HYDROLOGY

EL OSO GRANDE "A"

F21—D18

2 PLANS

Provided for your information only, wait for further direction.

CITY OF ALBUQUERQUE, NEW MEXICO
CITY ENGINEER'S OFFICE

3074-B

MEMORANDUM - May 19, 1976

TO: Mr. H. R. Orr, Jr., Asst. Public Works Director
FROM: V. M. Kimmick, City Engineer
SUBJECT: SAD184

There is $160,000 for storm sewer work in this district which must also cover the Cities share of costs with AMAFCA for the dam outfall across Juan Tabo Blvd. Those costs were estimated at $100,000.

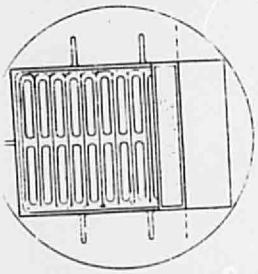
I have no other funds for this project, therefore, I cannot agree with the estimate and recommend the consultant revise the project to conform to available funds. Since this fact has been known for the entire life of the project, the engineer should not be paid for design beyond funds available.

VMK/fs

cc: Dwayne Sheppard
Bob Kielich

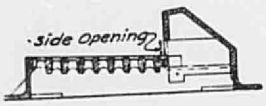
cc: Grant Snyder
Pete Test (Scanlon & Assoc.)

RECEIVED
MAY 21 1976
SCANLON & ASSOCIATES



PLAN

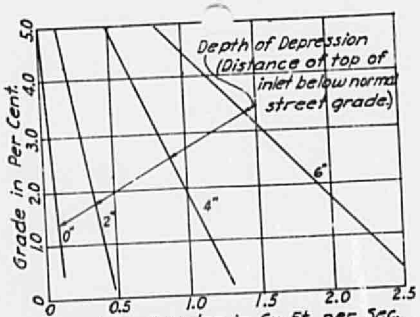
PART PLAN SHOWING CURVED CASTING.



SECTION

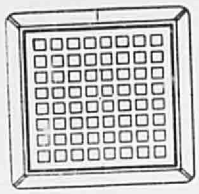
NOTE: To determine the capacity of this type casting, add 'Q' of side opening to 'Q' of grate opening.

TYPICAL CURB INLET OR CATCH BASIN CASTING.

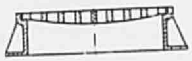


Data for an inlet 4'-6" long and 6" high with water just lapping past. For other size openings the capacities are approximately in proportion.

FIG. A.- RELATION BETWEEN STREET GRADES & SIDE INLET CAPACITY FOR VARIOUS DEPTHS OF DEPRESSION*

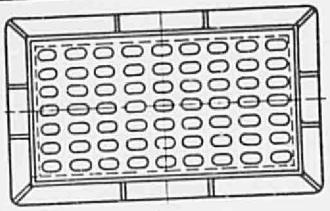


PLAN



SECTION WITH PLANE COVER

SQUARE

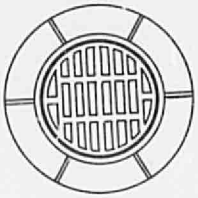


PLAN

SECTION WITH CONCAVE COVER

RECTANGULAR

TYPICAL ROADWAY INLET CASTINGS.



PLAN

SECTION

CIRCULAR INLET OR MANHOLE CASTING.

FORMULA FOR DETERMINING THE AREA OF INLET GRATING OPENINGS.

$$Q = cA\sqrt{2gh} \times \text{factor for clogging. (Use } 2/3)$$

Where: Q = Quantity of runoff reaching inlet in cubic feet per second.
c = Orifice coefficient: 0.6 for openings with square edges.
0.8 " " " rounded "

A = Net area in square ft.
g = 32.2
h = Allowable head on inlet in feet.

*From Municipal & County Engineering 1919 Vol. 57 page 147.

3074-B

9-7-76

Grant
Duane
Pete
Tom
Kimmick
K. Laws

no response

1. Grant wanted to know if Swearingen had signed ratification.

2. Baja & Manuelita ok as is w/addition of 1 drop @ NE Bajon

3. Osuna & JT ok as is w/addition of 1 drop @ NW

4. JT & Eubank use cattle guard as designed modify outlet design in 10 years. Get 20-W from CCIC

5. Eubank JT to Layton turn to Layton kickin is acceptable intersection

⇒ 6. City design criteria w/ carry 100 year storm in street. If street doesn't have capacity put overflow into storm sewer."

deferred 1975

7. Tear out 300' of northbound Eubank and put in water stop.

8. Spain & Eubank build concrete not asphalt.

9. Where bar @ Rear, check Grace Paul on height. Rear repair gutter invert. 100 year storm. Surface water off top of bar

10. storm drain from Spain to Bear. 10 year storm from Spain (cattle guard ÷ 2 days) pipe to Bear.

11. Get AGP & Swearingen to ratify

12. Get Home Planners to dedicate ROW @ Bear and IT & Eubank.

MEMORANDUM OF AGREEMENT

ACADEMY/TRAMWAY/EUBANK
SECTOR DEVELOPMENT PLANS

A meeting was held at 3:00 p.m., March 27, 1978 to discuss and determine a method for sharing various costs identified during the preparation of the Sector Plan and cost of preparing and printing the plan.

Persons attending the meeting and their respective parcels:

Larry Stroup	Peppertree Venture
Ben Abruzzo	Peppertree Venture
Horace McKay	McKay property
Rusty Rutledge	Rutledge Investment Company
Jim Stephens	AMHOME
Bob Murphy	Peppertree Venture
Joe Shipley	Peppertree Venture
Mike Emery	Aico-Wood
Don Martin	Aico-Wood
Joe Fulmer	Aico-Wood
Jim Smith	AMDEC & AMHOME

Cost share of planning services required in preparation of Sector Development Plan documents:

1. Services provided by Community Sciences Corporation and Gordon Herkenhoff & Associates in preparation of the plan, meetings with various persons relative to the plan and reproduction costs will be shared by owners of parcels identified as AMDEC, AMHOME, Horace McKay, Rutledge, Peppertree Venture and Aico-Wood. The appropriate share of cost to be determined by the gross acreage each owner has of the combined total.

2. Photogrammetric mapping by Thomas R. Mann & Associates and field surveys for control by Home Planning and Development were prepared for AMDEC and AMHOME and will not be used by the other owners.

3. Drainage improvement costs relating to off-site diversion east of the Sector Plan area and directed into Bear Canyon Arroyo will be shared by the ownership of property whose drainage currently flows into, or is diverted into Bear Canyon Arroyo. The appropriate share of cost to be determined by the gross acreage each owner has of the total acreage draining and diverted into Bear Canyon Arroyo east of Juan Tabo Dam.

4. Drainage improvement costs relating to off-site diversion east of the Sector Plan area and diverted into Pino Arroyo will be shared by the ownership of property whose drainage currently flows into the Bear Canyon Tributary, plus the area from the south rim of the Pino Arroyo south to the Bear Canyon Tributary. The appropriate share of cost to be determined by the gross acreage each owner has of the combined total area flowing into the Bear Canyon Tributary plus the area from the south rim of the Pino Arroyo south to the Bear Canyon Tributary.

5. Drainage improvement costs within the Sector Plan area and sized for flow-off land of more than one owner will be shared in proportion to the gross acreage each owner has of the combined total area flowing into the facility.

6. Water line extension costs outside the Sector Plan area for benefit of development within the Sector Plan would be shared in proportion to the number of dwelling units each owner has of the combined total D.U.'s that will be served by the extension of that particular line.

7. Sanitary sewer line extension costs would be shared in proportion to the number of dwelling units or equivalent design criteria for sizing the line demand that will be served by the extension of that particular line.

8. It is agreed that if one of the parties to this agreement initiates construction of drainage improvements, water lines, sewer lines or street improvements that would benefit other owners having a cost share of the improvements, that payment of each owner's share will be made promptly upon submittal of appropriate statements.

The above eight items were discussed and agreed upon by the following owners or representatives:

Affiliated Mortgage and Development Company

AMHOME

Pepertree Venture

Aico-Wood

Horace McKay

Rutledge Investment Company

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
David Rusk

Copy to —
Bob —
Monte —
Dwayne —
Bruce —

May 25, 1978

F21-0180

RECEIVED
MAY 30 1978
CITY ENGINEERS

Herbert M. Denish & Assoc.
P.O. Box 2001
Albuquerque, New Mexico 87103

Dear Mr. Denish:

RE: S-78-25

At their meeting of May 23, 1978, the Administrative Review Board approved the proposed plat of El Oso Grande Subdivision as submitted with those areas shown on the plat as "landscaped areas" or "common areas" being incorporated with the adjacent lots, thereby remaining in private ownership but with public easements for landscaping; approval of the plat is also subject to submission of a drainage plan satisfactory to the City Engineer and AMAFCA, compliance with the Park Dedication Ordinance, approval of the buildout schedule by Water Resources for provision of water and liquid waste facilites, and obtaining the necessary signatures on the plat.

NOTE: Approval of this subdivision will in no way commit the City to maintenance of the landscaping on any of the public right-of-way shown on the plat.

If you have any questions please do not hesitate to contact this office.

Sincerely,

Phil Garcia
Principal Planner

jd

cc: Home Planning Development Co.
2900 Louisiana Blvd. NE, Suite 210; 87110

CHAPARRAL CONSTRUCTION COMPANY

P.O. BOX 11234
ALBUQUERQUE, NEW MEXICO 87112
TEL: 298-2195

September 12, 1978

F21-018a

RECEIVED
SEP 18 1978
CITY ENGINEERS

Mr. Dwayne Sheppard
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Dear Mr. Sheppard,

This is a formal request that the "Turn-Key Procedure" be used in design and construction of the utilities and streets for the El Oso Grande Sub-Division. We propose to use Chambers, Campbell, Isaacson, Chaplin, Inc. as engineers to perform this design and supervision work.

If this meets with your approval please advise us as soon as possible.

Sincerely,

Glen Luttrell

Glen Luttrell

OCT 13 1978

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

Pino → Pino
RRB → RRB
FNB → 77-22

October 13, 1978

Mr. Mike Emery
Bohannan-Huston, Inc.
4125 Carlisle N.E.
Albuquerque, New Mexico 87107

RE: MASTER DRAINAGE PLAN FOR EL OSO GRANDE DEVELOPMENT

Dear Mr. Emery:

The Master Drainage Plan for El Oso Grande represents a significant departure from the guiding concepts of the AMAFCA Resolution 72-2. Whereas the resolution requires that no increase in runoff in either peak discharge or in total volume shall result after development, the recommendations of the report are limited to the control of the peak discharge. Essentially all the runoff volume generated by the development will be discharged into the arroyo.

While AMAFCA is presently retaining a consultant to study the effects of such an approach on the hydrology of the major water courses and on the approved Master Plan of Drainage for North Albuquerque Acres. I do not have presently the authority to waive the requirements of the Resolution. I will, therefore, have to refer to the Executive Engineer of AMAFCA the question of the acceptability of the proposal submitted. I also note that the proposed development of El Oso Grande, as described in the Master Plan prepared by Archi Tekton and supplied to the Planning Department, envisions high density land use with no runoff storage, limited landscaped areas, and immediate conveyance of the runoff to the streets. Under these conditions, I feel that a justification for the overall use of a coefficient of runoff of 0.65 needs to be supplied. Other areas of concern are as follows:

The absence of the flood control structures recommended in the North Albuquerque Acres Master Drainage Plan would result in the flooding of Spain Rd. and of the land to the South of it. Development approval will not be granted without a binding committment on the part of the developer guaranteeing the completion of suitable upstream structures prior to occupancy of any dwelling in Unit 1 and/or no later than May 15, 1979.

The existence of diversionary facilities East of Juan Tabo would prevent major flooding occurrences, yet Spain Rd. would still be subjected to flows of such magnitude and velocity to constitute a safety hazard. After a discussion of this matter with Mr. Orr, the conclusion was reached that it would

OCT 13 1976

be in the public interest to remove 150 cfs from Spain Rd. East of Morris during a 100 yrs. frequency storm under present conditions of development. Provided that storm sewer bond funds were available, such funds could be allocated to this purpose.

Given the magnitude of the flood flows anticipated, other methods of runoff conveyance should be investigated such as an open channel from Spain Rd. to the detention pond. Also, in place of a single inlet at Morris, multiple inlets along Spain Rd. should be provided, possibly at Noreen St. and elsewhere. Thought should be given to the possibility and method of intercepting the flows contributed by Beebe St., on the North side of Spain Rd.

Regarding the pond and park combination, my understanding is that Park Maintenance will assume responsibility for the care of this facility. I have not discussed the matter with representatives of Parks and Recreation, but it is my opinion that such assumption of responsibility would not occur until El Oso Grande is fully developed and that the Parks Department has received and approved the final plans. In the interim, the developer would retain full responsibility for the maintenance of the facilities.

I would like the engineer to describe with some detail the hydraulic conditions resulting from the intersection in public streets of 187 cu. ft./sec. traveling at 10.35 f.p.s. with both an opposite flow of 59 c.f.s. and with a further flow of 114.0 c.f.s. traveling at 7.13 f.p.s. perpendicular to the other two. I believe that a detailed demonstration that such a conveyance is not injurious to the health and safety of the residents, to their property, and to public property is in order since it is a recommendation of this report. The effectiveness of the intake structure under the prevailing turbulent and transient conditions just mentioned needs also to be demonstrated.

The configuration of intake structure, inlet outlet manholes, pond and outlet pipe is rather complex and not amenable to a segmented analysis particularly since steady state flow conditions would not exist. The occurrence of surges and transients would alter considerably the flow through capacity which would certainly not be constant. The analysis must take into full account the variable flow conditions and supply both hydraulic and energy gradients. I also have reservations regarding the maintenance requirements of these facilities, particularly in conjunction with Parks Dept. uses and needs.

Finally, the outlet discharging 152.9 c.f.s. at 15.89 f.p.s. into Bear Canyon Arroyo must be supplied with appropriate energy dissipation devices to prevent degradation of the existing channel. The design must suit the ultimate improvements to Bear Canyon with minimum modification.

I hope you'll be able to address these concerns in a comprehensive manner and supply satisfactory answers to the issues raised above.

Yours Truly,

Bruno Conegliano

Bruno Conegliano
Asst. City Engineer-Hydrology

BC/tl

cc: H. R. Orr, ACT. Dir. Public Works
C. D. Sheppard, Acting City Engineer

December 11, 1978

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

ATTENTION: Mr. Bruno Conegliano

REFERENCE: El Oso Grande, Unit II

Dear Bruno:

As per your request, I am submitting a summary of the drainage revisions to the El Oso Grande Unit II Drainage Report. Enclosed is a copy of the grading plan which shows the proposed offsite work to be accomplished. Offsite work will be coordinated with Home Planning Development Company prior to their release of the land to the Park's Department.

The first revision concerns the drainage outlet at the end of Oso Grande Court. It will be built to the City's Standards, a 10' wide concrete lined channel rundown instead of the "V" ditch originally proposed. The second revision concerns the storm drain pipe on the north side of Lot 24. It will be a 22" x 13" CMPA instead of the 12" diameter pipe originally proposed. The third revision concerns the construction of an offsite interception ditch to prevent offsite flows from entering the cul-de-sac at the end of Osuna Court. The last revision concerns the proposed construction of a drop inlet and storm drain into the proposed Bear Canyon Arroyo Channel to remove offsite flows impounded by the South Channel bank. I contacted Ike Pino with Bohannan Huston about these drainage improvements. He will incorporate this detail, plus the concrete rundown detail into their plans, when we receive final approvals on our plans.

If these revisions meet with your approval, a space for your signature is provided below.

Thank you.

Respectfully,

Christopher L. Weiss

Christopher L. Weiss, P.E.

Chambers, Campbell, Isaacson, Chaplin, Inc.
architects engineers planners 3500 indian school road ne albuquerque new mexico 87106 505 266 552

El Oso Grande, Unit II Drainage Report with above referenced revisions is approved.

Bruno Conegliano

Bruno Conegliano

12/12/78

Date

CLW:pw

Encl.

CITY OF ALBUQUERQUE, NEW MEXICO
CITY ENGINEER'S OFFICE

F21-D18 A

MEMORANDUM - January 15, 1979

TO: Malcolm W. deVesty, Assistant City Attorney
FROM: Bruno Conegliano, Assistant City Engineer-Hydrology B.C.
SUBJECT: El Oso Grande

The brief submitted by Herb Denish is naturally a "pro domo sua" statement. I have entered into the review process rather late in the game (after June 1978). In the last paragraph of the outline of the General History, the statement is made "All of the myriad regulations and policies had been dealt with and incorporated into the land use plan". Save and except those pertaining to flood protection (See Master Plan Criteria, Home Planning Co. by Archi-tekton on file with the Planning Department) and drainage. On May 23, 1978 the following comments were made by AMAFCA; as to the drainage requirements:

1. Drainage report and plan in concordance with AMAFCA 72-2 will be required.

2. Northeast Heights Drainage report required all drainage being carried in Spain Rd. to be diverted into the Bear Canyon Arroyo to south. Since Bear Arroyo transverses the north side of the proposed development, and local drainage from Academy Place drains to this arroyo, special attention to drainage management will be necessary.

The engineer for the developer gave short shrift to these concerns and in the report for Oso Grande, Units 1 and 2 dated June 1978 did not even mention the Bear Arroyo which as indicated above was a matter of concern to AMAFCA. The master drainage plan also submitted in June has a number of features unacceptable to the City which to this date have not yet been resolved (See attached correspondence) (Re first paragraph Page 2).

Regarding the third paragraph, Page 2, I want to mention that the area necessary for the Juan Tabo Dam was purchased by AMAFCA only after the threat of comdemnation. Later on the statement is made that "several small plats and drainage plans for land located within this potential flood area" have been approved by the City. To my knowledge, this statement is not correct. Plats for several parcels in the path of the Bear Arroyo were submitted to the City and approval was withheld on all the land encroaching on the mentioned water course. On Sheet 2 of 11 of the sector development plan, Home Planning, Inc., is shown as a participant of the consortium involved with the quoted area development effort.

In reference to Paragraph 1,Page 4, I note that while the City may eventually proceed with the upgrading of the Arroyo del Oso Dam contingent upon availability of resources and in competition with other priorities, the developer will still have to comply with the AMAFCA regulations outlined in Resolution 72-2 which are not particularly exotic but have been followed by all other developments in this community.

BC/fs
Enclosure

cc - Dick Heller
Drainage File

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

January 29, 1979

Mr. Subhas K. Shah
2829 Jefferson Street N.E.
Albuquerque, New Mexico 87110

G11-D4

Re: Villa Del Oeste Tract

Dear Mr. Shah:

I have reviewed the drainage report for the referenced development and I find it in compliance with the AMAFCA Resolution-72-2.

The drainage report is hereby approved.

Very truly yours,

Bruno Conegliano
Assistant City Engineer-Hydrology

BC/fs

cc - Dick Heller
Drainage File
Rich Leonard

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

MAYOR
David Rusk

February 5, 1979

F-21-D18a

Mr. Glen Luttrell
The Entity Corporation
6020 North Prince
Clovis, New Mexico 88101

Subject: El Oso Grande, Unit 3
Test Turnkey Project Work Authorization #T-35

Dear Mr. Luttrell:

Under the provisions of the Test Turnkey Project procedures, this letter is the Work Authorization to begin field work on the project.

Sincerely,

Richard S. Heller

Richard S. Heller
City Engineer

RSH/fs

cc - H. R. Orr
Kent Nowlin Construction, Inc.
Ray Dawson
Water Resources
Dwayne Sheppard
Bob Kielich
LaMonte Urban
Bruno Conegliano
Bill Mueller
Traffic Engineering Attn: Jim Milton

BOHANNAN-HUSTON INC.
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

May 10, 1979

RECEIVED
MAY 14 1979
CITY ENGINEERS

Mr. Bruno Conegliano
City Hydrologist
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: El Oso Grande Units 1 and 2

F21-D18a

Dear Mr. Conegliano:

There will be a design review conference for El Oso Grande Subdivision (Units 1 and 2) on Monday, May 21, 1979, at 1:00 PM in the Water Resources Department conference room on the ninth floor of the Western Bank Building. Representatives from utility companies, city departments, Bohannan–Huston, Inc., and Home Planning Development Company will be present.

Public Service Company has requested this meeting to help minimize the conflicts during the construction phase. If any minor plan changes are required to benefit the involved parties, they can be initiated at this time. Public Service Company has requested this procedure be incorporated in all future subdivision design.

Please notify us if you (or a representative) will not be attending this meeting. If you have any questions, please call David Millikan at this office.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc. Mr. Jim Stephens

DMYM/js
Job No. 77-223/78-083

the Stone company
REALTORS AND BUILDERS
2701 SAN PEDRO N.E., ALBUQUERQUE, NEW MEXICO 87110 (505)883-0900

March 31, 1980

Richard S. Heller
City Engineer
Engineering Division
Box 1293
Albuquerque, New Mexico 87103

RECEIVED
APR 1 1980
CITY ENGINEER

Dear Mr. Heller:

Please accept this request for a temporary barricade to be installed at the intersection of Eubank and Osuna N.E. This barricade would block traffic from going east on Osuna.

There is presently no one living in Stonegate Village, and I am fully aware that as soon as someone moves in, the barricade must be removed.

The reason for this request is that we have had a tremendous amount of damage and vandalism.

I know Osuna is a city street, but there is no reason for anyone to drive down to the end of Osuna as I can see, until people are living in the subdivision.

Thank you for your cooperation in this matter.

Sincerely,

Ralph Stone

Ralph Stone
President
The Stone Company

RS/gs

ROUGH DRAFT

Mr. Ralph Stone, President
The Stone Company
2701 San Pedro N.E.
Albuquerque, New Mexico 87110

Dear Mr. Stone:

I have reviewed your request of March 31, 1980 with the City Attorney. It is felt that this request is warranted and would be in the best interests of the Stone Company. In granting your request, you must realize that you must absolve the City of all liability, should an accident occur at the blockaded intersection of Osuna and Eubank. It should also be realized that this blockading of the street may slow down Fire Department vehicles from getting to your model homes should this unforeseen occurrence occur.

This temporary blockading of the street is approved for a period of six months or until the first resident of the subdivision moves in. Should an extension of your request be required after six months, you must do so in writing.

RSH/fs
cc - Bob Fosnaugh, Traffic Engineer
Mr. Mcdevesty, City Attorney

Acceptance of the above conditions ~~approved~~

Ralph Stone, President approved for
The Stone Company

Your blockading plan must be approved by the City Traffic Engineer

81/11/30. 16.56.15.

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*****************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED APRI 1980
 ERROR CORR -  01,02,03,04
 MODIFICATION -  50,51,52,53,54
*****************************************************
```

T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	-1.	2.	0.	1.	0.000000	0.00	-1.0	0.	136.100	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	.030	.030	.015	.100	.300	0.000	0.000	0.000	0.000	0.000
QT	3.000	2200.000	1000.000	3800.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2872.000	4.000	1.000	39.000	72.000	72.000	72.000	0.000	0.000	0.000
GR	137.410	1.000	130.410	15.000	130.410	25.000	137.410	39.000	0.000	0.000
X1	2800.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.010	0.000
X1	2750.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.190	0.000
X1	2700.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.540	0.000
X1	2650.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.550	0.000
X1	2600.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.550	0.000
X1	2550.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.540	0.000
X1	2500.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-2.270	0.000
X1	2450.000	0.000	0.000	0.000	50.000	50.000	50.000	0.000	-1.730	0.000

J-2

x1	2400.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	-1.460	0.000
x1	2300.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	-2.910	0.000
x1	2200.000	0.000	0.000	0.000	200.000	200.000	200.000	0.000	-2.920	0.000
x1	2000.000	0.000	0.000	0.000	200.000	200.000	200.000	0.000	-5.840	0.000
x1	1800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-5.840	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Builders/realtor developers
commercial & residential

Bellamah Corporation

July 21, 1980

RECEIVED
JUL 23 1980
CITY ENGINEER

E 22 03

Mr. Jim Smith
Albuquerque Federal Savings &
Loan Association
P. O. Box 25000
Albuquerque, N.M. 87125

Dear Jim: Re: Sector Group Spain Storm Sewer Participation

In the past sector plan meetings regarding the Spain storm system, we have conveyed to the sector participants that we were dissatisfied with the cost allocation regarding the aforementioned storm sewer. Consequently we have been exploring alternatives for handling the storm water drainage through our Peppertree subdivision.

We are attempting to finalize our evaluations that will propose discharging the storm waters of Peppertree in the approximate historical discharge paths to the west of our subdivision. If we are able to control the flow in the approximate historical locations, plus minimal on site ponding, we will not have to participate in the Spain storm sewer.

We want to advise you, as well as the other sector participants, of our current evaluations in order that if our findings are correct, the timing will not create a financial burden to other sector participants.

Sincerely,

DALE BELLAMAH ~~LAND CO. INC.~~

Larry D. Scroup, Vice-President

lds:mms
Copies to: Cliff Spirock
Richard Heller
Don Martin
Horace F. McKay, Jr.
Rusty Rutledge

6121 Indian School Road NE / PO Box 3325 / Albuquerque, New Mexico 87190 / (505) 883-3000

affiliated mortgage & development company amdec

a wholly owned subsidiary of Albuquerque Federal Savings and Loan Association

6400 uptown blvd., n.e.
albuquerque, new mexico

mailing address
p. o. box 25000
albuquerque, new mexico 87125

AM - 522

July 18, 1980

E22-D3

RECEIVED
JUL 23 1980
CITY ENGINEER

Mr. Richard S. Heller, P.E.
City Engineer
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87106

Dear Dick;

Thank you for spending some time with me on several important items. I know you are very busy and I do appreciate your time and cooperation.

I would like to clarify AMDeC's position on one item we discussed and that is the discharge of storm water runoff from Peppertree Subdivision across Chelwood to Prospectors Ridge.

AMDeC does not believe that Peppertree storm water runoff should be allowed to cross Chelwood and then be conveyed in internal subdivision streets of Prospectors Ridge because of two (2) main reasons.

The first reason is that a Master Storm Water Conveyance Study was prepared by all of the Sector Plan participants based upon proposed land uses, overall natural runoff in the Sector Plan area, and specifically preliminary plats of the Peppertree Subdivision. This Master Storm Water Conveyance Study was submitted to the City and approved "in concept" on April 3, 1979 (attached: copy of approved letter). This approved drainage plan indicated that storm water runoff generating from east of Chelwood would be intercepted at Chelwood and conveyed south.

The second reason is that the historic upland storm water runoff does not flow through Prospectors Ridge except through the southeast corner because it is intercepted by a berm and directed south toward the Bear Canyon Arroyo.

(Attached is a print showing the historic storm water runoff in Prospectors Ridge). Therefore, allowing the discharge from Peppertree to flow across Chelwood into the streets of Prospectors Ridge would significantly increase

the dificulty of managing the flow within the subdivision and would place an undue burden on Prospectors Ridge.

Since AMDeC has made major comments for Prospectors Ridge based upon the Master Storm Water Conveyance Study I was relieved to hear you say (and I agree) that this change will not be permitted without first consulting with all sector plan participants.

Again, thank you for your assistance and cooperation.

Sincerely,

AFFILIATED MORTGAGE & DEVELOPMENT COMOANY

Allan L. Whitesel

Allan Whitesel
Chief Engineer

AW/sd

RECEIVED 0040

AUG 06, 1980

CITY ENGINEER

M. DENISH AND ASSOCIATES, INC.
Consultants to Developers

Herbert M. Denish

Oso Grande Subdivision

August 1, 1980

Mr. Gene Mares
Planning Division
Municipal Development Department
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

RSH		ADM	
HRO		SUR	
CDS		COUN	
DES		SEC	
INSP		FILE	
HYDRO		RETURN	

Re: El Oso Grande

Dear Mr. Mares:

Enclosed with this letter are 25 copies each of the proposed replats for El Oso Grande Subdivision, I and II.

These subdivisions represent a small part of a Master Plan (S-77-52MP) which was approved by the Environmental Planning Commission in November, 1977.

The Subdivision Review Board (then Administrative Review Board) approved the original plats for these two subdivisions in May, 1978, and a Water Availability Statement was issued in August, 1978. At this point, all administrative approvals had been acquired with the exception of drainage.

Being located along the Bear Canyon drainage system, the resolution of storm-water management problems proved to be a complex affair requiring the construction of a "trainer dike" east of Tramway Boulevard; the reconstruction of Arroyo del Oso dam; and the installation of a storm-water sewer system in Spain Road. The required diversion is now in place; money has been allocated for the reconstruction of the dam; and the City Engineering office has authorized the expenditure of funds for a contribution to the construction of the storm-water system.

The market conditions under which the plans were first developed have changed radically in the intervening time and the plats have consequently been redesigned to reallocate densities and to eliminate some of the design features which are not only economically inefficient, but which were of great concern to the City Engineer, Refuse and Fire Departments during previous approval process.

Post Office Box 2001 / Albuquerque, New Mexico 87103 / Telephone (505) 842-6461

Since the City Engineer's contribution to the construction of the storm sewer system must be committed immediately, it is our desire that these plats be reviewed by the Subdivision Review Board as soon as possible.

If I can provide you with any further information, please call.

Sincerely yours,

Herbert M. Denish

HMD/mk

Enclosures

cc: Jim Stephens
Michial Emery
Richard Heller

HERBERT M. DENISH AND ASSOCIATES, INC.
Consultants to Developers

February 4, 1981

RECEIVED
FEB 1 9 1981
CITY ENGINEER

F21-D18A

Mr. William Kraemer
Assistant City Attorney
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Re: El Oso Grande: Proposed Park Exchange

Dear Bill:

As you may know, AMDeC recently purchased Home Planning Development Company, Inc. and with it interest in the El Oso Grande property on Spain between Eubank and Juan Tabo.

I have attached a copy of a letter I recently received from Sheilah Sweenhart of AMDeC; as you will note, AMDeC is no longer interested in making the park exchange which I had proposed to the Excess Properties Review Board on behalf of Home Planning.

As agent for AMDeC, I would like to request that the proposed exchange of lands be removed from consideration.

If you have any questions on this, be sure to give me a call.

Sincerely yours,

Herbert Denish

Herbert M. Denish

cc: Mr. Phil Garcia
Mr. Richard Heller
Mr. Howell G. "Bud" Ervien
Mr. Orlando Sedillo
Ms. Sheilah Sweenhart

No copy attached

RSH PAS
PRO
CH 2/12/81
ADM
SUR
COUN
SEC
FILE El Oso Grande Subdiv.
RETURN

20 First Plaza, Suite 320 / Post Office Box 2001 / Albuquerque, New Mexico 87103 / Telephone (505) 842-6461

WOOD BROS.
HOMES

RECEIVED
JUN 15 1981
CITY ENGINEER

June 15, 1981

F21-D18

Mr. Charles Easterling
Assistant City Engineer
City of Albuquerque
Post Office Box 1293
Albuquerque, NM 87103

Dear Mr. Easterling:

Subject: El Oso Grande

Attached are two copies of the El Oso Grande Conceptual Drainage Plan, as prepared by Bohannan-Huston, Inc. One copy of the report is being submitted to the Albuquerque Metropolitan Arroyo Flood Control Authority.

After reading this report, and meeting with you last Friday, I understand the concerns which must be addressed before a subdivision plat of individual building sites can be approved. These concerns are as follows:

1. We must accept natural flows from the area to the east, or get a commitment from that property owner that another solution is acceptable.

2. Osuna Road must be capable of handling developed flows which enter the right-of-way, or other approved means of handling the flows must be provided at the time of development.

3. Flows in Spain Road must be handled in an approved manner. Prior commitments indicate a storm drain will be constructed in Morris Street, for which the City has agreed to contribute $115,000.

4. Bear Canyon Arroyo must be addressed in an approved manner. Specifically:

   A. The inlet at Morris Street.
   B. The junction with the Morris storm drain.
   C. The transition into the existing box culverts at Eubank Boulevard.
   D. The discharge velocities from the Eubank box culvert and/or the channel treatment to handle those velocities.
   E. The channel design and treatment.
   F. The right-of-way or easements for the channel.

P.O. Box 16019, Albuquerque, New Mexico 87191 505/881-1804

It appears our phasing of construction will begin east of Morris Road, next to, and south of Spain Road. This will allow us to use the water, sewer, and road facilities already constructed. I understand temporary drainage easements and interim drainage solutions will be required for phase development.

Conclusion 5 of the report may be modified by additional engineering studies. We know the current 100 year flood line must start at the Bear Canyon Dam outlet, which would indicate the currently drawn line may be modified with additional study.

Hopefully, this report defines areas of concern and indicated solutions that are both possible and reasonable. Let us begin platting and the detailed engineering to solve these concerns.

Very truly yours,

Kleston H Laws

Kleston H. Laws
Southwest Region
Land Development Manager

KHL:pm

cc: Michial Emery
Sheilah Sweenhart

WOOD BROS.
HOMES

June 15, 1981

Mr. Charles Easterling
Assistant City Engineer
City of Albuquerque
Post Office Box 1293
Albuquerque, NM 87103

F21-D18A

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   E. The channel design and treatment.
   F. The right-of-way or easements for the channel.

P.O. Box 16019, Albuquerque, New Mexico 87191 505 881-1804

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Very truly yours,

Kleston H Laws

Kleston H. Laws
Southwest Region
Land Development Manager

KHL:pm

cc: Michial Emery
Sheilah Sweenhart

WOOD BROS.
HOMES

F21-D/80

July 1, 1981

RECEIVED
JUL 06 1981
CITY ENGINEER

Richard S. Heller
City Engineer
City of Albuquerque
Post Office Box 1293
Albuquerque, NM 87103

Dear Mr. Heller:

Subject: El Oso Grande Subdivision

Special Order 10 states that prior to start of design, approval must be obtained to utilize mountable curb - roll type. This letter requests the use of mountable curb - roll type, where permitted, by street flows in El Oso Grande Subdivision, south of Spain Road and east of Morris Street.

Please sign below if you approve this request. Thank you for your cooperation.

Sincerely,

Kleston H Laws

Kleston H. Laws
Southwest Region
Land Development Manager

Approved Richard S Heller Date 7/9/81
Richard S. Heller, City Engineer

KHL:pm

cc: AMDeC - Sheilah Sweenhart
Community Sciences Corporation

RSH EYA
HRO
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DES
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HYDRO
ADM
SUR
COUN
SEC
FILE
RETURN

Review & comment

P.O. Box 16019, Albuquerque, New Mexico 87191 505/881-1804

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

MAYOR
David Rusk

May 30, 1979

F21-D18a

Mr. Michial Emery
Bohanan-Huston, Inc.
4125 Carlisle Blvd. N.E.
Albuquerque, New Mexico 87107

Re: The Revised Drainage Report for El Oso Grande, Units 1 and 2

Dear Mr. Emery:

The drainage report for El Oso Grande, Units 1 and 2 incorporates the needed requirements verbally given at different meetings regarding this development. The drainage report is therefore approved in concept.

One reservation is raised in regard to the offsite flow, namely the possibility that the extension of Spain Road to Juan Tabo Blvd. may not be executed before the completion of this development. Since the firm of Andrews, Asbury and Robert has repeatedly indicated that some 100cfs will be conveyed to that intersection, said flow would not be contained in the roadway but would affect El Oso Grande, Unit 2. The construction plans must indicate provisions for the protection against this offsite flow and the required determinations of the water surface elevation in Spain Road. (See attached)must also include the mentioned offsite flow.

Very truly yours,

Bruno Conegliano
Assistant City Engineer-Hydrology

BC/fs
Enclosure
cc - Dick Heller, City Engineer
Rich Leonard, AMAFCA
Drainage File
Reading

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

October 22, 1981

F21-D18a

Mr. Kleston Laws
Wood Brothers
P. O. Box 16019
Albuquerque, New Mexico 87191

RE: EL OSO GRANDE DRAINAGE REPORT

Dear Kleston:

The referenced drainage report is approved. A detailed flow analysis of the proposed storm sewers and street intersections should be supplied when submitting construction plans for review.

Very truly yours,

Charles M. Easterling
Principal Asst. City Engineer/Hydrology

BB/CME/fs
8840A

WOOD BROS.
HOMES

December 8, 1981

Richard S. Heller
City Engineer
City of Albuquerque
Post Office Box 1293
Albuquerque, NM 87103

Dear Mr. Heller:

Subject: Oso Grande Subdivision

Section 10.B of the Subdivision Ordinance allows you to give approval to proceed with grading prior to filing a plat with the County Clerk.

Please grant approval below to allow us to procede with grading for Oso Grande Subdivision, Unit 1, Morris Street, from Spain to the Elena Gallegos Grant Line, and Bear Canyon Arroyo, from Morris Street to Eubank Boulevard.

We realize that the plans are still in the approval process, and that the proposed grading is at our own risk. We, or our contractor, will secure the required permits.

Sincerely,

Kleston H. Laws

Kleston H. Laws
Southwest Region
Land Development Manager

KHL:pm

Grading proposed above is approved. Richard S. Heller 12/8/81
Richard S. Heller, City Engineer Date
Approved rough grading plans required RSH

Agent D.R.B. 3-22-83 last on agenda Area.

APPLICATION FOR ZONE MAP AMENDMENT AND/OR DEVELOPMENT PLAN

N. O.

INSTRUCTIONS: PRINT OR TYPE IN BLACK INK ONLY. Use additional sheets, necessary. Thirty (30) copies (Annexation, forty copi of all attachments must be submitted with the applicat and, after folding, shall not exceed 8 1/2 x 14 inches.

Applicant's Name: AMWOOD reque

☐ Zone Map Amendment ☒ Development Plan Review (REVIEW & COMMENT) ☐ Annexatic

Type of Plan

For Lot(s): AREA "B" ~~Block(s)~~: in Subdivision/Addition DEL GRANDE

Presently zoned SU-1 and proposed to be zoned as NO CHANGE located a

Street Address (No. if any): SPAIN ROAD

Between JUAN TABO Street and MORRISS Stree

Total Land Area Covered by Application: Acres 30 Square Feet

Number of DU's Proposed 180-190 DU's Per Gross Acre 6.3 DU's Per Net Acre

APPLICANT INFORMATION:

Applicant's Mailing Address: AMWOOD, A JOINT VENTURE c/o AMDEC attn Sheilah Sweenhart 6400 UPTOWN BLVD Phone: 883-3503 Zip Code:

Applicant's Proprietary Interest in the Property:

Agent if any: COMMUNITY SCIENCES CORP Phone: 877-0000

Mailing Address: P.O. BOX 1328 CORRALES NM Zip Code: 87048

Signature of Applicant [signature] AGENT Date: 3-9-83

****

FOR PLANNING STAFF USE ONLY

Application Received By: [signature] Date: 3/9/83

Fee: $ Paid: $ Method of Payment:

Cross-Ref.: AX- Z- S- Other:

No. of Signs Issued: ZHE or EPC? DRB

1 Copy each to:
Research Analyst
Applicant
Graphics

Hearing Date: 3/22/83

Case Number: L- DRB-83-143

Map Number: F-21

F21-D18a

DATE: March 9, 1983

TO: Development Review Board of
City of Albuquerque

FROM: Community Sciences Corporation, Agent
AMWOOD, A Joint Venture

SUBJECT: Conceptual Review and Approval for a project on
El Oso Grande (Z-81-74), Area B

A portion of the prior zoning action, referred to as Tract B, El Oso Grande, is presently being considered by the applicant for planning and reconsideration of lot sizes. DRB Exhibit No. 1 shows the area under consideration. Please note that the zoning application allows 250 dwelling units for this area and the previous site development plan, sheet 3, indicates that streets and subsequent lotting may be approved administratively.

The land use concept first envisioned for the site development plan included town houses (attached 2-sides) situate on 25' wide lots with clusters of approximately 4 houses per module.

The area adjacent (Area A) is now designated, platted and marketed in a patio home concept, zero lot line, 40' normal lot widths. Attachments of Units (one side) only in exceptional lot geometry areas. It is proposed that all or a portion of Area B (this Application) be designed for a similar patio home product.

DRB Exhibit No. 2 shows a lot concept and similar street arrangement to the original submittal. It yields approximately 180-190 patio home lots.

QUESTION: Can the applicant proceed with the final plat for this concept and submit to the Development Review Board for combined preliminary and final plat approval? Could the Site Plan also be modified by the D.R.B. with the plat constituting the amendment?

On the exhibits please note a small (2-3 Acre) area at the northeast corner of the property between Edwards Drive and Thomas Drive. This land area (Approximately 50' wide), is "surplus" to the Plat Geometry shown on Exhibit No. 2.

QUESTION: Can this "lot" be conveyed to the adjoiner (pending their approval for zoning) without requiring resubmittal by AMWOOD to the E.P.C.?

DRB-83-143

SURVEYING
ENGINEERING
LAND PLANNING

P.O. Box 1328
Corrales, New Mexico 87048
(505) 897-0000

Exhibit No. 3 Depicts a different street Geometry that is more condusive to the location of an existing water line.

QUESTION: Can this (or similar) geometry be reviewed by the DRB, for a patio home concept, without E.P.C. resubmittal?

Summarizing, the applicant is desirous of an expedient review process that would create additional patio home lots as early on as possible. We hereby request your comments and guidance on the required procedure.

DRB-85-143

BOHANNAN-HUSTON INC.
4125 CARLISLE BLVD., N.E. ALBUQUERQUE, NEW MEXICO 87107 505 881-2000

to Bruno
To file RSA

May 9, 1979

RECEIVED
MAY 1 0 1979
CITY ENGINEERS

F21-D18a

Mr. Richard Heller
City Engineer
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

RSA
OR

Re: Morris Street Storm Sewer Adjacent to El Oso Grande Unit 1

Dear Mr. Heller:

On December 15, 1978, Mr. Orr stated that the City of Albuquerque wishes to remove 150 cfs from Spain Road near El Oso Grande Unit 1. We have done extensive preliminary work for the design of the storm sewer to remove this 150 cfs in addition to the flows generated within El Oso Grande Units 1 and 2.

On April 26, 1979, the city hydrologist told Mr. Millikan, of our firm, that he felt additional flows might need to be removed from Spain Road in this area. After numerous requests, we have not yet received a final flow rate to use in the design of the storm sewer.

Please notify us of a design flow this week, or we will proceed with the design, assuming the flow rate of 150 cfs is the desired amount to be removed. We are attempting to complete the design so that construction can be completed prior to the rainy season and without causing undue hardship to the developer.

Your prompt attention to this matter is requested. If you have any questions, please call me.

Sincerely yours,

Michial M. Emery

Michial M. Emery, P.E.
Vice President

cc: Mr. Jim Stephens
Mr. Herbert Denish

DMYM/js
Job No. 77-223.1

EL OSO GRANDE
CONCEPTUAL
DRAINAGE PLAN

June 1981

F 21-D18A

EL OSO GRANDE
CONCEPTUAL
DRAINAGE PLAN
ZONE ATLAS SHEET F-21

JUNE 1981

PREPARED FOR

AMWOOD
P.O. Box 25000
Albuquerque, NM 87125

PREPARED BY

BOHANNAN-HUSTON, INC.
4125 Carlisle Blvd., N.E.
Albuquerque, NM 87107

Michial M. Emery, P.E.
N.M.P.E. No. 5194

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Developed Flow Rate Calculations	
Temporary Channel Approval Letter	

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Purpose

The purpose of this report is to analyze the proposed development to determine the extent of internal drainage improvements which may be required and the impact of this development on the surrounding parcels, streets, and water courses.

A portion of El Oso Grande is already subdivided. The areas which have been subdivided are still under common ownership. It is proposed that the existing subdivision and existing drainage report be abandoned. This report is intended to outline general storm water management guidelines for development in this area. As the various stages of development occur, more detailed drainage reports should be prepared for the individual subdivisions.

Location and Description

The portion of El Oso Grande covered in this study is bounded by Spain Road on the north, Morris Street on the west, Osuna Road on the south, and a tract of currently vacant land on the east. In addition to analysis of the internal drainage conditions in this area, recommendations concerning improvements to the Bear Canyon Arroyo between Eubank Boulevard and Juan Tabo Boulevard are provided.

The parcel slopes from east to west at 3 1/2 – 4 percent. The soils in this area consist of Embudo gravelly sandy loams. They are classified by the Bernalillo County Soils Survey in hydrologic soil group B.

The site development plan proposes construction of townhomes and patio homes. Proposed densities are in the range of 6 – 8 1/2 du/ac.

Method

AMAFCA Resolution 1980 – 15 states: "The storm water runoff from such lot, tract, or parcel will discharge into, and in such manner as does not exceed the capacity of, storm drainage facilities downstream, . . . "

The Bear Canyon Arroyo has sufficient capacity to convey the developed runoff from this parcel as well as the runoff from upland basins. The Arroyo Del Oso Dam is approximately 2 1/2 miles downstream. It is currently being upgraded to have adequate capacity to handle uncontrolled discharge from all contributing basins.

The Juan Tabo Dam is immediately upstream of El Oso Grande. The Northeast Heights Drainage Management Plan indicates that with this facility in place, the flow rate in the Bear Canyon arroyo at Juan Tabo Boulevard is 1875 cfs. The flow rate at Eubank Boulevard, according to the same report is 1924 cfs. The latter value is used in this report for analysis of the Bear Canyon Arroyo.

The Rational Formula is used for computing all internal flow rates. The proposed site development plan indicates that areas 1, 2, 3, 9, 12, 13, and 14 (see plate 3) will have a density of approximately 6.2 du/ac. The developed runoff coefficient from these areas is estimated at 0.70.

The proposed site development plan indicates that areas 4, 5, 6, 7, 8, 10, and 11 (see plate 3) will have a density of approximately 8.3 du/ac. The developed runoff coefficient for these areas is estimated at 0.75.

As more detailed information becomes available for each of these areas, an analysis should be performed in order to justify these runoff coefficients or to develop more realistic values.

Since uncontrolled discharge is permitted from these parcels, undeveloped and developed runoff volume computations are not necessary. It is for this reason that they have been omitted from this report.

Existing Drainage

Spain Road is adjacent to the north boundary of El Oso Grande and forms the south boundary of Academy Place Units 2 and 4. A substantial amount of runoff generated within Academy Place Units 2 and 4 is discharged onto Spain Road. Additional flows exist in Spain Road that originate near the intersection of Spain Road and Juan Tabo Boulevard. Undeveloped flows from Basin A (see plate 2) also contribute to Spain Road along the north boundary of El Oso Grande.

All of these flows create an undesirable situation along the north boundary of El Oso Grande. The City Engineer has stated in the past that the city would like a storm sewer constructed to remove some of the flows in this area.

Previous discussions have resulted in the city requesting that 150 cfs be removed from Spain Road in this area. The previous development plans for El Oso Grande included a storm sewer in Morris Street which extended to Spain Road. The city agreed to contribute up to $115,000 for the initial phase to cover the additional cost for enlarging the proposed storm sewer system to remove the 150 cfs they requested.

Juan Tabo Boulevard effectively diverts all overland flows which originate to the east of Juan Tabo Boulevard. Flows from the land just to the east cross El Oso Grande in the undeveloped state. In its present condition El Oso Grande is divided into five drainage basins. Basin A as stated previously drains to Spain Road. Basins B, C, and D drain to the west across Morris Street. Flows generated in Basin E drain in a southerly direction toward to Bear Canyon Arroyo.

Proposed Drainage

It is proposed that undeveloped flows from area 15 and area 16 be prohibited from entering El Oso Grande. Permission was previously granted for construction of a ditch/berm along the west boundary of area 15 (see appendix). We feel that if areas west of area 16 are developed before area 16, a similar method can be used to convey the undeveloped runoff to Osuna Road. In both areas, desilting capabilities will be designed into the ditch/berm. This will insure that relatively clear water is discharged into the streets. If agreement by upstream land owners cannot be obtained, the undeveloped flow rates off these properties will be conveyed through the project.

When area 16 is developed, we feel it will be advantageous for that owner to collect runoff from the site in a storm drain at the southwest corner of his parcel. This storm drain may cross underneath Osuna Road, cross the existing park and discharge into the Bear Canyon Arroyo. This solution is recommended since it is much easier to collect the flows before they leave the parcel than to try and pick them up off the street further downstream. This should result in lower cost for the owner of this property. This solution also eliminates nuisance flows in this area of Osuna Road.

In the undeveloped state, basin A contributes 28.0 cfs to Spain Road. As shown on Plate 3 basins 9, 10, 11, 12 and 15 will contribute flows to Spain Road after development. If runoff from basin 15 is limited to the undeveloped rate from the area, the developed flows being discharged to Spain Road are 28.0 cfs. This amount is the same as the amount currently draining to Spain. Therefore, development of El Oso Grande will not compound the drainage problems in Spain.

In order to protect El Oso Grande from the existing drainage problems, the lots along Spain Road will be elevated and a small retaining wall will be constructed to keep the flows within the street right-of-way.

Runoff from area 1 will be removed from the street at the intersection of Morris Street by an adequate number of inlets. These flows will be conveyed to the south in Morris Street in an appropriately sized storm sewer.

Area 6 will drain through a drainage easement to area 13. Areas 13, 14, and 2 will converge at the intersection just east of Morris Street. Due to the large quantity of flow entering this intersection, it is recommended that a storm drain be extended to this intersection. The drain line should extend far enough up the street in basin 13 and remove enough flow to insure that the remainder will stay within the street right-of-way. This storm sewer will connect with the line from basin 1 in Morris Street and proceed south in Morris Street to the low point.

Until development plans for the area west of Morris Street are finalized, a temporary earthen channel should be constructed from the low point in Morris Street to the west to the Bear Canyon Arroyo. The upstream end of this channel will be protected at the point of discharge from the storm sewer. A temporary rundown will be provided to remove remaining flows from the street (approximately 75 cfs). A satisfactory method will be determined for discharging these flows into the Bear Canyon Arroyo as design progresses. The timing of the improvements to the Bear Canyon Arroyo will be determined as the development of this area progresses.

Area 5, 7, and 8 will be allowed uncontrolled discharge to Osuna Road. The street from area 4 shall be designed with a mild slope as it enters Osuna Road. The velocity head of the incoming flow added to the depth of flow at the flowline shall be equal to 1.0 or less. This will insure that all of the flows at this point stay within the right-of-way during a 100-year storm.

The flows in Osuna Road will proceed west to the intersection of Morris. A storm sewer will be constructed from this intersection to the Bear Canyon Arroyo crossing at Morris Street. The storm sewer and inlets will be designed to remove enough flow to allow the remaining flows to turn south on Morris and proceed to the crossing structure. At this point, the flows remaining in Morris Street will be removed by inlets or rundowns and discharged into the Bear Canyon Arroyo. If the full width of Osuna is not constructed initially, discharge rates will only be permitted to it which do not exceed its capacity.

Bear Canyon Arroyo Analysis

This development does not have any frontage along the Bear Canyon Arroyo right-of-way between Morris Street and Juan Tabo Boulevard. However, it is impacted by the 100-year flood plain limits as indicated in the Northeast Heights Drainage Management Plan by Leonard Rice Consulting Water Engineers, Inc.

In order to protect this development from the Bear Canyon Arroyo, Osuna Road should be elevated to a height that the top of curb is a minimum of 1.0' above the 100-year flood elevation.

As the arroyo approaches Morris Street, it should be constricted and the flows accelerated to utilize a trapezoidal box culvert with a 10' bottom width, 1 1/2:1 sideslopes for a depth of 4.0', and vertical walls of 2.5' minimum height. Conceptual drawings of the crossing structure and upstream transition are presented on plates 5 and 6.

West of Morris Street, the channel will be concrete lined. It will have a 10' bottom width, 2:1 sideslopes, and 6.0' of depth. This will allow narrowing of the right-of-way to 75' width. The proposed alignment of the new right-of-way within the existing right-of-way is shown on plate 4.

It is essential that the improvements to the channel east of Eubank do not affect the existing channel west of Eubank. If under existing conditions, it is assumed that the flow is at normal depth as it discharges from the six 6'x6' box culverts at Eubank Boulevard, the existing velocity is 17.8 fps. Further analysis will be made during the design process to determine if the flow is at normal depth as it leaves the Eubank boxes.

The velocity in the improved channel upstream of Eubank Boulevard is 26 – 27 fps. In order to decelerate the flow to the existing velocity as it leaves the crossing structure, it is necessary to widen the trapezoidal channel to 41' bottom width and flatten the slope. This transition design will be based on use of the Bernoulli and Continuity Equations. Details of this transition are shown on plates 8 and 9.

Conclusions:

1. Development of this project may proceed without being impacted by or affecting the current drainage problem in Spain Road.

2. Site drainage can be safely handled within the proposed street network. Necessary storm drainage improvements are indicated on plate 3.

3. Undeveloped runoff and developed runoff from area 15 should be discharged to Spain Road. After development, the runoff from this area shall not exceed the undeveloped peak flow rate (c = .35).

4. Undeveloped runoff from area 16 shall be desilted and discharged to Osuna Road. After development, uncontrolled discharge from this area may be conveyed in a storm sewer beneath Osuna across the park and discharged into the Bear Canyon Arroyo. Review of this concept will be required by Parks and Recreation Department.

5. Elevating Osuna Road from Morris Street to Juan Tabo Boulevard will protect El Oso Grande from the 100-year storm flows in the Bear Canyon Arroyo.

6. Constricting and accelerating the flows in the Bear Canyon Arroyo will allow construction of a satisfactory all-weather crossing structure at Morris Street at a reasonable cost (see plates 5 and 6).

7. The Bear Canyon Arroyo right-of-way may be reduced to 75' between Eubank and Morris. The proposed alignment is shown on plate 4.

8. A transition will be required just upstream of Eubank to insure that the upstream channel improvements do not produce negative effects on the channel west of Eubank. Diagrams of the proposed transition are shown on plates 6–9.

APPENDIX

UN DEVELOPED FLOW RATE CALCULATIONS

DRAINAGE BASIN	AREA	T_c	C	I	Q
A	13.8	10	.35	5.8	28.0
B	9.1	10	.35	5.8	18.5
C	0.9	10	.35	5.8	1.8
D	28.3	16	.35	4.8	47.5
E	30.6	10	.35	5.8	62.1

PROJECT NAME El Oso Grande SHEET 1 OF 2
PROJECT NO. BY [illegible] DATE 6/11/81
SUBJECT Undeveloped Flows CH'D DATE

DEVELOPED FLOW RATE CALCULATIONS

DRAINAGE BASIN	AREA	T_c	C	I	Q
1	7.4	10	.70	5.8	30.0
2	2.3	10	.70	5.8	9.5
3	7.4	10	.70	5.8	30.0
4	8.7	10	.75	5.8	37.9
5	2.2	10	.75	5.8	9.6
6	8.2	10	.75	5.8	35.7
7	5.2	10	.75	5.8	22.6
8	2.3	10	.75	5.8	10.0
9	1.6	10	.70	5.8	6.5
10	1.5	10	.75	5.8	6.5
11	0.7	10	.75	5.8	3.1
12	0.4	10	.70	5.8	1.6
13	9.8	10	.70	5.8	37.8
14	8.6	10	.70	5.8	34.9
	66.3				
	4.1	½ Surrounding Streets			
	70.4 ac				
15	5.1	10	.35	5.8	10.3
16	11.1	10	.35	5.8	22.5

PROJECT NAME El Oso Grande
PROJECT NO.
SUBJECT Developed Flows

SHEET 2 OF 2
BY [illegible] DATE 6/11/81
CH'D DATE

File 78-043

home planning
DEVELOPMENT COMPANY, INC.

2900 Louisiana Blvd. NE Suite 210 Albuquerque, New Mexico 87110 (505) 296-5451

August 16, 1978

Mr. Mick Vaskov
2703 Fairway
Las Cruces, New Mexico 88001

Dear Mr. Vaskov:

Home Planning requests your permission to construct a temporary dirt dike and channel, at our expense, along the West property line of Tract D.

A 20' wide strip immediatley adjacent to the West boundary line of Tract D will be more than adequate to construct the diversion.

It is understood, that when Tract D is improved, the diversion will be removed.

Please sign the appropriate space below, indicating your approval of the diversion.

Thank you for your cooperation.

Sincerely,

Joe Horvath
Project Engineer

Joe Horvath

Mick Vaskov

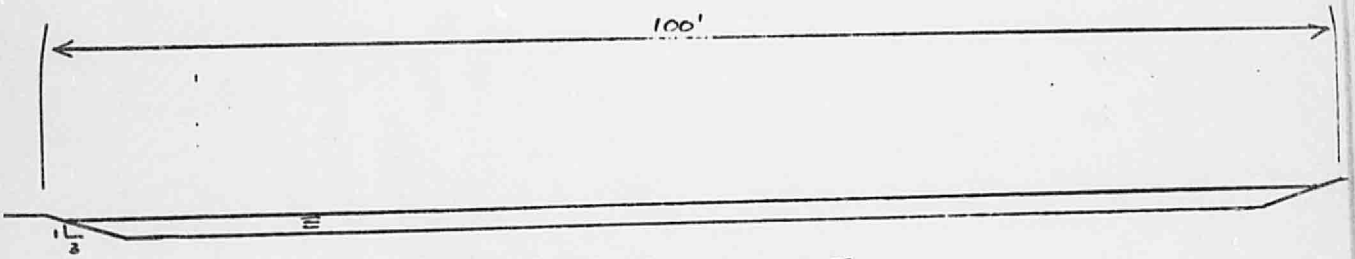
Mick Vaskov - Owner

Thomas K. Campbell II

Thomas K. Campbell II
Ed Wray Agency Inc.

Clifford E. Anderson

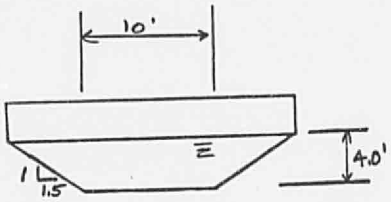
Clifford E. Anderson
Scanlon and Associates



BEAR CANYON
ARROYO EAST OF
MORRIS ST
(APPROX. SECTION)

S=.025
n=.025
D=1.65
V=12.5fps
h_v=2.4

A=153.4sf
P= 98.4
R= 1.56



Morris St. Crossing Structure

S=.025
n=.015
D=4.02
V=30.0
h_v= 14.0

A = 64sf
P= 24.4
R= 2.6

PLATE 5

ARROYO SECTIONS

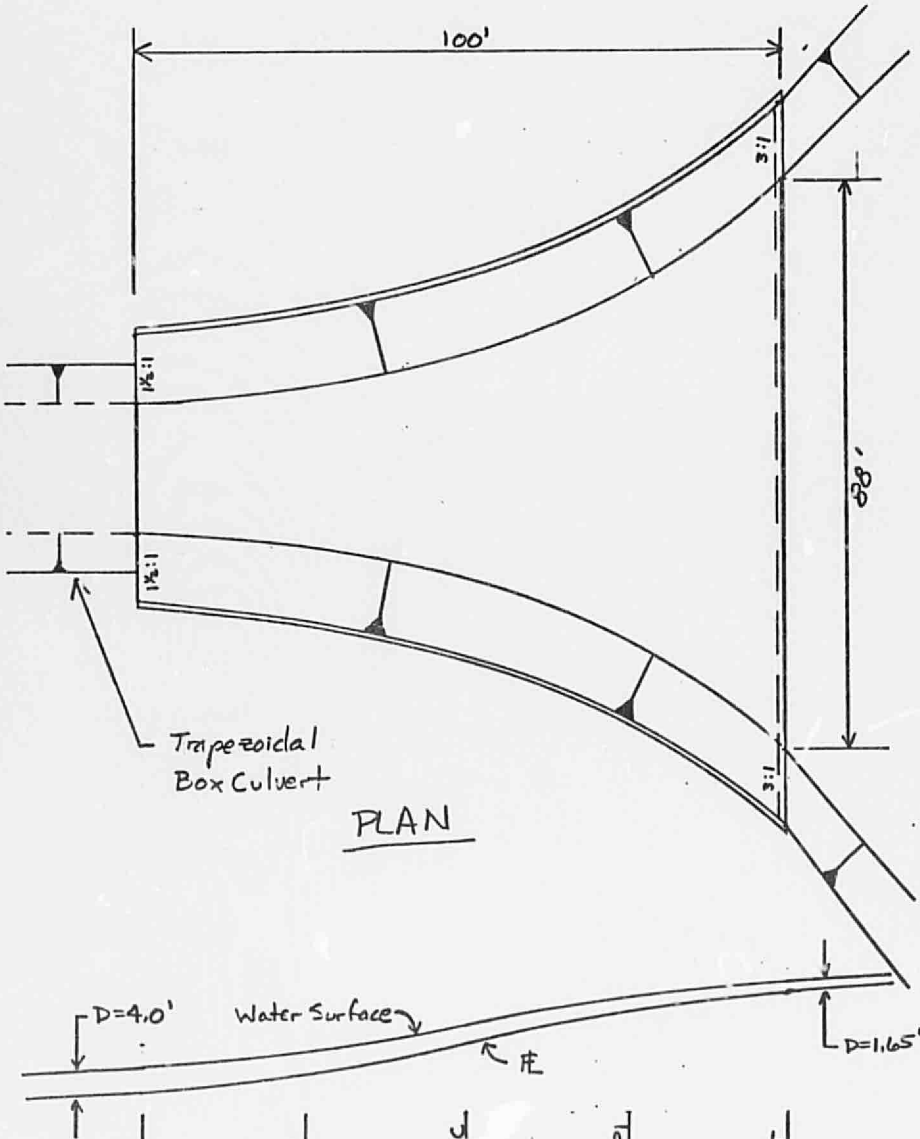
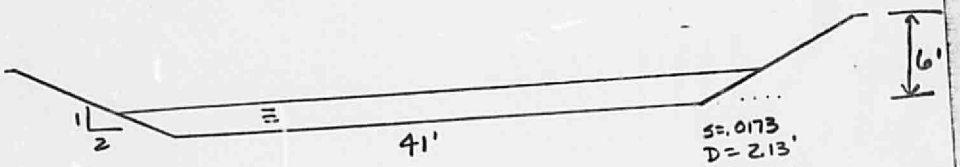


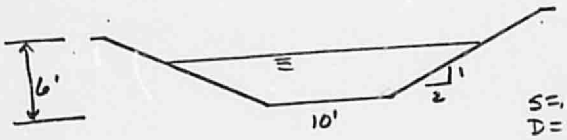
PLATE 6

PROJECT NAME	El Oso Grande	SHEET	OF
PROJECT NO.	10850	BY Arroyo	DATE 6/11/81
SUBJECT	Transition East of Morris	CH'D	DATE



S=.0173
D=2.13'
V=20.0
A=96.40
hv=6.21

41' Bottom Width Channel



S=.0250
D=3.81
V=28.7
A=67.13
hv=12.8

10' Bottom Width Channel

PLATE 7

PROJECT NAME El Oso Grande SHEET ____ OF ____
PROJECT NO. ____ BY ____ DATE 6/1/81
SUBJECT Sections of Transition from 10' Bottom Width to 41' Bottom Width CH'D ____ DATE ____

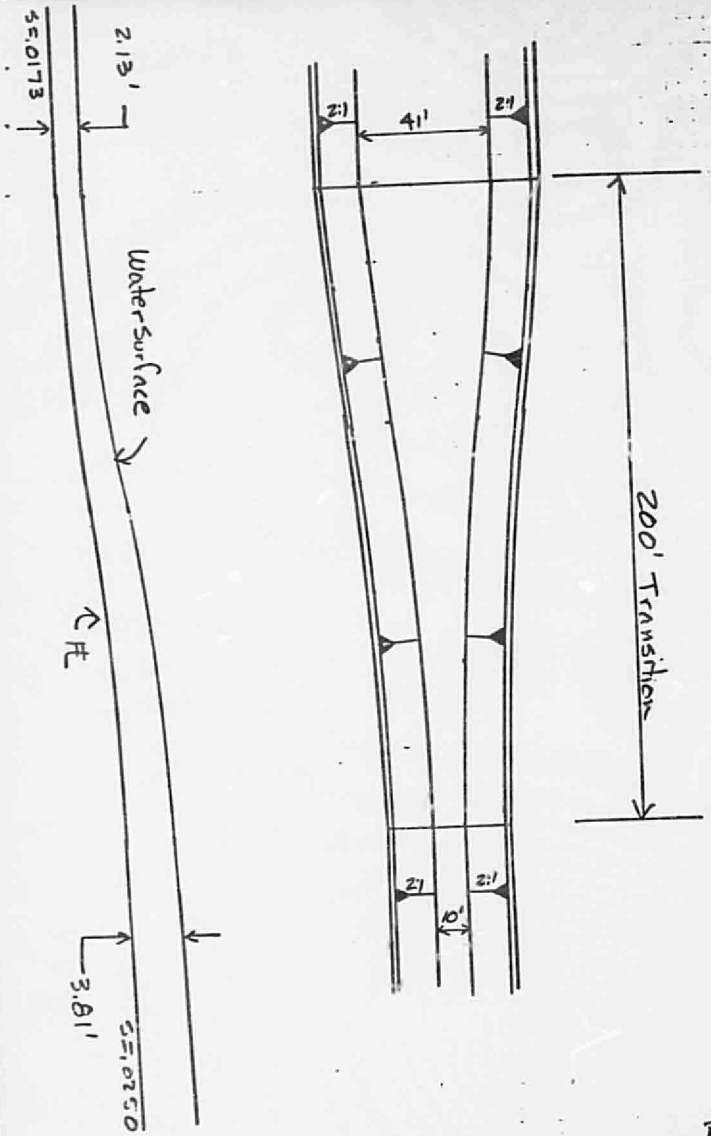
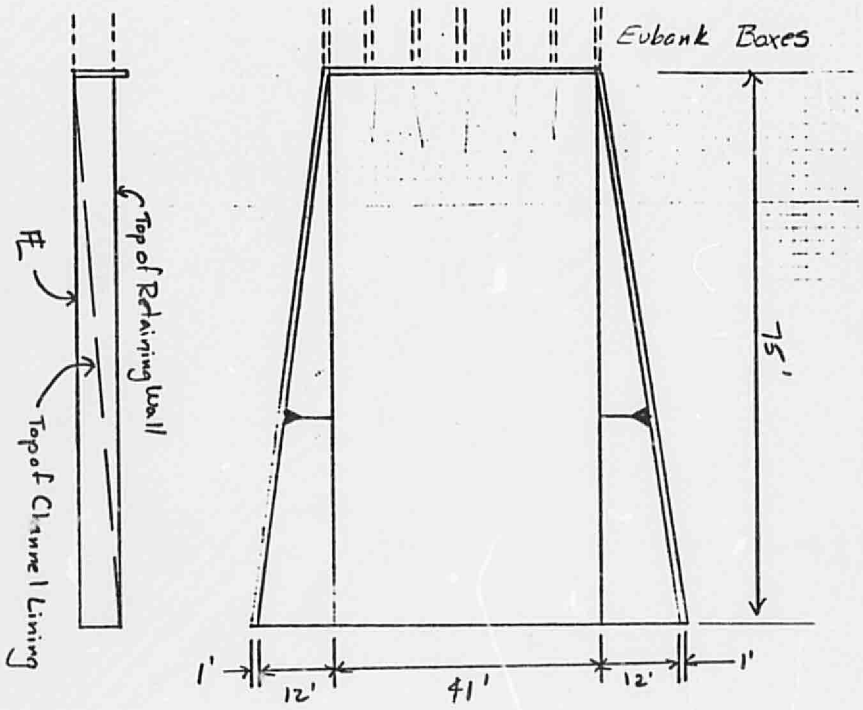


PLATE 8

PROJECT NAME El Oso Grande SHEET ____ OF ____

PROJECT NO. ____ BY Dmyn DATE 6/11/80

SUBJECT Transition from 10' bottom width to 41' bottom width CH'D ____ DATE ____



Transition from 2:1 Sideslopes to
Vertical walls
Upstream of Eubank Boxes

PLATE 9

PROJECT NAME El Oso Grande SHEET ____ OF ____
PROJECT NO. ____ BY ____ DATE 6/11/81
SUBJECT ____ CH'D ____ DATE ____

HYDROLOGY

F21/D18 2 OF 2

COMMUNITY SCIENCES CORPORATION
P. O. Box 1328
CORRALES, NEW MEXICO 87048

(505) 897-0000

LETTER OF TRANSMITTAL

DATE 11/30/81 JOB NO.

ATTENTION

RE: Oso Grande - Bear Canyon Channel

TO Chuck Casterling

RECEIVED
NOV 30 1981
ENGINEERING

GENTLEMEN:

WE ARE SENDING YOU ☐ Attached ☐ Under separate cover via _____ the following items:

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☒ Computations

COPIES	DATE	NO.	DESCRIPTION

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ Resubmit _____ copies for approval

☐ For your use ☐ Approved as noted ☐ Submit _____ copies for distribution

☒ As requested ☐ Returned for corrections ☐ Return _____ corrected prints

☐ For review and comment ☐ _____

☐ FOR BIDS DUE _____ 19____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Per checklist of requirements outlined in our last meeting:
1) Deflection computation for dissipator walls
2) Shear computation for dissipator walls
3) Temperature steel requirement for dissipator
4) Water surface profile computations at upstream end of channel

COPY TO _____

SIGNED: Kent M. Whitman

FORM 240-3 Available from NEBS Inc. Groton, Mass. 01450

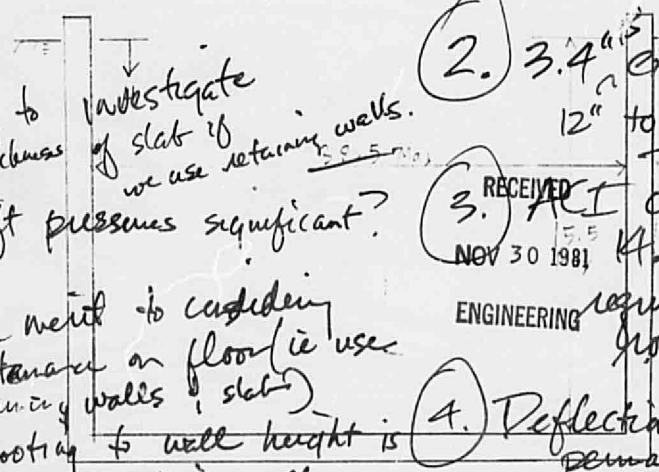
If enclosures are not as noted, kindly notify us at once.

Case Study Chap 1 - Supplementary Calcs

A) Deflection Calcs: Moment Area Method

P = 5474 #/ft

V_{max} = [illegible] #/ft



(1.) Need to look at saturated conditions? drain totally effective?

(2.) 3.4" is excessive 12" to 14" thickness

(3.) ACI code 14.2.12 requires two rows of steel

(4.) Deflection is permanent - due to shift of backfill soil.

(5.) Extra wat could cause spalling due to steel being saturated.

(12) Need to investigate thickness of slab if we use retaining walls.

(11.) Uplift pressures significant?

(10.) Some merit to considering maintenance on floor (ie use retaining walls & slab)

(9.) 1/2 footing to wall height is typical for retaining wall.

1) $\gamma_{w\ soil}$ = 142.4

K_a = 0.32 — non-saturated?

Thus Moment in Sidewalls = $\frac{(.32)(142.4)H^2(H)}{3}$

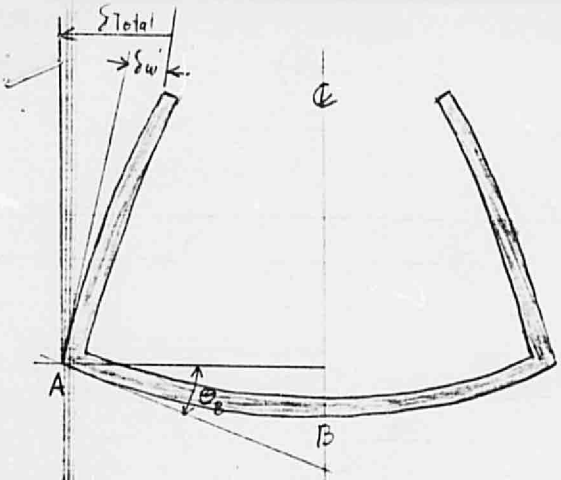
(7.) If wall thickness is increased slab must be also.

(8.) 2.8" is due to rotation of slab. $7.6H^3$

2) Ignoring deadweight of slab, weight of walls = 16.25 x 145 x 2 = 4712.5 resulting in uniform load on bottom of Continuous 23 #/SF

(6.) Box structure aggravates deflection - Seperate footing will not transmit moment. - Cantelever beam yields .87 inches.

RECEIVED
NOV 30 1981
ENGINEERING



E (concrete) $= 3155924$ psi

ACI – 14.2.12
~~requires two rows~~ of steel.

θ_B = Area under M/EI Diagram A to B

$$= \int_0^{19.25} \frac{(28282 + 61.5x^2 - 2367.75x)\,dx}{EI}$$

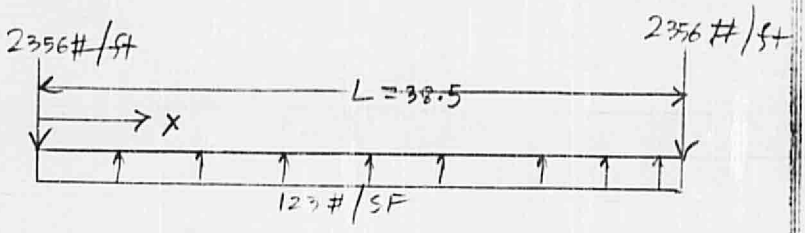
$$I = \frac{bd^3}{12} = \frac{12(9.5)^3}{12} = 857.38$$

$$\theta_B = \Big|_0^{(19.25)} \frac{28282x + 20.5x^3 - 1183.88x^2(144)}{3155924\,(857.38)} = 0.0134 \text{ rad.}$$

$$\delta_w = \int_0^{15.5} \frac{H\,7.6\,H^3\,dH}{EI} \qquad \int H^4\,dH \qquad \frac{H^5}{5}$$

$$= \Big|_0^{15.5} \frac{1.52\,H^5(1728)}{3155924\,(857.38)}$$

$$= 0.87 \text{ inches}$$



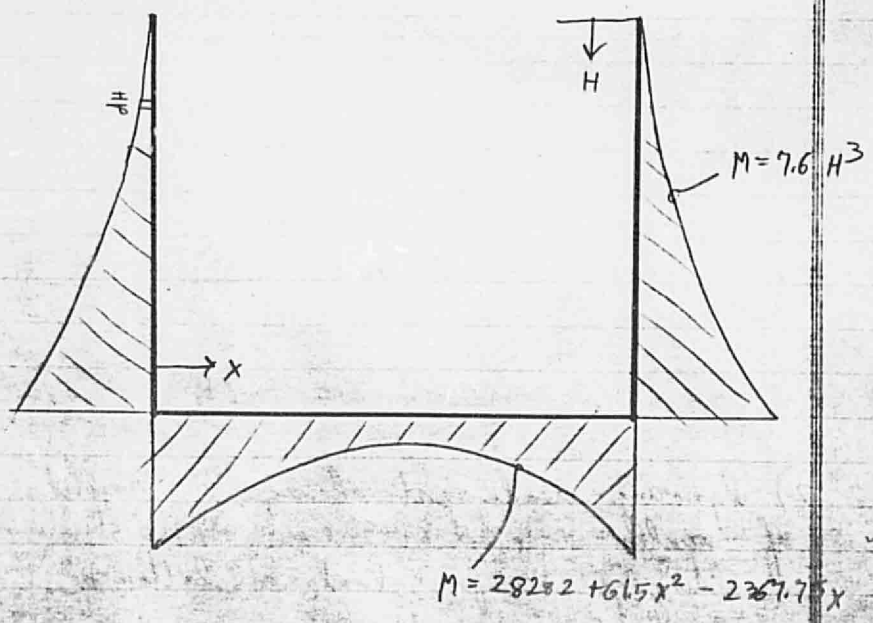
$$\text{Shear} = -\frac{wL}{2} + wx$$

1. Hydro Static Pressure

$$\text{Moment} = \int_0^x \left(-\frac{wL}{2} + wx\right) dx$$

$$= \frac{wx^2}{2} - \frac{wLx}{2}$$

$$\therefore \text{Net Moment} = 28282 + 61.5x^2 - 2367.75x$$



$\delta_{Total} = 0.87 + 15.5(12)(.0134)$

$= \underline{3.36}$ inches at maximum loading

B) <u>Shear at Base</u>

Shear stress max = 5474/12 x 9.5
= 48 psi

V allowable = $1.1\sqrt{f'c}$
= 60 OK

C) Bearing under walls for Test of Shear during curing

Weight Wall = 17.25 x 145 = 2501 #/SF

Which is well within soil bearing capacity.

D) <u>Temperature Steel Requirement</u>

ACI Section 807 requires .002 times gross cross sectional concrete area.

Actual ratio specified is 2 x 0.44/144 = .0061 > .002
OK

INDEMNIFICATION AGREEMENT

THIS AGREEMENT is made this _____ day of _____, 1980, by and between The Stone Company, 2701 San Pedro, N.E., Albuquerque, New Mexico, 87110, hereinafter referred to as the "Indemnitor" and the City of Albuquerque, New Mexico, a municipal corporation, hereinafter referred to as the "Indemnitee".

WITNESSETH:

WHEREAS, the Indemnitor is the owner of Stonegate Village, a subdivision lying along Osuna Road, N.E., east of Eubank Boulevard, N.E.; and

WHEREAS, although construction is presently underway, there are no persons residing in the subdivision; and

WHEREAS, the Indemnitor desires to install a temporary barricade at the intersection of Eubank Boulevard, N.E. and Osuna Road, N.E. in order to prevent motor vehicle traffic from proceeding east on Osuna Road, N.E.; and

WHEREAS, the Indemnitee is willing to permit the Indemnitor to install a temporary barricade at the intersection of Eubank Boulevard, N.E. and Osuna Road, N.E. under the terms and conditions provided herein.

NOW, THEREFORE, in consideration of the premises and covenants hereinafter contained, the parties hereto hereby agree as follows:

1. In consideration of the Indemnitee permitting the Indemnitor to install at the Indemnitor's expense a temporary barricade at the intersection of Eubank Boulevard, N.E. and Osuna Road, N.E., the Indemnitor agrees to defend, indemnify and hold harmless the Indemnitee and its officers, employees and agents from and against all claims, suits, actions, damages or judgments of any kind arising out of or resulting from the Indemnitee permitting the Indemnitor to install said barricade.

2. The proposed barricade and the Indemnitor's plan for barricading the intersection are subject to the approval of the City of Albuquerque's Traffic Engineer prior to installation of the barricade.

3. The barricade is to be of a temporary nature, and shall not remain in place for more than six (6) months from the date of this Agreement, unless an extension of time is granted in writing by the Indemnitee. Provided, however, that the Indemnitor shall remove the barricade as soon as the first resident takes up occupancy in Stonegate Village or within seventy-two (72) hours of receipt of written notice from the Indemnitee to remove the barricade. It is expressly agreed that if the Indemnitee, in its sole discretion, determines that an emergency exists, the Indemnitee may remove the barricade or cause the barricade to be removed at the Indemnitor's expense.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the day and year first above written.

CITY OF ALBUQUERQUE:

_____
James C. Jaramillo
Chief Administrative Officer

ATTEST:

_____
City Clerk/Recorder

THE STONE COMPANY:

_____
Ralph Stone, President

REVIEWED BY THE LEGAL DEPARTMENT:

_____
Assistant City Attorney

APPROVED:

_____
City Engineer

APPROVED:

_____
City Traffic Engineer

STATE OF NEW MEXICO)
) ss.
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this _____ day of _____, 1980, by Ralph Stone, President of The Stone Company.

_____
Notary Public

My Commission Expires:

_____

(SEAL)

City of Albuquerque
Special Assessment District No. 184
Engineer's Report

Analysis of Design

Street Improvements

Street improvements will consist of standard curb and gutter and asphaltic concrete pavement. The pavement thickness for residential will be six inches of compacted subgrade, three inches of asphaltic concrete base course and one inch of asphaltic concrete surface course. The streets in areas zoned for residential will vary from 33.25' to 41.25' wide, back of curb to back of curb. The pavement thickness for arterial will be twelve inches of compacted subgrade, six inches cement-treated base course, three inches of asphaltic concrete base course and one inch of asphaltic concrete surface course. The arterial streets will vary from 67.25' to 87.25' wide, back of curb to back of curb. The 67.25' width will have a sixteen-foot median, the 87.25' width will have a 36' median.

In order to properly dispose of surface drainage, it will be necessary to install storm sewers and construct drainage control works for the following streets:

Juan Tabo Boulevard, N.E.	-	Baja Drive, N.E., to Bear Arroyo & Spain Road, N.E., to Eubank
Manitoba Street, N.E.	-	Juan Tabo Blvd. East 600'
Indian School Road, N.E.	-	Wyoming Blvd., N.E. to Eubank Blvd., N.E.

This estimated construction cost for storm sewer improvements is $462,608.40.

Pete Test
Scanlon + Assoc

STORM SEWER IMPROVEMENTS

Description	Est. Quantity	Unit	Unit Prices	Total Amount
1. Furnish & Install 18" R.C.P	1,805	LF	$ 10.00	$18,050.00
2. Furnish & Install 36" R.C.P	1,105	LF	$ 18 00	$19,890.00
3. Furnish & Install 42" R.C.P	2,301	LF	$ 25.00	$57,525.00
4. Furnish & Install 48" R.C.P	1,555	LF	$ 30.00	$46,650.00
5. Furnish & Install 54" R.C.P	580	LF	$ 35.00	$20,300.00
6. Furnish & Install 60" R.C.P	490	LF	$ 40.00	$19,600.00
7. Trenching & Backfilling for 36" R.C.P. & smaller 0'-8' Depth.	2,508	LF	$ 5.50	$13,794.00
8. Trenching & Backfilling for 42" through 48" 0'-8' Depth	395	LF	$ 8.00	$ 3,160.00
9. Trenching & Backfilling for 42" through 48" 8'-10' Depth	1,492	LF	$ 10.00	$14,920.00
10. Trenching & Backfilling for 42" through 48" 10'-12' Depth	913	LF	$ 12.00	$10,956.00
11. Trenching & Backfilling for 42" through 48" 12'-14' Depth	583	LF	$ 15.00	$ 8,745.00
12. Trenching & Backfilling for 42" through 48" 14'-16' Depth	363	LF	$ 18.00	$ 6,534.00
13. Trenching & Backfilling for 42" through 48" over 16' Depth	512	LF	$ 25.00	$12,800.00
14. Trenching & Backfilling for 54" and Larger R.C.P. 0'-8' Depth	377	LF	$ 15.00	$ 5,655.00
15. Trenching & Backfilling for 54" and larger R.C.P. 8'-10' Depth	144	LF	$ 18.00	$ 2,592.00
16. Trenching & Backfilling for 54" and larger R.C.P. 10'-12' Depth	286	LF	$ 21.00	$ 6,006.00
17. Trenching & Backfilling for 54" and Larger R.C.P. 12'-14' Depth	263	LF	$ 24.00	$ 6,312.00
18. Type C. Manhole C' Dia. 0'-6' Depth	3	ea	$ 650.00	$ 1,950.00
19. Type C Manhole 8' Dia 0'-6' Depth	2	ea	$ 850.00	$ 1,700.00
20. Type E Manhole 6' Dia. 0'-6' Depth	17	ea	$ 550.00	$ 9,350.00

Description	Est. Quantity	Unit	Unit Prices	Total Amount
21. Type E Manhole 8' Dia. 0'-6' Depth	5	ea	$ 750.00	$ 3,750.00
22. Extra Depth for 6' Dia.M.H.	121	LF	$ [illegible]	$ 4,340.00
23. Extra Depth for 8' dia.M.H.	30	LF	$ 50.00	$ 1,500.00
24. Double grate Type C Inlet	39	ea	$ 700.00	$27,300.00
25. Headwall at Outlet End or SD (Barr Tria) (Bear Arroyo)	2	LS	$ 2,400.00	$ 2,400.00
26. Cattle Guard Inlets Malaguena & Juan Tabo Baja Dr. & Juan Tabo Spain & Juan Tabo	3	LS	$30,000.00	$30,000.00
27. Over Flow Eubank & Juan Tabo	1	LS	$ 8,000.00	$ 8,000.00
28. Removal & Disposal of Existing Pavement	1,200	SY	$ 2.00	$ 2,400.00
29. Removal & Disposal of Existing Conc. Cb. & Gtr.	360	LF	$ 1.80	$ 648.00
30. Concrete Curb & Gutter	360	LF	$ 3.50	$ 1,260.00
31. Concrete Valley Gutter	330	SY	$ 9.00	$ 2,970.00
32. Arterial Asphalt Pavement Including 12" Compacted Subgrade, 6" C.T.B. Prime Coat, 3" A.B.C. Tact Coat 1" A.S.C.	600	SY	$ 8.00	$ 4,800.00
33. Residential Asphalt Pavement Including- 6" Compacted Subgrade Prime Coat 3" A.B.C. Tact Coat 1" A.S.C.	275	SY	$ 6.00	$ 1,650.00
34. Permits and Fees	1	LS	$ 500.00	$ 500.00
35. Testing Allowance	1	LS	$ 7,500.00	$ 7,500.00

STORM SEWER TOTAL ESTIMATED COST $385,507.00
Plus 20% For Legal, Engineering & Administration $ 77,101.40

TOTAL ESTIMATED COST (Storm Sewer Improvements) $462.608.40

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