HYDROLOGY G11/D5 ONE OF TWO ONE PLAN

G11-D5

1 PLAN

RICHARD E. LEONARD
EXECUTIVE ENGINEER

B. H. SWINBURNE, CHAIRMAN
WILLIAM V. HEREFORD, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
VERNON DOAK, DIRECTOR
KLEBSON LAWS, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT AVE. N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 344-3516

RECEIVED
FEB 15 1980
CITY ENGINEER

611-D56

February 13, 1980

Mr. Michial M. Emery, P.E.
Vice President
Bohannan-Huston, Inc.
4125 Carlisle Blvd., NE
Albuquerque, NM 87107

Dear Mr. Emery:

Reference your February 12, 1980 letter Re: Burning Bush Subdivision Drainage Report.

I am sure you are aware that the drainage report conflicts with the soft lining and ROW requirements of the Northeast Heights Drainage Management Plan. Therefore, other than a flat disapproval, neither the Designee nor I can act on your report until the policy issues are resolved. I trust you will understand.

Sincerely,

Richard E Leonard

Richard E. Leonard
Executive Engineer

ic
cc: R. Heller
B. Conegliano
Jim Smith
S. Sweenhart

BSH		ADM	
HRO		SUR	
CDS		COUN	
DES		SEC	
INSP		FILE	

Hydrology

8-21-80 JJ&

Tract J - Ladera Hgts. Sub'd.

① Why is an infiltration rate of 12"/hr used? "Intro to Hydrology", Viessman, Harbough, Knapp, indicates an infiltration rate of 0.5 to 1.0 in/hr after 1 hr of continuous rainfall for a soil of high infiltratability with an increase of 3 to 7.5 times if a grass cover is included. Under the best of circumstances this is an infiltration rate of 7.5 in/hr.

② What happens when the ponds have silted up & little or no infiltration occurs.

③ The infiltration rate will decrease with time & this is not taken into account.

④ Drainage Basin "B" - 6" pipe area =
$= \frac{\pi \cdot .5^2}{4} = 0.196 ft^2$ not 0.09

$Q = 0.62(0.196)\sqrt{2gh}$ (when $h = 1.21'$) = 1.07 cfs

⑤ Why do "constants" change from area to area i.e. $\sqrt{2g} = 8.03, 8.02, \& 8.025$ & runoff coefficient of landscaped areas = 0.3 & 0.4

⑥ In Drainage Area G, a 6" pipe has an area of 0.35 ft²

⑦ the tables for areas D&E, F&G are unfinished
the discharge on all ponds is incorrect in some manner

(8) THE DRAINAGE CONCEPT IN THE REPORT IS NOT IN KEEPING WITH THE INTERIM DRAINAGE GUIDELINES WHICH REQUIRES Q_5 DISCHARGE RATE FROM THE SITE AND NOT THE Q_{100} UNDEVELOPED DISCHARGE RATE THAT THE REPORT PROPOSES.

(9) SINCE ARRISCO DR IS NOT AN IMPROVED STREET, HOW DOES THE ENGINEER PROPOSE TO CONNECT THE DISCHARGE PIPES INTO THE STREET, ALSO I BELIEVE THAT THE ENGINEER SHOULD OBTAIN PROPOSED STREET GRADES.

(10) THE CLOSE PROXIMITY OF THE PONDS TO THE FOUNDATION IS NOT ADDRESSED IN THE REPORT.

Goldberg - Mann & Associates, Inc.
Engineers - Planners
811 Dallas St., N.E. Albuquerque, New Mexico 87110 (505) 265-5611

October 27, 1980 0-77

Mr. Richard Leonard
AMAFCA
P.O. Box 25851
Albuquerque, New Mexico 87125

Re: Tract B, Ladera Heights Subdivision

Dear Rich:

I had talked to you previously about preparing a drainage report for Tract B of Ladera Heights Subdivision. At that time you were kind enough to recommend several sources of information that I might review. I have reviewed the sources as you recommended plus I have reviewed your file that contained a drainage report on the Ladera Heights Subdivision.

The drainage report was prepared by CCIC. It was approved on June 2, 1978, by Bruno Conegliano. Contained in that report is a letter of April 28, 1978. If you would check the last paragraph, it has the following statement:

> "Runoff shall be directed to an inlet collection system on Ladera Road by means of grading."

It goes on further to say that Jim Smith concurs with the design. In reviewing the entire report and this letter it is my opinion that it was AMAFCA's intent to allow Tract B to drain into the inlet system in Ladera Road, which in turn drains into your 60-inch line.

Would you please review the documents and let me know whether or not my opinion is correct. We would like to develop Tract B as a townhouse subdivision. On-site ponding is somewhat difficult when you have small units such as townhouses. Therefore, we are very anxious to be able to drain into your system since it borders our project and not provide 100 percent retention.

In addition, when my client purchased the property he paid a pro rata charge to the seller to cover the extension of the storm sewer line to his property. Therefore, if for some reason we could not use the system we certainly would like to recover the costs that we have paid to date.

Please advise me of your decision as soon as possible. If you have any questions or comments, do not hesitate to call. Thank you.

Yours truly,

GOLDBERG-MANN & ASSOCIATES, INC.

Thomas T. Mann, Jr., P.E.
President

TTM:pe
xc: Bill Fanning
Bruno Conegliano

RICHARD E. LEONARD
EXECUTIVE ENGINEER

S. H. SWINBURNE, CHAIRMAN
WILLIAM V. HEREFORD, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
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Arroyo
Flood
Control
Authority
2600 PROSPECT AVE. N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 344-3516

RECEIVED
NOV 06 1980
CITY ENGINEER

November 4, 1980

Mr. Thomas T. Mann, Jr., P.E.
Goldberg-Mann & Associates, Inc.
811 Dallas Street, NE
Albuquerque, NM 87110

Re: Tract B, Ladera Heights Subdivision

Dear Tom:

Mr. Leonard has asked that I reply to your letter of October 27, 1980.

We have researched the question of draining Tract B into the Ladera System Outfall and find that in previous reports and agreements it was indeed the intent to drain Tract B into the AMAFCA outfall.

Sincerely,

Dan Sabo
Engineer

Dan Sabo

md

cc: Bruno Conegliano

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

MAYOR
David P. Rusk

March 31, 1981

Rymar Enterprises
125 Eubank Blvd, NE
Albuquerque, NM 87123

RE: S-81-10

Gentlemen:

The Subdivision Review Board made the following decisions at the meeting of March 26, 1981:

S-81-10 shall be given preliminary approval, subject to Conditions 1 thru 9, as outlined in the Staff Report and the Findings:

Findings: Item 9 of Staff Findings is to be addressed: "All drainage is to be conveyed to the inlet shown at the northwest intersection of Street "A" and Ladera Boulevard. (Note: this is subject to approval by the City Hydrologist.)"

Development of Ladera to the property boundary, in lieu of half of Ladera and half of Tucson will be taken under consideration. Tom Mann was instructed to initiate a study of this for submittal to Messrs. Davenport and Beck.

The private streets should be labeled as "private ways."

Should you have any questions regarding these decisions, do not hesitate to contact me.

Sincerely,

Robert J. Casias
Chairman,
Subdivision Review Board

cc: Tom Mann, Goldberg-Mann

SUBDIVISION REVIEW BOARD
ACTION SHEET
March 26, 1981

PRESENT:

Bob Casias, Chairman
Lloyd Barlow
Paul Brasher
Joe Quintana
Evelyn Jeys
Bob Fosnaugh
Q. R. Kielich
Bob Burgan
Chuck Easterling

1. S-81-10 Goldberg-Mann and Associates, agent for Rymar Enterprises, requests subdivision approval for a parcel of land described as Tracts B, D, E, F, G, H, and I, Ladera Heights Subdivision located west of Coors Boulevard south of St. Joseph's Avenue, containing approximately 11 acres (G-11)

Tom Mann, agent represented Rymar Enterprises.

FINDINGS:

1. Item 9 of Staff Findings is to be addressed.

2. Development of Ladera to the property boundary, in lieu of half of Ladera and half of Tucson will be taken under consideration. Tom Mann was instructed to initiate a study of this for submittal to Messrs. Davenport and Beck.

3. The innermost one foot of the sidewalk along Ladera should have a different texture from the remainder.

4. The private streets should be labeled as "private ways".

BE IT RESOLVED that S-81-10 be given preliminary approval, subject to Conditions 1 thru 9, as outlined in the Staff Report and the above Findings.

MOVED by Bob Fosnaugh
SECONDED by Bob Keilich
Motion Carried Unanimously

2. S-81-8 Goldberg-Mann and Associates, agents for Pete Daskalos, requests subdivision approval for a parcel of land described as the S/2, N/2, SE/4 Section 27, T1ON, R4E, N.M.P.M. located at the southwest corner of Piru Boulevard and Nakomis Drive S.E., containing 2.4519 acres (L-22).

Appearing for the Piru Subdivision were Tom Mann, agent, Pete Daskalos and Fred Galley, owners.

Appearing with questions were two citizens representing the neighborhood. They raised a question about the increased density planned, and the quality of the homes to be built.

FINDINGS:

1. Lot 9 is unbuildable. It is suggested that this become "Tract A".

2. There is to be a quit claim or vacation of the Piru stub.

3. There are to be a curb radius and reflectorized barricade posts at the end of Piru.

4. The sewer line extension is to be paid for by the developer.

5. There is to be a resolution of the drainage from Tijeras Heights to the subject property.

BE IT RESOLVED that S-81-8 be given conditional approval, subject to Findings, and conditional upon resolution of the problem with Lot 9.

MOVED by Bob Casias
SECONDED by Bob Fosnaugh — Motion Carried Unanimously

3. SC5-81-9 Frank Benavidez, agent for Doyle Pargin and Abe Guzman, requests Subdivision approval for a parcel of land described as Portion of Tract 8B1, M.R.G.C.D. Map No. 52 together with a portion of Tract 9A2A1A1, M.R.G.C.D. Map No. 53, Bernalillo County, New Mexico, located north of Don Felipe Road, between Coors Boulevard and Isleta Boulevard S.W., containing 63.378 acres. (Q & R 10 & 11)

Frank Benavidez, agent, appeared in behalf of Don Felipe Estates.

Appearing in opposition was Gene Runkle, representing community landowners, who pointed out that the Board of County Commissioner's reversal of the County Planning Commission denial of this zoning is presently awaiting court hearing. Also, fire protection is not as represented in the Disclosure Statement, but is a volunteer fire department.

FINDINGS:

1. There should be a second access to the subdivision.

2. Cul-de-sacs or turnarounds are required for Don Miguel Road.

3. Don Miguel Road is proposed both east-west and north-south. This should be amended by renaming one of the legs to avoid confusion.

4. A drainage and grading plan is required and is subject to approval by the City Engineer.

5. A soils report is required.

BE IT RESOLVED that SC5-81-9 be indefinitely deferred in order to give the applicant time to comply with the above Findings.

MOVED by Bob Fosnaugh
SECONDED by Bob Burg[illegible] — M[illegible]on Carried Unanimously

AGENDA ITEM NO. 1
SUBDIVISION REVIEW BOARD
March 26, 1981
S-81-10

S-81-10 Goldberg-Mann and Associates, agent for Rymar Enterprises, requests subdivision approval for a parcel of land described as Tracts B, D, E, F, G, H, and I, Ladera Heights Subdivision located west of Coors Boulevard south of St. Joseph's Avenue, containing approximately 11 acres. (G-11)

COMMENTS FROM OTHER DEPARTMENTS TO THE SRB 3/26/81:

Traffic Engineer:	"25' P.L. radii required at intersections of Streets A & B with Ladera. Ladera Rd (S. portion) should be paved."
Human Service:	"No adverse comment."
AMAFCA:	"An approved drainage report is required prior to subdivision approval."

PLANNING DIVISION COMMENTS TO THE SRB 3/26/81:

Requested is subdivision approval for a 121 unit townhouse development located west of Coors Boulevard between Ladera Road and Tucson Road, N.W. containing approximately 11.05 acres.

The applicants have previously met with City Staff concerning the proposal. Those areas in need of amendment were disclosed at that time. The following items have been agreed upon by the applicant for inclusion into the development:

1. Ladera Road is to be developed half width from its present terminus, south to the intersection with Tucson Road.

2. Tucson Road is to be either developed concurrently with the proposal, or appropriately bonded in lieu of development.

3. Sidewalks along Ladera Boulevard are to be increased in width by one foot (1') for a total width of seven feet (7'). The sidewalks will then be constructed at the back of curb, leaving the landscaping strip between the sidewalk and the property line.

4. Interior sidewalks will be required only on one side of the street. In addition, the proposed jogging/walking paths will be shown on the replat.

5. All common areas will be landscaped.

6. Concrete pads for refuse containers will be provided.

7. The two interior street stubs will be modified to eliminate the wedges at their termini.

8. A curb cut at the intersection of Street "A" and Ladera Boulevard will be provided, as will a 100 foot (100') turn bay along Ladera.

9. All drainage is to be conveyed to the inlet shown at the northwest intersection of Street "A" and Ladera Boulevard. (Note: this is subject to approval by the City Hydrologist.)

As can easily be inferred, the proposal's final configuration will have addressed most of the obvious points of omission. However, it is also evident that certain components of Section 21 of the City of Albuquerque Subdivision Ordinance have not been complied with. It remains the responsibility of the applicant to address these areas. Particular attention must be given to the drainage report and site grading plan in order to meet City drainage criteria.

FINDINGS:

1. The amendments to the proposal, as outlined above, must be provided.

2. Section 21 of the Subdivision Ordinance must be complied with in total.

3. A detailed drainage report and site grading plan must be submitted and approved prior to final plat approval.

RECOMMENDATION: Conditional approval of S-81-10, subject to the above Findings is recommended.

Robert J. Casias, Planner

RJC:edj

cc: Rymar Enterprises, 125 Eubank Blvd, NE; 87123
Goldberg-Mann & Associates, 811 Dallas NE; 87110

IT IS REQUESTED THAT THE APPLICANT/AGENT BE PRESENT AT THE MEETING

AUG 2 6 1981

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

G11-D5

August 24, 1981

Mr. Steve Cannon
Tom Mann & Associates
811 Dallas N.E.
Albuquerque, New Mexico 87110

RE: BURNING TREE SUBDIVISION DRAINAGE REPORT

Dear Steve:

An initial review of the referenced drainage report has resulted in the comments listed below. The reference numbers are taken from the current Drainage Report (DR) and Construction Plan (CP) Checklists.

1. DR Item #1 - The City will require a certification stating that drainage facilities are in substantial compliance with the approved plan. Tom Mann and Associates may accept responsibility for this certification if it is felt that this action would be advantageous to the development timetable.

2. DR Item #2 - Please supply with future reports all planning and zoning actions history.

3. DR Item #7 - This office should be supplied with the delineation of off-site contibuting watersheds on City Ortho-Topo Area Maps. Does St. Joseph's Avenue and the watershed to the northwest contribute runoff to Ladera Road?

4. DR Item #8 - Please supply with all future reports off-site rates of flow for the 10-year frequency storm.

5. DR Item #10 - What present conditions prevent areas to the north and east from contributing runoff to Ladera Road?

6. DR Item #15B1 - For lots in which runoff from backyards remain on-site, will a pond be graded to handle the rainfall?

7. DR Item #15B2 - How are the proposed ponds to be drained? The City will not accept ponding facilities which do not provide a means of positive discharge.

8. DR Item #15B5 - What landscaping provisions are made for the ponds?

9. DR Item #15B8 - The drainage report indicates that development increases runoff by 9.2 cfs and that additional catch basins will be constructed to handle the increased flow. How many catch basins now exist? What is the present capacity of the storm sewer system? How many catch basins are to be added?

10. DR Item #18A - A vicinity map should be affixed to the plans if they are to be used for construction purposes.

11. DR Item #19B - Pad elevations should include the word MINIMUM.

12. DR Item #19C - Temporary bench mark location should be identified.

13. DR Item #21K - Additional spot elevations should be included to verify that the property line elevation is at least 1 ft. above street flowline.

14. DR Item #22 - Is the development going to be phased such that a erosion control plan would be necessary?

15. DR Item #23 - The City is now requiring that the owner enter into an agreement to construct, operate, and maintain all drainage facilities substantially in compliance with the approved drainage plan. We urge that this document be completed at the earliest possible date.

16. We would appreciate receiving a completed copy of the Drainage Plan Information sheet as soon as possible.

If I can answer any questions concerning the above matters, please call.

Sincerely,

Brian G. Burnett
Civil Engineer/Hydrology

BB:gc
8033A
cc f/Reading

811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110 • 505-265-5611

Tom Mann Associates, Inc. Engineers

0077
September 24, 1981

RECEIVED
SEP 28 1981
ENGINEERING

Mr. Brian Burnett
Civil Engineer/Hydrology
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Re: Burning Tree Subdivision
Drainage Report

Transmitted herewith are two (2) copies of the revised drainage report for Burning Tree Subdivision. In response to your initial review of the subject drainage report, I thought a revised report should be written. The items you have mentioned in your review have been addressed in the revised report. For further clarification, I have addressed your comments individually as listed in your letter dated August 24, 1981:

1. Pursuant to our telephone conversation, the matter of accepting responsibility for certification of drainage facilities should be clarified at a later date.

2. The subdivision had appropriate zoning, and therefore, did not go before the EPC. Comments from SRB have been enclosed inside the front cover of the drainage report.

3. A City topo map at one inch equals 500 feet delineating the affecting watersheds have been included as Figure 2 in the revised drainage report. St. Joseph Avenue contributes runoff to the north side of Ladera. This flow stays in the north gutter line and is conveyed to a 'double C' catch basin which empties into the existing storm drain system. Runoff into Ladera Road from the golf course is negligible.

4. The offsite rates of flow for the ten-year frequency storm have been included in the report (see Calculations).

5. Shown in Figure 2 are the drainage basins to the north and east. Drainage Basin Number 7 flows via St. Joseph Avenue to the north side of Ladera and empties into the

storm drain system via a 'double C' catch basin located in the north gutter line. Flows are prevented from crossing the centerline of Ladera by means of a median. There is also a water block located in the intersection of St. Joseph and Ladera Road. The Q_{100} and Q_{10} flows are shown in the supplemental calculations. Storm water generated in Drainage Basin Number 6 located east of the site is contained within a pond on St. Joseph Avenue. The report explains that no offsite flows should be generated by either offsite Drainage Basin 6 or 7.

6. The back yards will slope toward the rear yard wall as shown on the Grading Plan. It is expected that the majority of runoff generated will percolate into the soil; however, if necessary, up to 100 cubic yards of water can be stored against the back yard wall. This water would accumulate at no more than 8 inches deep, and where possible, weep holes in the yard walls would be provided to allow an outfall in case of emergency.

7. The ponds first proposed for the common areas have been eliminated. The proposed ponds in the back yard cannot be drained. It is felt that the quantity of storm water generated in the back yard area will not present a significant problem despite the lack of a positive discharge.

8. Back yards, side yards and common areas will be naturally landscaped such as grass, trees, bushes, etc.

9. Revised calculations show that the proposed development increases runoff by approximately 7.3 cfs. Calculations also show that the existing catch basin can handle the increased flow; therefore, no additional catch basins are to be added.

10. A Vicinity Map has been included on the Grading Plan.

11. Pad elevations are now indicated as minimum.

12. A temporary benchmark location has been identified at the northeast corner of the site. This benchmark is shown on the Grading Plan.

13. Additional spot elevations have been included to verify the property line is at least one foot above the street fill line (see the Grading Plan).

14. At this time no plans to phase development within the subdivision have been made. If such plans develop in the future, your office will be notified.

15. The owner and his lawyer are in the process of completing the agreement to construct, operate and maintain all drainage facilities substantially in compliance with the approved drainage plan. As soon as I have this document, I will forward it to you.

16. The drainage plan information sheet is included as the second sheet within the drainage report.

I hope this helps to clarify the revised drainage report. If there are any questions that I can answer, please call.

Sincerely,

TOM MANN & ASSOCIATES, INC.

Stephen D. Cannon
Project Engineer

SDC:bb
Encs.

00771

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 15, 1981

Mr. Steve Cannon
Tom Mann & Associates
811 Dallas N.E.
Albuquerque, New Mexico 87110

Re: BURNING TREE SUBDIVISION DRAINAGE REPORT

Dear Steve:

The referenced drainage report is hereby approved.

Very truly yours,

Brian G. Burnett
Civil Engineer/Hydrology

BGB/fs

RICHARD E. LEONARD
EXECUTIVE ENGINEER

S. H. SWINBURNE, CHAIRMAN
WILLIAM V. HEREFORD, VICE-CHAIRMAN
FRANCES McCOY, SECRETARY-TREASURER
R. WARD HUNNICUTT, DIRECTOR
KLESTON LAWS, DIRECTOR

Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority

2600 PROSPECT AVE., N.E.
P. O. BOX 25851 - ALBUQUERQUE, N. M. 87125
TELEPHONE 884-2215

To DR
G11-D56

May 20, 1983

TO: Gene Mares, Chairman, DRB

FROM: AMAFCA DS.

SUBJECT: Comments: Burning Tree Subdivision
S-83-12 (DRB-83-221)

The grading plan appears to be in agreement with the drainage report prepared by CCIC and approved June 2, 1978 (Ladera Heights Subdivision).

The engineer should advise if the inlets in Ladera Road were built as required and if the flow rates are essentially the same.

ia
cc: Brian Burnett ✓

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
Harry E. Kinney

CHIEF
ADMINISTRATIVE OFFICER
Frank A. Kleinhenz

INTER-OFFICE MEMORANDUM

TO: DEVELOPMENT REVIEW BOARD MEMBERS
JIM MILTON, Transportation
LEORA JAEGER, Transit
JOE QUINTANA, Council of Governments
TED SCHOLER, CIP Planner
DAN SABO, AMAFCA
SAM TRUJILLO, Refuse Removal Division
PAT EVERTSEN, Police Planning
BOB CASIAS, Fire Department
DAMACIO SALAZAR, Environmental Health
BOB ROMERO, Zoning Enforcement Officer
MARY LOU HAYWOOD, Neighborhood Coordination
LEONARD GREENSPAN, Albuquerque Public Schools
VAL VALDEZ, Real Estate Officer
LLOYD D. BARLOW, Zoning Hearing Examiner
NICK ESTES, Acting City Attorney
ERICA JONES, Air Quality Board, Heritage Place, N.E.; 87109

FROM: GENE MARES, Chairman, Development Review Board

SUBJECT: DEVELOPMENT REVIEW BOARD HEARING ON A MAJOR SUBDIVISION

S-83-12 (DRB-83-221) Tom Mann and Associates, agent for Neil Trout, requests approval for the Burning Tree Subdivision, a replat of Tracts B, D, E, F, G, H, Ladera Heights Subdivision, zoned R-3, and located on Ladera Road, N.W., across from Ladera Golf Course, and west of Atrisco Road, N.W., containing approximately 12.8 acres. (G-11)

Your comment on the above case is requested. The date comments are to be at this office is MAY 25, 1983, so that the Board may hear this case on MAY 31, 1983. Attached are copies of the request.

If you have any further questions, please contact Gene or Felipe at 7422, extensions 30 and 48, respectively.

APPLICATION FOR SUBDIVISION

INSTRUCTIONS: PRINT OR TYPE IN BLACK INK ONLY. All attachments must be submitted with the application and, after folding, shall not exceed 8 1/2 x 14 inches.

1. Applicant's Name: Neil TREITMAN requests:

____ Sketch Plat ___X___ Preliminary Plat ____ Final Plat

____ Date Submitted 5/11 Date Submitted ____ Date Submitted

approval of the proposed BORDING TREE Subdivision of

Lot(s): _____ Block(s): _____

in Subdivision/Addition/MRGCD Map Number: _____

Located generally: SECTIONS 2 & 3, T10N, R2E

2. Description of the Request:

Number of lots proposed: 121 Total gross acres covered by request: 12.78

	Proposed Use	Zoning	Total Net Acreage of Use
a.	Townhomes	R-3	12.78
b.			
c.			
d.			

Other information: _____

DRB-83-221
Case #

3. APPLICANT INFORMATION:

Applicant's Mailing Address: P.O. Box 6072 Zip Code: 88240
Hobbs, N.M. Phone: (505) 397-6200

Agent (if any): Tom Mann & Assoc / STEVE CANNON Phone: 265-5611

Mailing Address: 811 Dallas NE Zip Code: 87110

Ownership Interest in Property: NONE

4. REQUIRED ATTACHMENTS IN ACCORDANCE WITH SUBDIVISION ORDINANCE REQUIREMENTS
See Appropriate Checklist(s)

5. Signature of Applicant: Stephen P Cannon Date: May 11, 1983

If agent is used, attach applicant's authorization to act on the applicant's behalf regarding this request.

****

PLANNING DIVISION INTERNAL USE ONLY

Application Received by: _____ Date: _____

Fee Paid: _____ Method of Payment: _____

Cross References: _____

1 copy each to:
Applicant
Secretary
Graphics

Meeting Date: _____

Case # S- SC- SC5-

Map Number _____

6. Water and sanitary sewer availability statement from the Water Resources Department is required prior to providing service. (Fire extensions may be required.) Statement will also determine necessity for dedicating private service easements. (Easement would be 10 feet.)

7. Proposed lot configuration will not allow for individual services per Plumbing Code, i.e., service lines cannot cross a property to service another property without suitable easement. Therefore review and approval by Code Administration is required.

8. Park dedication fee (cash in lieu) is required before final sign-off.

9. Although applicant wishes to plat the property into nine parcels and three at a time, the Board strongly urged the applicant to consider processing this case as a Major Subdivision (requiring public advertisement), thereby including all lots to be subdivided and addressing all the Board's concerns.

DRB-83-221 Tom Mann and Associates, agent for Neil Trout, requests review and comment for the Replat of the Burning Tree Subdivision within Sections 2 and 3, T10N, R2E, zoned R-3, and located on Ladera Road, across from the Golf Course. (G-11)

1. After hearing the history of the case, the Board determined that since there were no changes to the originally approved plan by the Subdivision Review Board (S-81-10), the same information could be re-submitted. However, the information must be re-analyzed for compliance with current code and ordinance requirements. This is to include compliance with new surveying techniques. Adherence to the conditions of the Subdivision Review Board must also be made.

2. A drainage management plan be reviewed to determine compliance with existing drainage policy.

3. A bond or letter of credit for drainage and private streets is required.

4. Indication on the plat for dimensions of frontage access points proposed is required.

5. The Board recommended that the developer meet with Water Resources Department and Engineering Division to clarify concerns written in previous correspondence as follows.

   a. Special agreement for waterline in Tucson.

   b. Easement language, configuration, and coordination with other public utilities.

c. Fire protection requirements.

Utility extension charge requirements must be met.

6. Area for refuse pick-up should be reviewed by the Refuse Division for dead-end street stubs. Perhaps a common collection area can be established as in case Z-82-30-1.

7. The purpose and maintenance of common areas A, J, J, etc., should be indicated.

8. Indication of width dimensions of adjoining streets is required.

For clarification, the approved Findings by the Subdivision Review Board meeting of March 26, 1981, are as follows.

1. Ladera Road is to be developed half width from its present terminus, south to the intersection with Tucson Road.

2. Tucson Road is to be either developed concurrently with the proposal, or appropriately bonded in lieu of development.

3. Sidewalks along Ladera Boulevard are to be increased in width by one foot for a total width of seven feet. The sidewalks will then be constructed at the back of curb, leaving the landscaping strip between the sidewalk and the property line.

4. Interior sidewalks will be required only on one side of the street. In addition, the proposed jogging/walking paths will be shown on the replat.

5. All common areas will be landscaped.

6. Concrete pads for refuse containers will be provided.

7. The two interior street stubs will be modified to eliminate the wedges at their termini.

8. A curb cut at the intersection of Street "A" and Ladera Boulevard will be provided, as will a 100-foot turn bay along Ladera.

9. All drainage is to be conveyed to the inlet shown at the northwest intersection of Street "A" and Ladera Boulevard. (Note: This is subject to approval by the City Hydrologist.)

10. Development of Ladera to the property boundary, in lieu of half of Ladera and half of Tucson, will be taken under consideration. Tom Mann was instructed to initiate a study of this for submittal to Messrs. Davenport and Beck.

11. The innermost one foot of the sidewalk along Ladera should have a different texture from the remainder.

12. The private streets should be labeled as "private ways".

9. The Board advised the applicant to make application for Major Subdivision.

DRB-83-222 Gary W. Tibljas/Denney-Gross and Associates, Incorporated, agent for Melkus-Ruele, Partners, requests review and comment for the Replat of Tracts 68 and 72-A, MRGCD Map 22, into Lots A-H and J-N and J-N, Commons North, zoned SU/PRD and R-1, and located at the northeast corner of Rio Grande Boulevard and Corrales Road, N.W. (B-15/County)

1. Corrales Road is classified s a principal arterial street and requires a 124-foot right of way. Sixty-two feet from centerline should be dedicated.

2. A 25-foot property line radius is required at the intersection of Corrales Road and Rio Grande Boulevard.

3. Width of private access easements should be 24 feet, except for one-way portions which may be 20 feet.

4. Diminsions of flared widths of access easement must be indicated.

5. A water and sanitary sewer availability statement from the Water Resources Department is required.

6. Water and sewer easement dedication is required.

7. Note on water in Utility Systems (Site Plan) should be removed.

8. Review of the drainage plan by the Hydrology office is required.

9. Plat should indicate private drainage easements.

10. A 22-foot minimum width for private access road is required.

11. Dimensions on both proposed accesses is required.

12. The Board requested that correspondence regarding the status from the State Highway Department on rights of way which might be required for the Corrales crossing be submitted.

13. The Board felt a determination as to whether this request should be advertised or handled through the summary procedure could be made when item "9" above was addressed.

The request was deferred to the May 10, 1983, meeting of the Board at the request of the agent.

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE May 23, 1983 REF. NO._____

TO: Gene Mares, Chairman, Development Review Board

FROM: Brian Burnett, Civil Engineer/Hydrology

SUBJECT: S-83-12 (DRB-83-221)

My comments:

1. An overview of the drainage plan is required of the applicant to assess compliance with existing criteria and policies.

2. Financial guarantees required for storm drainage improvements.

BGB/tsl

811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110 • 505-265-5611

Tom Mann Associates, Inc. Engineers

00773
September 15, 1983

Mr. Fred Aguirre
Civil Engineer/Hydrology
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Bent Tree Subdivision Drainage

Dear Fred:

Bent Tree is the new name for a 123 lot townhouse development which was originally approved in the fall of 1981 under the name of Burning Tree. Since the approval of that project by the City staff, no construction was started. Earlier this year the property changed hands. The new owner wishes to implement the original design.

In July of this year, the Design Review Board gave preliminary approval to the project. The construction drawings were then re-submitted for processing to the City Engineer as a re-entry project. Construction for the project is to take place in three phases, and is identified by City Work Order Numbers 1214, 1885, and 1886. So that you can properly review these drawings, the following items are enclosed with this letter:

1. Comments received from Brian Burnett dated August 24, 1981, concerning drainage on the subject property.

2. Reply to those comments addressed to Brian Burnett from Steve Cannon on September 24, 1981.

3. A copy of the approved drainage report dated September 24, 1981.

4. A copy of the approval letter from Brian Burnett dated October 15, 1981.

5. Two copies of the current grading plan.

The grading plan remains essentially the same as the approved plan. The basic drainage concept is that all roofs and front yards will drain into the streets. The streets will carry the flows toward Cactus Flower Drive and Sunbird Drive which empty into Ladera Road. The combined flows are carried toward an inlet

located near the intersection of Ladera Road and Sunbird Drive. Two type "double C" catch basins divert the flow into a storm drain system which directs the flows into the Ladera Detention System. The previous drainage report shows that both the Ladera Detention System and the storm drain leading to it have the capacity to allow free discharge from the Bent Tree Subdivision. The storm water that remains in the backyards will be expected to percolate into the soil, especially in the grassy areas. In order to protect the house pad, the backyards will slope toward the rear yard, as shown on the grading plan. A maximum of between 25 and 50 cubic feet of storm water could generate in this area in the 100-year frequency storm. However, approximately 100 cubic yards of storage will be provided against the yard wall in each lot. Where possible, weep holes in the yard wall will be provided eight inches above the finish grade at the rear wall to allow an outfall in case of emergency overflow.

The differences between this grading plan and the approved grading plan are shown below.

1. The street terminii at both ends of Harvest Maiden Way have been eliminated. This allowed for the construction of two more units, one at each end. In order to accomplish this, the units on lots 95, 96, and 97 have been turned and now front on Cactus Flower Drive, and the units on lots 78, 79, and 80 have been turned and now front on Sunbird Drive.

2. Two additional lots have been added off of Harvest Maiden Way. These are lots 122 and 123.

3. An outlet street, Prairie Flower Drive, has been added connecting Cactus Flower Drive to Tucson Road. A waterblock has been designed at the southerly end of Prairie Flower Drive. This waterblock prevents any water south of the site from entering the site, as well as sending all on-site flows westward down Cactus Flower Drive.

4. As mentioned previously, construction is expected to take place in three phases. These three phases are shown on the grading plan; however, it is the developer's intention to grade the entire site as part of construction for Phase I. In so doing, erosion control berms will be required where Phase II and Phase III meet Ladera Road. These erosion control berms are

shown on the grading plan for Phase I. The schedule for phasing is as follows:

Phase I is to commence immediately.

Phase II will start sometime in late fall.

Phase III will begin in late spring.

If you have any questions, do not hesitate to call. If you are satisfied with the drainage details, the developer is seeking a grading permit as soon as possible. Thank you for your prompt attention.

Sincerely,

TOM MANN & ASSOCIATES, INC.

Stephen D. Cannon
Project Engineer

SDC:ra
Encls.

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

00773
October 6, 1983

Development Review Board
City of Albuquerque
Municipal Development Department
Planning Division
P.O. Box 1293
Albuquerque, NM 87103

Re: Bent Tree Subdivision (DRB-83-221)

Attention Board Members:

We have presented the Bent Tree Subdivision plat before the board twice previously, once on May 3, 1983, and once on May 31, 1983. At the May 31, 1983, meeting, the Development Review Board gave us preliminary approval of the Bent Tree Plat subject to DRB action and comments of May 3, 1983. I would now like to address those comments of May 3, 1983.

1. The plat has been re-analyzed for compliance with current code and ordinance requirements, including new surveying techniques. The plat is now at the Survey Department for final signature.

2. A drainage management plan has been submitted to the City Hydrologist, and he has reviewed it for compliance with existing drainage policy. A temporary grading permit has been issued.

3. A letter of credit agreement has been drawn up and is at the City Legal Department for review.

4. Frontage access points have been indicated on the plat.

5. The Water Resources Department and the Engineering Division have been contacted concerning the following items:

   a. A special agreement for the water line in Tucson was drawn up and executed two years ago, and is in effect.

   b. The easement configuration and language have been coordinated and approved by all the utilities and the Water Resources Department.

   c. The fire department has reviewed the plat and is satisfied for fire protection requirements.

6. The refuse division has reviewed the plat and we have agreed upon a collection scheme for the subdivision.

7. The purpose and maintenance of all common areas has been shown by note on the plat.

8. Indication of width dimensions in adjoining streets has been shown on the plat.

Findings by the Subdivision Review Board meeting of March 26, 1981, are addressed as follows:

1. Ladera Road is to be developed full width from its present terminus south to the intersection of Tucson Road. We are developing the west side in lieu of developing Tucson Road at this time.

2. Tucson Road is not to be developed at this time. See Item 1.

3. The sidewalks cannot be increased to seven feet due to the available right-of-way of Ladera Road. This item has been discussed with Traffic, and the sidewalk arrangement has been agreed to both by the developer and the Traffic Department.

4. Interior sidewalks and the proposed jogging/walking paths are shown on the construction drawings. A sidewalk variance will need to be granted by the Board.

5. All common areas will be landscaped.

6. Concrete pads for refuse containers will be provided.

7. The interior steets have been modified such that interior street stubs no longer occur.

8. A curb cut at the intersection of Cactus Flower Drive and Ladera Boulevard has been provided, as well as a 100-foot turn bay along Ladera.

9. The drainage has been reviewed and approved by the City Hydrologist.

10. See Item 1.

11. The innermost one-foot of sidewalk along Ladera will be poured as a running bond pattern and colored brown.

12. The private streets have been labeled as private ways.

If the Board is satisfied that the above requirements have been met, we would at this time request final approval of the plat for Bent Tree Subdivision.

Sincerely,

TOM MANN & ASSOCIATES, INC.

Stephen D. Cannon
Project Engineer

SDC:ra

811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110 • 505-265-5611

Tom Mann Associates, Inc.
Engineers

00773
October 12, 1983

G11-D56
Bent Tree

RECEIVED
OCT 12 1983
ENGINEERING

Mr. Fred Aguirre
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87102

Re: Bent Tree Subdivision - City W.O. # 1214, 1884, 1885

Dear Mr. Aguirre:

As per discussions with Dwayne Sheppard at the Development Review Board, an agreement was drawn up making Bent Tree Development Corporation, developer of Bent Tree Subdivision, responsible for arterial paving in Ladera Road adjacent to Ladera Golf Course in lieu of financial responsibility for the paving of Tucson Road adjacent to the Subdivision. This agreement is transmitted herewith for your review.

Thank you,

TOM MANN & ASSOCIATES, INC.

Stephen D. Cannon
Project Engineer

SDC:ra
Encls.

CITY OF ALBUQUERQUE

ALBUQUERQUE, NEW MEXICO

INTER-OFFICE CORRESPONDENCE January 16, 1984 REF. NO._____

TO: Gene Mares, Principal Planner, Planning Division

FROM: Robert A. Fosnaugh, Traffic Engineer, Traffic Engineering
By: Dennis D. Barnes, Associate Traffic Engineer (Planning) DDB

SUBJECT: DRB CASE COMMENTS - JANUARY 17, 1984 HEARING

V-84-6

No objection provided all abutting owners concur. Vacation should be extended east to Atrisco, or a turn around or connection to the south should be provided.

RAF/DDB/bjm

January 17, 1984

TO: DMJM/Adam, Hamlyn, Anderson, Agents for the Presley Co. of N.M.

FROM: City Engineer/AMAFCA Designee

SUBJECT: V-84-6

No objection; however, it appears that this vacation will block access to the Bent Tree Subdivision.

CDS:FJA:mrk

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Tom Mann Associates, Inc. Engineers

00776
August 30, 1984

Mr. Fred Aguirre
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Bent Tree Subdivision Drainage

Dear Fred:

On October 18, 1983, you approved the revisions to the Bent Tree Grading Plan and signed-off on construction drawings. Since that time, two additional plats have gone before the DRB requesting platting changes within the subdivision. As per your request, I am transmitting to you a revised grading and drainage plan for the subdivision which reflects these proposed changes in platting. These platting changes, which include Lots 78-A through 82-A, and Lot 21-A1 through Lot 53, do not greatly affect the approved drainage scheme. Lots 78, 79, and 80 have been turned 90-degrees so that the house pads now face Dancing Star Way. As shown on the revised grading plan, the front yards and the roofs still drain into Dancing Star Way while the water that falls on the backyard remains there. Changes to Lots 28-A1 through 53 were brought about as a vacation of Tucson Road. Essentially, all this plat changes is an increased depth in the backyards of these lots. In order to protect the house pad, the backyard will still slope toward the rear yard as shown. A maximum of between 25 and 50 cubic feet of water could still be generated in this area in the 100-year frequency storm which would still pond in the backyard. Both of these plats have been delegated to you by DRB Board members. If you are satisfied with the drainage details, please let me know as soon as possible and I will deliver the final plats to you for signature. Thank you for your prompt attention.

Sincerely,

TOM MANN & ASSOCIATES, INC.

Stephen D. Cannon
Project Engineer

RECEIVED
SEP 06 1984
HYDROLOGY SECTION

SDS:ra

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

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

September 21, 1984

Mr. Steve Canyon
Tom Mann Associates, Inc.
811 Dallas, N.E.
Albuquerque, New Mexico 87110

RE: BENT TREE SUBDIVISION DRAINAGE PLAN, REVISED AUGUST 20, 1984
(G11-D5)

Dear Steve:

The revised drainage plan dated August 20, 1984 required for the proposed replat of Lots 78 through 82 and 25 through 53 is approved. However, this approval is subject to revising the referenced drainage plan to reflect the new lot designation.

If I can be of further assistance, please contact me at 766-7644.

Sincerely yours,

Fred J. Aguirre
Design Hydrologist

FJA/bm

811 DALLAS, N.E. • ALBUQUERQUE • NEW MEXICO • 87110 • 505-265-5611

Tom Mann Associates, Inc. Engineers

00776
January 1, 1985

Mr. Fred Aguirre
Hydrology Section
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87103

Re: Bent Tree Subdivision Drainage Plan - Revised
January 2, 1985 (G11-D5)

Dear Fred:

Submitted herewith is a copy of the revised drainage plan for the subject project for your records. Thank you for your cooperation.

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

Sincerely,

TOM MANN & ASSOCIATES, INC.

Chuck Cala

Chuck Cala

CC:kl
Encls.

RECEIVED
JAN 03 1985
HYDROLOGY SECTION

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

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

January 3, 1985

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

RE: BENT TREE SUBDIVISION DRAINAGE PLAN
REVISED JANUARY 2, 1985 (G-11/D5)

Dear Chuck:

The referenced drainage plan revised on January 2, 1985 is approved.

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

Cordially,

Fred J. Aguirre
Design Hydrologist

FJA/bsj

AGREEMENT AND RATIFICATION 304

85 27832

This Agreement and Ratification is made this 11th day of April, 1985, by and between Bent Tree Development Corporation (hereinafter referred to as Developer) and the City of Albuquerque, New Mexico, a municipal corporation (hereinafter referred to as City).

WHEREAS the City and Developer entered into an Agreement to Construct Subdivision Improvements on the 26th day of October, 1983, (Said Agreement recorded at Book Misc. 60-A, Pages 204, through 233 of the Records of the Clerk of Bernalillo County, New Mexico) wherein Developer agreed to construct certain subdivision improvements a shown on Plans and Specifications submitted to the City Engineer and identified as Project No. 1214, 1884, and 1885; and

WHEREAS in said Agreement Developer financially guaranteed the construction of the subdivision improvements according to the Plans and Specifications submitted and identified as Project No. 1214, 1884, and 1885; and

RECEIVED
APR 19 1985
611/DS
HYDROLOGY SECTION

WHEREAS Developer has now tendered to the City the following documents for review and approval:

_____ Revised Design Plans (prior to issuance of a work order) for Project No. _____ (Revisions Dated _____.)

_____ Revised Construction Documents for Project No. _____.

X Replat (Described fully) A Replat of Lots 61 thru 69, Bent Tree Subdivision, filed January 20, 1984, into Lots 61-A thru 69-A

WHEREAS Developer and the City wish to have the terms, conditions and financial guarantees of the above-mentioned Agreement and Construct Subdivision Improvements apply to and govern the Revisions/Replat submitted to the City.

NOW THEREFORE in consideration of the above, the parties agree as follows:

1. The terms and conditions of the above described Agreement to Construct Subdivision Improvements previously entered into between the parties shall govern the Revisions/Replat submitted to the City and approved on the 29th day of March, 1985, by the City;

2. As a condition of City approval of said Revisions/Replat, Developer shall revise the financial guarantee previously posted in accordance with the above-described Subdivision Improvements Agreement a follows:

N/A

3. The terms and conditions of the above-described Agreement to Construct Subdivision Improvements are hereby ratified, confirmed and made applicable to the Revisions/Replat submitted by Developer by this instrument.

DEVELOPER

By: _____
Bent Tree Development Corp.

CITY OF ALBUQUERQUE

_____
Frank A. Kleinhenz
Chief Administrative Officer

_____
C. Dwayne Sheppard
City Engineer

ATTEST:

_____
City Clerk

APPROVED AS TO FORM ONLY:

_____
Assistant City Attorney

_____
City Attorney

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

306

The foregoing instrument was acknowledged before me on this 28th day of March, 1985, by Ralph Stone an authorized representative of Developer.

Dola L. Grant
Notary Public

My Commission Expires:

12/18/88

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me on this 10th day of April, 1985, by Frank A. Kleinhenz, Chief Administrative Officer of the City of Albuquerque, a municipal corporation on behalf of said corporation.

Dola L. Grant
Notary Public

My Commission Expires:

12/18/88

STATE OF NEW MEXICO
COUNTY OF BERNALILLO
FILED FOR RECORD

1985 APR 11 PM 3:13

M 299 FG 304-306
DOLORES C. WALLER
CO. CLERK & RECORDER
DEPUTY

-3-

DRAINAGE COVENANT

THIS COVENANT made this _____ day of _____, 1981, by and between the City of Albuquerque, a municipal corporation, (City) and Rymar Enterprises, Inc. (Owner, which term includes successors and assigns.)

RECITAL

The Owner is owner of certain real property located at Burning Tree Subdivision in Albuquerque, New Mexico, (the Property) and more particularly described as follows:

A certain tract of land located within the City Limits of Albuquerque, New Mexico; within Sections 2 and 3, Township 10 North, Range 2 East, N.M.P.M., and is comprised of the following tracts: Tracts B, D, E, F, G, H and I as shown on the plat of Ladera Heights Subdivision filed in the Office of the County Clerk of Bernalillo County, New Mexico on June 30, 1978 in Volume D8, Folio 155.

That pursuant to City ordinances, regulations, and other applicable laws, the Owner is required to install and/or maintain certain drainage facilities on the Property, and the parties wish to provide for an agreement as to the obligations and responsibilities for same.

DESCRIPTION OF FACILITIES

The following facilities are to be constructed and/or maintained by the owner:

The drainage facilities described in the approved drainage report (attached) and shown in the construction plans are to be constructed by the owner. All facilities located on private land are to be maintained by the owner.

CONSTRUCTION OF DRAINAGE FACILITIES

The Owner shall construct the drainage facilities in accordance with standards, plans, and specifications prescribed and approved by the City.

MAINTENANCE OF FACILITIES

The Owner shall, at his cost in accordance with the standards, plans, and specifications prescribed by the City, maintain said drainage facility. The City shall have the right to enter periodically upon the Property to inspect the drainage facility.

FAILURE TO COMPLY AND LIEN

In the event that the Owner shall fail to construct the drainage facility in accordance with standards, plans, and specifications prescribed and approved by the City or fail to adequately maintain said facilities, the City shall give the Owner notice in writing to construct, correct, or maintain said

facilities, and if the Owner fails to comply therewith within 30 days, the City may enter upon said property to perform the necessary construction or maintenance. The cost of the City's performing such construction or maintenance shall be paid by the Owner. In the event the Owner fails to pay said cost within thirty (30) days after being billed for same, the City may file a lien against the Property.

LIABILITY

The City shall not be liable for any damages to the Owner resulting from its construction, modification, or maintenance of said facilities.

NOTICE

The written notice provided for herein shall be accomplished by mailing same to:

Rymar Enterprises, Inc.
1000 Eubank N.E.
Albuquerque, New Mexico 87112

The Owner may change said address by giving written notice, certified mail, return receipt requested, to the City Engineer, City Hall, at 505 Marquette Street, Albuquerque, New Mexico, 87103.

INDEMNIFICATION AND HOLD HARMLESS

The Owner agrees to defend, indemnify, and hold harmless, the City, its officials, agents and employees from and against any and all claims, actions, suits, or proceedings of any kind brought against said parties for or on account of any matter arising from the drainage facility provided for herein or the Owner's failure to construct, maintain, or modify the drainage facility under this Covenant.

COVENANT RUNNING WITH THE PROPERTY

The obligation of the Owner set forth herein shall be binding upon the Owner, his heirs, and assigns, and the property of the Owner as described herein and will run with said property until released by the City.

OWNER

By:_____

Title:_____

REVIEWED BY THE LEGAL DEPARTMENT:

_____
Assistant City Attorney

CITY OF ALBUQUERQUE

_____
Chief Administrative Officer

_____
Assistant City Engineer/Hydrology

ACKNOWLEDGEMENTS

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

The foregoing instrument was acknowledged before me this _____day of _____, 1981, by _____, _____
(Name of Officer) (Title)
_____, a _____
(Name of Corporation) (State of Incorporation)
corporation, on behalf of said corporation.

_____
Notary Public

My Commission Expires:
_____

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

The foregoing instrument was acknowledged before me this _____day of _____, 1981, by _____
(Name of Acknowledging Partner or Partners)
on behalf of _____,
(Name of Partnership)
a partnership.

_____
Notary Public

My Commission Expires:
_____

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

The foregoing instrument was acknowledged before me by _____, on this _____day of _____, 1981.

_____
Notary Public

My Commission Expires:
_____

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

The foregoing instrument was acknowledged before me this _____day of _____, 1981, by _____ Chief Administrative Officer of the City of Albuquerque, municipal corporation, on behalf of said corporation.

_____
Notary Public

My Commission Expires:
_____

50 YEARS

The First National Bank in Albuquerc

Original letter of Credit filed w/ City Clerk 11/2/83 dw

IRREVOCABLE LETTER OF CREDIT NO. 10712

OCTOBER 20, 1983

AMOUNT: $793,407.75

Mr. Frank A. Kleinhenz
Chief Administrative Officer
City of Albuquerque
P. O. Box 1293
Albuquerque, New Mexico 87103

Dear Mr. Kleinhenz:

At the request of Bent Tree Development Corporation, a New Mexico corporation, we establish our Irrevocable Letter of Credit in your favor for the account of Bent Tree Development Corporation, to the extent of and not exceeding Seven Hundred Ninety-Three Thousand Four Hundred Seven and 75/100 Dollars ($793,407.75).

This Letter of Credit has been established to insure the completion of improvements to the "Bent Tree Subdivision" in the City of Albuquerque, County of Bernalillo, State of New Mexico, including the paving of streets, construction of curbs and gutters, and storm drainage development on-and-off-site, as provided for in the Agreement between Bent Tree Development Corporation and the City of Albuquerque, which Agreement is recorded at Book Misc. 60 A at Pages 204 through 233 of the records of the County of Bernalillo, State of New Mexico (herein the "Agreement"). A draft for any amount up to, but not in excess of, Seven Hundred Ninety-Three Thousand Four Hundred Seven and 75/100 Dollars ($793,407.75) is available at sight at First National Bank in Albuquerque between October 20, 1983, and October 19, 1984.

When presented for negotiation, the draft is to be accompanied by the following documents:

1. Your notarized certification stating that Bent Tree Development Corporation, has failed to comply with the terms of the Agreement referred to above;

2. Your notarized certification that the "undersigned is Chief Administrative Officer of the City of Albuquerque and is authorized to sign this statement"; and

3. Your notarized certification that the amount of the draft is not more than the estimated total amount necessary to pay for all City completed improvements to the Bent Tree Subdivision which have not been previously paid for by Bent Tree Development Corporation, plus the estimated amount necessary to complete and pay for the remaining improvements required by the Agreement which have not yet been completed and paid for by Bent Tree Development Corporation.

Original

Page Two (2)
IRREVOCABLE LETTER OF CREDIT NO. 10712
Beneficiary: CITY OF ALBUQUERQUE
Accountee: Bent Tree Development Corporation

This Letter of Credit will be automatically renewed at its expiration date to April 19, 1985 and for the remaining unpaid improvement balance under the Agreement, unless the Bank notifies the Beneficiary in writing at least forty-five (45) days prior to October 19, 1984.

We hereby agree with the drawers that a Draft drawn under and in compliance with the terms of this Letter of Credit will be duly honored on presentation to the drawee if negotiated between October 20, 1983, and October 19, 1984.

A Draft drawn under this Letter of Credit must be endorsed and contain the clause: "Drawn under Letter of Credit No. 10712 of First National Bank in Albuquerque, dated October 20, 1983, "the amount of such draft must be endorsed on the reverse side hereof, and this Letter of Credit must be attached to the Draft when the credit has been paid in full".

This Letter of Credit terminates in Albuquerque, N.M. at 3:00 o'clock P.M. New Mexico time October 19, 1984.

This credit is subject to uniform customs and practice for documentary credit (1974 revision) International Chamber of Commerce, Publication No. 290.

FIRST NATIONAL BANK IN ALBUQUERQUE

BY: W.C. Stein

W.C. Stein, Exe. Vice Pres. & Cashier

204

Recording Information
Bk. Misc. 60A pg. 204 - 233
10-28-83

AGREEMENT

Agreement made between the City of Albuquerque, New Mexico, a municipal corporation, hereinafter referred to as "City", and BENT TREE DEVELOPMENT CORPORATION, A CORPORATION, hereinafter referred to as "Developer."

WHEREAS, Bent Tree Development Corporation is the developer of certain described real estate lying situate and being in the City of Albuquerque, County of Bernalillo, State of New Mexico, to-wit:

A certain tract of land located within the City Limits of Albuquerque, New Mexico; within Sections 2 and 3, Township 10 North, Range 2 East, N.M.P.M., and is comprised of the following tracts: Tracts B, D, E, F, G, H, and I as shown on the plat of Ladera Heights Subdivision filed in the Office of the County Clerk of Bernalillo County, New Mexico on June 30, 1978 in Volume D8, Folio 155; and being more particularly described as follows:

Beginning at the northeast corner of the said subdivision whence the USC and GS Brass Cap stamped "NM448-N5" bears N 32°16'51" E a distance of 3201.50 feet; thence S 11°48'28" E a distance of 527.89 feet; thence S 09°17'12" W a distance of 67.50 feet; thence along the arc of a curve to the right with Δ= 21°47'23", R = 100.00 feet, L = 38.03 feet and a Long Chord that bears S 20°10'54" W a distance of 37.80 feet; thence S 89°46'57" E a distance of 34.54 feet; thence S 00°13'03" W a distance of 200.00 feet; thence N89°48'39" W a distance of 380.43 feet; thence N 89°46'57" W a distance of 381.91 feet; thence along the arc of a curve to the left with Δ = 07°15'08", R = 1030.00 feet; L = 130.37 feet and a Long Chord that bears S 86°35'29" W a distance of 130.28 feet; thence along the arc of a curve to the right with Δ = 95°20'17", R = 25.00 feet, L = 41.60 feet and a Long chord that bears N 49°21'56" W a distance of 36.96 feet; thence along the arc of a curve to the right with Δ = 34°49'31", R = 616.20 feet, L = 374.54 feet and a Long Chord that bears N 15°42'58" E a distance of 368.80 feet; thence along the arc of a curve to the right with Δ = 49°03'42", R = 1001.59 feet, L =

857.65 feet and a Long Chord that bears N 57°39'34" E a distance of 831.69 feet to the point of beginning and containing 12.787 acres more or less.

as depicted on the map attached hereto as Exhibit "A"; and,

WHEREAS, a plat and subdivision plan for he above described property has been submitted to the City of Albuquerque for approval, and has been attached hereto as Exhibit "B"; and,

WHEREAS, as a contingent condition of approval of said plat and subdivision plan the Developer has agreed to provide for the paving of streets, construction of curbs and gutters, and storm drainage development, on- and off-site; and

WHEREAS, the Developer has submitted, and the City has approved, plans and a contract for paving of streets, construction of curbs and gutters, installation of water and sanitary sewer lines, and storm drainage development on- and off-site in compliance with specifications of the City of Albuquerque Land Subdivision reguations; and

WHEREAS, pursuant to Section 6(d) of the City of Albuquerque Subdivision Ordinance, Enactment No. 56-1983, the Developer is required to provide a financial guarantee for completion of all on-site and off-site drainage and flood control facilities which are necessary as a result of the change of land use and for all improvements that are essential to the delivery of City services or utilities to the individual lots of the subdivision, and such construction is a condition of plat approval or a building permit issuance; and

WHEREAS, it is in the interest of the City that the paving of streets, construction of curbs and gutters, installation of water and sanitary sewer services, and storm drainage development on-

and off-site be completed to City specifications within one (1) year; and

WHEREAS, where it is possible for the Developer to obtain a Letter of Credit in an amount that will provide the City with sufficient security to insure that the streets will be paved, curbs and gutters constructed and water and sanitary sewer facilities installed, and

NOW, THEREFORE, the parties to this Agreement, in consideration of mutual confidences and stipulations set out herein, agree as follows:

1. The Developer agrees to post a Letter of Credit, meeting reasonable conditions imposed upon the Developer by the City, and acceptable to the City, in the amount of Seven Hundred Ninety Three Thousand, Four Hundred and Seven Dollars, and 75/100 ($793,407.75), running to the City on or before October, 19, 1983, which amount represents 125 percent of the current estimated cost of paving of street(s), construction of curbs and gutters, installation of water and sanitary sewer facilities, and development of all drainage facilities on- and off-site, as provided in the submitted plat and subdivision plan and Preliminarily approved construction plans pursuant to all applicable City requirements, which amount has been approved by the City Engineer. A copy of the estimate on which the Letter of Credit amount is based is attached hereto as Exhibit "C".

2. The Developer agrees to complete by ~~October~~ August 19, 1984, the paving of the street(s), construction of curbs and gutters, installation of water and sanitary sewer facilities, and storm

drainage development on- and off-site, as provided for in the submitted plat and subdivision plan for the property, and the approved construction plans pursuant to all applicable City requirements.

3. The Developer agrees to give the City notice in writing of sale or assignment of all or part of the above described property.

4. In the event of sale or assignment, the City will not release the Developer from its obligations under this contract and will continue to hold the Developer responsible for the paving of street(s), construction of curbs and gutters, construction of water and sanitary sewer facilities, and storm drainage development on- and off-site, until a successor in interest to the Developer has posted a bond or letter of credit. At such time as acceptable security has been posted by the Developer's successor in interest, City will terminate the Letter of Credit.

5. If the paving of street(s), construction of curbs and gutters, construction of water and sanitary sewer facilities, and storm drainage development on- and off-site, pursuant to the submitted plat and subdivision plan, approved construction plans is not completed by ~~October~~ August 19, 1984, and, if a bond or letter of credit acceptable to the City has not been posted by the Developer's successor in interest to all or part of the property prior to that date, the City will have recourse on the Letter of Credit in an amount, or amounts, necessary for payment of any completed portion of the improvements which has not been paid for by the Developer and for the cost of completing any portion of the improvements not then completed by the Developer.

6. This instrument contains the entire agreement between the parties concerning the matters referred to herein, and no statement, promises, or inducements made by either party or agent of either party that is not contained in this written Agreement shall be valid or binding; and this contract may not be enlarged, modified, or altered, except in writing, signed by the parties and endorsed hereon.

7. This Agreement may be extended and the amount of security posted modified upon agreement of the parties. Developer must meet with City Engineer to extend agreement in advance of date of performance.

8. The Developer agrees to indemnify and hold harmless the City, its agents and employees from all claims, damages, losses and expenses, including reasonable attorney's fees in case it shall be necessary to defend an action arising out of damages which occur from storms and/or flooding prior to and during the Developer, its agents and employees, construction of Bent Tree Subdivision, and prior to the City's taking recourse as the Letter of Credit as provided herein.

9. This Agreement shall inure to the benefit of and be binding upon the heirs, executors, administrators, assignees, and successors of the respective parties and shall constitute a covenant running with the land and must be recorded in the records of the Bernalillo County Clerk.

Executed this (26) 26th day of October, 1983.

CITY OF ALBUQUERQUE

Frank A. Kleinhenz
Chief Administrative Officer

ATTEST:

City Clerk

Bent Tree Development Corporation

By: Gene A Dixon
Its: Secretary

APPROVED:

Legal Department

APPROVED:

City Engineering 10/26/83

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 26th day of October, 1983 by Gene A Dixon Secretary of Bent Tree Development Corp.

Notary Public

My Commission Expires:

5/00/87

Executed this (26) 26th day of October, 1983.

CITY OF ALBUQUERQUE

Frank A. Kleinheinz
Chief Administrative Officer

ATTEST:

City Clerk

Bent Tree Development Corporation

By:
Its: Secretary

APPROVED:

Legal Department

APPROVED:

10/26/83
City Engineering

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 26th day of October, 1983 by Gary A. Dickson Secretary of Bent Tree Development Corp.

Notary Public

My Commission Expires:

5/10/87

STATE OF NEW MEXICO)
)
COUNTY OF BERNALILLO)

The foregoing instrument was acknowledged before me this 26th day of October, 1983, by Frank A. Kleinhenz, Chief administrative Officer, City of Albuquerque.

Dola L. Grant
Notary Public

My Commission Expires:
12/18/84

EXHIBIT C

ESTIMATE

Estimate Date: August 10, 1983

Job # 1884

Requestor: Tom Mann & Associates
811 Dallas, N.E.
Albuquerque, N.M. 87110
(505) 265 5611

Work Order Date:

Map No: G:11

Developer: Neil Treitman

Person to contact regarding this form: Steve Cannon
811 Dallas, N.E.
Albuquerque, N.M. 87110
(505) 265 5611

Name of Subdivision of Description of Property to be served:

Bent Tree, Phase II

General Scope of Project: Paving, water, and sewer in Sunbird Drive, and sewer in Cactus Flower Drive and Dancing Star Way

Developer to Pay: 100%

Policy:

Specific Location:

Nature of Construction

	P	W	S
Sunbird Drive, from Ladera Road to Cactus Flower Drive N.W.	P	W	S
8" sanitary sewer from Ladera Road and Cactus Folwer Drive N.W., in Cactus Flower Drive to Dancing Star Way N.W., and in Dancing Star Way from Cactus Flower Drive N.W. to Sunbird Drive N.W.			S
Left turn bay (arterial paving) in Ladera Road at Sunbird Drive	P		

ESTIMATE ITEM NO.	DESCRIPTION	CONTRACT UNIT PRICE	QUANTITY		EST. AMT.	AS-BUILT QUANTITY	AS-BUI AMOUN
CASH PAVING II							
P-4	GRADING	1.70	3340	SY	5678.00		
P-17	PROC 4" SUBBS	1.30	2160	SY	2808.00		
P-19	PROC 6" SUBBS	1.55	740	SY	1147.00		
P-25	1-1/2" AC BS-1500 M	3.50	2160	SY	7560.00		
P-30	TK CT	0.29	2880	SY	835.20		
P-32	1-1/2" AC SF-1500 M	3.45	2160	SY	7452.00		
P-36	2" AC SF-1500 M	4.20	62	SY	260.40		
P-35	1-1/2" AC SF-1800 M	3.50	680	SY	2380.00		
P-27	2-1/2" AC BS-1500 M	4.65	680	SY	3162.00		
P-24	6" CTB	4.70	680	SY	3196.00		
P-44	PCC VLY G	4.30	1600	SF	6880.00		
P-46	PCC STD C&G	9.50	1020	LF	9690.00		
P-50	PCC HD C	7.70	480	LF	3696.00		
P-42	4" PCC SDWK	2.20	1745	SF	3839.00		
P-46	PCC STD C&G	3.50	204	LF	1938.00		

ESTIMATE ITEM NO.	DESCRIPTION	CONTRACT UNIT	QUANTITY		EST. AMT.	AS-BUILT QUANTITY	AS-BUILT AMOUNT
---	4" PCC Paving, Running Bond Pattern, BRN	2.20	284	SF	624.80		
P-42	4" PCC Wheel Chair Ramps	2.20	540	SF	1188.00		
P-38	AC CURB	4.30	210	LF	903.00		
K-49	STR CONC	240.00	2	CY	480.00		
P-51	MH ADJ W/RGS	165.00	13	EA	2145.00		
P-12	AC CURB REM	6.00	360	LF	2160.00		
P-13	PCC C&G REM	5.00	110	LF	550.00		
	PCC MD C&G	5.00	100	LF	500.00		
WATER							
W-2	6" CIP	15.00	-1250	LF	18,750.00		
W-45	PRESS CONN	600.00	- 1	EA	600.00		
W-52	MJ FIT (4"-14")	2.00	- 1250	LB	2500.00		
W-56	CAP (4"-6")	38.00	- 8	EA	304.00		
W-60	12" TAP SLV	950.00	1	EA	950.00		
W-66	6" GV	400.00	7	EA	2800.00		
W-82	V BOX-A	250.00	7	EA	1750.00		
W-87	FH 4-1/2'	1,050.00	2	EA	2100.00		
W-89	FH EXT (6" or 12")	200.00	2	EA	400.00		
W-170	1" S SERV	360.00	-12	EA	4320.00		
W-171	1" D SERV	427.00	- 6	EA	2562.00		
W-186	BLKG	120.00	. 5	CY	600.00		
-28	REM & REPL ART PVMT	35.50	125	SY	4437.50		
SEWER							
S-3	8" VCP	9.50	-1810	LF	15,385.00		
	8" DIP	9.50	380	LF	3230.00		
A-1	4" CIP	10.00	995	LF	9950.00		
S-12	TRCHG 6'-8' D	9.50	-1280	LF	12,160.00		
S-13	TRCHG 8'-10' D	11.50	- 100	LF	1150.00		
S-14	TRCHG 10'-14' D	13.50	- 720	LF	9720.00		
S-15	TRCHG 14'-18' D	17.00	- 90	LF	1530.00		
S-9	4" VCP TEE	50.00	- 64	EA	3200.00		
S-21	4' MH, less than 6' D	1,100.00	1	EA	1100.00		
S-22	4' MH, 6'-10' D	1,300.00	15	EA	19,500.00		
S-23	4' MH, 10'-14' D	1450.00	2	EA	2900.00		
W-36	TRCHG 6'-8' D	2.60	365	LF	949.00		
W-37	TRCHG 8'-14' D	3.50	165	LF	577.50		
W-38	TRCHG 14' and over D	4.00	465	LF	1860.00		
M-28	REM & REPL ART PVMT	35.50	210	SY	7455.00		
					201,812.40		

Subtotal:
Contingencies: (10%):
Engineering: (6%):
Testing Fee: (2%):
Total Construction Cost:
No Design Deposit Fee.

NOTES:

1. Outstanding Pro-rata: None; To be paid under Phase I. CF
2. For Staking, construction and inspection use Drawing No. 1884
3. This work shall be done in accordance with the specifications of Block-to-Block Contract No. 31.
4. If payment of the engineering fee is not made ten (10) working days before the expiration date of Contract No. 31, then this document must

ESTIMATE

Estimate Date: August 10, 1983

Job # 1885

Requestor: Tom Mann & Associates
811 Dallas, N.E.
Albuquerque, N.M. 87110
(505) 265 5611

Work Order Date:

Map No: G-11

Developer: Neil Treitman

Person to contact regarding this form: Steve Cannon
811 Dallas, N.E.
Albuquerque, N.M. 87110
(505) 265 5611

Name of Subdivision of Description of Property to be served:

Bent Tree, Phase III

General Scope of Project: Residential paving, water and sewer in Dancing Star Way N.W., Cactus Flower Drive N.W., Prairie Flower Drive N.W., and Harvest Maiden Way

Developer to Pay: 100%

Policy:

Specific Location:	Nature of Construction		
Dancing Star Way N.W., Cactus Flower to SongBird	P	W	
Cactus Flower Drive N.W., Ladera Road to Praire Flower Road	P	W	S
Praire Flower Road N.W., Cactus Flower to Tucson Road	P	W	
Harvest Maiden Way N.W.	P	W	S

ESTIMATE ITEM NO.	DESCRIPTION	CONTRACT UNIT PRICE	QUANTITY		EST. AMT.	AS-BUILT QUANTITY	AS-BUILT AMOUNT
PHASE III - PAVING							
P-4	GRADING	1.70	9750	SY	16,575.00		
P-17	PROC 4" SUBBS	1.30	8100	SY	10,530.00		
P-25	1-1/2" AC BS-1500 M	3.50	8100	SY	28,350.00		
P-30	TK CT	0.29	8100	SY	2349.00		
P-32	1-1/2" AC SF-1500 M	3.45	8100	SY	27,945.00		
P-44	PCC VLY G	4.30	2380	SF	10,234.00		
P-46	STD C&G	9.50	2110	LF	20045.00		
P-50	PCC HD C	7.70	760	LF	5862.00		
P-42	4" PCC SDWK	2.20	2880	SF	6336.00		
	4" PCC W.C. Ramps	2.20	780	SF	1716.00		
K-49	STR CONC	240.00	2	CY	480.00		
P-51	MH ADJ W/RGS	165.00	12	EA	1980.00		
P-46	PCC ROLL TYPE C&G	9.50	1920	LF	18,240.00		
P-52	MH ADJ W/MASONRY	210.0	1	EA	210.00		

ESTIMATE ITEM NO.	DESCRIPTION	CONTRACT UNIT	QUANTITY		EST. AMT.	AS-BUILT QUANTITY	AS-BUILT AMOUNT
PHASE III - WATER							
W-2	6" CIP	15.00	2200	LF	33,000.00		
W-52	MJ FIT (4" 14")	2.00	1220	LBS	2440.00		
W-56	CAP (4"-6")	38.00	1	EA	38.00		
W-66	6" GV	400.00	5	EA	2000.00		
W-82	V BOX-A	250.00	5	EA	1250.00		
W-87	FH 4-1/2' BURY	1050.00	3	EA	3150.00		
W-89	FH EXT (6" or 12")	200.00	3	EA	600.00		
W-170	1" S SERV	360.00	12	EA	4320.00		
W-171	1" D SERV	427.00	3	EA	1281.00		
W-186	CONC. BLOCKING	120.00	3	CY	360.00		
PHASE III - SEWER							
S-3	8" VCP	8.50	1055	LF	8967.50		
	8" DIP	8.50	112	LF	952.00		
A-1	4" CIP	10.00	1210	LF	12100.00		
S-12	TRCHG 6'-8' D	9.50	330	LF	3135.00		
S-13	TRCHG 8'-10' D	11.50	490	LF	5635.00		
S-14	TRCHG 10'-14' D	13.50	350	LF	4725.00		
S-9	4" VCP TEE	50.00	47	EA	2350.00		
S-22	4' MH, 6'-10' D	1300.00	5	EA	6500.00		
S-23	4' MH, 10'-14' D	1450.00	1	EA	1450.00		
W-36	TRCHG 6'-8' D	2.60	910	LF	2366.00		
W-37	TRCHG 8'-14' D	3.50	300	LF	1050.00		
					250,233.50		

Subtotal:
Contingencies: (10%):
Engineering: (6%):
Testing Fee: (2%):
Total Construction Cost:
No design deposit fee.

NOTES:

1. Outstanding Pro-rata: None; Paid under Phase I.
2. For Staking, construction and inspection use Drawing No. 1214
3. This work shall be done in accordance with the specifications of Block-to-Block Contract No. 31.
4. If payment of the engineering fee is not made ten (10) working days before the expiration date of Contract No. 31, then this document must

ESTIMATE

Estimate Date: August 10, 1983 Job # 1214

Requestor: Tom Mann & Associates
811 Dallas, N.E.
Albuquerque, N.M. 87110
(505) 265 5611

Work Order Date:

Map No: G-11

Developer: Neil Treitman

Person to contact regarding this form: Stephen Cannon
811 Dallas, N.E.
Albuquerque, N.M. 87110
(505) 265 5611

Name of Subdivision of Description of Property to be served:

Bent Tree, Phase I

General Scope of Project: Arterial paving and sewer in Ladera Road N.W., and residential paving, water and sewer in private frontage roads off of Ladera Road N.W.

Developer to Pay: 100%

Policy:

Specific Location:

Nature of Construction

Arterial paving, both sides and 12" water in Ladera Road from Tucson Road to 300' south of St. Joseph's.	P W
8" sanitary sewer in Ladara Road from Tucson Road to Sunbird Drive N.W.	S
Residential paving, 6" water and 8" sanitary sewer in private drives east of Ladera Road between Tucson and Sunbird	P W S
Catch basin in Ladera, just south of Sunbird	K

ESTIMATE ITEM NO.	DESCRIPTION	CONTRACT UNIT PRICE	QUANTITY	EST. AMT.	AS-BUILT QUANTITY	AS-BU AMOUN
PHASE I - PAVING						
P-4	Grading	1.70	6750 SY	11475.00		
P-17	Proc. 4" SUBBS	1.30	1410 SY	1833.00		
P-19	Proc 6" SUBBS	1.55	2340 SY	3627.00		
P-25	1-1/2" AC BS -1500 M	3.50	1410 SY	4935.00		
P-30	TK CT	0.29	3420 SY	991.80		
P-32	1-1/2" AC SF-1500 M	3.45	1410 SY	4864.50		
P-35	1-1/2" AC SF-1800 M	3.50	2010 SY	7035.00		
P-27	2-1/2" AC BS-1500 M	4.65	2010 SY	9346.50		
P-24	6" CTB	4.70	2010 SY	9447.00		
P-44	PCC VLY G	4.30	1360 SF	5848.00		
P-46	STD C&G	9.50	650 LF	6175.00		
P-50	PCC HD C	7.70	580 LF	4466.00		
P-42	4" PCC SDWK	2.20	2020 SF	4444.00		
--	4" PCC Paving, Running Bond, Pattern BRN	2.20	910 SF	2002.00		
P-42	4" PCC Wheel Chair Ramps	2.20	1060 SF	2332.00		

HYDROLOGY G11/D5 TWO OF TWO ONE PLAN

ESTIMATE ITEM NO.	DESCRIPTION	CONTRACT QUANTITY UNIT	EST. AMT.	AS-BUILT QUANTITY	AS-BUILT AMOUNT
P-38	AC Curb	4.30 - 820 LF	3526.00		
K-49	STR CONC	240.00 - 3 CY	720.00		
P-51	MH ADJ W/RGS	165.00 - 11 EA	1815.00		
P-13	PCC C&G REM	5.00 - 300 LF	1500.00		
PHASE I - WATER					
W-2	6" CIP	15.00 - 725 LF	10,875.00		
W-5	12" CIP	24.00 - 410 LF	9840.00		
W-52	MJ FIT (4-14")	2.00 - 1125 LBS	2250.00		
W-56	CAP	38.00 - 4 EA	152.00		
W-66	6" GV	400.00 - 4 EA	1600.00		
W-82	V - Box - A	250.00 - 5 EA	1250.00		
W-87	FH 4-1/2	1,050.00 - 2 EA	2100.00		
W-89	FH EXT (6" or 12")	200.00 - 2 EA	400.00		
W-170	1" S SERV	360.00 - 6 EA	2160.00		
W-171	1" D SERV	427.00 - 9 EA	3843.00		
W-186	BLKG	120.00 - 4 CY	480.00		
M-28	REM & REPL ART PVMT	35.50 - 60 SY	2130.00		
W-45	Press CONN	600.00 - 2 EA	1200.00		
W-60	12" TAP SLV	950.00 2 EA	1900.00		
W-69	12" G.V.	800.00 1 EA	800.00		
P-12	AC CURB REM	6.00 - 25 LF	150.00		
P-38	AC CURB	4.30 - 25 LF	107.50		
PHASE I - SEWER					
S-3	8" VCP	8.50 - 1400 LF	11,900.00		
A-1	4" CIP	10.00 520 LF	5200.00		
S-12	TRCHG 6'-8' D	9.50 - 90 LF	855.00		
S-13	TRCHG 8'-10' D	11.50 - 510 LF	5865.00		
S-14	TRCHG 10'-14' D	13.50 - 530 LF	7155.00		
S-15	TRCHG 14'-18' D	17.00 - 270 LF	4590.00		
S-9	4" VCP TEE	50.00 - 12 EA	600.00		
S-22	4' MH, 6'-10' D	1,300.00 - 4 EA	5200.00		
S-23	4' MH, 10'-14' D	1450.00 - 4 EA	5800.00		
S-24	4' MH, ADD D CST, 14'-18' D	60.003 VF	180.00		
S-25	4' MH, ADD D CST, OVER 18' D	60.008 VF	42.00		
S-26	6' MH, ADD D CST TO 4' MH	135.00 8 LF	1080.00		
S-30	DROP MH	160.00 1 EA	160.00		
W-36	TRCHG. 6'-8' D	2.60 120 LF	300.00		
W-37	TRCHG 8'-14' D	3.50 400 LF	1400.00		
M-28	REM & REPL ART PVMT	35.50 40 SY	1420.00		
PHASE I - DRAINAGE					
K-32	Type 'C' Catch Basin, double grate	2875.00 1 EA	2875.00		
			182680.30		

Subtotal:
Contingencies: (10%):
Engineering: (6%):
Testing Fee: (2%):
Total Construction Cost:

NOTES:

1. Outstanding Pro-rata: 12" WATERLINE ON LADERA @ $7,112.50 EA.
2. For Staking, construction and inspection use Drawing No. 1214
3. This work shall be done in accordance with the specifications of Block-to-Block Contract No. 31.
4. If payment of the engineering fee is not made ten (10) working days before the expiration date of Contract No. 31, then this document must

11/3/83

Fred:

This is the agreement signed + recorded for Bent Tree w/ a copy of the letter of credit filed.

This is your file copy.

Denise

DRAINAGE REPORT

FOR

TRACT B? J of the

LADERA HEIGHTS SUBDIVISION
ALBUQUERQUE, NEW MEXICO

PREPARED FOR
HILLSIDE CORPORATION
P.O. BOX 790
GALLUP, NEW MEXICO 87301

PREPARED BY
TRINITY ENTERPRISES, INC.
401 COORS ROAD, N.W.
SUITE 202
ALBUQUERQUE, NEW MEXICO

BO K. JOHNSON
P.E. NO. 5922

Table of Contents

I. Discussion
II. Undeveloped Site Drainage Calculations
III. Developed Site-Drainage Characteristics
IV. Calculation for pond size and discharge rates
V. Appendix.
a.) U.S.W.S. Storm data
b.) Ladera Heights Subdivision drainage maps

I. DISCUSSION:

The site is located on the northwest corner of Tucson Road. The site slopes to the northwest and drains to the double drop inlets located on Ladera Road near the intersection of St. Joseph's Avenue. As per the Interm Drainage Guidelines, November, 1979 provided by Richard S. Heller, City Engineer, this site will match or reduce the undeveloped 100 year-storm flow rate by using a combination of detention and retention ponds. The retention ponds are sized using an infiltration rate of 12 inches per hour. The detention ponds shall be sized with a controlled discharge pipe. The sum of all the drainage flow rate will approximate the 100 year-24 hour storm undeveloped flow rate.

II. UNDEVELOPED SITE DRAINAGE CALCULATION

AREA= 3.0± ACRES WITH A RUNOFF FACTOR OF 0.35

USING THE STORM DATA [illegible] S.W.S.

10 MINUTE INTENSITY for the [illegible] year storm = $\frac{0.86}{(10/60)}$ = 5.16 $\frac{\text{inches}}{\text{hour}}$

Q_{100} UNDEVELOPED = (0.35)(5.16)(3) = 5.42 c.f.s.

III. DEVELOPED SITE-DRAINAGE CHARACTERISTICS

1. Drainage Area Basin No.

	Flow Rate to Offsite
A	0
B	0.48
C	2.76
D	0
E	0
F	0
G	2.53
	0
	5.77 c.f.s. ≅ 5.42 c.f.s.

Calculation for Pond Size and Discharge Rates

DRAINAGE AREA "A" (TOTAL ON-SITE RETENTION AREA)

CONTRIBUTING AREA	AREA	"C" RUNOFF FACTOR	EFFECTIVE AREA
ROOF	7264 FT.²	1.00	7264
LANDSCAPING (POND AREA)	5600 FT.²	1.00	5600

TOTAL EFFECTIVE AREA = 12,864 FT.²

REQUIRED POND VOLUME CALCULATION

TIME	ACCUM. RAINFALL	VOLUME	AVERAGE POND DEPTH	INFILTRATED VOLUME (12 IN/FT²/HR.)	STORAGE VOLUME	SURFACE AREA
0	0	0	0	0	0	0
5	0.55	590 (590)	1.6	82 (82)	508	979
10	0.86	922 (332)	1.8	186 (111)	736	1252
15	1.03	1104 (182)	1.9*	297 (369)	867	1332
30	1.50	1608 (504)	1.8	665 (629)	942*	1475*
1HR	1.90	2037 (429)		1294	742	1258
2HR	1.99	2133 (96)				
3HR	2.03	2176				
6HR	2.30	2466				

* PEAK DEPTH @ 1.9'
W/ STORAGE VOLUME @ 942 FT.³

POND GEOMETRY

d=0	AREA=0	AREA = 400 d²
d = 2'	AREA = 1600	VOLUME = 133 d³
d = 1'	AREA = 400	
d = 1.5	AREA = 900	

DRAINAGE BASIN B (CONTROL DISCHARGE - DETENTION AREA)

	AREA	C-RUNOFF FACTOR	EFFECTIVE AREA
ASPHALT	4872 FT²	0.95	4628
POND	153 FT²	1.00	153
		TOTAL	4781 FT²

USE THE 100 YEAR - 6HR STORM

TIME (MIN)	ACCUM. RAINFALL (IN.)	VOLUME (FT.³)	POND DEPTH (FT.)	PIPE DISCHARGE (C.F.S.)	ACCUM RUNOFF (FT.³)	STORAGE VOLUME (FT.³)
0	0	0				0
5	0.55	219	0.62	0.34	103	116*
10	0.86	343	1.21*	0.48*	246	97
15	1.03	410	1.00	0.43	376	33
30	1.50	598				
60	1.90	757				
120	1.99	793				
180	2.03	809				
360	2.30	916				

MAXIMUM DEPTH OF POND IS 1.21 FEET W/ A DISCHARGE RATE OF 0.48 C.F.S OCCURRING @ 8 MINUTES

POND GEOMETRY:

d	AREA
0	0
.5	25
1.0	180
1.5	486
2.0	720

AREA = $180d^{2.0}$
VOLUME = $60d^3$

PIPE DISCHARGE:

$$Q = C_d A\sqrt{2gh} = 0.62(0.09)(8.02)\sqrt{h} = 0.43\sqrt{h}$$

DRAINAGE AREA "C" (CONTROLLED DISCHARGE = DETENTION AREA)

	AREA	"C" (RUNOFF FACTOR)	EFFECTIVE AREA
PARKING LOT	30,323	0.95	28,807
POND	695	1.00	695
		TOTAL EFFECTIVE AREA	29,501 FT.²

TIME	① RAINFALL AMOUNT	RUNOFF VOLUME	POND DEPTH	② INCREM. FLOW	ACCUM RUNOFF	STORED VOLUME
MIN.	INCHES	FT.³	FT.	(C.F.S)	FT³	FT.³
0	0	0				
5	.55	1352	1.08	2.00	600 cf	752
10	0.80	2114	0.28	2.76	1429 c	684
15	1.03	2532	0.22	2.39	2146	356
30	1.30	3688	↓	↓	↓	↓
60	1.90	4671				
120	1.99	4892				
180	2.00	5114				
360	2.30	5655				

PEAK OCCURS @ TIME = 5MIN W/ A PEAK RUNOFF RATE @ 2.76 c.f.s.

2.81

① 100 YEAR - 6 HOUR STORM

② USE 10" DIA. PIPE

W/ $Q = C_d (A)\sqrt{2gh} = 0.62(0.55)(8.03)\sqrt{H} = 2.72\, h^{1/2}$

POND GEOMETRY:

VOLUME = 695 d

AREA = 695

DRAINAGE BASIN D&E (TOTAL ON-SITE RETENTION AREA)

	AREA	1" RUNOFF FACTOR	EFFECTIVE AREA
ROOF	2346	1.0	2346
POND	352	1.0	352
LANDSCAPING	1405	0.4	562
SIDEWALK	1165	1.0	1165
		TOTAL EFFECTIVE AREA =	4425

POND GEOMETRY

$d = 0$ AREA = 0
$d = 0.1$ AREA = 3.80
$d = 1.0$ AREA = 380.25

$\text{AREA} = 380.25 x^2$
$\text{VOLUME} = \int \text{AREA}\, d(h) = 126.75\, h^3$
$h = \left[\frac{\text{VOLUME}}{126.75}\right]^{1/3}$

TIME (MIN)	ACCUM. RAINFALL (INCHES)	VOLUME (FT³)	POND DEPTH (FT.)	*INFILTRATION VOLUME (INCR.)		STORAGE VOLUME (FT³)	SURFACE AREA (FT²)
0	0	0			Σ		
5	0.55	203 (116)	1.09	37.8/2	37.8	165	463
10	0.86	317 (63)	1.22	42.1/2	86.2	232	566
15	1.03	380 (33)	1.26	49.2/2	134.5	246	591
30	1.50	553 (173)	1.28	165	289.5	264	620
40	1.90	701 (148)		281		0	
70	1.99	734 (33)					
90	2.03	749 ( )					
110	2.90	848 ( )					

* ASSUME 12 IN/FT²/HR = 1 IN/FT²/5 MIN.

DRAINAGE AREA F (CONTROLLED DISCHARGE - RETENTION AREA)

	AREA	C (RUNOFF FACTOR)	EFFECTIVE AREA
ROOF	5000 FT.²	1.00	5000
PAVEMENT	9820 FT.²	0.95	9329
LANDSCAPING	2600 FT.²	0.30	780
SIDEWALKS	2400 FT.²	0.95	2280
		TOTAL	17,389

TIME MIN.	RAINFALL ACCUM. IN.	RUNOFF VOLUME FT³	RUNOFF AREA G FT³	TOTAL RUNOFF FT³	POND DEPTH FT	INFLOW FLOW CFS	POND RUNOFF FT³	STORAGE VOLUME FT³
								0
0	0	0	0	0				
5	.65	797	412	1209	0.86	1.78	534	875
10	0.86	1246	755	2001	0.81	2.48	1277	724
15	1.03	1493	817 *	2310	0.63	2.30	1967	343
30	1.50	2174	2390 *	4564	1.11	2.53	2725	1869
60	1.90	2753						
120	1.99	2884	* PEAK OF AREA G					
180	2.08	3014						
360	2.30	3333						

MAXIMUM discharge @ 2.53 c.f.s.

POND GEOMETRY

d	AREA
0.8	2633
0.6	1560
0.5	1032
0.1	60
1.0	4131

$AREA = 4131 d^2$

$Volume = 1377 d^3$

USE 10" DIA PIPE

$Q = C_d A \sqrt{2gh} = 0.62(.55)(8.025)\sqrt{4} = 2.71\sqrt{4}$

DRAINAGE AREA "G" (CONTROLLED DISCHARGE TO DRAINAGE AREA F)

	AREA (FT.²)	C-RUNOFF FACTOR	EFFECTIVE AREA
ROOF	12,750	1.00	12,750
LANDSCAPING	3,930	0.30	1,179
ASPHALT	15,960	0.95	15,162
SIDEWALK	3075	0.95	2,921
POND	4175	1.00	4,175
		TOTAL	36,187

TIME (MIN.)	ACCUM. RAINFALL (IN.)	VOLUME (FT.³)	POND DEPTH (FT.)	PIPE DISCHARGE (C.F.S.)	ACCUM. RUNOFF (FT.³)	STORAGE VOLUME (FT.³)
0	0	0				
5	0.55	1659	0.69	2.04	1612	1047
10	0.86	2593	1.05	2.52	755	1838
15	1.03	3106	1.23	2.72	817	2289
30	1.50	4523	1.68	2.66	2390	2133
60	1.90	5730				
120	1.99	6001				
180	2.03	6122				
360	2.30	6936				

MAXIMUM DISCHARGE @ 2.72 C.F.S.

POND GEOMETRY

d	AREA
0	1075
0.5	1218
1.0	2361

AREA = $1075 + 1286d$

VOLUME = $1075d + 643d^2$

$643d^2 + 1075d - Vol = 0$

$d^2 + 1.672d - \frac{Vol}{642} = 0$

$d = \frac{-1.672 + \sqrt{(0.672)^2 + 4(\frac{Vol}{642})}}{2}$

PIPE DISCHARGE

USE 6" DIA. PIPE

$Q = C_d A \sqrt{2gh} = 0.62(0.35)(8.03)\sqrt{h} = 1.737\sqrt{h}$

USE 2-6" DIA. PIPES.

$Q = 2(1.737)\sqrt{h} = 3.474\sqrt{h}$

APPENDIX A

U.S.W.S. Storm data

ESTIMATED RETURN PERIODS FOR SHORT-DURATION PRECIPITATION (Inches)

Station: ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO (CITY).
Latitude, 35° 05' N.; Longitude, 106° 39' W.; Elevation 4,960 ft.

DURATION	RETURN PERIOD (YEARS) 1	2	5	10	25	50	100	T,
5 min.	0.28	0.33	0.39	0.44	0.49	0.55		2.17
10 min.	0.37	0.45	0.47	0.55	0.63	0.77	0.86	1.62
15 min.	0.45	0.54	0.59	0.70	0.86	0.97	1.03	1.40
30 min.	0.48	0.62	0.82	0.96	1.19	1.34	1.50	0.96
1 hr.	0.61	0.78	1.04	1.22	1.50	1.70	1.90	
2 hr.	0.63	0.81	1.09	1.28	1.57	1.78	1.99	
3 hr.	0.64	0.83	1.13	1.33	1.63	1.86	2.03	
6 hr.	0.68	0.90	1.25	1.47	1.80	2.05	2.30	
12 hr.	0.71	0.96	1.35	1.59	1.95	2.22	2.50	
24 hr.	0.75	1.02	1.46	1.72	2.10	2.40	2.70	

$I_{10\ MIN.}$

APPENDIX B

Ladera Heights Subdivision drainage maps

DRAINAGE PLAT
LADERA HEIGHTS SUBDIVISION

BEING A REPLAT OF COLLEGE PARK ADDITION - UNIT 2, SUMMARY REPLAT OF COLLEGE PARK - UNIT 1, AND COLLEGE PARK SOUTH

SCALE 1" = 100'

PROPOSED CITY GOLF COURSE LADERA DETENTION BASIN

AREA III
9 cfs
32 ac-ft

AREA II
34 cfs
12 ac-ft

AREA I
28 cfs
98 ac-ft

TRACT A
TRACT B
TRACT C
C-1
R-1
R-2
R-3

LADERA ROAD
TUCSON ROAD
ESTANCIA DRIVE
MT HOLYOKE AVENUE
20' STORM SEWER EASEMENT
20' EXISTING SEWER EASEMENT
PROPOSED 25' SEWER EASEMENT
30' TRAIL DEDICATION
60" DIAMETER STORM DRAIN
MOUNTABLE CURB

VICINITY MAP
SCALE 1" = 750'

LEGEND

- DRAINAGE AREA DESIGNATION
- FLOW CONCENTRATION AT POINT OF EXIT FOR SPECIFIC AREA
- FLOW DIRECTION
- WATER BLOCKS
- DRAINAGE AREA BOUNDARY
- AREAS SUBJECT TO BACKYARD PONDING

DRAINAGE NOTES

1. Existing pressurized manhole converted to accept runoff by means of special designed grate cover
2. Combination Inlets on Ladera Road to accept flows from Area II & III
3. Self Ponding Area
4. Offsite Runoff Control Pond 80 x 80 x 3

EXHIBIT I

SHEET 1 OF 2

DRAINAGE REPORT

FOR

BURNING TREE SUBDIVISION

REVISED SEPTEMBER 1981

RECEIVED
SEP 28 1981
ENGINEERING

PREPARED FOR: RYMAR ENTERPRISES, INC.
1000 EUBANK BOULEVARD N.E.
ALBUQUERQUE, NEW MEXICO 87112

PREPARED BY: TOM MANN & ASSOCIATES, INC.
811 DALLAS N.E.
ALBUQUERQUE, NEW MEXICO 87110
(505) 265-5611

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

DRAINAGE REPORT INFORMATION SHEET

PROJECT TITLE: Burning Tree Subdivision

ZONE ATLAS PAGE NO. G-11 CITY ADDRESS Ladera Road N.W.

LEGAL ADDRESS Tracts: B, D, E, F, G, H, & I of Ladera Heights

ENGINEERING FIRM Tom Mann & Associates, Inc. CONTACT Steve Cannon

ADDRESS 811 Dallas N.E. 87110 PHONE 265-5611

OWNER Rymar Enterprises, Inc. CONTACT Bob Ryan

ADDRESS 1000 Eubank N.E. 87112 PHONE 298-5573

ARCHITECT/SURVEYOR Bill Fanning CONTACT

ADDRESS 110 Amherst Drive S.E. PHONE 266-5874

DATE SUBMITTED August 24, 1981

BY Steve Cannon

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PURPOSE AND SCOPE

The purpose of this drainage report is to establish the criteria for controlling runoff resulting from a development in a manner that is acceptable to the City of Albuquerque and to the Albuquerque Metropolitan Arroyo Flood Control Authority.

This plan determines the runoff resulting from a 100-year frequency storm falling on the site under existing and developed conditions.

The scope of this plan is to ensure that the proposed project will be protected from storm runoff and that the development will not increase the flooding potential of adjacent properties.

LOCATION AND DESCRIPTION

Burning Tree Subdivision is located on the West Mesa, north of Tuscon Road, N.W. and south of Ladera Road, N.W., within Section 2, Township 10 North, Range 2 East, N.M.P.M. Figure 1 graphically depicts the location of the site.

The parcel is 11.052 acres in size and will be developed as a 121-unit townhouse subdivision. All lots will be 0.05 acres in size or larger with designated common areas throughout the subdivision. The natural topography of the site is mildly sloping toward the west (0.6 percent slope).

DESIGN CRITERIA

In analyzing the storm runoff, the SCS method is used:

Existing Soil Conditions

Soil Type: Madurez-Wink Association

Hydrological Soil Type: B

Existing Land Use: Range, Poor Condition

A. For Runoff Flowrates, Q = Aq (D.R.O.)

A = Drainage area in acres

D.R.O. = Direct runoff in inches

q = C.F.S. per acre per inch of runoff, from Plate 5

B. For Ponding Volumes, $V_{100} = \frac{Q}{12}A$

A = Drainage area in square feet

Q = Direct runoff in inches

EXISTING DRAINAGE CONDITIONS

The site is bounded on the north and west by Ladera Heights Subdivision and El Rancho Atrisco, while the land to the east and south lies undeveloped. Ladera Road is paved from Atrisco Road to approximately 300 feet southwest of the intersection with St. Joseph Avenue with arterial street-type paving (see Figure 5).

The existing drainage conditions are shown superimposed on the Albuquerque City Topo Map shown in Figure 2. The project lies within a drainage basin that directs flows to the north and west across the site and into Ladera Road. Runoff is conveyed in the south and eastern gutter line of Ladera Road to a low point located at the northeast corner of the project site. Two (2) type 'Double C' catch basins divert the flow into a storm drain system which directs the flows into the Ladera detention system.

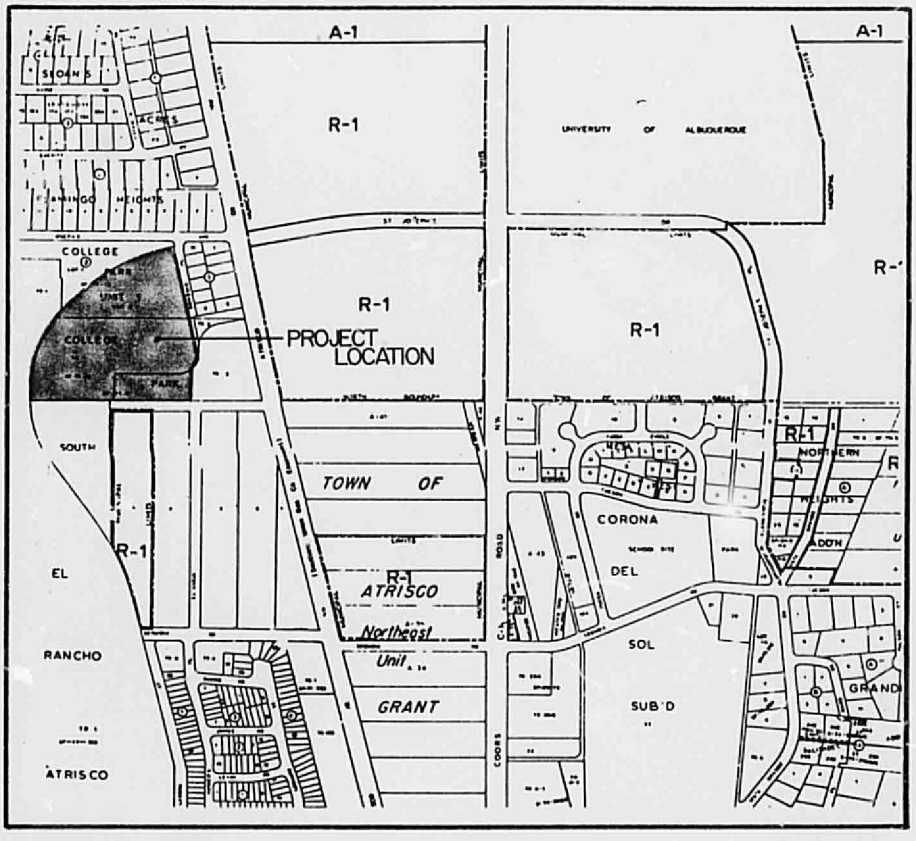
The drainage basin affecting the site has been divided into five (5) sub-basins for a convenient quantitative analysis. Sub-Basin Number 1 represents a site to be developed (Q_{100} = 9.9 cfs). Sub-Basin Number 2 contributes runoff onto the site from the south and the east (Q_{100} = 3.0 cfs). Sub-Basin Number 3 (Q_{100} = 3.3 cfs) and Sub-Basin Number 4 (Q_{100} = 4.0 cfs) do not contribute runoff onto the site, but do flow into Ladera Road. Sub-Basin Number 5 (Q_{100} = 3.8 cfs) represents the south and east half of Ladera Road. All five (5) sub-basins combined into one (1) flow entering the catch basin. Calculations show that 20.1 cfs is generated at this point

during the 100-year frequency storm. Calculations also show that the existing catch basin is capable of handling 29 cfs and that the south and east half of Ladera Road is designed to carry 28.0 cfs within the curb lines.

Drainage Basin Number 6 (shown on Figure 2) lies north and east of the site. The 100-year frequency storm generates a Q equal to 17.5 cfs and a volume equal to 44,600 cf. Calculations show that an existing depression centered in St. Joseph Avenue holds 49,125 cf of runoff; therefore, Drainage Basin Number 6 should not contribute runoff to the site nor contribute flow to the existing catch basins on Ladera Road.

Drainage Basin Number 7 represents development to the north and west of the site. Runoff is collected at St. Joseph Avenue and runs south to Ladera Road. The water was turned northeastward and travels along the north and east gutterline to an existing 'Double C' catch basin opposite the other two mentioned above. This catch basin diverts the flows into the Ladera detention system. Q_{100} is estimated at 18.0 cfs as it enters the catch basin.

The Flood Hazard Map for the site is shown in Figure 3. It can be seen from Figure 3 that the project site does not lie within a flood hazard zone or a flood plain. In addition, there are no existing drainage easements on the site.



VICINITY MAP
SCALE: 1" = 800'

G-11-Z

FIGURE 1

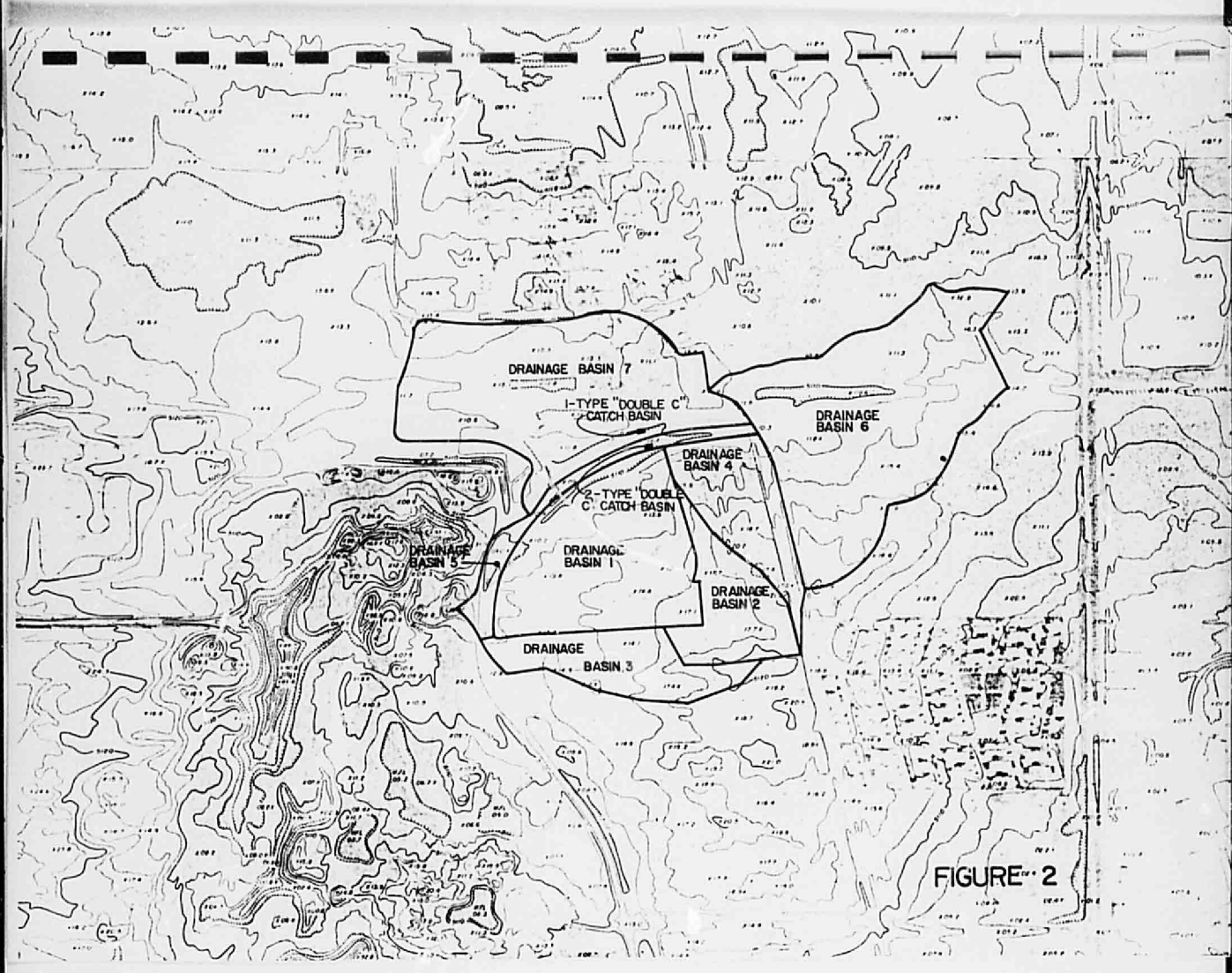
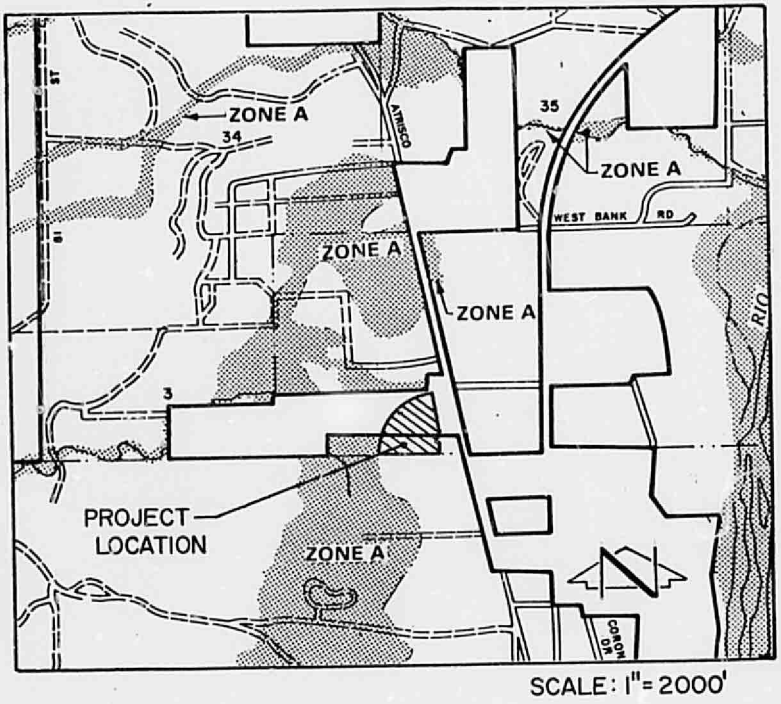

DRAINAGE BASIN 7
1-TYPE "DOUBLE C" CATCH BASIN
DRAINAGE BASIN 6
DRAINAGE BASIN 4
2-TYPE "DOUBLE C" CATCH BASIN
DRAINAGE BASIN 5
DRAINAGE BASIN 1
DRAINAGE BASIN 2
DRAINAGE BASIN 3

FIGURE 2



SCALE: 1" = 2000'

BERNALILLO COUNTY FLOOD HAZARD MAP - SHEET 3 OF 15

FIGURE 3

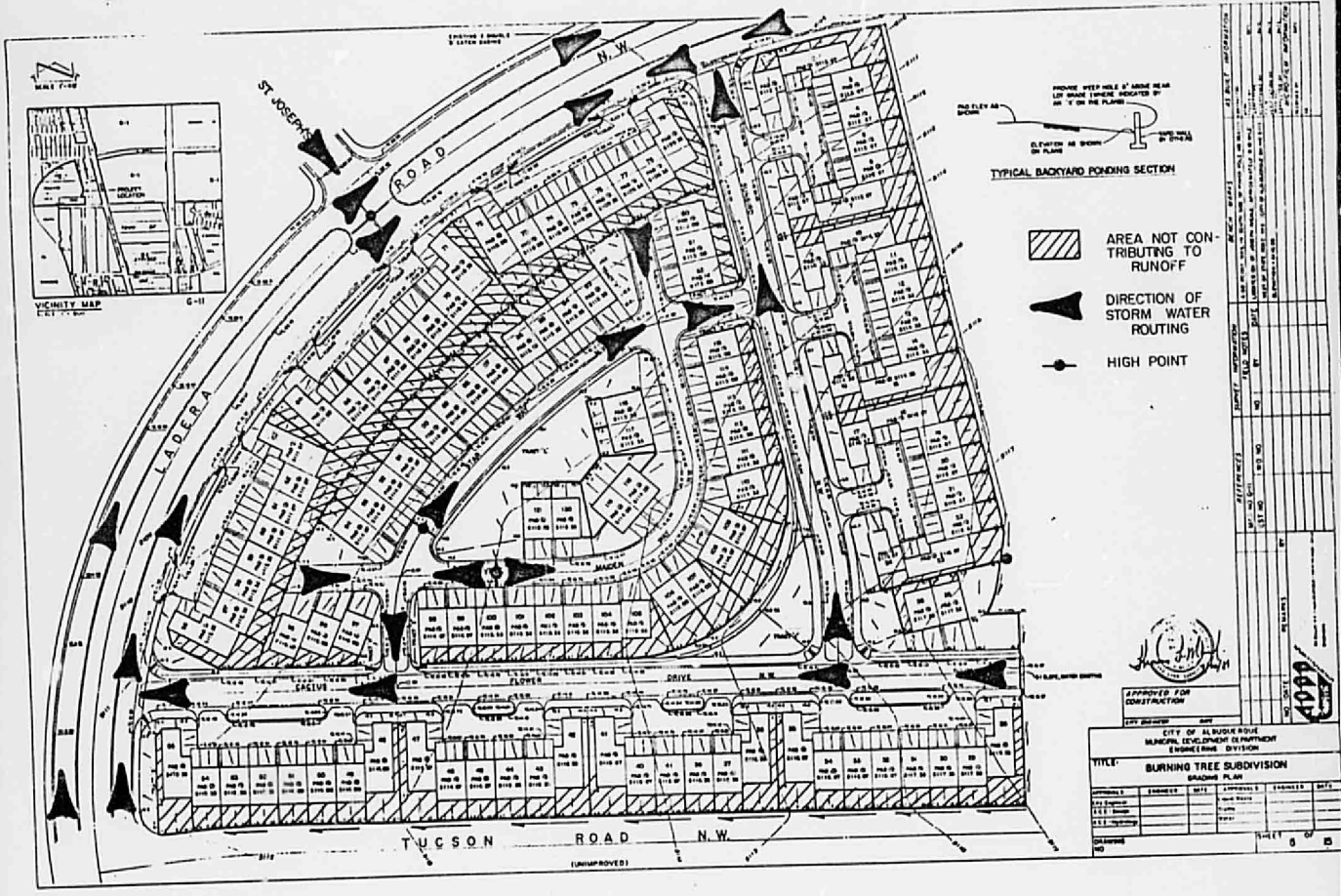

ST. JOSEPH'S
ROAD
N.W.
LADERA
DRIVE
N.W.
TUCSON
ROAD
N.W.
(UNIMPROVED)
VICINITY MAP
TYPICAL BACKYARD PONDING SECTION
AREA NOT CONTRIBUTING TO RUNOFF
DIRECTION OF STORM WATER ROUTING
HIGH POINT
APPROVED FOR CONSTRUCTION
CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION
TITLE:
BURNING TREE SUBDIVISION
GRADING PLAN

FIGURE 4

PROPOSED DRAINAGE CONDITIONS

The proposed drainage scheme is shown in Figure 4. A detailed Grading Plan has also been submitted with this report and can be found inside the back cover.

Public streets consisting of arterial and residential street sections and private streets consisting of residential street sections will be utilized. Common areas, as well as back and side yards will consist of natural landscaping such as grass and trees.

Yard walls will be built on rear and common lot lines. Structural retaining walls will be constructed for elevation differences greater than 16 inches. The location of yard and retaining walls are shown on the Grading Plan.

Stormwater that falls on the back yards will be retained on site within the individual lot. All roofs, driveways, front yards and common areas will slope toward the street. Runoff from these areas will be diverted into the streets and routed to the two existing catch basins located in the south and east gutter of Ladera Road. The routing of the flows in the streets is clearly demonstrated in Figure 4.

Development of the subdivision and paving improvements on Ladera Road will increase runoff generated in Drainage Sub-Basins 1 and 5. Drainage Sub-Basins 3 and 4 will remain unchanged. Portions of the 3.0 cfs generated in Drainage Sub-Basin 2 will be routed into Cactus Flower Drive which will carry the runoff through the subdivision and empty into Ladera Road. The remaining runoff will be routed along yard walls,

through Tract X and Tuscon Road, eventually ending up in Ladera Road. All runoff from the combined drainage basin will still be channeled into the existing catch basins on Ladera Road. Described improvements increased Q_{100} approximately 6.3 cfs, making a total of 27.4 cfs entering the catch basin. Since the existing catch basin can handle 29 cfs, no improvements to the catch basin are required. The 100-year flow will still remain within the curbs of the south and east half of Ladera Road.

Improvements will not affect Drainage Basin 6, and only slightly increase flows in Drainage Basin 7 (less than 0.5 cfs entering at the catch basin).

The storm water that remains outside in the back yards will be expected to percolate into the soil, especially in the grassy areas. In order to protect the house pad, the back yards will slope toward the rear yard wall as shown on the Grading Plan. A maximum of between 25 and 50 cf of storm water could generate in this area during the 100-year frequency storm; however, approximately 100 cubic yards of storage will be provided against the yard wall in most lots. Where possible, weep holes in the yard walls will be provided 8 inches above the finished grade at the rear wall to allow an outfall in case of emergency.

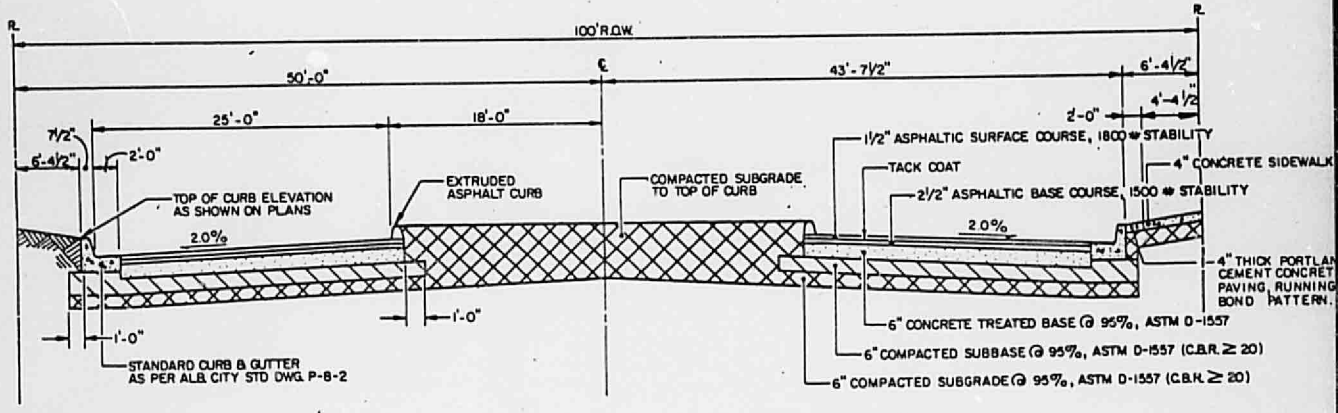
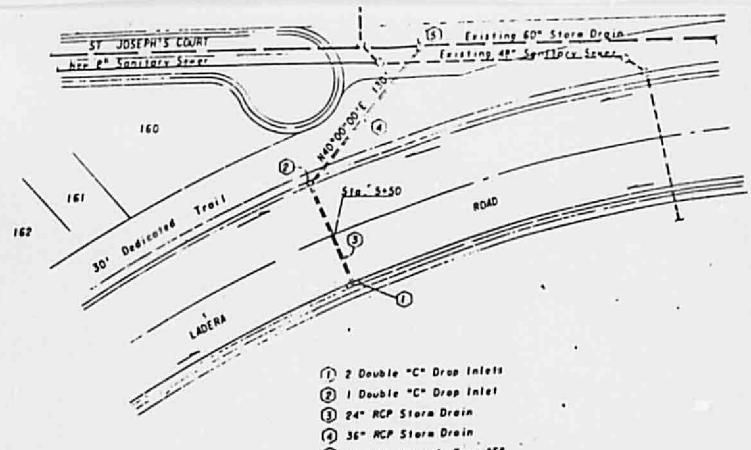
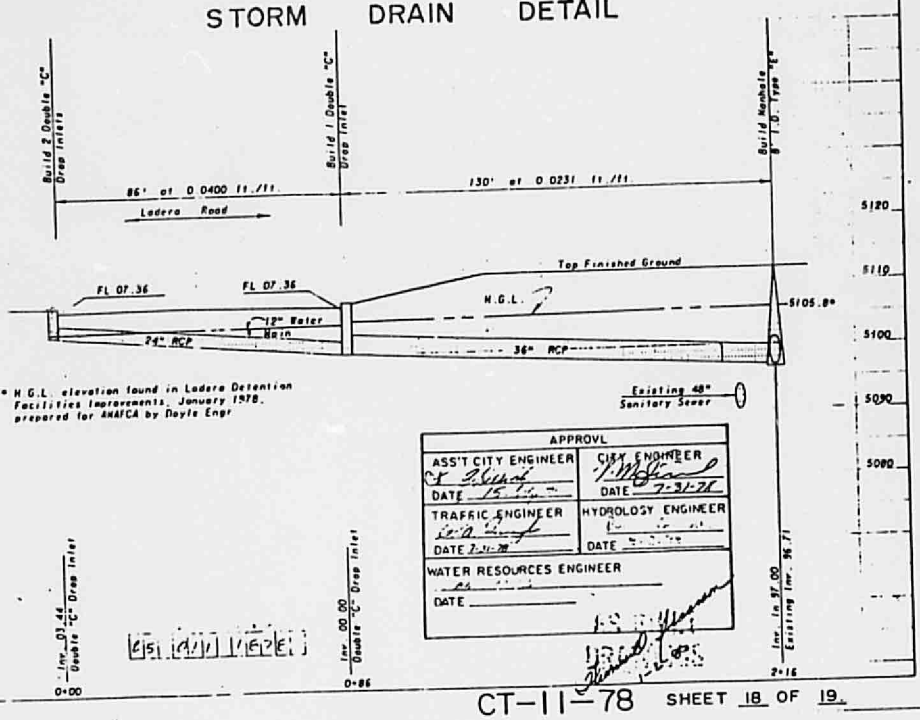

100' R.O.W.
50'-0"
43'-7½"
6'-4½"
25'-0"
18'-0"
4'-4½"
2'-0"
7½"
6'-4½"
2'-0"
TOP OF CURB ELEVATION AS SHOWN ON PLANS
EXTRUDED ASPHALT CURB
COMPACTED SUBGRADE TO TOP OF CURB
1½" ASPHALTIC SURFACE COURSE, 1800 # STABILITY
TACK COAT
2½" ASPHALTIC BASE COURSE, 1500 # STABILITY
4" CONCRETE SIDEWALK
2.0%
2.0%
4" THICK PORTLAN CEMENT CONCRET PAVING, RUNNING BOND PATTERN.
1'-0"
1'-0"
STANDARD CURB & GUTTER AS PER ALB. CITY STD. DWG. P-8-2
6" CONCRETE TREATED BASE @ 95%, ASTM D-1557
6" COMPACTED SUBBASE @ 95%, ASTM D-1557 (C.B.R. ≥ 20)
6" COMPACTED SUBGRADE @ 95%, ASTM D-1557 (C.B.R. ≥ 20)

FIGURE 5



STORM DRAIN DETAIL



* H.G.L. elevation found in Ladera Detention Facilities Improvements, January 1978, prepared for ANAFCA by Doyle Engr

APPROVL	
ASS'T CITY ENGINEER DATE 15 [illegible]	CITY ENGINEER DATE 7-31-78
TRAFFIC ENGINEER DATE 7-31-78	HYDROLOGY ENGINEER DATE
WATER RESOURCES ENGINEER DATE	

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FIGURE 6

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions and recommendations are presented for the development of Burning Tree Subdivision:

1. Construct the house pad to provide positive drainage away from the house in all directions.
2. Drain all roofs toward the front yard.
3. Drain driveways and front yards into the streets.
4. Route the runoff from the streets into the existing catch basins located in Ladera Road N.W. as shown on the Grading Plan.
5. Construct yard walls in location shown on the Grading Plan. Structural retaining walls will be constructed for elevation differences greater than 16 inches.
6. Slope back yards toward the rear yard wall to provide positive drainage away from the house pad. Provide runoff storage against the rear yard wall.
7. Provide weep holes 8 inches above finished grade in rear walls where shown on the Grading Plan. This will provide for emergency outfall.

CALCULATIONS

ANALYSIS BY SCS METHOD

Job: BURNING TREE D-7

EXISTING CONDITIONS : 100 YR

DRAINAGE BASIN	LAND USE						WATERSHED CHARACTERISTICS				STORM CHARACTERISTICS					Q (cfs)	VOL (cu. ft.)
	AREA$_1$ (ac.)	CN$_1$	AREA$_2$ (ac.)	CN$_2$	TOTAL AREA (ac.)	COMP. CN	LENGTH (FT.)	DROP (FEET)	SLOPE (%)	TC (HR.)	FREQUENCY (yr)	RAINFALL (in.)	RUNOFF (in.)	DC	DISCHARGE (cfs/ac/in)		
1	—	—	—	—	11.05	79	750	9.5	.0059	0.10	100	2.2	0.64	70	1.40	9.9	25,800
2	—	—	—	—	3.3	79	500	6.0	.0120	0.10	100	2.2	0.64	70	1.40	3.0	7,700
3	—	—	—	—	3.7	79	950	9.0	.0095	0.15	100	2.2	0.64	70	1.40	3.3	8,640
4	3.74	79	0.26	95	4.0	80	900	11.0	.0122	0.13	100	2.2	0.70	70	1.42	4.0	10,150
5	0.45	79	1.36	95	1.81	91	500	2.5	.0050	0.10	100	2.2	1.52	70	1.40	3.8	10,000
1+2+3 +4+5	22.24	79	1.62	95	23.86	80	2300	12.4	.0054	0.37	100	2.2	0.69	70	1.22	20.1	59,700
6	—	—	—	—	19.1	79	900	11.3	.0126	0.13	100	2.2	0.64	70	1.42	17.5	44,600
7	16.7	79	2.2	95	18.9	81	1400	10.0	.0071	0.25	100	2.2	0.73	70	1.30	18.06	50,400

ANALYSIS BY SCS METHOD

EXISTING CONDITIONS : 10 YR

DRAINAGE BASIN	LAND USE						WATERSHED CHARACTERISTICS				STORM CHARACTERISTICS					Q (cfs)	VOL (cu. ft.)
	AREA$_1$ (ac.)	CN$_1$	AREA$_2$ (ac.)	CN$_2$	TOTAL AREA (ac.)	COMP. CN	LENGTH (FT.)	DROP (FEET)	SLOPE (%)	TC (HR)	FREQUENCY (yr)	RAINFALL (in.)	RUNOFF (in.)	DC	DISCHARGE (cfs/ac/in)		
1	—	—	—	—	11.05	79	750	9.5	.0059	0.10	10	1.4	0.21	70	1.40	3.3	8600
2	—	—	—	—	3.3	79	500	6.0	.0120	0.10	10	1.4	0.21	70	1.40	1.0	2550
3	—	—	—	—	3.7	79	950	9.0	.0095	0.15	10	1.4	0.21	70	1.40	1.1	2900
4	3.74	79	0.26	95	4.0	80	900	11.0	.0122	0.13	10	1.4	0.24	70	1.42	1.4	3500
5	0.45	79	1.36	95	1.81	91	500	2.5	.0050	0.10	10	1.4	0.66	70	1.40	1.7	4350
1+2+3+4+5	22.24	79	1.62	95	23.86	80	2300	12.4	.0054	0.37	10	1.4	0.24	70	1.22	7.0	20,800
6	—	—	—	—	19.1	79	900	11.3	.0126	0.13	10	1.4	0.21	70	1.42	5.7	14,600
7	16.7	79	2.2	95	18.9	81	1400	10.0	.0071	0.25	10	1.4	0.26	70	1.30	6.5	18,100

ANALYSIS BY SCS METHOD

DEVELOPED CONDITIONS : 100 yr

DRAINAGE BASIN	LAND USE						WATERSHED CHARACTERISTICS				STORM CHARACTERISTICS					Q	VOL
	AREA$_1$ (ac.)	CN_1	AREA$_2$ (ac.)	CN_2	TOTAL AREA (ac.)	COMP. CN	LENGTH (FT.)	DROP (FEET)	SLOPE (%)	TC (HR)	FREQUENCY (yr)	RAINFALL (in.)	RUNOFF (in.)	DC	DISCHARGE (cfs/ac/in)	(cfs)	(cu. ft.)
1	—	—	—	—	11.05	89*				0.10	100	2.2	1.20	70	1.40	18.6	48,150
2					3.3	79				0.10	100	2.2				3.0	7,700
3					3.7	79				0.15	100	2.2				3.3	8,640
4					4.0	80				0.13	100	2.2				4.0	10,150
5	1.72	95	0.09	79	1.81	94				0.10	100	2.2	1.58	70	1.40	4.0	10,400
1+2+3 +4+5					23.86	85				0.37	100	2.2	0.94	70	1.22	27.4	81,400
6					19.1	79				0.13	100	2.2				17.5	44,600
7	18.9	81	0.25	95	19.15	81	1400	10.0	.0071	0.25	100	2.2	0.73	70	1.30	18.2	50,750

ANALYSIS BY SCS METHOD

JOB: BURNING TREE

DEVELOPED CONDITIONS, 10 YR.

DRAINAGE BASIN	LAND USE						WATERSHED CHARACTERISTICS				STORM CHARACTERISTICS					Q	VOL
	AREA1 (ac.)	CN_1	AREA2 (ac.)	CN_2	TOTAL AREA (ac.)	COMP. CN	LENGTH (FT.)	DROP (FEET)	SLOPE (%)	TC (HR)	FREQUENCY (yr)	RAINFALL (in.)	RUNOFF (in.)	DC	DISCHARGE (cfs/ac/in)	(cfs)	(cu. ft.)
1					11.05	89				0.10	10YR	1.4	0.56		1.40	8.7	22,500
2					3.3	79				0.10	10YR	1.4	0.21		1.40	1.0	2500
3					3.7	79				0.15	10YR	1.4	0.21		1.40	1.1	2900
4					4.0	80				0.13	10YR	1.4	0.24		1.42	1.4	3500
5					1.81	94				0.10	10YR	1.4	0.85		1.40	2.2	5600
1+2+3+ 4+5					23.86	85				0.37	10YR	1.4	0.39		1.22	11.4	33,800
6					19.1	79				0.13	10YR	1.4	0.21		1.42	5.70	14,600
7					19.15	81				0.25	10YR	1.4	0.26		1.30	6.5	18,100

DRAINAGE BASIN #1 : DEVELOPED FLOWS

IMPERVIOUS AREA ON-SITE FLOWING TO CATCH BASIN

HOUSE PADS (ROOFS):	155700 sq.ft.	3.57 ac.
PRIVATE STREETS	88500 sq.ft.	2.03 ac.
DRIVEWAYS	43560 sq.ft.	1.00 ac.
PUBLIC STREETS	51600 sq.ft.	1.18 ac.
SDWK/JOGGING PATH	6000 sq.ft.	0.13 ac.
TOTAL:	345360 sq.ft.	7.93 ac.

AREA ON-SITE NOT FLOWING TO CATCH BASINS:
BACKYARDS OF THE FOLLOWING LOTS:

LOTS 2 thru 26:	12800 sq.ft.	0.29 ac.
LOTS 28 thru 55:	18200 sq.ft.	0.42 ac.
LOTS 56 thru 79:	13000 sq.ft.	0.30 ac.
LOTS 80 thru 94:	6500 sq.ft.	0.15 ac.
LOTS 98 thru 115:	7500 sq.ft.	0.17 ac.
LOTS 116 thru 121:	2850 sq.ft.	0.07 ac.
TOTAL:	60850 sq.ft.	1.40 ac.

SUMMARY:

AREA PONDED:	1.40 ac.	13%
IMPERVIOUS AREA:	7.93 ac.	72%
PERVIOUS AREA:	1.72 ac.	16%
TOTAL AREA:	11.05 ac.	100%

COMPOSITE Cn:
PERCENT IMPERVIOUS: 72%
PERVIOUS Cn: 79
COMPOSITE Cn (W/O PONDING): 93 [from plate #1]

PERCENT ON-SITE PONDING: 13%
COMPOSITE Cn : 89 [from plate #2]

FLOW CAPACITY; LADERA ROAD (SOUTH & EAST)

WORK FILE: TEMP

FROM		ANGLE	DIST	NORTH	EAST	TO
	LADERA ROAD: FLOW TO T.C.					
*****	START			0.67000	0.46000	1
1	INV	S 14 14 14.2 E	0.6912	0.00000	0.63000	2
2	INV	N 86 16 51.6 E	2.0042	0.13000	2.63000	3
3	INV	N 88 51 15.3 E	23.0046	0.59000	25.63000	4
4	INV	N 0 00 00.0 E	0.0800	0.67000	25.63000	5
5	INV	N 90 00 00.0 W	25.1700	0.67000	0.46000	1
				0.67000	0.46000	1
	NO CLOSURE ERROR		8.40ft	.0002ac		

FROM		ANGLE	DIST	NORTH	EAST	TO
	LADERA ROAD: FLOW WITHIN R.O.W.					
*****	START			1.00000	-6.38000	7
7	INV	S 87 02 20.6 E	6.3885	0.67000	0.00000	6
6	INV	S 90 00 00.0 E	0.4600	0.67000	0.46000	1
1	INV	S 14 14 14.2 E	0.6912	0.00000	0.63000	2
2	INV	N 86 16 51.6 E	2.0042	0.13000	2.63000	3
3	INV	N 88 51 15.3 E	23.0046	0.59000	25.63000	4
4	INV	N 0 00 00.0 E	0.4100	1.00000	25.63000	8
8	INV	N 90 00 00.0 W	32.0100	1.00000	-6.38000	7
				1.00000	-6.38000	7
	NO CLOSURE ERROR		17.91ft	.0004ac		

LADERA ROAD
FLOW CONTAINED IN THE R.O.W.

```
n=0.013
A=17.91
P=6.39+0.46+0 69+2+23.01+0.41
R=A/P
S=0.0040
Q=(1.486/n)*A*(R^(2/3))*S^0.5
V=Q/A

Q
 35.2197237802
V
 4 8140549291
```

LADERA ROAD
FLOW CONTAINED IN THE STREET

```
n=0.013
A=8.40
P=0.6912+2.0042+23.0046+0.08
R=A/P
S=0.0040
Q=(1.486/n)*A*(R^(2/3))*S^0.5
V=Q/A

Q
 28.7551311116
V
 3 42323227519
```

CATCH BASIN CAPACITY

INLET GRATE CAPACITY:

$Q = A*C*(2*g*h)^{0.5}$

WHERE A = 5.73 + 1.29 = 7.39 sq.ft.

C = 0.5

g = 32.2

h = 0.67

Q = 24.7 cfs

ASSUME A CLOG FACTOR = 0.67

Q = 0.67 * 24.27 = 16.26 cfs per double grate

FOR THE TWO EXISTING DOUBLE GRATES:

Q = 16.26 * 2 = 32.5 cfs

ORIFICE CAPACITY:

ENTRANCE TYPE : square-edged; flush entrance

PIPE : 24" RCP

(SC)op = 1.40% [from plate #6]

Q(100) = 28 cfs

$Q/D^{(5/2)}$ = 4.95

So = 4.0%

SC*L/D) 1.8 [from plate #7]

L(control)) (1.8 * 2)/0.014

) 257 ft

L(actual) = 86 ft.

L(actual) (L(control); therfore INLET ORIFICE CONTROLS

HW = 7.36 - 3.44 + 0.67 = 4.59 ft.

D = 24" = 2 ft.

HW/D = 2.30

Q = 29.0 cfs [from plate #8]

ORIFICE CAPACITY (INLET GRATE CAPACITY; therefore INLET ORIFI : CONTROLS

28.0 cfs (29.0 cfs; therefore THE EXISTING CATCH BASIN IS SATISFACORY TO DISCHARGE THE 100 YEAR FLOW IN THE DEVELOPED CONDITION

DRAINAGE BASIN #6 : EXISTING STORAGE

POND VOLUME:

ELEV: 5109.6 AREA: 0 sq.ft.
ELEV: 5110.0 AREA: 77500 sq.ft.
ELEV: 5100.3 AREA: 150000 sq.ft.

VOL= [(77500+0)] * [5110.0-5109.6] +
[(150000 + 77500)/2] * 5110.3 - 5110.0]
= 49125 c.f.

V(100) = 44600 c.f.

EXISTING STORAGE RETAINS THE RUNOFF FROM THE 100 YR. STORM

PERCENTAGE OF IMPERVIOUS AREAS
VS.
COMPOSITE CN'S FOR GIVEN PERVIOUS
AREA CN'S

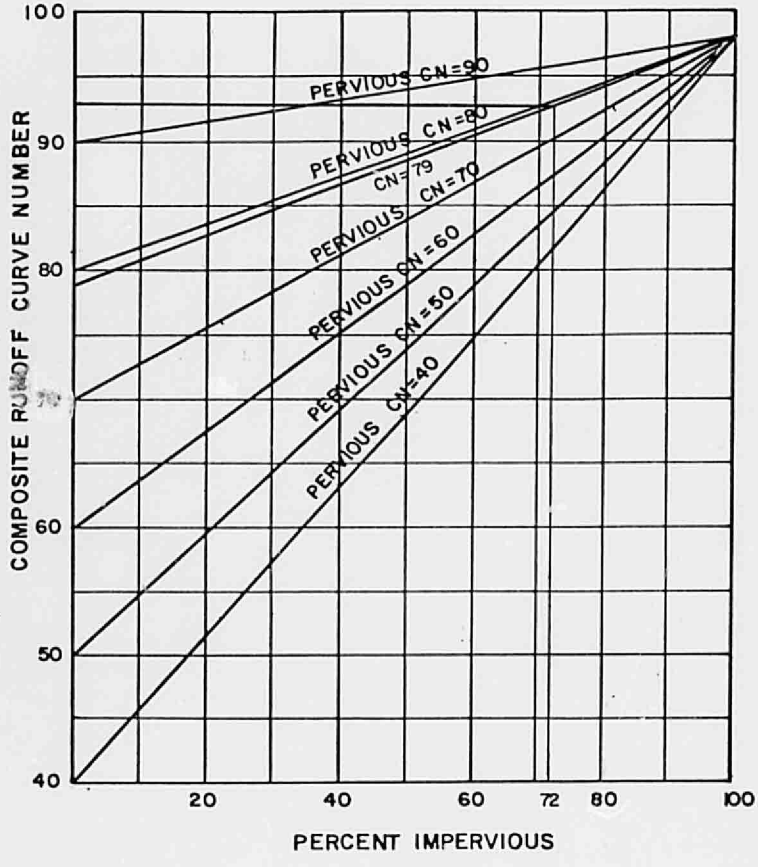


PLATE I

PERCENT ONSITE PONDING VS. COMPOSITE CURVE NUMBER GIVEN COMPOSITE CN WITHOUT PONDING

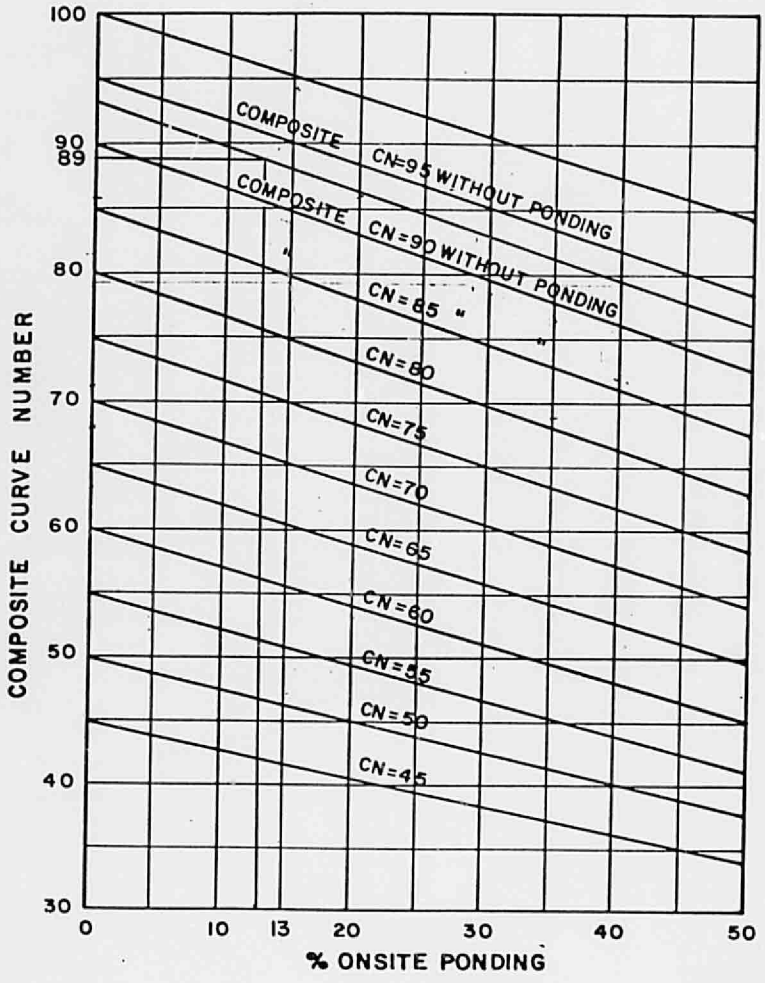
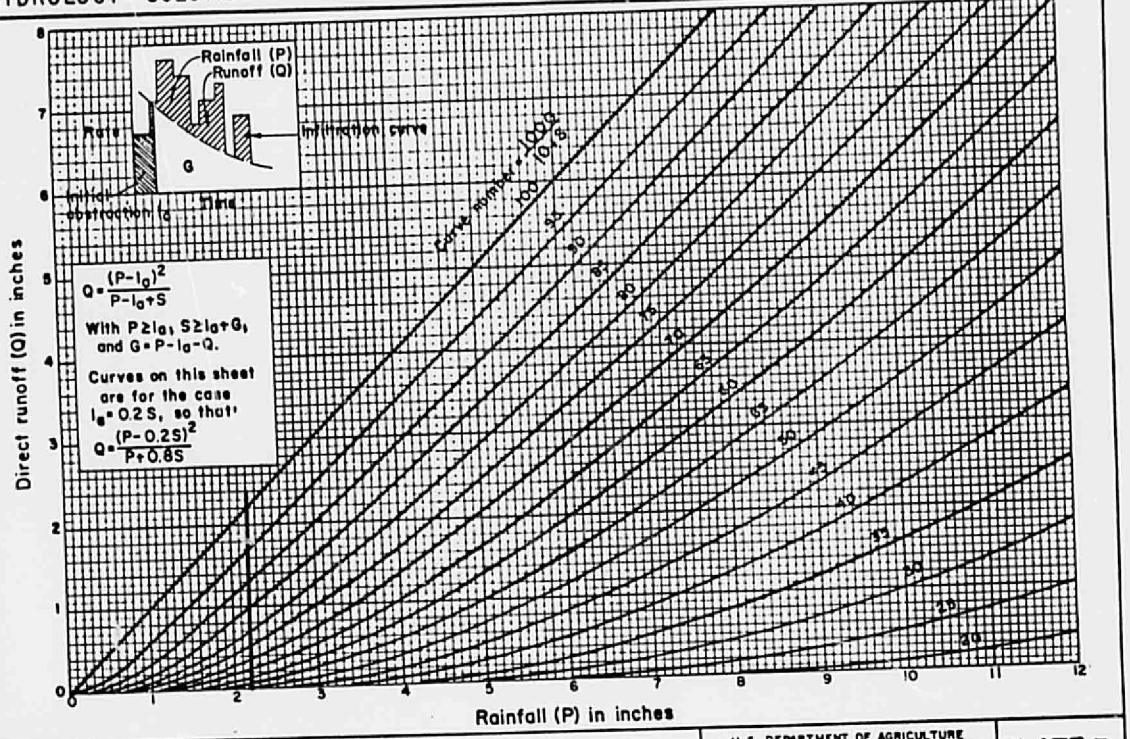


PLATE 2

HYDROLOGY: SOLUTION OF RUNOFF EQUATION $Q = \frac{(P-0.2S)^2}{P+0.8S}$

P=0 to 12 inches
Q=0 to 8 inches



REFERENCE
Mockus, Victor: Estimating direct runoff amounts from storm rainfall: Central Technical Unit, October 1955.

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
ENGINEERING DIVISION – CENTRAL TECHNICAL UNIT

PLATE-3

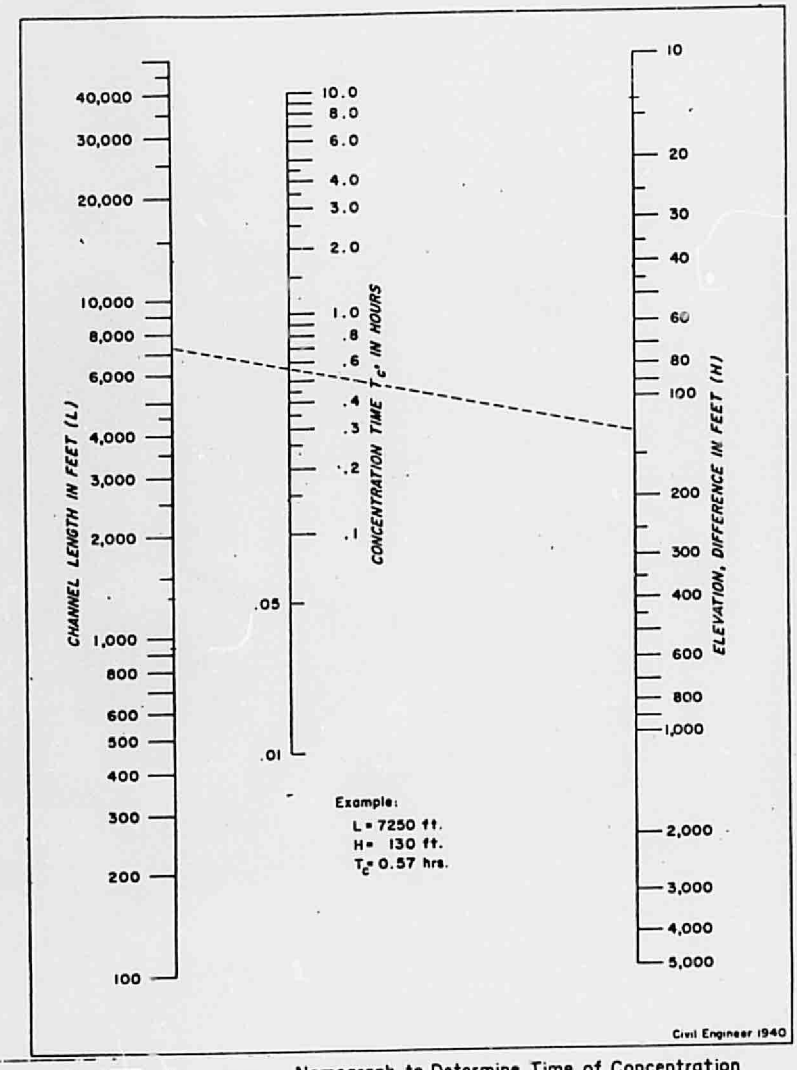


PLATE-4 --- Nomograph to Determine Time of Concentration

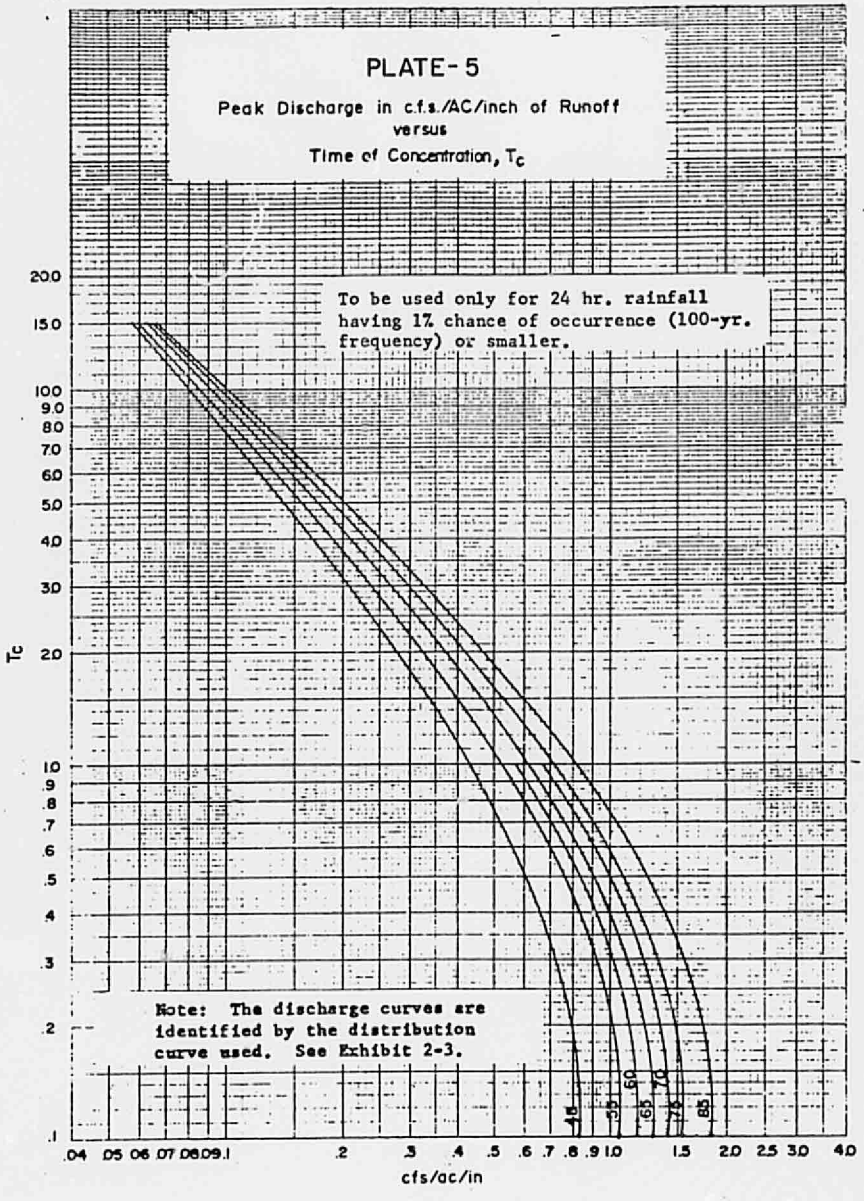
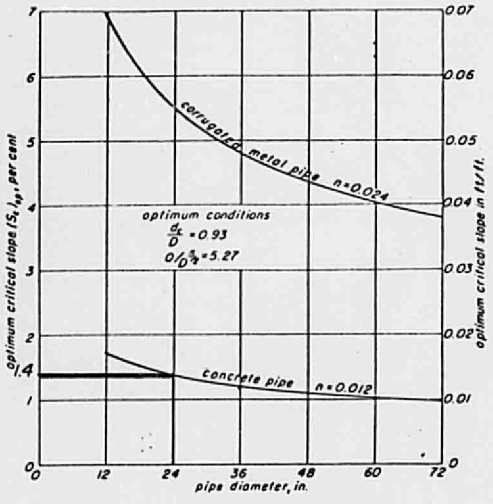


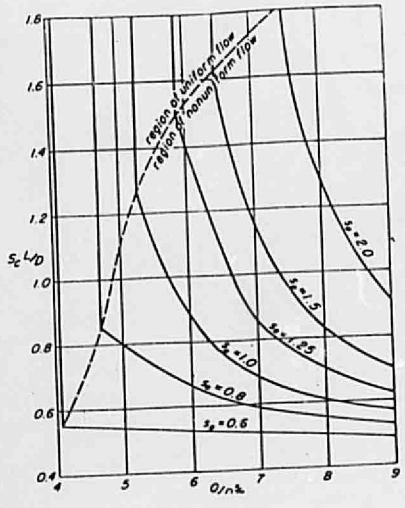
PLATE-5
Peak Discharge in c.f.s./AC/inch of Runoff
versus
Time of Concentration, T_c
To be used only for 24 hr. rainfall having 1% chance of occurrence (100-yr. frequency) or smaller.
Note: The discharge curves are identified by the distribution curve used. See Exhibit 2-3.
Tc
200
150
100
90
80
70
60
50
40
30
20
10
9
8
7
6
5
4
3
2
1
.04 .05 .06 .07 .08 .09 .1 .2 .3 .4 .5 .6 .7 .8 .9 1.0 1.5 2.0 2.5 3.0 4.0
cfs/ac/in
45
55
60
65
70
75
85



Optimum critical slope for circular pipe.

* Taken from "Handbook of Concrete Culvert Pipe Hydraulics", Portland Cement Organization, 1964, Page 88.

PLATE 6



Control length for square-edge entrance with a headwall.

PLATE 7

INLET CONTROL

NOMOGRAPH FOR SQUARE-EDGED ENTRANCE IN A HEADWALL

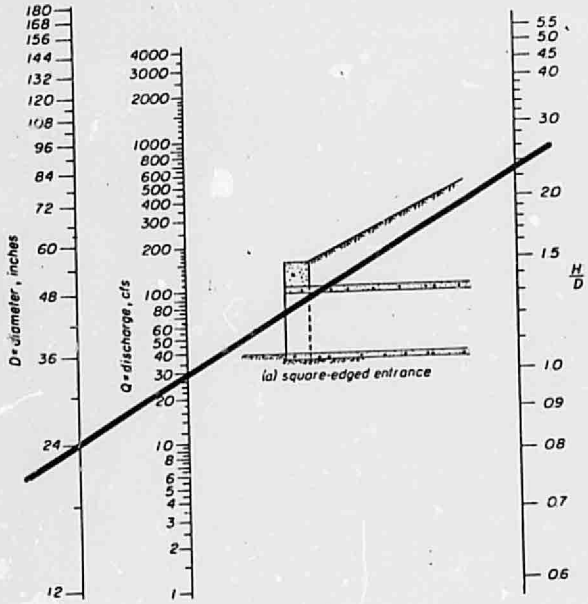


PLATE 8