HYDROLOGY L19/D4 NO PLANS

L19/D4

NO PLANS

DRAINAGE ANALYSIS

FOR THE

EL SUR APARTMENTS

REGISTERED PROFESSIONAL ENGINEER AND LAND SURVEYOR NEW MEXICO THOMAS O. MADSEN

Prepared For:

PEBBCO Enterprises

Albuquerque, New Mexico

January 1979

Drainage Report and Plan

for

El Sur Apartments

INTRODUCTION:

At the request of PEBBCO Enterprises, project developers for the El Sur Apartments, CCIC has investigated the storm drainage for the site. This investigation address itself to the subject property in its undeveloped condition and analyze the internal flows in its developed state with recommendation for compliance to the Albuquerque Metropolitan Arroyo Flood Control Authority's (A.M.A.F.C.A.) requirements.

PROPERTY DESCRIPTION:

The property on which the apartments are proposed is located in the S.E. quadrant of the city. In particular, it lies adjacent to the south side of Bell Ave. between Pennsylvania and Dallas Avenues, S.E. The address and legal description are as follows:

7900 Bell Ave. S.E.

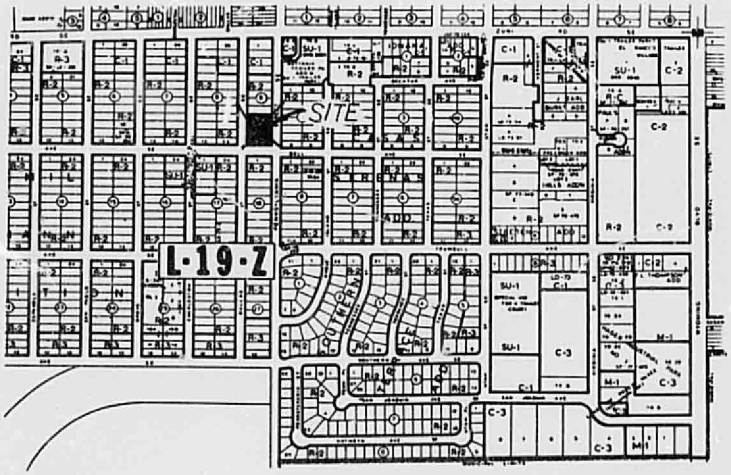
Tract A, Block 18

Replate of Emil Mann Addition

Filed No. D8-200

Albuquerque, New Mexico

Zoning R-2, Atlas L-19



PROPOSED DEVELOPMENT:

The proposed development consist of two main structures, containing 24 units, paved parking areas and landscaping.

Construction features which are pertinent to drainage are as follows:

a. The buildings will have flat roofs, with roof drains collecting the storm runoff for discharge to the landscaped areas.

b. The drainage off of, and around the building, will be accommodated by ponding areas located between and around the buildings within the landscaped areas.

c. The west portion of the site will be paved for parking, capable of parking 36 cars.

DRAINAGE CONDITIONS:

The entire site is relativily flat, with a slight grade drop to the west. There are no cross-drainage characteristics for the site because of the bordering streets and having not to accept any surface flow from the south. Undeveloped drainage conditions are as follows:

Considering, 1. Lot area = 26,372 sq. ft. - 0.605 ac.

2. "C" factor - 0.35

3. I - 5.4"/hr.

4. D - 2.6"

Then,

Q = CIA

= (0.35)(5.4)(0.605)

= 1.14 cfs USE 1cfs

V = CDA

= (0.35)(2.6")(1/12)(26,372 sq.ft.)

= 1999.88 cu.ft. USE 2000 cu.ft.

Developed site drainage condition:

1. Composite "C"

Hard surface area = 0.95 (64%) = 0.61 19745 ft²

Landscaped area = 0.20 (36%) = 0.07

= 0.68

2. Q = CIA

= (0.68)(5.4)(0.605)

= 2.22 cfs (Value not pertinent)

3. V = CDA

= (0.68)(2.6")(1/12)(26.372)

= 3885 cu.ft.

4. Required Ponding = V_{DEV} - V_{UND}

(3885 - 2000) = 1885 cu.ft.

PONDING REQUIREMENT:

Parking lot to drain to street.

1. Area = 0.27 ac

2. C = 0.95 (90%), C = 0.20 (10%), = "C" - .87

3. V = CDA

= (0.87)(2.6")(1/12)(11760 sq.ft.)

= 2217 cu. ft.

Remaining Area to pond 100% of storm runoff.

Area Pond "A" - area of pond - 1076 s.f. @ ave. depth.

- cu.ft. to pond (0.72)(2.6)(5250)(1/12) = ~~705~~ 919 c.f.

- ave. depth = 0.67'

Area Pond "B" - similar to above

Area Pond "C" - area of pond = 350 s.f.

- cu.ft. to pond = (0.72)(2.6)(1/12)(2890) = 450 c.f.

- ave. depth = 1.25'

Totals: Pond A = 705 c.f.

Pond B = 705 c.f.

Pond C = 450 c.f.

Total = 1860 c.f. = Required ponding

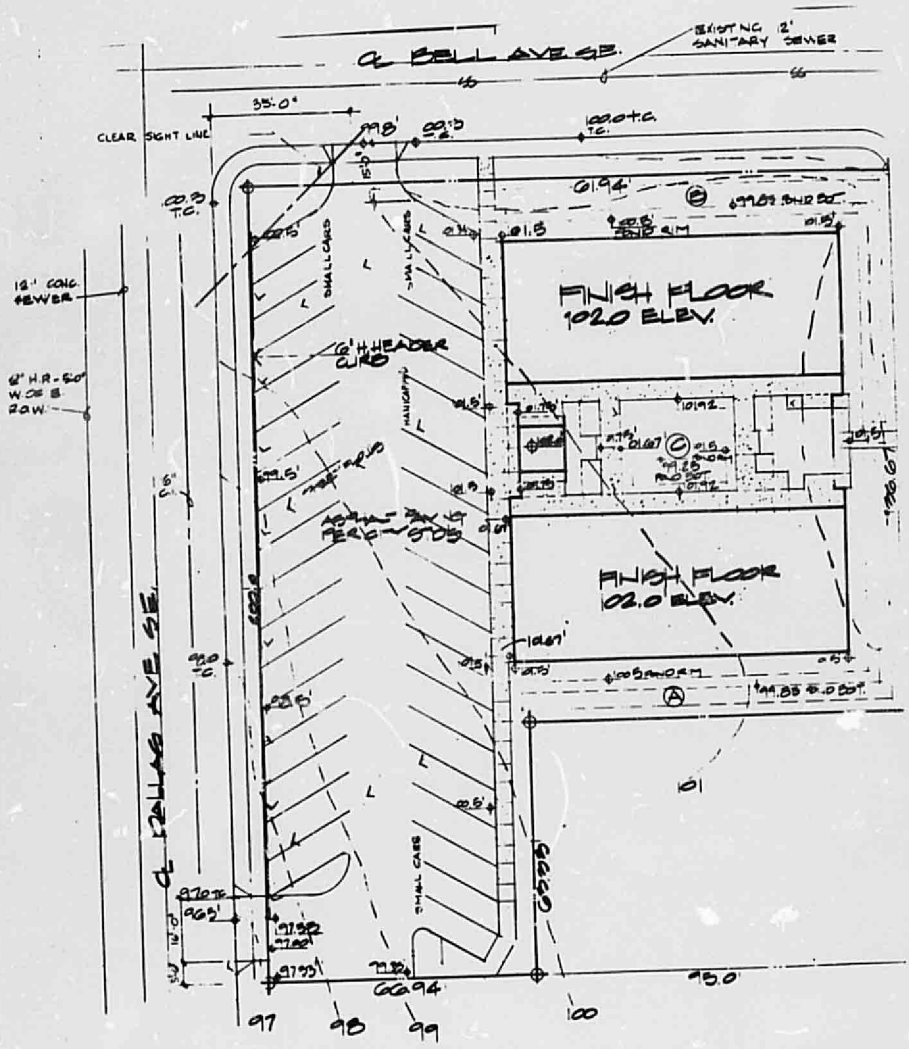
RECOMMENDATIONS:

1. Allow all runoff from parking lot to runoff to Dallas Ave. Exit point of runoff shall be at southwest corner. (See accompanying site drainage and grading plan.)

2. Remainder of site, which includes all structure and landscape areas, shall pond 100% of storm runoff. This shall be accomplished by area ponds around the structures. See Ponding Requirements for individual pond capacties.

3. Upper ponding limits shall be kept away from structure's footing in order to safeguard against any weakening of structure's subgrade.

4. The landscaped areas will be able to function primarily for that purpose if certain allowances are made for the low areas. Grass will not survive in frequently flooded areas so gravel will have to incorporated into the visual realm of the landscaping. An added benefit of the position of the low areas, with reference to the proposed landscaping, is that runoff can be utilized for watering.



GRADING & DRAINAGE PLAN

January 29, 1979

City of Albuquerque
Hydrology Engineer
Engineering Division
P.O. Box 1293
Albuquerque, NM 87103

REFERENCE: El Sur Apartments

ATTENTION: Fred Aguirre

Dear Fred:

As per our telephone conversation of January 29, 1979, we are submitting the additional information that you requested. Enclosed is a revised site grading and drainage plan with cross-section locations. The cross-sections are then shown on the following pages.

Shown on cross-section #4 is a two course high block wall which is supposed to provide drainage and erosion protection to the home owner to the south. The location of this wall can be more clearly defined on the revised site grading and drainage plan.

Hopefully this letter will provide you with all the additional information required to get these plans approved by your department.

Very truly yours,

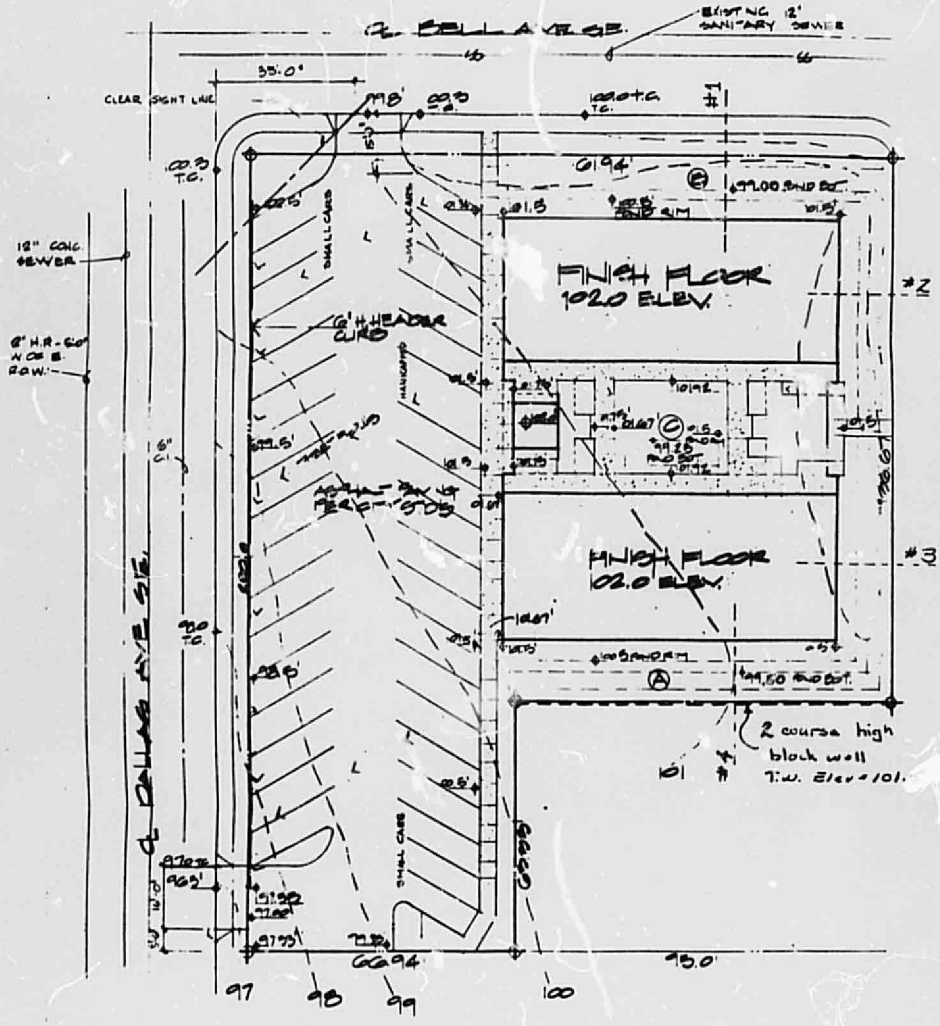
Fred C. Arfman

Fred C. Arfman, for
CHAMBERS, CAMPBELL,
ISAACSON, CHAPLIN, INC.

FCA:pw

Encl.

Chambers, Campbell, Isaacson, Chaplin, Inc.
architects engineers planners 3500 Indian School Road NE Albuquerque New Mexico 87106 505 266 5522



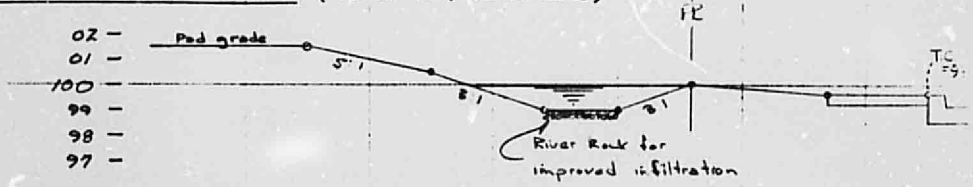
GRADING & DRAINAGE PLAN 1" = 30'

EL SUR APARTMENTS

Show pond cross-sections as per location designated on the accompanying revised grading & drainage plan.

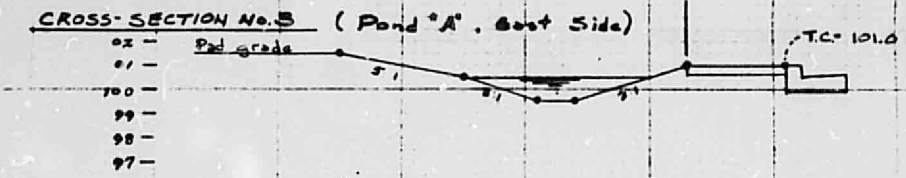
SCALE:
HORIZ: 1" = 5'
VERT: 1" = 5'

CROSS-SECTION No. 1 (Pond "B", North side)



CROSS-SECTION No. 2 (Pond "B", East Side)

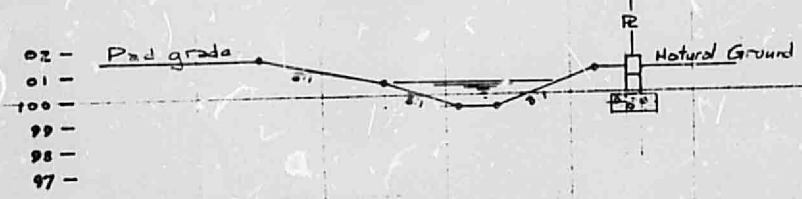
CROSS-SECTION No. 3 (Pond "A", East Side)



CCIC
ALBUQUERQUE, NEW MEXICO

SUBJECT POND CROSS-SECTIONS JOB NO. ____
BY FCA DATE 1-29-79 SHEET NO. 1 OF 2

CROSS-SECTION No. 4 (Pond "A", South side w/ dike)



CCIC
ALBUQUERQUE, NEW MEXICO

SUBJECT Pond Cross-Sections JOB NO.
BY FCA DATE 12-9-79 SHEET NO. 2 OF 2

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

MAYOR
David Rusk

February 1, 1979

L19-D4

Chamber,Cambell,Isaacson,Chaplin,Inc.
Architects, Engineers, Planners
3500 Indian School Road N. E.

REFERENCE: El Sur Apartments Drainage Report

ATTENTION: Fred C. Arfman, for Chambers, Cambell, Isaacson, Chaplin Inc.

The above referenced drainage report is approved.

Very truly yours,

Fred J Cegueri

In Bruno Conegliano
Assistant
City Engineer-Hydrology

BC/ln

cc: Rich Leonard, AMAFC
Drainage File