HYDROLOGY L23/D4 ONE PLAN

L23/D4

1 PLAN

CITY OF ALBUQUERQUE, NEW MEXICO
CITY ENGINEER'S OFFICE

L 23-D4

MEMORANDUM- October 27, 1977

TO: H.R. Orr - Acting Public Works Director
FROM: Bruno Conegliano B.C.
RE: Acquistion of Right of Way for a drainage facility in "Los Cerros" subdivision.

Enclosed are the legal descriptions of properties that need to be purchased by the city for drainage purposes in the above referenced subdivision.

BC/gm

DRB 84-134
L 23 D4

SPEED - MEMO

City Engineer/Applicant Designer

PLANNING DIVISION | **CITY OF ALBUQUERQUE**

TO: Tom Mann

SUBJECT: DRB 84-134
PRELIMINARY & FINAL PLAT APPROVAL

INSTRUCTIONS:
Sender:
1. Write message on left.
2. Retain pink copy for your file.
3. Send white and yellow to addressee.

Recipient:
1. Write reply on right.
2. Retain yellow copy for your records.
3. Return white copy to originator.

MESSAGE:

- SUBJECT TO APPROVAL OF THE UPDATED DRAINAGE REPORT SUBMITTED
- FINANCIAL SECURITY REQUIRED FOR PRIVATE STREET IMPROVEMENTS

SIGNED [signature] DATE 2/2/84

REPLY:

SIGNED _____ DATE _____

SPEED - MEMO

PLANNING DIVISION | **CITY OF ALBUQUERQUE**

TO:

SUBJECT: Traffic Engineering Comments
DRB-84-134

INSTRUCTIONS:
Sender:
1. Write message on left.
2. Retain pink copy for your file.
3. Send white and yellow to addressee.

Recipient:
1. Write reply on right.
2. Retain yellow copy for your records.
3. Return white copy to originator.

MESSAGE: A Subdivision Improvements Agreement is required. Also the access easement must be increased to reflect a 26' roadway, and 4' sidewalk on one side plus clearances, making a total width of 33'.

✓ Show the control of access line on Tramway and extended accross Skyline. - OK

SIGNED Dennis D. Berner DATE 2-16-84

REPLY:

SIGNED _____ DATE _____

SPEED MEMO

WATER RESOURCES DEPARTMENT ENGINEERING DIVISION	DEVELOPMENT REVIEW BOARD CITY OF ALBUQUERQUE
D.R.B. CASE NO. 84-134 SUBJECT: Prel. & Final Plat - Blk B & C, Los Cerros Add'l (ZONE ATLAS PAGE L-23)	SPECIAL INSTRUCTIONS:

COMMENT:

→ ~~Reserve~~ Comment ~~for~~ presentation -

→ Table public waterline easement as exclusive public waterline easement. Place the following note on the plat:

"The City of Albuquerque (Water Resource Dept.) shall have the exclusive right to place underground utilities within the 'Exclusive Public Waterline Easement', except for perpendicular utility crossings or where written approval is obtained from the City of Albuquerque (Water Resource Dept.) On site sewage collection is via 'private' collection systems"

SIGNED D S Mourhead DATE 2/22/84

SPEED - MEMO

PLANNING DIVISION | **CITY OF ALBUQUERQUE**

TO: GENE MARES, Planning

SUBJECT: DRB-84-134
LOS CERROS ADDITION

INSTRUCTIONS:

Sender:
1. Write message on left.
2. Retain pink copy for your file.
3. Send white and yellow to addressee.

Recipient:
1. Write reply on right.
2. Retain yellow copy for your records.
3. Return white copy to originator.

MESSAGE: Under Ordinance 7-1976, as amended, the developer is required to dedicate land or cash-in-lieu of land; plus pay a development fee at building permit time.

We under stand that there are now existing 7-four-plexes (28 units).

The developer is now planning to construct 64 additional units (2 apartment buildings).

64 x 85 x $.90 = $4,896.00

64 x $39.00 = $2496 (development fee)

SIGNED MARTIN VALDEZ DATE 2/21/84
Parks & Rec.

REPLY:

SIGNED _____ DATE _____

APPLICATION FOR SUBDIVISION AND/OR VACATION

INSTRUCTIONS

PRINT OR TYPE IN BLACK INK ONLY. Use additional sheets if necessary. The completed application is to be submitted to the Planning Division by the applicant or agent. Each application must be accompanied by the filing fee (checks are preferred and made payable to the City of Albuquerque). All attachments must be submitted with the application and, after folding, shall not exceed 9 1/2 x 14 inches. Additional information may be obtained from the Planning Division (505) 766-7422.

APPLICATION FOR:

SUBDIVISION

___ Sketch Plat
✓ Preliminary Plat
✓ Final Plat

VACATION

___ Public Right-of-Way
___ Private Way
___ Easement

1. APPLICANT INFORMATION

a. Applicant: TED WHITEMAN Telephone: ___
Mailing Address: c/o TOM T. MANN & ASSOC. Zip Code: ___
Applicant's Proprietary Interest in the Property: OWNER

b. Agent (if any): TOM MANN & ASSOC Telephone: 265-5611
Mailing Address: 811 DALLAS NE Zip Code: 87110

c. Signature of applicant/agent: [signature] Date: 02-08-84

2. LOCATION OF REQUEST

a. Street Address (if any): ___
b. Legal Description of the Property:
(1) Lot(s)/Tract(s): A-1 & B
(2) Block: ___
(3) Subdivision-Addition Name/MRGCD Map: LOS CERROS
c. Location of Property by Streets: NORTH OF INTERSECTION OF TRAMWAY BLVD. & INTERSTATE HIGHWAY 40
d. Uniform Property Code: ___

3. PROJECT DETAILS

a. Present Zoning: R-2 Proposed: R-2
b. Number of Lots Existing: 5 Proposed: 2
c. Number of Dwelling Units Existing: 7 Proposed: 2
d. Total Land Area Covered by Request: Acres: 2.7551 Sq. Feet: ___

4. (VACATION ONLY) REASON FOR REQUEST Use Separate Sheet: Why should the vacation be granted?

5. ATTACHMENTS AS REQUIRED IN SUBDIVISION ORDINANCE See appropriate checklist(s)

PLANNING DIVISION INTERNAL USE ONLY

Cross-references: ___ No. Signs Issued: ___
Application and Fee Received by [signature] Date: 2/8/84
Fee Paid: Dollars $ ___ Method of Payment: ___ CREDIT: ___

TREASURER VALIDATION

MAP NO. L-23 D4
HEARING DATE: Feb 21, 84
CASE NUMBER: DRB-84-134

Distribution: Secretary-Orig./Case File
Applicant/Agent
Treasurer

Rev. 3/83

APPLICATION FOR SUBDIVISION AND/OR VACATION

INSTRUCTIONS

PRINT OR TYPE IN BLACK INK ONLY. Use additional sheets if necessary. The completed application is to be submitted to the Planning Division by the applicant or agent. Each application must be accompanied by the filing fee (checks are preferred and made payable to the City of Albuquerque). All attachments must be submitted with the application and, after folding, shall not exceed 8 1/2 x 14 inches. Additional information may be obtained from the Planning Division (505) 766-7422.

APPLICATION FOR:

SUBDIVISION

____ Sketch Plat

✓ Preliminary Plat

✓ Final Plat

VACATION

____ Public Right-of-Way

____ Private Way

____ Easement

1. APPLICANT INFORMATION

a. Applicant: TED WHITEMAN Telephone: ____

Mailing Address: c/o TOM T. MANN & ASSOC. Zip Code: ____

Applicant's Proprietary Interest in the Property: OWNER

b. Agent (if any): TOM MANN & ASSOC Telephone: 265-5611

Mailing Address: 811 DALLAS NE Zip Code: 87110

c. Signature of applicant/agent: [signature] Date: 02-08-84

2. LOCATION OF REQUEST

a. Street Address (if any): ____

b. Legal Description of the Property:

(1) Lot(s)/Tract(s): A-1 & B

(2) Block: ____

(3) Subdivision-Addition Name/MRGCD Map: LOS CERRAS

c. Location of Property by Streets: NORTH OF INTERSECTION OF TRAMWAY BLVD. & INTERSTATE HIGHWAY 40

d. Uniform Property Code: ____

3. PROJECT DETAILS

a. Present Zoning: R-2 Proposed: R-2

b. Number of Lots Existing: 5 Proposed: 2

c. Number of Dwelling Units Existing: 7 Proposed: 2

d. Total Land Area Covered by Request: Acres: 2.7551 Sq. Feet: ____

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PLANNING DIVISION INTERNAL USE ONLY

Cross-references: ____ No. Signs Issued: ____

Application and Fee Received by: [signature] Date: 2/8/84

Fee Paid: Dollars $ ____ Method of Payment: ____ CREDIT: ____

TREASURER VALIDATION

MAP NO. L-23 D4

HEARING DATE: Feb 21 '84

CASE NUMBER: DRB-84-134

Distribution: Secretary-Orig./Case File
Applicant/Agent
Treasurer

Rev. 3/83

Fred -

Is there a difference between a "private access easement" and a "private street"? I think so. Also, the creation of the easement on my plat will only serve one lot, Tract B. Please let me know what you think.

Jeff

30172

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

L23D4

February 23, 1984

Mr. Jeffrey Mortensen
Tom Mann & Associates
811 Dallas, NE
Albuquerque, New Mexico 87110

RE: GRADING & DRAINAGE PLAN FOR PHASE III OF SKYLINE SOUTH APARTMENTS (L23-D9) RECEIVED FEBRUARY 1, 1984

Dear Jeff:

The above referenced plan, dated January 31, 1984 is approved. However, either the lotlines for the portions of lots 104, 105, 106, 107 and Tract A will need to be removed or a drainage covenent to run with the lots and tracts will need to be obtained for the drainage across the lotlines.

An erosion control plan for the period of construction should also be prepared for inclusion in the construction set.

It is suggested that your clients engineer perform the inspections and certifications due to the workload and staffing of this department.

If I can be of further assistance, please advise me.

Sincerely yours,

Billy J. Goolsby

Billy Goolsby, P.E.
City/County Flood Ordinance Administrator

BG/ca
cc: Dick Elliot

30172

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

PARKS & RECREATION DEPARTMENT
121 Tijeras, N. E.
Albuquerque, New Mexico 87102

March 2, 1984

Mr. Jeff Mortenson
Tom Mann & Associates
811 Dallas N. E.
Albuquerque, New Mexico 87110

Dear Jeff:

The Park Dedication and Development Ordinance applies three (3) different ways to the Los Cerros Subdivision. (This has never happened before)

Tracts 104, 105, 106 which had R-3 Zoning in 1976 when the Ordinance was amended do not have to pay a land fee requirement because the tracts were "grandfathered in" at that R-3 density.

Lots 107 through 110, Block B and Lots 108 - 110, Block C were changed from R-1 to R-2 in 1977. In 1977 residential properties in existing areas had the choice of either paying the development fee ($39 per apartment) or cash-in-lieu of land. So Mr. Waterman paid the development fee when he picked up building permits for the seven 4-plex units.

However, the development on what was Lots 104, 105, 106 and 107, Block C do fall under the Ordinance. Based on building 21 units, credit for the original 4 lots; the fee is due on 17 dwelling units X 85 square fee X .90 = $1,300.05.

Sincerely yours,

Janet Saiers

Janet Saiers
Urban Planner

cc: Ted Waterman
Dick Elliot

Tom Mann Associates, Inc.
Engineers
811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110 • 505-265-5611

L 2304

GINA: FINAL SIGN OFF

30172
March 6, 1984

Mr. Gene Mares
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Re: Summary Plat of Tracts A-1 and B - Los Cerros, DRB-84-134

Dear Gene:

Transmitted herewith for final sign off by the DRB are five copies of the subject plat. ~~I have addressed all~~ comments with the exception of the cash in lieu of land payment required by Parks and Recreation. I have met with Ms. Janet Saiers of the Parks and Recreation Department to re-evaluate the required payment. It is hoped that the developer will make this payment prior to the next DRB meeting on March 13, 1984. If not, maybe the DRB can delegate to Parks and Recreation and Planning.

Attached are copies of pertinent correspondence concerning this project.

If you have any questions or comments concerning this submittal, please do not hesitate to call.

Sincerely,

TOM MANN & ASSOCIATES, INC.

Jeffrey G. Mortensen, P.E.
Vice-President

JGM:kl
Encs.

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A. General Considerations

1. All portions of this study are intended to comply with the requirements of the Albuquerque Metropolitan Arroyo Flood Control Authority Resolution No. 2, Series of 1972.

2. General location and description of the site proper: The site lies north of I-40, east of Tramway Blvd., N. E., south of Skyline Rd., N. E., and west of Wells Drive N. E., comprising a 6 acre portion of "Drainage Area 2-a" shown and designated on Plates 8 and 9 of Technical Reference 4a hereof, situated in the southwest (outfall) portion of the said Drainage Area 2-a.

3. Original, undeveloped conditions: Under original, undeveloped conditions, storm water from approximately 67 acres of off-site higher lands (to the north, northeast and east of the site), crossed the site (via two minor water courses and three depressed areas) flowing to a natural outfall in the Tijeras Canyon Arroyo (approximately one-half mi[illegible] to the south of the site), the water courses draining 49 acres (including 6 acres of "mountainous" slopes) and 6 acres, respectively, and the depressions draining 4, 2 and 6 acres, respectively, of the said offsite lands.

4. Existing conditions.

a. Onsite:

I. The site proper is currently undeveloped (except for having been surveyed and platted), although there is evidence of minor grading operations within street rights-of-way sometime in the past which did little more than mark the street alinements and are now overgrown with natural vegetation;

A. General Considerations (continued)

4.a. (continued)

II. There has been no extensive or serious soil erosion;

III. The natural character of the terrain is sandy - gravelly - loam soil with sparse grass cover;

IV. Two minor watercourses enter the east boundary of the site and join near the extreme southeast corner of the site; no other watercourses cross or affect the site, although surface runoff concatrates in three other on-site depressions crossing the site;

V. There are no existing on-site drainage structures or man made facilities.

b. Offsite.

I. Upstream:

A. The areas have been platted and subdivided and are being gradually developed as suburban residential property; [these are shown on the inset vicinity map of Plate 1 hereof as drainage sub-areas II, III, IV, V and VI];

B. Most of the streets have been graded and are being maintained although not yet surfaced;

C. Several residences have been built in the extreme upstream (northeast portion) of the watershed.

II. Adjacent: [see said inset vicinity map of Plate 1]

A. Eight acres of developing suburban residential property within the said "Drainage Area 2-a" watershed drains into and through a culvert discharging immediately southeast

A. General Considerations (continued)

4.b.II.A. (continued)

of the site proper into an unlined open channel within the freeway right-of-way (between the roadway and the north fence of the freeway); [sub-area I]

B. Three acres of the said watershed abut the south boundary of the site proper lying between the site and the freeway roadway, 0.7 acre of which lies east of an earth berm diversion facility and contains the open channel described in 4bIIA preceding. Runoff from the site proper and from the easternmost areas of the watershed discharge into (and through) this area (most of which is within the freeway right-of-way) which in turn discharges into culverts through the freeway roadway embankment;

C. One acre of the said watershed (being the extreme southwest portion thereof) abuts the west boundary of the site (and is part of Tramway Blvd. right-of-way). An earth berm exists along the west edge of this area, serving to keep runoff from reaching the Tramway Blvd. roadway and diverting the runoff into culverts (through the said freeway roadway embankment) at the extreme southwest corner of the said watershed.

D. An 8 acre portion of the said watershed lying north of (but not abutting) the site drains into the area described in 4bIIC preceding; [sub-area VII]

E. The extreme northwesterly 16 acre portion of the said watershed drains into the Tramway Blvd. roadway. [sub-area VIII]

A. General Considerations (continued)

4. b. (continued)

III. Downstream:

A. The said culverts through the freeway roadway embankment discharge into 2 open unlined channels crossing on 8 acre area lying between the said freeway roadway and Central Avenue roadway. The said channels join at the inlet of a double culvert through the said Central Avenue roadway embankment which in turn discharges into a culvert under Four Hills Blvd. roadway, which discharges into a natural open unlined watercourse adjacent to the west side of said Four Hills Blvd. right-of-way, which discharges into the said Tijeras Canyon Arroyo.

B. All runoff from the said Drainage Area 2-a watershed except that from the said sub-area VIII drains through the structures indicated in 4bIIIA preceding, collecting at two locations north of the freeway initially.

5. Future conditions (developed):

a. It is assumed that offsite properties will continue to develop as suburban residential with hard-surfaced streets as platted; and that the runoff currently entering the site proper will continue to do so under developed conditions and will have to be accommodated accordingly.

b. No storm sewers or additional structures offsite have been anticipated.

c. It would be possible to plan offsite development of streets that would divert the major portion of runoff currently entering the site in such a manner as to by-pass the site but still collect at the existing offsite structures.

B. Drainage Analysis

1. General.

a. All peak flows indicated on Plate 1 hereof assume developed conditions, 100 year storm.

b. All sub-areas, including sub-area VIII, have been included in determining peak flows and maximum runoff quantities.

c. Points of entry and exit of storm water entering and leaving the site are essentially unchanged.

d. Existing streets within sub-areas V and VI have been assumed to intercept and sub-divide the existing runoff pattern as it currently enters the site; the remaining sub-areas have been assumed to continue to discharge at the same entry points on or adjacent to the site in the future as they now exist.

e. On-site runoff from developed conditions in excess of runoff from existing conditions will be retained on site in ponds capable of retaining runoff at peak flow intensity for a maximum duration of 18 minutes; water thus impounded will percolate through the pond floors.

2. Method: the "Rational Method" has been used to determine runoff quantities (Q), employing the formulas $I=189/(t+25)$ and $Q=AIR$ in which R is the ratio of runoff to rainfall; Surface areas (A) were determined from technical references 4a and 4b; intensity of rainfall (I) was determined from technical reference 4c; times of concentration (t) have been determined from technical reference 4d which utilizes the length (L), average slope (S) surface character (c) of the drainage area (A) as determined from technical references 4a, 4b and 4e; runoff coefficients (R) have been determined from technical reference 4dII.

B. Drainage Analysis (continued)

3. Supplementary criteria.

a. Carrying capacities have been computed from, or determined from tables based upon, the formulae:

$$Q = aV;\ V = \frac{1.486}{n} r^{2/3} s^{1/2};\ Q = 0.62a\sqrt{62.4H}$$

in which "a" is the cross-sectional area of the channel or pipe,

"V" is the flow velocity,

"n" is the roughness coefficient of the channel or pipe,

"r" is the hydraulic radius ("a" divided by wetted permimeter),

"s" is the pipe or channel gradient,

"H" is the hydraulic (back-up) head at pipe inlets.

b. The following values were used:

"t" = 0 for steep sloped roofs;

"c" = varies from paved through grassed surfaces;

"R" = 1.0 for hard-surfaced areas (roofs, decks, pavements),

= 0.55 for developed composite areas with potentially high percentage of hard-surfaced area,

= 0.50 for developed composite areas with potentially low percentage of hard-surfaced area,

= 0.40 for yard areas, mountainous slopes and undeveloped areas;

"n" = 0.015 for hard surfaces (pavements, lined channels, culverts),

= 0.030 for earth surfaces (unlined earth channels and natural watercourses).

B. Drainage Analysis (continued)

4. Technical references:

a. "Flood Plain Information - Albuquerque Arroyos Part II" by Corps of Engineers, U. S. Army, dated July 1971.

b. Site boundary (replat) and topography prepared by Elder Company dated February and March 1972, respectively

c. "1963 Master Plan of Drainage for the City of Albuquerque and Its Environs" by Gordon Herkenhoff and Associates.

d. "Data Book for Civil Engineers, Design, Volume One" by Elwyn E. Seelye, 1948:

I. Overland Flow Time nomograph (page 5-00);

II. Table of values for runoff to rainfall ratio for various drainage surfaces (page 5-01).

e. "Proposed Los Cerros Apartments, Condominiums" drawings (Scheme I) sheets 1, 2 and 3, by Dean Hunt and Associates (prepared in 1972).

f. "Handbook of Culvert and Drainage Practice", Armco Culvert Manufacturers Association, 1931.

g. "Concrete Pipe Handbook", American Concrete Pipe Association, 1951.

h. "Handbook of Water Control", Western Metal Manufacturing Company, 1936.

i. "Handbook of Hydraulics", Horace Williams King, 1939.

j. "Hydraulics of Open Channels", Boris A. Bakhmeteff, 1932.

C. Recommendations

1. If possible, final site planning should include:

   a. Provision for terracing and/or widening the proposed channel along the east boundary so that velocity of flow would be reduced and hard-surfacing (lining) could be eliminated;

   b. Provision for terracing on-site yard areas in such a manner as to create small ponding areas, and reduce or eliminate the large proposed ponding area;

   c. Provision for a multi-purpose area in the ponding areas and construction of overflow weirs that would keep minor flows out of the ponding areas.

2. Finish yard slopes in excess of 4 to 1 should be sodded, those in excess of 2 to 1 should have a rock blanket utilizing 12 inch or larger diameter rock, preferably volcanic, hand placed.

3. Multi-purpose ponding areas:

   a. Slopes should not exceed 4 to 1 and, preferably, not exceed 6 to 1;

   b. Surfaces of floors and sides shall be natural soil, sand, gravel or (preferably) sod.

4. Pond floors shall be allowed to percolate impounded water; impervious membranes shall not be used on pond floors.

5. A hard-surfaced emergency overflow section shall be included on embankments of ponding areas greater than 3 acre feet.

6. Design water depths shall not exceed 12 inches on-site.

7. Velocities of flow in non-hard-surfaced drainage swales on-site or at points of discharge from on-site facilities shall not exceed 3 feet per second unless erosion protection is installed.

C. Recommendations (continued)

8. The proposed structures indicated on the Drainage Plan are not the only possible solutions for accommodating storm water affecting the site. The proposed lined channel alternates (northeast corner of the site) could be eliminated if off-site runoff is diverted "upstream" into existing streets or storm sewers; or, the rear yard areas of the proposed buildings could be slightly altered to permit a wider and/or terraced swale that would not require hard surfacing.

9. The proposed ponding areas can be altered if the equivalent retention of runoff is provided for by several small on-site retention areas in landscaped and/or multi-purpose non-hard-surfaced areas and/or proper terracing so designed as to slow down overland flows and increase infiltration rate.

10. If percentage of proposed on-site hard-surfaced areas are increased, on-site ponding capacity will have to be increased proportionately by constructing additional ponding areas not to exceed 12 inches in depth.

11. The east portion of the site should be developed last so that advantage could be gained from future off-site developments that might divert runnoff currently entering the site from off-site lands.

12. Impervious membranes should not be incorporated with landscaping unless an equivalent hard-surfaced area is eliminated (such as substituting gravel for pavement in walks and/or parking areas) or the increased runnoff is retained by ponding.

D. Conclusions

1. Ponding/retention capabilities at adjacent offsite downstream drainage structure inlets will compensate for and accomodate runoff from storms of more than 18 minute duration at maximum intensity.

2. Ultimate development of upstream offsite lands will probably result in diversion of storm water runoff in such a manner as to decrease flows into and through the site.

3. Actual quantities and peak flows from a 100 year storm should be less than the calculated flows indicated on plate 1 hereof.

4. In the event a 100 year storm occurs upon the subject site and the land draining thereinto, the proposed plan indicated on the accompanying Plate 1 (or revisions thereof which conform with the criteria and recommendations included herein) should enable the storm surface waters emanating from higher lands and draining through the site to pass through the site, and storm water runoff discharging from the site to discharge, to an ultimate point of discharge into the Tijeras Canyon Arroyo at such rate of flow, velocity, quantity and location that will neither exceed the capacities of either the proposed onsite or existing offsite downstream storm drainage facilities nor cause damage to or endanger the proposed development.

5. There is evidence of erosion at the discharge end of the last downstream drainage structure (the 54" CMP under Fourhills Blvd.); development of the subject site as proposed herein will not add to such erosion.

6. Percolation rates of the natural soil onsite are high.