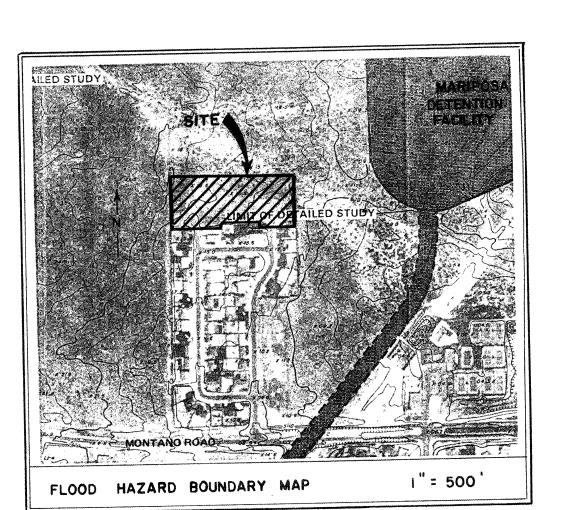C.E./Hydrology Section

cc: Andre Houle, DRC

RAG/bsj

PUBLIC WORKS DEPARTMENT

Walter Nickerson, P.E., City Engineer   **ENGINEERING GROUP**   Telephone (505) 768-2500

AN EQUAL OPPORTUNITY EMPLOYER

BUTTERFIELD II SUBDIVISION

TEMPORARY BENCH MARK – TOP
OF CURB AT PROPERTY LINE.
ELEVATION = 5,112.05'.

NOTE :
TOTAL SURFACE RUNOFF FROM SITE
(Q-100 = 13.3 CFS) DISCHARGES IN
DESERT SAND PLACE, WHICH HAS A
CAPACITY OF 24 CFS (n=0.020,
i=0.5%, d=0.53'). THESE FLOWS
TRAVEL TO THE CUL-DE-SAC AT THE
SOUTH END OF WOODHOLLOW PLACE,
AND THENCE TO THE A.M.A.F.C.A.
MARIPOSA CHANNEL THROUGH A
TRIPLE-D DROP INLET AND 30" DIA.
CONCRETE STORM SEWER (30 CFS
CAPACITY FOR EACH). SEE C.O.A.
PROJECT 2651.

CONSTRUCT APPROXIMATELY 60' OF
SILT FENCE OR TEMPORARY 6" EARTH
BERM TO RETAIN SEDIMENT DURING
CONSTRUCTION.

EXISTING 5' HIGH WOOD FENCE

VISTA MONTAÑO SOUTH
SUBDIVISION

N

1" = 40'

VICINITY MAP   E-11

FLOOD HAZARD BOUNDARY MAP   1" = 500'

LEGEND

	SIDEWALK, CURB & GUTTER (EXISTING, PROPOSED)
	PROPOSED ASPHALT
	BUILDING (EXISTING, PROPOSED)
	PROPERTY LINE
12.7x	EXISTING SPOT ELEVATION
	EXISTING CONTOUR
12.5	PROPOSED SPOT ELEVATION
10	PROPOSED CONTOUR
	SURFACE FLOW DIRECTION (EXISTING, PROPOSED)
L.A.	LANDSCAPED AREA
T.G.W.	TOP OF GRADE WALL (LESS THAN 18" HIGH)
T.R.W.	TOP OF RETAINING WALL (MORE THAN 18" HIGH)
T.A.	TOP OF ASPHALT
T.C.	TOP OF CURB
F.L.	FLOW LINE
F.F.	FINISHED FLOOR

CONSTRUCTION NOTES:

1. Before construction, the Contractor shall check and verify pertinent figures shown hereon and shall make all applicable field measurements. Should any conflict, error or discrepancy be discovered, the contractor shall notify the Engineer at once to resolve the problem. It is recommended that the Contractor meet with the Engineer for a pre-design conference to discuss the scope of work and critical areas involved.

2. The Contractor shall be responsible for following the plans using his best skill and attention. Any departure from the plans must be approved by the Engineer and the City Hydrology Department prior to construction.

3. The Contractor shall check the site plan for locations of existing utilities within or adjacent to streets and shall take all necessary precautions and efforts to locate and protect these utilities. He shall give 48 hours notice to Line Locating Service, 765-1234, for any work that may interfere with said utilities.

CONSTRUCT SHALLOW SWALE TO
DIRECT BACKYARD FLOWS ALONG
SIDE OF HOUSE TO STREET.
SLOPE OF SWALE APPROX. 1%

F.F. 15.4

TYPICAL LOT GRADING PLAN

1" = 20'

DRAINAGE / GRADING PLAN
VISTA MONTAÑO NORTH SUB'D'N

WH ENGINEERING

SHEET ___ OF ___

RECEIVED
AUG 15 1986
HYDROLOGY SECTION

SCOPE:

The proposed improvements are comprised of a 20-unit residential single-dwelling development including paved streets, roll curbs, sidewalks, houses and associated infrastructure.

The Present site is undeveloped vacant land surrounded by residential subdivisions. Existing surrounding public streets and utilities have been brought to the subdivision boundary and will be extended through the development.

The intent of this plan is to show:

a) Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

b) The extent of proposed site improvements, including buildings, walks and pavement.

c) The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet City requirements for drainage management.

d) The relationship of onsite improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

GENERAL NOTES: The site will be graded so that all flows will drain past the eastern property line in Desert Sands Place NW, thence to the storm sewer inlet located in the cul-de-sac at the southern end of Woodhollow Place NW. Individual lots will have shallow swales to drain backyards towards the fronts of the lots and into streets.

LEGAL: Lots 6 and 7 of Block 1, Lots 1, 2, and 7-10 of Block 2, and Lots 19-30 of Block 3, Vista Montaño Subdivision.

SURVEYOR: Elder Company Surveying, 530 Jefferson N.E., Albuquerque, NM. July, 1986.

B.M.: NE corner of Section 26, T11N, R2E, NMPM Brass Cap monument in place in concrete. Elevation = 5,112.53'.

T.B.M.: Top of curb (north) on Desert Sand Place at east property line. Elevation = 5,112.05'.

SOILS: SCS Soils Map #20 (Bernalillo County, NM). Soil is type 'MWA', Hydrologic Soil Group 'B'.

FLOOD HAZARD: FEMA Map #14. Due to the construction of the Mariposa Detention Facility, the site has been removed from the flood plain.

OFF-SITE DRAINAGE: Concrete block walls block flows from the north and west. Approximately 0.7 acres of the residential development to the south (Vista Cielo Ave.) drain into the site in Vista Sierra and Vista Montaño Streets. No flows enter the site from the east.

EROSION CONTROL: Contractor shall be responsible for containing sediment generated during construction by use of a temporary earth berm or silt fence constructed across the site's eastern outlet.

CALCULATIONS: Calculations are based on the City of Albuquerque D.P.M. Manual, Vol. II for the 100 year-6 hour storm, using the Rational Formula to compare the existing and proposed runoff rates.

RATIONAL METHOD- Q = CIA (ON-SITE)

Area-of-site: 197,014 sq.ft. = 4.5 Ac.

Run-off Coefficient:

Existing site:
Undeveloped Area = 197,014 ft²

Developed Site:
Roof Area = 49,500 ft²
Landscaped Area = 107,229 ft²
Paved Area = 40,285 ft²

$C_r = \dfrac{49,500(0.90)}{197,014} = 0.23$

$C_l = \dfrac{107,229(0.25)}{197,014} = 0.14$

$C_p = \dfrac{40,285(0.95)}{197,014} = 0.19$

Composite C = 0.40   Composite C = 0.56

Rainfall Intensity:

$I = P_6(6.84) T_c^{-0.51} = 4.65"$ per hour
where $P_6 = 2.2$ (DPM 22.2 D-1)
$T_c = 10$ minutes

Existing Condition:

$Q_{100} = (0.40)(4.65)(4.5)$
$= 8.4$ cfs

$V_{100} = (8.4)(50T_c)(60 \text{ sec/min})/2$
$= 12,555$ cu. ft.

Developed Condition:

$Q_{100} = (0.56)(4.65)(4.5)$
$= 11.7$ cfs

$V_{100} = (11.7)(50)(60)/2$
$= 17,550$ cu. ft.

$V = \dfrac{Q_p \times T}{2}$

T= Total Duration of Runoff in seconds.

RATIONAL METHOD- Q = CIA (OFF-SITE)

Area: Vista Sierra Street, Vista Montaño Street, ½ of Vista Cielo Avenue, and fronts of adjoining lots.

Existing off-site:
Landscaped Area = 17,884 ft²
Paved Area = 11,616 ft²

$C_l = \dfrac{17,884(0.25)}{29,500} = 0.15$

$C_p = \dfrac{11,616(0.90)}{29,500} = 0.35$

Composite C = 0.50

$Q_{100} = (0.50)(4.65)(0.68)$
$= 1.6$ cfs

$V_{100} = (1.6)(50T_c)(60 \text{ sec/min})/2$
$= 2,400$ cu.ft.

Total Flows (Developed):

On-site	11.7 cfs	17,550 cu.ft.
Off-site	1.6 cfs	2,400 cu.ft.
	13.3 cfs	19,950 cu.ft.

SUMMARY:

$Q_{100} = (13.3)-(8.4) = 4.9$ cfs (increase)
$V_{100} = (19,950)-(12,555) = 7,395$ cu.ft. (increase)