City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

October 30, 2000

Larry D. Read, PE
Larry Read & Associates
12836-B Lomas NE
Albuquerque, NM 87112

Re: Sunshine Country Mobile Home Park – Community Buildings
Engineer's Stamp dated 10-25-99, (N10/D4)
Engineering Certification dated 10-17-00

Dear Mr. Read,

Based upon the information provided in your submittal dated 10-18-00, Engineering Certification for Certificate of Occupancy for the above referenced site is approved.

If I can be of further assistance, please contact me at 924-3986.

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Sr. Engineer, Hydrology

C: file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

February 28, 2000

Larry D. Read, PE
Larry Read & Associates
12836-B Lomas NE
Albuquerque, NM 87112

Re: Sunshine Country Mobile Home Park Phase 2 Grading and Drainage Plan
Engineer's Stamp dated 6-30-99 (N10/D04)

Dear Mr. Read,

Based upon the information provided in your submittal dated 7-7-99 and in response to our meeting on 1-12-00, the above referenced grading and drainage plan cannot be approved until the following comments are addressed:

1. Per Mr. Aguirre's letter dated 7-29-99 (enclosed), "preliminary street design with the proposed permanent storm drain in Blake Rd. is required." I will at least need to see preliminary plan and profile for the street fronting the lot and for 100' west. You will need to show curb and gutter in the ultimate location and inlets as required.

2. All other comments from the enclosed letter still apply. I will meet with you to facilitate your resubmittal.

Please contact me at 924-3986.

Sincerely,

Bradley L. Bingham, PE
Hydrology Review Engineer

C: file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

December 23, 1998

Larry Read
Larry Read & Associates
P.O. Box 90233
Albuquerque, NM 87199

Re: Drainage Report for Sunshine Country Mobile Home Court
Larry D. Read and Associates report dated August 9, 1998
Phase I Plan dated April 6, 1998 by Jacob Vigil
Phase II Plans dated August 1, 1998
Drainage file #N-10/D004
Request for Site Development Plan approval for Building Permit

Dear Mr. Read:

Our consultant, Steve P. Kemna, from Smith Engineering has reviewed the two referenced submittals and forwarded the following comments (see attached letter dated September 28, 1998).

Additionally, please include any correspondence you may have with the Corps of Engineers regarding their plans to provide an outfall for this area. I believe Larry Blair mentioned a Sandy Rail from the Corps, that may be a good contact to obtain such information. This will help us justify the assumption of using Coors or the MRGCD systems as the regional outfall for this area.

Please address these comments and resubmit.

Sincerely,

Fred J. Aguirre
City Hydrologist
Public Works Department

Attachment: Letter dated September 28, 1998

c: file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 2[illegible], 1999

Larry Read
Larry Read & Associates
P.O. Box 90233
Albuquerque, NM 87199

RE: Drainage Report for Sunshine Country Mobile Home Court (Phase 2), Drainage File # N10/D004
Larry D. Read and Associates, Drainage Plan June 30, 1999 for approval of the Site Development Plan, Final Plat and grading/paving permit

Dear Mr. Read:

Approval of the referenced drainage report will require the resolution of the following items:

1. Off-site basin above Unser- According to our engineer, Pat Stovall, the basin above Unser is greater that what was identified in your report. Please, submit your documentation supporting your basin area.
2. The temporary 8' diameter inlet and sediment pond is not acceptable from a traffic and/or a drainage safety standpoint. The permanent street and storm drain (with catch basins) improvements must be constructed with this project unless you can justify why these improvements should not or cannot be constructed at this time.
3. The storm runoff from the mobile home park must be discharged directly to the Amole Channel. The proposed discharge to the unlined ditch that parallels the Amole is not acceptable to Storm Drain Maintenance because of the added maintenance, with respect to weeds and standing water, that will result from the increase flows to the bar ditch.
4. Preliminary street design with the proposed permanent storm drain in Blake Road is required with your resubmittal. DRC approval will require plan and profile sheets for these improvements.
5. Show the right-of-way/property lines on your resubmittal.

Please advise your client that no development is permitted until the EPC delegated site plan for phase 2 is approved by DRB. Also, to facilitate our review and approval, I would request that you submit a stand alone drainage report for this phase, unless you prefer to process both phases as a single project. If you have any questions, please feel free to call me at 924-3999.

Sincerely,

Fred J. Aguirre
City Engineer

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

AGREEMENT #575382
(Phase 1 Sunshine Mobile Home Park)

THIS AGREEMENT is made this 5th day of June, 1998, by and between the City of Albuquerque, New Mexico ("City"), whose address is P. O. Box 1293 (One Civic Plaza, NW), Albuquerque, New Mexico 87103, and Country Side L.L.C. ("Developer"), a New Mexico Limited Liability Company, whose address is 257 Juan Tabo, NE, Albuquerque, NM 87123 and whose telephone number is 296-3188, is made in Albuquerque, New Mexico, and is entered into as of the date of final execution of this Agreement.

1. **Recital.** The Developer is developing certain lands within Bernalillo County, New Mexico, known as:

> Tract 1 as described in Warranty Deed recorded January 6, 1988 in Bk 323A at pg 104 as Doc. No. 881255 Bernalillo County Clerk's Office, Bernalillo County, NM ("Developer's Property").

The Developer certifies that the Developer's Property is owned by Joe Santangelo and Anna Santangelo (Husband and Wife) d/b/a Country Side L.L.C. ("Owner").

2. Developer has at Developer's expense constructed an eight (8) inch waterline to Developer's property and has requested that the City provide City water service to Developer's property.

3. Developer has submitted to the DRB a Site Plan and a Preliminary Plat for review and proposes to obtain Site Plan and Preliminary and Final Plat approval and install public infrastructure Improvements upon City property which abuts or is near or on Developer's Property, for the benefit of Developer's Property. The City requires, and the Developer is willing to provide certain assurances as a prerequisite to the City's providing City water service to Developer's Property.

4. The City is willing to provide City water service to Phase I of Developer's property subject to and conditioned upon Developer's obligations contained herein.

THEREFORE:

1. **Deadline and Improvements**. The Developer agrees to obtain site plan ("Site Plan") approval and execute a Subdivision Improvement Agreement ("SIA") with Financial Guarantee ("Improvements"), required as a condition to Site Plan approval, to the satisfaction of the City, on or before the 13th day of May, 1999 ("Construction Completion Deadline"), at no cost to the City:

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Page: 1 of 7
06/09/1998 10:16A
Bk-9810 Pg-9190
Judy D Woodward Bern. Co. AGRE R 19.00

2. **Financial Guarantee:**

To secure Developer's obligations to obtain Site Plan approval and execute an SIA associated therewith, Developer has provided the following Financial Guaranty:

Type of Financial Guaranty: LETTER OF CREDIT #972410

Amount: $ 150,000 00

Name of Financial Institution of Surety providing Guaranty:
Natians Bank

Date City first able to call Guaranty:_____

[Construction Completion Deadline]: 13 MAY, 1999

If Guaranty other than a Bond, last day City able to call Guaranty is:
July 10, 1999

Additional Information:_____

_____

3. **Compliance**. Developer shall comply with all City and County ordinances rules and regulations in obtaining Site Plan approval and the construction of the Improvements.

4. **Water Service**. Upon the final execution of this Agreement, City agrees to provide City water service and issue a water meter to Developer's Property. Developer agrees to pay all costs and expenses associated with installation of the water meter including the payment of utility expansion charges. The Developer's application for water service has been approved with the condition that meter not be made operable until execution of this Agreement.

5. **Assignment.** This Agreement shall not be assigned without the prior written consent of the City and the Developer and the express written concurrence of any financial institution or surety which has undertaken to guarantee the completion of the Improvements. The City's approval will not be withheld unreasonably. If so assigned, this Agreement shall extend to and be binding upon the successors and assigns of the parties hereto.

6. **Release**. If the Developer's Property or any part thereof is sold, conveyed or assigned, the City will not release the Developer from its obligations under

Judy D. Woodward Bern. Co. AGRE R 19.00
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Page: 2 of 7
06/09/1998 10:16A
Bk-9810 Pg-9190

FINAL ACTION TAKEN

NOW, THEREFORE, BE IT RESOLVED THAT the Environmental Planning Commission voted to recommend approval to City Council of AX-97-19 a request for annexation based on the following Findings:

FINDINGS:

1. This is a request for annexation and establishment of R-1 for the Amole Channel containing 4.3 acres, and SU-1 for a Mobile Home Park for 22.2 acres, and establishment of R-1 zoning for 10 acres, located on the south side of Blake Road west of Coors Boulevard SW.

2. This request is consistent with Resolution 54-1990 (Annexation Policy), because it is in the Developing Urban area, "and annexation of such areas into the City is desired and encouraged."

3. This request for annexation meets the requirements of Resolution 54-1990; this site, designated by the *Comprehensive Plan* as Developing Urban, is appropriate for annexation as the policies of the Developing Urban section of the *Plan* are furthered; a pre-annexation agreement is not necessary as City utilities are readily available from Blake Road, no extensions of main lines are necessary, and the right of way for the roadway; the subject site is contiguous to the City limits along Blake Road, giving it convenient street access; and the subject site has reasonable boundaries.

MOVED BY COMMISSIONER HENDERSON
SECONDED BY COMMISSIONER GARA MOTION CARRIED UNANIMOUSLY

NOW, THEREFORE, BE IT RESOLVED THAT the Environmental Planning Commission voted to recommend approval to City Council of Z-97-109, establishment of zoning for SU-1 for Mobile Home Park, R-1 for the APS site and R-1 for the Amole Channel based on the following Findings:

FINDINGS:

1. This request is to establish SU-1 for Mobile Home Park zoning for an approximately 22.2 acre site, and R-1 zoning for an unplatted 10 acre site owned by APS and for the Amole Channel which runs through the mobile home park, located Blake Road SW.

2. This zone map amendment request meets the requirements and the intent of Resolution 270-1980; establishment of the requested zoning will be consistent with the health, safety, morals, and general welfare of the City and will stabilize the land use by giving it an appropriate zoning category; annexation of the site are changed community conditions that justify the change.

3. Site Development Plan approval will be require for the portion of the request that is zoned SU-1 for Mobile Home Park.

MOVED BY COMMISSIONER HENDERSON
SECONDED BY COMMISSIONER GARA MOTION CARRIED UNANIMOUSLY

NOW, THEREFORE, BE IT RESOLVED THAT the Environmental Planning Commission voted to approve Z-97-109, a site development plan approval request, based on the following Findings and subject to the following Conditions:

FINDINGS:

1. The submitted site plan is for an approximately 22.2 acre site with an partially developed mobile home park and for the development of the remainder of the mobile home park; final DRB sign-off for this site development plan is contingent on annexation and establishment of zoning and should not be done before such actions are completed.

2. The submitted landscaping plan shows landscaping for the two portions of the development; it will conform to City policies and requirements with some changes and additions to: the amount of landscaping; the perimeter landscaping buffers.

4. Conditions of approval should include the comments of the Transportation Division.

CONDITIONS:

1. The landscape plan shall have vines and trees planted along the wall adjacent to the Amole Channel on the mobile home lots.

2. Street trees and a landscape buffer should be placed along Blake Road.

3. Elevations , colors/materials for the office shall be shown.

4. Conditions of approval should include the comments of the Transportation Division.

CITY OF ALBUQUERQUE AGENCY COMMENTS

PLANNING DEPARTMENT

Zoning Enforcement

"A 10 foot separation is required between sheds under 80 square feet and dwellings on adjacent lots. Storage sheds over 80 square feet area required to placed 10 feet from all dwellings."

PUBLIC WORKS DEPARTMENT

Transportation Development Services:

"Conditions of approval for the proposed "annexation and establishment of zoning" should include:

- Dedication of 40 feet of right-of-way from the existing centerline of Blake Road, this includes right-of-way for the proposed bike lane.
- Dedication of the appropriate right-of-way for the Amble del Norte Bike Trail.
- Construction of 31 feet of pavement, curb & gutter, and a 6 foot sidewalk, to be placed at the property line, for Blake Road. This includes pavement for the proposed bike lane.
- Provision of adequate sight distance at entrances.

Conditions of approval for the proposed "site plan for subdivision purposes" should include:

- Provision for vehicular and pedestrian access across the diversion channel, in order to access the recreation facilities without using Blake Road."

Transportation Planning:

"Conditions of the proposed **"annexation"** approval should include:

- Dedication of 34 feet of right of way from the roadway centerline for Blake Road, a Collector street on the Long Range Major Street Plan.
- Dedication of an additional 6 feet of right of way along Blake Road for a bike lane as proposed in the *Bikeways Master Plan.*

Dedication of appropriate rights of way for secondary trails along the Amble Del Norte Diversion Facility and the Amble Detention Basin as proposed in the *Trails and Bikeways Facility Plan.*"

Utility Development:

"The utility plans will require some modifications to conform with city standards. In general water service will be available upon completion of pending off-site public works construction projects. Service to each parcel will require a private fire line connection and separate metered service connection. All connections must be tapped directly to the new public lines in Blake. All on-site lines will be private maintained by the property owner."

Hydrology:

"The Hydrology Section has no objection to the annexation and zoning request. An approved conceptual grading and drainage plan is required for site plan sign-off by the City Engineer / AMAFCA."

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
DEVELOPMENT SERVICES DIVISION
P. O. BOX 1293
ALBUQUERQUE, NEW MEXICO 87103

Sunshine Country Mobile Home Court
257 Juan Tabo NE
Albuquerque, NM 87123

Date: March 26, 1998
CERTIFICATE OF ZONING

FILE: Z-97-109/AX-97-19 (Council Bill 0-3)
LEGAL: Annexation and establishment of SU-1 for Mobile Home Park for Lots 1 & 2, Sunshine Country Addition containing approximately 22.2 acres, and annexation and establishment of R-1 zoning for an unplatted parcel directly to the west of the subject site containing approximately 10 acres, and Lot A1-1, Block O, Amole del Norte Diversion Facility containing approximately 4.3 acres, all located on Blake Road SW between Coors Road SW and Wendel Road SW. (N-10) WALTER GELB, STAFF PLANNER

On January 21, 1998, the City Council approved your request to annex and amend the zone map as it applies to the above-cited property. The possible appeal period having expired, the property status is now changed as follows:

ESTABLISHMENT OF SU-1 FOR MOBILE HOME PARK, AND R-1 ZONING

Successful applicants are reminded that other regulations of the City must be complied with, even after approval of the zoning is secured. Approval of this case does not constitute approval of plans for a building permit. You should take two copies of your plans to the Building & Inspection Division of the City to initiate a building permit.

Sincerely,

Bob Paulsen

For Fabrizio Bertoletti
Acting Planning Director

cc: Larry Read, P. O. Box 90233, 87199
Ramona Torres-Ford, Westgate Heights Assoc., 2336 Don Luis Road SW, 87105
Denise Johnson, Westgate Heights Neigh. Assoc., 1527 86th Street SW, 87121
Joe Santagelo, 4000 Blake Road SW, 87105
Wallace Bingham, 6344 Belture NE, 87
David Ning, Policy Planning
City Zoning
County Zoning
George King, Maps & Records, Public Works
File

Z-CERTIFICATION

City of Albuquerque

P.O. BOX 1293 · ALBUQUERQUE, NEW MEXICO 87103

January 4, 2000

Larry D. Read, PE
Larry Read & Associates
12836-B Lomas NE
Albuquerque, NM 87112

Re: Sunshine Country Mobile Home Park Phase 1 Grading and Drainage Plan
Engineer's Stamp dated 5-25-99 (by J. Vigil)
Engineer's Stamp dated 10-25-99 (by L. Read)(N10/D04)

Dear Mr. Read,

Based upon the information provided in your submittal dated 11-5-99, the above referenced grading and drainage plan is acceptable for Site Development Plan for Building Permit and Building Permit for the community facility. Prior to Site Plan sign-off, an approved infrastructure list will be required as well as an agreement and covenant for the two ponds.

Please attach both copies of these approved plans to the construction sets prior to sign-off by Hydrology.

Also, prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

If you have any questions, you can contact me at 924-3986

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Hydrology Review Engineer

C: file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

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

July 29, 1999

Jacob A. Vigil
Vigil Engineering
7317 4th Street N.W.
Albuquerque, NM

RE: Drainage Certification Sunshine Country Mobile Home Court Phase 1, Drainage File # N10/D004
Jake Vigil, Certification Plan May 25, 1999 for Certificate of Occupancy (C.O.).

Dear Mr. Vigil:

Approval of the referenced Certification for CO approval will require the following information:

1. Invert elevations of the inlet and outlet pipes for each pond. Note: if the outlet pipes are 18" or greater from the bottom of the pond, fencing will be required per the DPM.
2. A temporary public drainage easement with an Agreement and Covenant will be required for each pond that receives public waters. These documents are required to insure maintenance of the ponds until such time that the permanent downstream improvements have been constructed (a blank copy of each form is attached for your use).
3. As-built elevations for the catch basin and rundown in Blake Road.

Your request for C.O. does not appear to be applicable since there are no existing buildings, please clarify with your resubmittal. If you have any questions regarding this letter, please feel free to call me at 924-3999.

Sincerely,

Fred J. Aguirre
City Engineer

Enclosure

cc: Larry Read

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

July 29, 1999

Larry Read
Larry Read & Associates
P.O. Box 90233
Albuquerque, NM 87199

RE: Drainage Report for Sunshine Country Mobile Home Court (Phase 1), Drainage File # N10/D004
Larry D. Read and Associates, Drainage Plan June 30, 1999 for Building Permit Approval.

Dear Mr. Read:

The referenced drainage plan is approved for Site Development Plan approval. However prior to Building permit sign-off and/or DRC approval, the following comments must be addressed and included in the Drainage Plan:

1. Include the as-built plan grades submitted by you for Mr. Vigil for Certificate of Occupancy. Your drainage plan does not reflect these grades, especially in the ponds.
2. Include on the drainge plan the proposed street improvements and storm drain for Blake Rd. with sufficient spot elevations. DRC approval will require a plan and profile sheet for the proposed street and storm drain in Blake Road.
3. Approval of Mr Vigil certification plan. See attached letter to Mr. Vigil regarding our comments for approval of his C.O.

Given that this development is controlled by a site plan (SU-1 Zonning), you will need to submit the required site plan to DRB for their approval. Also, to facilitate our review and approval, I would request that you submit a stand alone drainage report for this phase, unless you prefer to process both phases as a single project. If you have any questions, please feel free to call me at 924-3999.

Sincerely,

Fred J. Aguirre
City Engineer

Enclosure

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

CITY OF
Albuquerque

March 3, 1998

Larry Read, P.E.
Larry Read & Associates
P.O. Box 90233
Albuquerque, NM 87199

RE: SUNSHINE COUNTRY MOBILE HOME PARK.

Dear Mr. Read:

Based on the information provided on your February 17, 1998 submittal, it appears that the above referenced project is not located within the City of Albuquerque. You must submit your proposed plan for development to the appropriate Bernalillo County agencies.

If I can be of further assistance, please feel free to contact me at 924-3984.

Sincerely,

Lisa Ann Manwill, P.E.
Hydrology

c: Andrew Garcia
File

Smith Engineering Company

A Full Service Engineering Company

September 28, 1998

Fred Aguirre
Hydrologist
City of Albuquerque
Public Works Department
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Report for Sunshine Country Mobile Home Court
Larry D. Read and Associates, Report stamped August 9, 1998
Phase 1 Plans dated April 6, 1998 by Jacob Vigil
Phase 2 Plans dated August 1, 1998
Drainage File # N10/D004
Request for Site Development Plan Approval for Building Permit
SEC Job # 198624.B2

Dear Mr. Aguirre:

Smith Engineering Company (SEC) is pleased to review the resubmittal for the "Drainage Report for Sunshine Country Mobile Home Court".

The following comments address Phase 1 of the project:

✓1. Mr. Read has addressed COA Phase 1 comments # 1, 3, 4, 6, 7, 8, 9, and 11 (COA letter dated May 27, 1998).
✓2. Phase 1 comment #10 - This original comment was in error. In fact, the COA does not require fencing around detention basins that have 3H:1V slopes or flatter and empty within 96 hours. Therefore, no fence is required around the Phase 1 detention basins.
✓3. Phase 1 Comment #2 - It is understood that the pump station in Phase 1 is an interim measure and it will not be used under fully developed conditions. How will you empty the pond in the fully developed conditions? Do you plan to connect the existing detention basins to the future Blake Storm Drain? Will the future Blake Storm Drain have to extend west to the existing detention basins and not just west to Barcelona as shown in the drainage report?
✓4. Phase 1 Comment #5 - Lisa Manwill at AMAFCA has not received any updated report for this project. AMAFCA received its latest report in February 1997. Kurt Browning provided comments dated November 1996 on a previous request. Please provide a letter from AMAFCA approving your proposed connection to the outfall pipe from the Amole Detention Basin. (Perhaps a better solution would be to let the ultimate storm drain in Blake Road outfall to a retention basin in the valley). Perhaps a meeting between AMAFCA, the COA, and yourself would provide some direction on the ultimate design for the Blake Road drainage system.

The following comments address Phase 2 of the project:

✓1. Mr. Read has addressed COA Phase 2 comments # 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, and 16 (COA letter dated May 27, 1998).
✓2. Phase 2 Comments #1, 2, and 3 - It appears that based on the existing topography on the updated Phase 2 grading and drainage plan, that the entire APS property drains to the south and east and enters the Phase 2 property. While cross lot drainage is not desirable, you must still pass the historic existing runoff through your property via a drainage easement. Also, it does not appear reasonably feasible for the APS property to

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

discharge to Blake Road under developed conditions (against natural grade), so you must also pass the future developed offsite flow through the Phase 2 property. It appears that the quantity of offsite runoff reaching the Phase 2 property from the APS site must be reanalyzed. Also, the APS site may or may not become a school. Please reevaluate its peak flows based on a density typical of its zoning, namely 6 dwelling units/acre.

3. Phase 2 Comment #15 - I could not locate any calculations or discussion showing the impact of the 10-year analysis on the future Blake Road storm drain design (impact on total length of storm drain or number of inlets needed).

Thank you for the opportunity to review this drainage report. If you have any questions please feel free to contact me at 884-0700.

Sincerely,

Smith Engineering Company

Stephen Paul Kemna

Stephen P. Kemna, P.E.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

FAX:
CITY OF
Albuquerque

May 27, 1998

Larry Read
Larry Read & Associates
P.O. Box 90233
Albuquerque, NM 87199

RE: Drainage Report for Sunshine Country Mobile Home Court
Larry D. Read and Associates, Report dated May 3, 1998
Phase 1 Plans dated April 6, 1998 by Jacob Vigil
Phase 2 Plans dated October 10, 1997 by Larry Read
Drainage File # N10/D004
Request for Site Development Plan Approval for Building Permit & Plat Approval

Dear Mr. Read:

Our consultant Steve P. Kemna, from Smith Engineering Company has reviewed the two referenced submittals and forrward the following comments (see attached letter). Please address these comments and resubmit.

Sincerely,

Fred J. Aguirre
City Hydrologist

Enclosure

Smith Engineering Company

A Full Service Engineering Company

May 20, 1998

Fred Aguirre
Hydrologist
City of Albuquerque
Public Works Department
P.O. Box 1293
Albuquerque, NM 87103

Re: Drainage Report for Sunshine Country Mobile Home Court
Larry D. Read and Associates, Report dated May 3, 1998
Phase 1 Plans dated April 6, 1998 by Jacob Vigil
Phase 2 Plans dated October 10, 1997
Drainage File # N10/D004
Request for Site Development Plan Approval for Building Permit
SEC Job # 198624.B2

Dear Mr. Aguirre:

Smith Engineering Company (SEC) is pleased to submit the review comments for the "Drainage Report for Sunshine Country Mobile Home Court" . The following comments address Phase 1 of the project:

NA
5-27-98

1. You show an existing detention basin with storage for the 100-year 24-hour event that discharges to the Amole Channel via an existing lift station. As an interim drainage measure the City of Albuquerque criteria allows retention ponds that store the 100-year 10-day event. Please resize your ponds to contain the 100-year 10-day event.
2. A privately owned lift station cannot be used for the ultimate developed condition of your pond. Given these constraints how will you empty the detention basin in the ultimate developed condition?
3. How does the cross section of Blake Circle transition to insure that flow on both sides of the street enter the ponds and does not flow into Blake Road?
4. Please show calculations that demonstrate that the onsite streets convey the 100-year peak flow at a depth less than 0.2 feet above top of curb (including sequent depth).
5. The future storm drain design along Blake Road connects to the existing 36 inch diameter outfall from the Amole Detention Pond. Will AMAFCA allow such a connection? It is not desirable to "store" storm water in the proposed storm drain due to sedimentation and capacity needed for subsequent runoff events. Please develop an ultimate drainage system that does not store water in the storm drain pipe.
6. Please include a legal description of the property on the grading plan.
7. Please include a location, description, and elevation of the project bench mark (Albuquerque Control Survey Vertical Datum) on the grading plan.
8. Please include a legend on the grading plan that indicates the property lines.
9. Please show the existing contours on the grading plan.
10. Please include fencing around the perimeters of the drainage ponds.
11. Please show the top of curb and flow line elevations on the grading plan.

The following comments address Phase 2 of the project:

1. It appears that the rough grading of Phase 2 has diverted the offsite flow from the adjacent APS property (offsite basins B-2 and B-3). What is the impact of your diversion on adjacent properties?

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

2. The future land use of the APS property is unknown at this time. Please compute the offsite flow from this property assuming a uniform density of 6 dwelling units/acre.
3. It does not seem feasible to drain the north half of the APS property to Blake Road. The existing topography appears to show the entire APS property draining to the southeast. Please address the ultimate drainage of this offsite property in light of these comments.
4. How will you intercept the existing offsite flow form the APS property? Please show existing topography on your grading plan that includes offsite contours and details of your collector/conveyance structure.
5. Please compute the existing offsite flow in Blake Road (including contributing basins west of the future Unser Boulevard). What is the impact that this existing flow in Blake Road has on your site? Does offsite flow in the north half of Blake overtop the crown of the roadway and enter the south half of Blake Road?
6. Please show that the Amole "side channel" has the capacity for the existing offsite flows along with your proposed developed onsite flows. Is the unlined bed and side slopes of this "side channel" stable for these computed flows?
7. Does the Amole Channel have the design capacity for free discharge from the contributing basins under developed conditions?
8. Please demonstrate that the proposed driveway culverts have the capacity to convey the existing offsite flow in Blake Road. Please include details of the culvert end sections.
9. Please show that the offsite and onsite flow entering Phase 2 can flow in the proposed streets without exceeding 0.2 feet above the top of curb (including sequent depth where appropriate).
10. Please show how you propose to discharge flows from the streets into the side channel of the Amole Channel. Also include details and calculations for the design of your "openings" in the perimeter wall.
11. Please show a vicinity map on the grading plan.
12. Please show the project bench mark location, description, and elevation on the grading plan.
13. Please show existing contours 25 feet beyond the property lines on the grading plan.
14. Please compute the undeveloped peak flow for the site.
15. Please examine the 10-year event for the design of the future conditions Blake Storm Drain to insure that the 10-year flow depth does not exceed 0.5 feet in Blake Road. This may impact the location and number of inlets needed.
16. Please show/discuss the Erosion Control Plan on the grading plan.

Thank you for the opportunity to review this drainage report. If you have any questions please feel free to contact me at 884-0700.

Sincerely,

Smith Engineering Company

Stephen Paul Kemna

Stephen P. Kemna, P.E.

6400 Uptown Boulevard, N.E. Suite 500E Albuquerque, N. M. 87110 Telephone 505/884-0700 Fax 505/884-2376

7-19-99

FROM
LARRY REID

PROPOSED STORM DRAIN IMPROVEMENTS

Includes Parcel 7 West of the Proposed Unser Blvd Extension

30.8 ac
+ 11.4 ac
42.2 ac = 0.0659 sq mi

EXHIBIT B

OFFISTE DRAINAGE &
PROPOSED STORM DRAIN

SCALE 1"=500'

10-YEAR

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - VERSION: 1997.02c RUN DATE (MON/DAY/YR) =07/17/1999
INPUT FILE = C:\sun10.txt USER NO.= AHYMO-I-9702a0100001A-SH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
*S	COMPUTE 10 YR. 6 HR. Sunshine Country Offsite Requirements									
*S	Sun10(715).TXT - HYMO PER JAN 1993 DPM REVISIONS									
*S										
*S										
RAINFALL	TYPE= 1									RAIN6= 1.470
*S										
*S	COMPUTE RUNOFF FOR FULLY DEVELOPED CONDITIONS - PHASE I									
*S										
*S										
*S	BASIN RIO BRAVO SECTOR DEVELOPMENT PLAN PARCEL 7 WEST OF									
*S	THE PROPOSED UNSER BLVD EXTENSION (30.8 ACRES) and									
*S	11.4 ACRES BETWEEN PARCEL 7 AND BLAKE									
*S										
COMPUTE NM HYD	114.10	-	14	.06594	10.27	.289	.08218	1.530	.243	PER IMP= .00
*S										
*S	BASIN C-1									
COMPUTE NM HYD	101.10	-	1	.01670	23.55	.774	.86871	1.500	2.203	PER IMP= 57.00
*S										
*S										
*S	BASIN C-2									
COMPUTE NM HYD	102.10	-	2	.02230	31.44	1.033	.86871	1.500	2.203	PER IMP= 57.00
*S										
*S										
*S	BASIN C-3									
COMPUTE NM HYD	103.10	-	3	.01690	23.83	.783	.86871	1.500	2.203	PER IMP= 57.00
*S										
*S										
*S	BASIN C-4									
COMPUTE NM HYD	104.10	-	4	.00100	1.65	.058	1.08672	1.500	2.581	PER IMP= 85.00
*S										
*S										
*S	BASIN C-5									
COMPUTE NM HYD	105.10	-	5	.00480	6.78	.222	.86871	1.500	2.206	PER IMP= 57.00
*S										
*S										
*S	BASIN A-3A North Portion APS Site									
*s	ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL									
COMPUTE NM HYD	106.10	-	6	.00825	11.14	.370	.84201	1.500	2.110	PER IMP= 57.00
*S										
*S										
*S	BASIN A-3B South Portion APS Site									
*s	ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL									
COMPUTE NM HYD	107.10	-	7	.00738	9.97	.331	.84201	1.500	2.110	PER IMP= 57.00
*S										
*S										
*S	BASIN B-1									
COMPUTE NM HYD	108.10	-	8	.01900	26.79	.880	.86871	1.500	2.203	PER IMP= 57.00
*S										
*S										
*S	BASIN B-2A									
COMPUTE NM HYD	109.10	-	9	.01690	23.83	.783	.86871	1.500	2.203	PER IMP= 57.00
*S										
*S										
*S										
*S	BASIN B-2B									
COMPUTE NM HYD	110.10	-	10	.03160	44.55	1.464	.86871	1.500	2.203	PER IMP= 57.00
*S										
*S										
*S	BASIN D-1									
COMPUTE NM HYD	111.10	-	11	.00565	3.50	.108	.36012	1.530	.968	PER IMP= 17.00
*S										
*S										
*S	BASIN D-2									
COMPUTE NM HYD	112.10	-	12	.00284	2.92	.075	.49368	1.530	1.608	PER IMP= 7.00
*S										
*S										
*S										
*S	BASIN D-3									

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
COMPUTE NM HYD	113.10	-	13	.03627	22.43	.697	.36012	1.530	.966	PER IMP= 17.00
*S -										
*S										
*S----------										
*S BEGIN SIZING STORM DRAIN WEST OF AMOLE DEL NORTE ARROYO										
*S----------										
*S										
*S ANALYSIS POINT AP-1A										
*S ROUTE PARCEL 7 TO AP1 OVERLAND AND COMBINE AT AP-1										
*S										
*S										
ROUTE	259.10	14	59	.06594	6.22	.289	.08219	1.680	.147	
*S										
ADD HYD	258.10 59& 8		58	.08494	30.02	1.169	.25812	1.530	.552	
*S										
*S										
*S										
*S ANALYSIS POINT AP-1										
*S ROUTE OFFSITE BASIN B-1 IN STORM DRAIN BLAKE AND COMBINE W/B-2A										
*S										
*S										
ROUTE	260.10	58	60	.08494	30.17	1.169	.25812	1.530	.555	
*S										
ADD HYD	260.10 60& 9		61	.10184	53.50	1.952	.35944	1.530	.821	
*S										
*S										
*S										
*S ANALYSIS POINT AP-2										
*S ROUTE OFFSITE COMBINED BASIN B-1, B-2A IN STORM DRAIN IN BLAKE										
*S AND COMBINE W/B-2B										
*S										
*S										
ROUTE	262.10	61	62	.10184	53.85	1.952	.35944	1.530	.826	
*S										
ADD HYD	263.10 62&10		63	.13344	97.46	3.416	.48004	1.530	1.141	
*S										
*S										
*S										
*S ANALYSIS POINT AP-3										
*S ROUTE OFFSITE COMBINED BASIN B-1, B-2A, B-2B IN STORM DRAIN IN										
*S BLAKE AND COMBINE A-3A AND A-3B										
*S										
*S										
ADD HYD	264.10 6& 7		64	.01563	21.11	.702	.84198	1.500	2.110	
*S										
ROUTE	261.10	63	65	.13344	97.79	3.416	.48005	1.530	1.145	
*S										
ADD HYD	266.10 65&64		66	.14907	118.46	4.118	.51799	1.530	1.242	
*S										
*S										
*S										
*S ANALYSIS POINT AP-4										
*S ROUTE OFFSITE COMBINED IN STORM DRAIN IN BLAKE TO DISCHARGE										
*S POINT AT AMOLE DEL NORTE ARROYO										
*S										
*S										
*S										
ROUTE	267.10	66	67	.14907	118.66	4.118	.51799	1.530	1.244	
*S										
*S										
*S----------										
*S BEGIN SIZING STORM DRAIN EAST OF AMOLE DEL NORTE ARROYO										
*S----------										
*S										
*S										
*S ANALYSIS POINT AP-5										
*S ROUTE OFFSITE BASIN C-1 IN STORM DRAIN BLAKE AND COMBINE W/C-2										
*S										
*S										
ROUTE	268.10	1	68	.01670	23.38	.774	.86872	1.500	2.188	
*S										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	260.10	68& 2	69	.03900	54.83	1.807	.86869	1.500	2.197	
ADD HYD	290.10	69& 4	90	.04000	56.48	1.865	.87414	1.500	2.206	
*S										
*S										
*S ANALYSIS POINT AP-5A										
*S ROUTE OFFSITE BASIN C-1 AND C-2 IN STORM DRAIN BLAKE										
*S AND COMBINE W/D-1, C-4										
*S										
*S										
ROUTE	268.10	90	70	.04000	56.35	1.865	.87415	1.530	2.201	
*S										
ADD HYD	271.10	70& 3	71	.05690	79.83	2.648	.87252	1.500	2.192	
*S										
*S										
*S ANALYSIS POINT AP-6										
*S ROUTE COMBINED C-1, C-2, & D1 TO AND COMBINE WITH D-2 & D-3, C-3										
*S										
*S										
ROUTE	272.10	71	72	.05690	80.63	2.648	.87253	1.530	2.214	
ADD HYD	273.10	72&12	73	.05974	83.55	2.723	.85450	1.530	2.185	
ADD HYD	274.10	73&13	74	.09601	105.98	3.419	.66773	1.530	1.725	
ADD HYD	291.10	74&11	91	.10166	109.48	3.528	.65064	1.530	1.683	
*S										
*S										
*S ANALYSIS POINT AP-7										
*S ROUTE FULL FLOW TO PROPOSED STORM DRAIN IN COORS BLVD										
*S										
*S										
ROUTE	275.10	91	75	.10166	109.04	3.528	.65065	1.530	1.676	
ADD HYD	292.10	75& 5	92	.10646	115.67	3.750	.66047	1.530	1.698	
*S										
FINISH										

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02c
         RUN DATE (MON/DAY/YR) = 07/17/1999
         START TIME (HR:MIN:SEC) = 21:16:45      USER NO.= AHYMO-I-9702a0100001A-SH
         INPUT FILE = C:\sun10.txt

START                  TIME=0.0 0 -6
*S     COMPUTE 10 YR. 6 HR. Sunshine Country Offsite Requirements
*S     Sun10(715).TXT     -     HYMO PER JAN 1993 DPM REVISIONS
*S
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
RAINFALL               TYPE=-1  RAIN QUAR=0 RAIN ONE=1.25 RAIN SIX=1.47
                       RAIN DAY=1.77 DT=0.03

                  COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                  DT =     .030000 HOURS       END TIME =      6.000000 HOURS
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S COMPUTE RUNOFF FOR FULLY DEVELOPED CONDITIONS - PHASE I
*S
*-----------------------------------------------------------------
*S
*S  BASIN RIO BRAVO SECTOR DEVELOPMENT PLAN PARCEL 7 WEST OF
*S        THE PROPOSED UNSER BLVD EXTENSION (30.8 ACRES) and
*S        11.4 ACRES BETWEEN PARCEL 7 AND BLAKE
*S
COMPUTE NM HYD         ID=14   HYD NO= 114.1   DA=0.065938 SQ MI
                       PER A=100 PER B=0 PER C=0  PER D=0 TP=-.133
                       RAIN=-1

     K =   .178731HR    TP =   .133000HR    K/TP RATIO =  1.343843     SHAPE CONSTANT, N =  2.678122
     UNIT PEAK =   126.14    CFS   UNIT VOLUME =    .9992       B =   254.44       P60 = 1.2500
     AREA =      .065938 SQ MI    IA =    .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .030000

*S
*S  BASIN C-1
COMPUTE NM HYD         ID=1   HYD NO= 101.1   DA=0.0167 SQ MI
                       PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                       RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   37.666    CFS   UNIT VOLUME =    .9996       B =   526.28       P60 = 1.2500
     AREA =      .009519 SQ MI    IA =   .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .030000


     K =   .115635HR    TP =   .133000HR    K/TP RATIO =   .869438     SHAPE CONSTANT, N =  4.086316
     UNIT PEAK =   19.485    CFS   UNIT VOLUME =    .9996       B =   360.88       P60 = 1.2500
     AREA =      .007181 SQ MI    IA =    .38488 INCHES    INF =    .92767 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .030000

*S
PRINT HYD              ID=1 CODE=10

                                PARTIAL HYDROGRAPH   101.10

  TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
   HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
  .000        .0          1.500      23.5         3.000        .1         4.500        .1         6.000        .1
  .300        .0          1.800       7.3         3.300        .1         4.800        .1         6.300        .0
  .600        .0          2.100       3.4         3.600        .1         5.100        .1         6.600        .0
  .900        .0          2.400        .8         3.900        .0         5.400        .1         6.900        .0
 1.200        .0          2.700        .3         4.200        .0         5.700        .1

     RUNOFF VOLUME =      .86871 INCHES     =        .7737 ACRE-FEET
     PEAK DISCHARGE RATE =      23.55 CFS  AT   1.500 HOURS   BASIN AREA =    .0167 SQ. MI.


*S
*S  BASIN C-2
COMPUTE NM HYD         ID=2   HYD NO= 102.1   DA=0.0223 SQ MI
                       PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                       RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   50.297    CFS   UNIT VOLUME =    .9996       B =   526.28       P60 = 1.2500
     AREA =      .012711 SQ MI    IA =   .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =    .030000
```

K = .115635HR TP = .133000HR K/TP RATIO = .869438 SHAPE CONSTANT, N = 4.086316
UNIT PEAK = 26.019 CFS UNIT VOLUME = .9998 B = 360.88 P60 = 1.2500
AREA = .009589 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=2 CODE=10

PARTIAL HYDROGRAPH 102.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	31.4	3.000	.2	4.500	.1	6.000	.2
.300	.0	1.800	9.8	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	4.6	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	1.1	3.900	.1	5.400	.1	6.900	.0
1.200	.0	2.700	.4	4.200	.1	5.700	.1		

RUNOFF VOLUME = .86871 INCHES = 1.0332 ACRE-FEET
PEAK DISCHARGE RATE = 31.44 CFS AT 1.500 HOURS BASIN AREA = .0223 SQ. MI.

*S
*S BASIN C-3
COMPUTE NM HYD ID=3 HYD NO= 103.1 DA=0.0169 SQ MI
PER A=0 PER B=10 PER C=33 PER D=57 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 38.117 CFS UNIT VOLUME = .9996 B = 526.28 P60 = 1.2500
AREA = .009633 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .115635HR TP = .133000HR K/TP RATIO = .869438 SHAPE CONSTANT, N = 4.086316
UNIT PEAK = 19.718 CFS UNIT VOLUME = .9996 B = 360.88 P60 = 1.2500
AREA = .007267 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=3 CODE=10

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	23.8	3.000	.1	4.500	.1	6.000	.1
.300	.0	1.800	7.4	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	3.5	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	.8	3.900	.0	5.400	.1	6.900	.0
1.200	.0	2.700	.3	4.200	.1	5.700	.1		

RUNOFF VOLUME = .86871 INCHES = .7830 ACRE-FEET
PEAK DISCHARGE RATE = 23.83 CFS AT 1.500 HOURS BASIN AREA = .0169 SQ. MI.

*S
*S BASIN C-4
COMPUTE NM HYD ID=4 HYD NO= 104.1 DA=0.0010
PER A=0 PER B=15 PER C=0 PER D=85 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.3634 CFS UNIT VOLUME = .9962 B = 526.28 P60 = 1.2500
AREA = .000850 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .141582HR TP = .133000HR K/TP RATIO = 1.064525 SHAPE CONSTANT, N = 3.317383
UNIT PEAK = .34596 CFS UNIT VOLUME = .9588 B = 306.75 P60 = 1.2500
AREA = .000150 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=4 CODE=10

PARTIAL HYDROGRAPH 104.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	1.7	3.000	.0	4.500	.0	6.000	.0
.300	.0	1.800	.6	3.300	.0	4.800	.0	6.300	.0

.600	.0	2.100	.3	3.600	.0	5.100	.0
.900	.0	2.400	.1	3.900	.0	5.400	.0
1.200	.0	2.700	.0	4.200	.0	5.700	.0

RUNOFF VOLUME = 1.08672 INCHES = .0580 ACRE-FEET
PEAK DISCHARGE RATE = 1.65 CFS AT 1.500 HOURS BASIN AREA = .0010 SQ. MI.

*S
*S BASIN C-5
COMPUTE NM HYD ID=5 HYD NO= 105.1 DA=0.0048
PER A=0 PER B=10 PER C=33 PER D=57 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 10.826 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.2500
AREA = .002736 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .115635HR TP = .133000HR K/TP RATIO = .869438 SHAPE CONSTANT, N = 4.086316
UNIT PEAK = 5.6005 CFS UNIT VOLUME = .9979 B = 360.88 P60 = 1.2500
AREA = .002064 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=5 CODE=10

PARTIAL HYDROGRAPH 105.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	6.8	3.000	.0	4.500	.0	6.000	.0
.300	.0	1.800	2.1	3.300	.0	4.800	.0	6.300	.0
.600	.0	2.100	1.0	3.600	.0	5.100	.0	6.600	.0
.900	.0	2.400	.2	3.900	.0	5.400	.0		
1.200	.0	2.700	.1	4.200	.0	5.700	.0		

RUNOFF VOLUME = .86871 INCHES = .2224 ACRE-FEET
PEAK DISCHARGE RATE = 6.78 CFS AT 1.500 HOURS BASIN AREA = .0048 SQ. MI.

*S
*S BASIN A-3A North Portion APS Site
*s ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL
COMPUTE NM HYD ID=6 HYD NO= 106.1 DA=0.00825
PER A=0 PER B=22 PER C=21 PER D=57 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 18.608 CFS UNIT VOLUME = .9993 B = 526.28 P60 = 1.2500
AREA = .004703 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .125070HR TP = .133000HR K/TP RATIO = .940378 SHAPE CONSTANT, N = 3.760142
UNIT PEAK = 9.0381 CFS UNIT VOLUME = .9989 B = 338.85 P60 = 1.2500
AREA = .003548 SQ MI IA = .42674 INCHES INF = 1.04488 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=6 CODE=10

PARTIAL HYDROGRAPH 106.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	11.1	3.000	.1	4.500	.0	6.000	.1
.300	.0	1.800	3.5	3.300	.0	4.800	.0	6.300	.0
.600	.0	2.100	1.7	3.600	.0	5.100	.0	6.600	.0
.900	.0	2.400	.4	3.900	.0	5.400	.0		
1.200	.0	2.700	.2	4.200	.0	5.700	.1		

RUNOFF VOLUME = .84201 INCHES = .3705 ACRE-FEET
PEAK DISCHARGE RATE = 11.14 CFS AT 1.500 HOURS BASIN AREA = .0083 SQ. MI.

*S
*S BASIN A-3B South Portion APS Site
*s ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL
COMPUTE NM HYD ID=7 HYD NO= 107.1 DA=0.00738

```
                    PER A=0 PER B=22 PER C=21  PER D=57 TP=-.133
                    RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   16.645    CFS   UNIT VOLUME =    .9992       B =   526.28      P60 = 1.2500
     AREA =      .004207 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .125070HR    TP =   .133000HR    K/TP RATIO =   .940378     SHAPE CONSTANT, N =  3.760142
     UNIT PEAK =   8.0850    CFS   UNIT VOLUME =    .9986       B =   338.85      P60 = 1.2500
     AREA =      .003173 SQ MI    IA =    .42674 INCHES    INF =   1.04488 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD           ID=7 CODE=10

                              PARTIAL HYDROGRAPH   107.10

   TIME    FLOW      TIME    FLOW      TIME    FLOW      TIME    FLOW      TIME    FLOW
    HRS     CFS       HRS     CFS       HRS     CFS       HRS     CFS       HRS     CFS
   .000      .0     1.500    10.0     3.000      .1     4.500      .0     6.000      .1
   .300      .0     1.800     3.2     3.300      .0     4.800      .0     6.300      .0
   .600      .0     2.100     1.5     3.600      .0     5.100      .0     6.600      .0
   .900      .0     2.400      .4     3.900      .0     5.400      .0
  1.200      .0     2.700      .1     4.200      .0     5.700      .0

    RUNOFF VOLUME =      .84201 INCHES      =        .3314 ACRE-FEET
    PEAK DISCHARGE RATE =       9.97 CFS  AT   1.500 HOURS   BASIN AREA =    .0074 SQ. MI.


*S
*S  BASIN B-1
COMPUTE NM HYD      ID=8   HYD NO= 108.1   DA=0.0190 SQ MI
                    PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                    RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   42.854    CFS   UNIT VOLUME =    .9996       B =   526.28      P60 = 1.2500
     AREA =      .010830 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .115635HR    TP =   .133000HR    K/TP RATIO =   .869438     SHAPE CONSTANT, N =  4.086316
     UNIT PEAK =   22.169    CFS   UNIT VOLUME =    .9997       B =   360.88      P60 = 1.2500
     AREA =      .008170 SQ MI    IA =    .38488 INCHES    INF =    .92767 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD           ID=8 CODE=10

                              PARTIAL HYDROGRAPH   108.10

   TIME    FLOW      TIME    FLOW      TIME    FLOW      TIME    FLOW      TIME    FLOW
    HRS     CFS       HRS     CFS       HRS     CFS       HRS     CFS       HRS     CFS
   .000      .0     1.500    26.8     3.000      .2     4.500      .1     6.000      .1
   .300      .0     1.800     8.3     3.300      .1     4.800      .1     6.300      .0
   .600      .0     2.100     3.9     3.600      .1     5.100      .1     6.600      .0
   .900      .0     2.400      .9     3.900      .1     5.400      .1     6.900      .0
  1.200      .0     2.700      .4     4.200      .1     5.700      .1

    RUNOFF VOLUME =      .86871 INCHES      =        .8803 ACRE-FEET
    PEAK DISCHARGE RATE =      26.79 CFS  AT   1.500 HOURS   BASIN AREA =    .0190 SQ. MI.


*S
*S  BASIN B-2A
COMPUTE NM HYD      ID=9   HYD NO= 109.1   DA=0.0169 SQ MI
                    PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                    RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   38.117    CFS   UNIT VOLUME =    .9996       B =   526.28      P60 = 1.2500
     AREA =      .009633 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .115635HR    TP =   .133000HR    K/TP RATIO =   .869438     SHAPE CONSTANT, N =  4.086316
     UNIT PEAK =   19.718    CFS   UNIT VOLUME =    .9996       B =   360.88      P60 = 1.2500
     AREA =      .007267 SQ MI    IA =    .38488 INCHES    INF =    .92767 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000
```

```
*S
PRINT HYD          ID=9 CODE=10
```

PARTIAL HYDROGRAPH 109.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	23.8	3.000	.1	4.500	.1	6.000	.1
.300	.0	1.800	7.4	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	3.5	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	.8	3.900	.0	5.400	.1	6.900	.0
1.200	.0	2.700	.3	4.200	.1	5.700	.1		

RUNOFF VOLUME = .86871 INCHES = .7830 ACRE-FEET
PEAK DISCHARGE RATE = 23.83 CFS AT 1.500 HOURS BASIN AREA = .0169 SQ. MI.

```
*S
*S
*S  BASIN B-2B
COMPUTE NM HYD     ID=10   HYD NO= 110.1   DA=0.0316 SQ MI
                   PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                   RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 71.273 CFS UNIT VOLUME = .9997 B = 526.28 P60 = 1.2500
AREA = .018012 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .115635HR TP = .133000HR K/TP RATIO = .869438 SHAPE CONSTANT, N = 4.086316
UNIT PEAK = 36.870 CFS UNIT VOLUME = .9999 B = 360.88 P60 = 1.2500
AREA = .013588 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

```
*S
PRINT HYD          ID=10 CODE=10
```

PARTIAL HYDROGRAPH 110.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	44.6	3.000	.3	4.500	.1	6.000	.2
.300	.0	1.800	13.9	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	6.5	3.600	.1	5.100	.2	6.600	.0
.900	.0	2.400	1.5	3.900	.1	5.400	.2	6.900	.0
1.200	.0	2.700	.6	4.200	.1	5.700	.2		

RUNOFF VOLUME = .86871 INCHES = 1.4641 ACRE-FEET
PEAK DISCHARGE RATE = 44.55 CFS AT 1.500 HOURS BASIN AREA = .0316 SQ. MI.

```
*S
*S  BASIN D-1
COMPUTE NM HYD     ID=11   HYD NO= 111.1   DA=0.005648 SQ MI
                   PER A=43 PER B=20 PER C=20  PER D=17 TP=-.133
                   RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.7993 CFS UNIT VOLUME = .9967 B = 526.28 P60 = 1.2500
AREA = .000960 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .152774HR TP = .133000HR K/TP RATIO = 1.148676 SHAPE CONSTANT, N = 3.083865
UNIT PEAK = 10.172 CFS UNIT VOLUME = .9985 B = 288.59 P60 = 1.2500
AREA = .004688 SQ MI IA = .54157 INCHES INF = 1.36639 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

```
*S
PRINT HYD          ID=11 CODE=10
```

PARTIAL HYDROGRAPH 111.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	3.5	3.000	.0	4.500	.0	6.000	.0
.300	.0	1.800	1.0	3.300	.0	4.800	.0	6.300	.0
.600	.0	2.100	.4	3.600	.0	5.100	.0		
.900	.0	2.400	.1	3.900	.0	5.400	.0		
1.200	.0	2.700	.1	4.200	.0	5.700	.0		

```
    RUNOFF VOLUME =      .36012 INCHES     =        .1085 ACRE-FEET
    PEAK DISCHARGE RATE =       3.50 CFS  AT   1.530 HOURS   BASIN AREA =   .0056 SQ. MI.


*S
*S  BASIN D-2
COMPUTE NM HYD       ID=12   HYD NO= 112.1   DA=0.002841 SQ MI
                     PER A=0 PER B=0 PER C=93  PER D=7 TP=-.133
                     RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   .78692   CFS   UNIT VOLUME =    .9855       B =   526.28      P60 = 1.2500
     AREA =      .000199 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .107773HR    TP =   .133000HR    K/TP RATIO =   .810320     SHAPE CONSTANT, N =  4.414309
     UNIT PEAK =   7.5869    CFS   UNIT VOLUME =    .9981       B =   381.91      P60 = 1.2500
     AREA =      .002642 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD            ID=12 CODE=10

                          PARTIAL HYDROGRAPH   112.10

    TIME     FLOW      TIME     FLOW      TIME     FLOW      TIME     FLOW      TIME     FLOW
    HRS      CFS       HRS      CFS       HRS      CFS       HRS      CFS       HRS      CFS
    .000      .0      1.500      2.9     3.000      .0      4.500      .0      6.000      .0
    .300      .0      1.800       .6     3.300      .0      4.800      .0
    .600      .0      2.100       .2     3.600      .0      5.100      .0
    .900      .0      2.400       .1     3.900      .0      5.400      .0
   1.200      .0      2.700       .0     4.200      .0      5.700      .0

    RUNOFF VOLUME =      .49368 INCHES     =        .0748 ACRE-FEET
    PEAK DISCHARGE RATE =       2.92 CFS  AT   1.530 HOURS   BASIN AREA =   .0028 SQ. MI.


*S
*S
*S  BASIN D-3
COMPUTE NM HYD       ID=13   HYD NO= 113.1   DA=0.03627 SQ MI
                     PER A=43 PER B=20 PER C=20  PER D=17 TP=-.133
                     RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   24.398    CFS   UNIT VOLUME =    .9994       B =   526.28      P60 = 1.2500
     AREA =      .006166 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .152774HR    TP =   .133000HR    K/TP RATIO =  1.148676     SHAPE CONSTANT, N =  3.083865
     UNIT PEAK =   65.321    CFS   UNIT VOLUME =    .9998       B =   288.59      P60 = 1.2500
     AREA =      .030104 SQ MI    IA =    .54157 INCHES    INF =   1.36639 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD            ID=13 CODE=10

                          PARTIAL HYDROGRAPH   113.10

    TIME     FLOW      TIME     FLOW      TIME     FLOW      TIME     FLOW      TIME     FLOW
    HRS      CFS       HRS      CFS       HRS      CFS       HRS      CFS       HRS      CFS
    .000      .0      1.500     22.3     3.000      .2      4.500      .0      6.000      .1
    .300      .0      1.800      6.6     3.300      .1      4.800      .0      6.300      .0
    .600      .0      2.100      2.8     3.600      .1      5.100      .1      6.600      .0
    .900      .0      2.400       .8     3.900      .0      5.400      .1
   1.200      .0      2.700       .4     4.200      .0      5.700      .1

    RUNOFF VOLUME =      .36012 INCHES     =        .6966 ACRE-FEET
    PEAK DISCHARGE RATE =      22.43 CFS  AT   1.530 HOURS   BASIN AREA =   .0363 SQ. MI.


*S
*S-----------------------------------------------------------------------
*S   BEGIN SIZING STORM DRAIN WEST OF AMOLE DEL NORTE ARROYO
*S-----------------------------------------------------------------------
*-----------------------------------------------------------------------
*-----------------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-1A
```

```
*S  ROUTE PARCEL 7 TO AP1 OVERLAND AND COMBINE AT AP-1
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=1 NO SEGS=1
                      MIN ELEV 100 MAX ELEV 102.5
                      CH SLP = 0.02  FP SLP = 0.02 N=0.045
                      DIST 200
                      DIST   ELEV    DIST ELEV   DIST ELEV
                      0      102.5     40  100   160   100
                      200    102.5
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
100.00	.00	.00	120.00
100.13	16.07	19.19	124.21
100.26	32.69	61.30	128.42
100.39	49.86	121.27	132.63
100.53	67.59	197.19	136.84
100.66	85.87	288.00	141.05
100.79	104.71	393.02	145.26
100.92	124.10	511.80	149.47
101.05	144.04	644.06	153.68
101.18	164.54	789.57	157.89
101.32	185.59	948.22	162.10
101.45	207.20	1119.92	166.31
101.58	229.36	1304.62	170.53
101.71	252.07	1502.33	174.74
101.84	275.34	1713.05	178.95
101.97	299.16	1936.82	183.16
102.11	323.54	2173.70	187.37
102.24	348.47	2423.75	191.58
102.37	373.95	2687.04	195.79
102.50	399.99	2963.66	200.00

```
COMPUTE TRAVEL TIME ID=59  REACH NO=1 NO VS=1 L=750 FT
                    SLP=0.020
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.132	16.066	19.19	.1744
.263	32.686	61.30	.1111
.395	49.861	121.27	.0857
.526	67.589	197.19	.0714
.658	85.871	288.00	.0621
.789	104.707	393.02	.0555
.921	124.097	511.80	.0505
1.053	144.041	644.06	.0466
1.184	164.540	789.57	.0434
1.316	185.592	948.22	.0408
1.447	207.198	1119.92	.0385
1.579	229.358	1304.62	.0366
1.710	252.072	1502.33	.0350
1.842	275.340	1713.05	.0335
1.974	299.162	1936.82	.0322
2.105	323.538	2173.70	.0310
2.237	348.469	2423.75	.0300
2.368	373.953	2687.04	.0290
2.500	399.991	2963.66	.0281

```
ROUTE               ID=59 HYD=259.1 IN ID=14 DT=0.0
PRINT HYD           ID=59 CODE=10
```

PARTIAL HYDROGRAPH 259.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.200	.0	2.400	.8	3.600	.1	4.800	.0
.300	.0	1.500	2.6	2.700	.4	3.900	.0	5.100	.0
.600	.0	1.800	5.1	3.000	.2	4.200	.0	5.400	.0
.900	.0	2.100	1.9	3.300	.1	4.500	.0	5.700	.0

RUNOFF VOLUME = .08219 INCHES = .2890 ACRE-FEET
PEAK DISCHARGE RATE = 6.22 CFS AT 1.680 HOURS BASIN AREA = .0659 SQ. MI.

```
*S
ADD HYD             ID=58  HYD NO=258.1 ID=59  ID=8
```

PRINT HYD ID=58 CODE 10

PARTIAL HYDROGRAPH 258.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	29.4	3.000	.4	4.500	.1	6.000	.1
.300	.0	1.800	13.5	3.300	.2	4.800	.1	6.300	.0
.600	.0	2.100	5.8	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	1.7	3.900	.1	5.400	.1	6.900	.0
1.200	.0	2.700	.8	4.200	.1	5.700	.1		

RUNOFF VOLUME = .25812 INCHES = 1.1693 ACRE-FEET
PEAK DISCHARGE RATE = 30.02 CFS AT 1.530 HOURS BASIN AREA = .0849 SQ. MI.

*S
*S
*----------
*----------
*S
*S ANALYSIS POINT AP-1
*S ROUTE OFFSITE BASIN B-1 IN STORM DRAIN BLAKE AND COMBINE W/B-2A
*S
*----------
*S
COMPUTE RATING CURVE CID=1 VS NO=11 NO SEGS=-1
PIPE SLOPE 0.018 PIPE DIA 3.0 N 0.013

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.16	.14	.47	1.33
.31	.39	2.04	1.83
.47	.71	4.74	2.18
.63	1.07	8.52	2.44
.78	1.46	13.30	2.63
.94	1.89	18.98	2.78
1.09	2.33	25.43	2.89
1.25	2.79	32.51	2.96
1.41	3.26	40.08	2.99
1.56	3.72	47.97	3.00
1.72	4.19	56.00	3.00
1.88	4.65	63.98	3.00
2.03	5.10	71.71	3.00
2.19	5.53	78.95	3.00
2.35	5.93	85.43	3.00
2.50	6.30	90.82	3.00
2.66	6.62	94.68	3.00
2.81	6.89	96.26	3.00
3.00	7.07	96.26	3.00

COMPUTE TRAVEL TIME ID=60 REACH NO=1 NO VS=1 L=450 FT
SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.47	.0374
.313	.391	2.04	.0240
.469	.706	4.74	.0186
.625	1.068	8.52	.0157
.782	1.465	13.30	.0138
.938	1.889	18.98	.0124
1.094	2.332	25.43	.0115
1.251	2.790	32.51	.0107
1.407	3.255	40.08	.0102
1.563	3.724	47.97	.0097
1.720	4.191	56.00	.0094
1.876	4.650	63.98	.0091
2.032	5.097	71.71	.0089
2.189	5.525	78.95	.0087
2.345	5.928	85.43	.0087
2.501	6.297	90.82	.0087
2.658	6.622	94.68	.0087
2.814	6.887	96.26	.0089
3.000	7.069	96.26	.0092

ROUTE ID=60 HYD=260.1 IN ID=58 DT=0.0

```
PRINT HYD             ID=60 CODE=10
```

PARTIAL HYDROGRAPH 260.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	28.7	3.000	.4	4.500	.1	6.000	.1
.300	.0	1.800	13.8	3.300	.2	4.800	.1	6.300	.0
.600	.0	2.100	6.2	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	1.8	3.900	.1	5.400	.1	6.900	.0
1.200	.0	2.700	.9	4.200	.1	5.700	.1		

RUNOFF VOLUME = .25812 INCHES = 1.1693 ACRE-FEET
PEAK DISCHARGE RATE = 30.17 CFS AT 1.530 HOURS BASIN AREA = .0849 SQ. MI.

```
*S
ADD HYD               ID=61  HYD NO=260.1 ID=60  ID=9
PRINT HYD             ID=61 CODE 10
```

PARTIAL HYDROGRAPH 260.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	52.5	3.000	.6	4.500	.1	6.000	.3
.300	.0	1.800	21.3	3.300	.3	4.800	.2	6.300	.0
.600	.0	2.100	9.7	3.600	.2	5.100	.2	6.600	.0
.900	.0	2.400	2.6	3.900	.1	5.400	.2	6.900	.0
1.200	.0	2.700	1.2	4.200	.1	5.700	.2		

RUNOFF VOLUME = .35944 INCHES = 1.9522 ACRE-FEET
PEAK DISCHARGE RATE = 53.50 CFS AT 1.530 HOURS BASIN AREA = .1018 SQ. MI.

```
*S
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-2
*S  ROUTE OFFSITE COMBINED BASIN B-1, B-2A IN STORM DRAIN IN BLAKE
*S   AND COMBINE W/B-2B
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.018 PIPE DIA 3.5 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.18	.19	.71	1.56
.36	.53	3.07	2.14
.55	.96	7.15	2.54
.73	1.45	12.85	2.84
.91	1.99	20.07	3.07
1.09	2.57	28.63	3.25
1.28	3.17	38.36	3.37
1.46	3.80	49.04	3.45
1.64	4.43	60.46	3.49
1.82	5.07	72.35	3.50
2.01	5.70	84.47	3.50
2.19	6.33	96.51	3.50
2.37	6.94	108.17	3.50
2.55	7.52	119.09	3.50
2.74	8.07	128.86	3.50
2.92	8.57	136.99	3.50
3.10	9.01	142.81	3.50
3.28	9.37	145.20	3.50
3.50	9.62	145.20	3.50

```
COMPUTE TRAVEL TIME ID=61  REACH NO=1 NO VS=1 L=450 FT
                    SLP=0.018
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS

.182	.191	.71	.0338
.365	.532	3.07	.0216
.547	.961	7.15	.0168
.730	1.453	12.85	.0141
.912	1.994	20.07	.0124
1.094	2.571	28.63	.0112
1.277	3.175	38.36	.0103
1.459	3.797	49.04	.0097
1.641	4.431	60.46	.0092
1.824	5.069	72.35	.0088
2.006	5.704	84.47	.0084
2.189	6.330	96.51	.0082
2.371	6.938	108.17	.0080
2.553	7.520	119.09	.0079
2.736	8.069	128.86	.0078
2.918	8.571	136.99	.0078
3.101	9.014	142.81	.0079
3.283	9.374	145.20	.0081
3.500	9.621	145.20	.0083

```
ROUTE              ID=62 HYD=262.1 IN ID=61 DT=0.0
*S
ADD HYD            ID=63  HYD NO=263.1 ID=62  ID=10
*S
*S
PRINT HYD          ID=63 CODE 10
```

PARTIAL HYDROGRAPH 263.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	95.9	3.000	.9	4.500	.2	6.000	.5
.300	.0	1.800	35.7	3.300	.5	4.800	.3	6.300	.1
.600	.0	2.100	16.7	3.600	.3	5.100	.3	6.600	.0
.900	.0	2.400	4.3	3.900	.2	5.400	.4	6.900	.0
1.200	.0	2.700	1.9	4.200	.2	5.700	.4		

RUNOFF VOLUME = .48004 INCHES = 3.4163 ACRE-FEET
PEAK DISCHARGE RATE = 97.46 CFS AT 1.530 HOURS BASIN AREA = .1334 SQ. MI.

```
*------------------------------------------------------------
*------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-3
*S  ROUTE OFFSITE COMBINED BASIN B-1, B-2A, B-2B IN STORM DRAIN IN
*S   BLAKE AND COMBINE A-3A AND A-3B
*S
*------------------------------------------------------------
*------------------------------------------------------------
*S
ADD HYD            ID=64 HYD NO 264.1 ID=6 ID=7
PRINT HYD          ID=64 CODE 10
```

PARTIAL HYDROGRAPH 264.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	21.1	3.000	.1	4.500	.1	6.000	.1
.300	.0	1.800	6.7	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	3.2	3.600	.0	5.100	.1	6.600	.0
.900	.0	2.400	.8	3.900	.0	5.400	.1		
1.200	.0	2.700	.3	4.200	.0	5.700	.1		

RUNOFF VOLUME = .84198 INCHES = .7019 ACRE-FEET
PEAK DISCHARGE RATE = 21.11 CFS AT 1.500 HOURS BASIN AREA = .0156 SQ. MI.

```
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.018 PIPE DIA 4.0 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	1.01	1.78
.42	.69	4.39	2.44
.63	1.25	10.20	2.91
.83	1.90	18.35	3.25
1.04	2.60	28.65	3.51
1.25	3.36	40.88	3.71

1.46	4.15	54.76	3.85
1.67	4.96	70.02	3.94
1.88	5.79	86.31	3.99
2.08	6.62	103.30	4.00
2.29	7.45	120.60	4.00
2.50	8.27	137.80	4.00
2.71	9.06	154.44	4.00
2.92	9.82	170.03	4.00
3.13	10.54	183.98	4.00
3.34	11.20	195.59	4.00
3.54	11.77	203.89	4.00
3.75	12.24	207.31	4.00
4.00	12.57	207.31	4.00

COMPUTE TRAVEL TIME ID=65 REACH NO=1 NO VS=1 L=850 FT
SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	1.01	.0583
.417	.695	4.39	.0374
.625	1.255	10.20	.0290
.834	1.898	18.35	.0244
1.042	2.604	28.65	.0215
1.251	3.358	40.88	.0194
1.459	4.146	54.76	.0179
1.668	4.960	70.02	.0167
1.876	5.788	86.31	.0158
2.084	6.621	103.30	.0151
2.293	7.451	120.60	.0146
2.501	8.267	137.80	.0142
2.710	9.062	154.44	.0139
2.918	9.823	170.03	.0136
3.127	10.539	183.98	.0135
3.335	11.195	195.59	.0135
3.544	11.773	203.89	.0136
3.752	12.243	207.31	.0139
4.000	12.566	207.31	.0143

ROUTE ID=65 HYD=261.1 IN ID=63 DT=0.0
*S
ADD HYD ID=66 HYD NO=266.1 ID=65 ID=64
*S
*S
PRINT HYD ID=66 CODE 10

PARTIAL HYDROGRAPH 266.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	112.8	3.000	1.2	4.500	.3	6.000	.6
.300	.0	1.800	43.8	3.300	.6	4.800	.3	6.300	.2
.600	.0	2.100	21.1	3.600	.4	5.100	.4	6.600	.0
.900	.0	2.400	5.5	3.900	.3	5.400	.5	6.900	.0
1.200	.0	2.700	2.4	4.200	.3	5.700	.5	7.200	.0

RUNOFF VOLUME = .51799 INCHES = 4.1182 ACRE-FEET
PEAK DISCHARGE RATE = 118.46 CFS AT 1.530 HOURS BASIN AREA = .1491 SQ. MI.

*S
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*----------
*S
*S ANALYSIS POINT AP-4
*S ROUTE OFFSITE COMBINED IN STORM DRAIN IN BLAKE TO DISCHARGE
*S POINT AT AMOLE DEL NORTE ARROYO
*S
*----------
*----------
*S
*S
COMPUTE RATING CURVE CID=1 VS NO=11 NO SEGS=-1
PIPE SLOPE 0.018 PIPE DIA 4.0 N 0.013

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	1.01	1.78

.42	.69	4.39	2.44
.63	1.25	10.20	2.91
.83	1.90	18.35	3.25
1.04	2.60	28.65	3.51
1.25	3.36	40.88	3.71
1.46	4.15	54.76	3.85
1.67	4.96	70.02	3.94
1.88	5.79	86.31	3.99
2.08	6.62	103.30	4.00
2.29	7.45	120.60	4.00
2.50	8.27	137.80	4.00
2.71	9.06	154.44	4.00
2.92	9.82	170.03	4.00
3.13	10.54	183.98	4.00
3.34	11.20	195.59	4.00
3.54	11.77	203.89	4.00
3.75	12.24	207.31	4.00
4.00	12.57	207.31	4.00

COMPUTE TRAVEL TIME ID=67 REACH NO=1 NO VS=1 L=225 FT
SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	1.01	.0154
.417	.695	4.39	.0099
.625	1.255	10.20	.0077
.834	1.898	18.35	.0065
1.042	2.604	28.65	.0057
1.251	3.358	40.88	.0051
1.459	4.146	54.76	.0047
1.668	4.960	70.02	.0044
1.876	5.788	86.31	.0042
2.084	6.621	103.30	.0040
2.293	7.451	120.60	.0039
2.501	8.267	137.80	.0037
2.710	9.062	154.44	.0037
2.918	9.823	170.03	.0036
3.127	10.539	183.98	.0036
3.335	11.195	195.59	.0036
3.544	11.773	203.89	.0036
3.752	12.243	207.31	.0037
4.000	12.566	207.31	.0038

ROUTE ID=67 HYD=267.1 IN ID=66 DT=0.0
PRINT HYD ID=67 CODE=10

PARTIAL HYDROGRAPH 267.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	111.6	3.000	1.2	4.500	.3	6.000	.6
.300	.0	1.800	44.2	3.300	.6	4.800	.3	6.300	.2
.600	.0	2.100	21.5	3.600	.4	5.100	.4	6.600	.0
.900	.0	2.400	5.6	3.900	.3	5.400	.5	6.900	.0
1.200	.0	2.700	2.4	4.200	.3	5.700	.5	7.200	.0

RUNOFF VOLUME = .51799 INCHES = 4.1182 ACRE-FEET
PEAK DISCHARGE RATE = 118.66 CFS AT 1.530 HOURS BASIN AREA = .1491 SQ. MI.

*S
*S
*S----------
*S BEGIN SIZING STORM DRAIN EAST OF AMOLE DEL NORTE ARROYO
*S----------
*S
*----------
*----------
*S
*S ANALYSIS POINT AP-5
*S ROUTE OFFSITE BASIN C-1 IN STORM DRAIN BLAKE AND COMBINE W/C-2
*S
*----------
*----------
*S
COMPUTE RATING CURVE CID=1 VS NO=11 NO SEGS=-1
PIPE SLOPE 0.018 PIPE DIA 2.25 N 0.013

RATING CURVE PIPE SECTION 11.0

WATER	FLOW	FLOW	MAX

SURFACE ELEV	AREA SQ FT	RATE CFS	WIDTH FT
.00	.00	.00	.00
.12	.08	.22	1.00
.23	.22	.95	1.37
.35	.40	2.20	1.63
.47	.60	3.96	1.83
.59	.82	6.18	1.98
.70	1.06	8.81	2.09
.82	1.31	11.81	2.17
.94	1.57	15.10	2.22
1.06	1.83	18.61	2.25
1.17	2.09	22.27	2.25
1.29	2.36	26.00	2.25
1.41	2.62	29.71	2.25
1.52	2.87	33.30	2.25
1.64	3.11	36.66	2.25
1.76	3.33	39.67	2.25
1.88	3.54	42.17	2.25
1.99	3.72	43.96	2.25
2.11	3.87	44.70	2.25
2.25	3.98	44.70	2.25

COMPUTE TRAVEL TIME ID=68 REACH NO=1 NO VS=1 L=265 FT
SLP=0.018

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.117	.079	.22	.0267
.235	.220	.95	.0171
.352	.397	2.20	.0133
.469	.601	3.96	.0112
.586	.824	6.18	.0098
.704	1.062	8.81	.0089
.821	1.312	11.81	.0082
.938	1.569	15.10	.0077
1.055	1.831	18.61	.0072
1.173	2.095	22.27	.0069
1.290	2.357	26.00	.0067
1.407	2.616	29.71	.0065
1.524	2.867	33.30	.0063
1.641	3.108	36.66	.0062
1.759	3.334	39.67	.0062
1.876	3.542	42.17	.0062
1.993	3.725	43.96	.0062
2.111	3.874	44.70	.0064
2.250	3.976	44.70	.0065

ROUTE ID=68 HYD=268.1 IN ID=1 DT=0.0
PRINT HYD ID=68 CODE=10

PARTIAL HYDROGRAPH 268.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	23.4	3.000	.2	4.500	.1	6.000	.1
.300	.0	1.800	7.5	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	3.6	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	.8	3.900	.0	5.400	.1	6.900	.0
1.200	.0	2.700	.4	4.200	.0	5.700	.1		

RUNOFF VOLUME = .86872 INCHES = .7737 ACRE-FEET
PEAK DISCHARGE RATE = 23.38 CFS AT 1.500 HOURS BASIN AREA = .0167 SQ. MI.

*S
ADD HYD ID=69 HYD NO=260.1 ID=68 ID=2
ADD HYD ID=90 HYD NO=290.1 ID=69 ID=4
PRINT HYD ID=90 CODE 10

PARTIAL HYDROGRAPH 290.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	56.5	3.000	.4	4.500	.1	6.000	.3
.300	.0	1.800	17.8	3.300	.2	4.800	.2	6.300	.0
.600	.0	2.100	8.5	3.600	.1	5.100	.2	6.600	.0
.900	.0	2.400	2.0	3.900	.1	5.400	.2	6.900	.0
1.200	.0	2.700	.8	4.200	.1	5.700	.3		

RUNOFF VOLUME = .87414 INCHES = 1.8648 ACRE-FEET

PEAK DISCHARGE RATE = 56.48 CFS AT 1.500 HOURS BASIN AREA = .0400 SQ. MI.

```
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-5A
*S  ROUTE OFFSITE BASIN C-1 AND C-2 IN STORM DRAIN BLAKE
*S  AND COMBINE W/D-1, C-4
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.018 PIPE DIA 3.00 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.16	.14	.47	1.33
.31	.39	2.04	1.83
.47	.71	4.74	2.18
.63	1.07	8.52	2.44
.78	1.46	13.30	2.63
.94	1.89	18.98	2.78
1.09	2.33	25.43	2.89
1.25	2.79	32.51	2.96
1.41	3.26	40.08	2.99
1.56	3.72	47.97	3.00
1.72	4.19	56.00	3.00
1.88	4.65	63.98	3.00
2.03	5.10	71.71	3.00
2.19	5.53	78.95	3.00
2.35	5.93	85.43	3.00
2.50	6.30	90.82	3.00
2.66	6.62	94.68	3.00
2.81	6.89	96.26	3.00
3.00	7.07	96.26	3.00

```
COMPUTE TRAVEL TIME ID=70  REACH NO=1 NO VS=1 L=310 FT
                    SLP=0.018
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.47	.0258
.313	.391	2.04	.0165
.469	.706	4.74	.0128
.625	1.068	8.52	.0108
.782	1.465	13.30	.0095
.938	1.889	18.98	.0086
1.094	2.332	25.43	.0079
1.251	2.790	32.51	.0074
1.407	3.255	40.08	.0070
1.563	3.724	47.97	.0067
1.720	4.191	56.00	.0064
1.876	4.650	63.98	.0063
2.032	5.097	71.71	.0061
2.189	5.525	78.95	.0060
2.345	5.928	85.43	.0060
2.501	6.297	90.82	.0060
2.658	6.622	94.68	.0060
2.814	6.887	96.26	.0062
3.000	7.069	96.26	.0063

```
ROUTE                ID=70 HYD=268.1 IN ID=90 DT=0.0
PRINT HYD            ID=70 CODE=10
```

PARTIAL HYDROGRAPH 268.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	56.0	3.000	.4	4.500	.1	6.000	.3
.300	.0	1.800	18.1	3.300	.2	4.800	.2	6.300	.1
.600	.0	2.100	8.9	3.600	.1	5.100	.2	6.600	.0
.900	.0	2.400	2.1	3.900	.1	5.400	.2	6.900	.0
1.200	.0	2.700	.9	4.200	.1	5.700	.3		

RUNOFF VOLUME = .87415 INCHES = 1.8648 ACRE-FEET

PEAK DISCHARGE RATE = 56.35 CFS AT 1.530 HOURS BASIN AREA = .0400 SQ. MI.

```
*S
ADD HYD          ID=71  HYD NO=271.1 ID=70  ID=3
PRINT HYD        ID=71 CODE 10
```

PARTIAL HYDROGRAPH 271.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	79.8	3.000	.5	4.500	.2	6.000	.4
.300	.0	1.800	25.6	3.300	.3	4.800	.2	6.300	.1
.600	.0	2.100	12.4	3.600	.2	5.100	.3	6.600	.0
.900	.0	2.400	2.9	3.900	.2	5.400	.3	6.900	.0
1.200	.0	2.700	1.2	4.200	.2	5.700	.4		

RUNOFF VOLUME = .87252 INCHES = 2.6478 ACRE-FEET
PEAK DISCHARGE RATE = 79.83 CFS AT 1.500 HOURS BASIN AREA = .0569 SQ. MI.

```
*S
*-----------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-6
*S  ROUTE COMBINED C-1, C-2, & D1 TO AND COMBINE WITH D-2 & D-3, C-3
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.021 PIPE DIA 3.50 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.18	.19	.76	1.56
.36	.53	3.32	2.14
.55	.96	7.72	2.54
.73	1.45	13.88	2.84
.91	1.99	21.67	3.07
1.09	2.57	30.92	3.25
1.28	3.17	41.43	3.37
1.46	3.80	52.97	3.45
1.64	4.43	65.30	3.49
1.82	5.07	78.15	3.50
2.01	5.70	91.24	3.50
2.19	6.33	104.25	3.50
2.37	6.94	116.84	3.50
2.55	7.52	128.63	3.50
2.74	8.07	139.19	3.50
2.92	8.57	147.97	3.50
3.10	9.01	154.25	3.50
3.28	9.37	156.84	3.50
3.50	9.62	156.84	3.50

```
COMPUTE TRAVEL TIME ID=72  REACH NO=1 NO VS=1 L=640 FT
                    SLP=0.021
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.182	.191	.76	.0445
.365	.532	3.32	.0285
.547	.961	7.72	.0221
.730	1.453	13.88	.0186
.912	1.994	21.67	.0164
1.094	2.571	30.92	.0148
1.277	3.175	41.43	.0136
1.459	3.797	52.97	.0127
1.641	4.431	65.30	.0121
1.824	5.069	78.15	.0115
2.006	5.704	91.24	.0111
2.189	6.330	104.25	.0108
2.371	6.938	116.84	.0106
2.553	7.520	128.63	.0104
2.736	8.069	139.19	.0103

	2.918	8.571	147.97	.0103
	3.101	9.014	154.25	.0104
	3.283	9.374	156.84	.0106
	3.500	9.621	156.84	.0109

```
ROUTE          ID=72 HYD=272.1 IN ID=71 DT=0.0
ADD HYD        ID=73 HYD 273.1 ID I 72 ID II 12
ADD HYD        ID=74 HYD 274.1 ID I 73  ID II 13
ADD HYD        ID=91 HYD 291.1 ID I 74 ID 11 3
PRINT HYD      ID=91 CODE=10
```

PARTIAL HYDROGRAPH 291.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	106.6	3.000	.8	4.500	.2	6.000	.5
.300	.0	1.800	34.6	3.300	.4	4.800	.3	6.300	.1
.600	.0	2.100	16.6	3.600	.3	5.100	.3	6.600	.0
.900	.0	2.400	4.1	3.900	.2	5.400	.4	6.900	.0
1.200	.0	2.700	1.8	4.200	.2	5.700	.5		

RUNOFF VOLUME = .65064 INCHES = 3.5276 ACRE-FEET
PEAK DISCHARGE RATE = 109.48 CFS AT 1.530 HOURS BASIN AREA = .1017 SQ. MI.

```
*S
*--------------------------------------------------------------
*--------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-7
*S  ROUTE FULL FLOW TO PROPOSED STORM DRAIN IN COORS BLVD
*S
*--------------------------------------------------------------
*--------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.015 PIPE DIA 4.00 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	.92	1.78
.42	.69	4.01	2.44
.63	1.25	9.31	2.91
.83	1.90	16.75	3.25
1.04	2.60	26.15	3.51
1.25	3.36	37.31	3.71
1.46	4.15	49.99	3.85
1.67	4.96	63.92	3.94
1.88	5.79	78.79	3.99
2.08	6.62	94.30	4.00
2.29	7.45	110.09	4.00
2.50	8.27	125.79	4.00
2.71	9.06	140.99	4.00
2.92	9.82	155.22	4.00
3.13	10.54	167.95	4.00
3.34	11.20	178.55	4.00
3.54	11.77	186.13	4.00
3.75	12.24	189.24	4.00
4.00	12.57	189.25	4.00

```
COMPUTE TRAVEL TIME ID=75  REACH NO=1 NO VS=1 L=875 FT
                    SLP=0.009
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	.92	.0658
.417	.695	4.01	.0422
.625	1.255	9.31	.0328
.834	1.898	16.75	.0275
1.042	2.604	26.15	.0242
1.251	3.358	37.31	.0219
1.459	4.146	49.99	.0202
1.668	4.960	63.92	.0189
1.876	5.788	78.79	.0179
2.084	6.621	94.30	.0171
2.293	7.451	110.09	.0164
2.501	8.267	125.79	.0160
2.710	9.062	140.99	.0156

2.918	9.823	155.22	.0154
3.127	10.539	167.95	.0153
3.335	11.195	178.55	.0152
3.544	11.773	186.13	.0154
3.752	12.243	189.24	.0157
4.000	12.566	189.25	.0161

ROUTE ID=75 HYD=275.1 IN ID=91 DT=0.0
ADD HYD ID=92 HYD 292.1 ID I 75 ID II 5
PRINT HYD ID=92 CODE=10

PARTIAL HYDROGRAPH 292.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	107.4	3.000	1.0	4.500	.2	6.000	.5
.300	.0	1.800	38.6	3.300	.5	4.800	.3	6.300	.2
.600	.0	2.100	18.8	3.600	.3	5.100	.3	6.600	.0
.900	.0	2.400	4.8	3.900	.2	5.400	.4	6.900	.0
1.200	.0	2.700	2.1	4.200	.2	5.700	.5	7.200	.0

RUNOFF VOLUME = .66047 INCHES = 3.7500 ACRE-FEET
PEAK DISCHARGE RATE = 115.67 CFS AT 1.530 HOURS BASIN AREA = .1065 SQ. MI.

*S
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 21:16:46

100-YEAR

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - VERSION: 1997.02c RUN DATE (MON/DAY/YR) =07/17/1999
INPUT FILE = C:\SUN100.TXT USER NO.= AHYMO-I-9702a0100001A-SH

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION	
										TIME=	.00
START											
*S	COMPUTE 10 YR. 6 HR. Sunshine Country Offsite Requirements										
*S	Sun1007299.TXT - HYMO PER JAN 1993 DPM REVISIONS										
*S											
*S										RAIN6=	2.200
RAINFALL TYPE= 1											
*S											
*S	COMPUTE RUNOFF FOR FULLY DEVELOPED CONDITIONS - PHASE I										
*S											
*S											
*S	BASIN RIO BRAVO SECTOR DEVELOPMENT PLAN PARCEL 7 WEST OF										
*S	THE PROPOSED UNSER BLVD EXTENSION (30.8 ACRES) and										
*S	THE 11.4 ACRES BETWEEN PARCEL 7 AND BLAKE ROAD										
*S											
COMPUTE NM HYD		114.10	-	14	.06594	55.34	1.548	.44014	1.530	1.311 PER IMP=	.00
*S											
*S	BASIN C-1										
COMPUTE NM HYD		101.10	-	1	.01670	38.88	1.346	1.51100	1.500	3.637 PER IMP=	57.00
*S											
*S	BASIN C-2										
COMPUTE NM HYD		102.10	-	2	.02230	51.91	1.797	1.51100	1.500	3.637 PER IMP=	57.00
*S											
*S											
*S	BASIN C-3										
COMPUTE NM HYD		103.10	-	3	.01690	39.34	1.362	1.51100	1.500	3.637 PER IMP=	57.00
*S											
*S											
*S	BASIN C-4										
COMPUTE NM HYD		104.10	-	4	.00100	2.59	.094	1.77184	1.500	4.040 PER IMP=	85.00
*S											
*S											
*S	BASIN C-5										
COMPUTE NM HYD		105.10	-	5	.00480	11.19	.387	1.51100	1.500	3.641 PER IMP=	57.00
*S											
*S											
*S	BASIN A-3A North Portion APS Site										
*s	ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL										
COMPUTE NM HYD		106.10	-	6	.00825	18.66	.647	1.47005	1.500	3.533 PER IMP=	57.00
*S											
*S											
*S	BASIN A-3B South Portion APS Site										
*s	ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL										
COMPUTE NM HYD		107.10	-	7	.00738	16.69	.579	1.47005	1.500	3.534 PER IMP=	57.00
*S											
*S											
*S	BASIN B-1										
COMPUTE NM HYD		108.10	-	8	.01900	44.23	1.531	1.51100	1.500	3.637 PER IMP=	57.00
*S											
*S											
*S	BASIN B-2A										
COMPUTE NM HYD		109.10	-	9	.01690	39.34	1.362	1.51100	1.500	3.637 PER IMP=	57.00
*S											
*S											
*S											
*S	BASIN B-2B										
COMPUTE NM HYD		110.10	-	10	.03160	73.55	2.547	1.51100	1.500	3.637 PER IMP=	57.00
*S											
*S											
*S	BASIN D-1										
COMPUTE NM HYD		111.10	-	11	.00565	8.03	.250	.82984	1.530	2.221 PER IMP=	17.00
*S											
*S											
*S	BASIN D-2										
COMPUTE NM HYD		112.10	-	12	.00284	5.43	.161	1.06243	1.500	2.985 PER IMP=	7.00
*S											
*S											
*S											
*S	BASIN D-3										

100-YR
AHYMO

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
COMPUTE NM HYD	113.10	-	13	.03627	51.48	1.605	.82984	1.530	2.218	PER IMP= 17.00
*S										
*S										
*S----------										
*S BEGIN SIZING STORM DRAIN WEST OF AMOLE DEL NORTE ARROYO										
*S----------										
*S										
*S ANALYSIS POINT AP-1A										
*S ROUTE PARCEL 7 TO AP1 OVERLAND AND COMBINE AT AP-1										
*S										
*S										
ROUTE	259.10	14	59	.06594	37.28	1.548	.44015	1.620	.883	
*S										
ADD HYD	258.10 59& 8		58	.08494	71.74	3.079	.67969	1.560	1.320	
*S										
*S										
*S										
*S ANALYSIS POINT AP-1										
*S ROUTE OFFSITE BASIN B-1 IN STORM DRAIN BLAKE AND COMBINE W/B-2A										
*S										
*S										
ROUTE	260.10	58	60	.08494	71.70	3.079	.67969	1.560	1.319	
*S										
ADD HYD	260.10 60& 9		61	.10184	107.44	4.441	.81764	1.530	1.648	
*S										
*S										
*S										
*S ANALYSIS POINT AP-2										
*S ROUTE OFFSITE COMBINED BASIN B-1, B-2A IN STORM DRAIN IN BLAKE										
*S AND COMBINE W/B-2B										
*S										
*S										
ROUTE	262.10	61	62	.10184	106.89	4.441	.81764	1.560	1.640	
*S										
ADD HYD	263.10 62&10		63	.13344	178.45	6.987	.98183	1.530	2.090	
*S										
*S										
*S										
*S ANALYSIS POINT AP-3										
*S ROUTE OFFSITE COMBINED BASIN B-1, B-2A, B-2B IN STORM DRAIN IN										
*S BLAKE AND COMBINE A-3A AND A-3B										
*S										
*S										
ADD HYD	264.10 6& 7		64	.01563	35.35	1.225	1.47002	1.500	3.534	
*S										
ROUTE	261.10	63	65	.13344	177.01	6.987	.98184	1.530	2.073	
*S										
ADD HYD	266.10 65&64		66	.14907	211.46	8.213	1.03302	1.530	2.216	
*S										
*S										
*S										
*S ANALYSIS POINT AP-4										
*S ROUTE OFFSITE COMBINED IN STORM DRAIN IN BLAKE TO DISCHARGE										
*S POINT AT AMOLE DEL NORTE ARROYO										
*S										
*S										
*S										
ROUTE	267.10	66	67	.14907	210.78	8.213	1.03303	1.530	2.209	
*S										
*S										
*S----------										
*S BEGIN SIZING STORM DRAIN EAST OF AMOLE DEL NORTE ARROYO										
*S----------										
*S										
*S										
*S ANALYSIS POINT AP-5										
*S ROUTE OFFSITE BASIN C-1 IN STORM DRAIN BLAKE AND COMBINE W/C-2										
*S										
*S										
ROUTE	268.10	1	68	.01670	38.60	1.346	1.51101	1.500	3.612	
*S										

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
ADD HYD	260.10	68& 2	69	.03900	90.51	3.143	1.51099	1.500	3.626	
ADD HYD	290.10	69& 4	90	.04000	93.09	3.237	1.51750	1.500	3.636	
*S										
*S										
*S ANALYSIS POINT AP-5A										
*S ROUTE OFFSITE BASIN C-1 AND C-2 IN STORM DRAIN BLAKE										
*S AND COMBINE W/D-1, C-4										
*S										
*S										
ROUTE	268.10	90	70	.04000	92.13	3.237	1.51751	1.500	3.599	
*S										
ADD HYD	271.10	70& 3	71	.05690	131.47	4.599	1.51557	1.500	3.610	
*S										
*S										
*S ANALYSIS POINT AP-6										
*S ROUTE COMBINED C-1, C-2, & D1 TO AND COMBINE WITH D-2 & D-3, C-3										
*S										
*S										
ROUTE	272.10	71	72	.05690	131.74	4.599	1.51557	1.530	3.618	
ADD HYD	273.10	72&12	73	.05974	137.09	4.760	1.49401	1.530	3.586	
ADD HYD	274.10	73&13	74	.09601	188.57	6.365	1.24311	1.530	3.069	
ADD HYD	291.10	74&11	91	.10166	196.60	6.615	1.22015	1.530	3.022	
*S										
*S										
*S ANALYSIS POINT AP-7										
*S ROUTE FULL FLOW TO PROPOSED STORM DRAIN IN COORS BLVD										
*S										
*S										
ROUTE	275.10	91	75	.10166	195.00	6.615	1.22015	1.530	2.997	
ADD HYD	292.10	75& 5	92	.10646	205.88	7.002	1.23326	1.530	3.022	
*S										
FINISH										

```
    AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02c
         RUN DATE (MON/DAY/YR) = 07/17/1999
         START TIME (HR:MIN:SEC) = 21:31:27      USER NO.= AHYMO-I-9702a0100001A-SH
         INPUT FILE = C:\SUN100.TXT

START                TIME=0.0 0 -6
*S     COMPUTE 10 YR. 6 HR. Sunshine Country Offsite Requirements
*S     Sun1007299.TXT     -     HYMO PER JAN 1993 DPM REVISIONS
*S
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
RAINFALL             TYPE=-1  RAIN QUAR=0 RAIN ONE=1.87 RAIN SIX=2.20
                     RAIN DAY=2.66 DT=0.03

               COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
               DT =     .030000 HOURS       END TIME =      6.000000 HOURS
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S COMPUTE RUNOFF FOR FULLY DEVELOPED CONDITIONS - PHASE I
*S
*-----------------------------------------------------------------
*S
*S  BASIN RIO BRAVO SECTOR DEVELOPMENT PLAN PARCEL 7 WEST OF
*S        THE PROPOSED UNSER BLVD EXTENSION (30.8 ACRES) and
*S  THE 11.4 ACRES BETWEEN PARCEL 7 AND BLAKE ROAD
*S
COMPUTE NM HYD       ID=14   HYD NO= 114.1   DA=0.065938 SQ MI
                     PER A=100 PER B=0 PER C=0  PER D=0 TP=-.133
                     RAIN=-1

     K =   .162905HR    TP =   .133000HR    K/TP RATIO =  1.224850     SHAPE CONSTANT, N =  2.906382
     UNIT PEAK =   135.89    CFS   UNIT VOLUME =     .9997       B =   274.10      P60 = 1.8700
     AREA =      .065938 SQ MI    IA =     .65000 INCHES    INF =   1.67000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

PRINT HYD            ID=14 CODE=10

                                PARTIAL HYDROGRAPH   114.10

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     .000        .0          1.200        .0         2.400       2.3         3.600        .2         4.800        .0
     .300        .0          1.500       53.7        2.700       1.2         3.900        .1         5.100        .0
     .600        .0          1.800       14.0        3.000        .7         4.200        .1         5.400        .0
     .900        .0          2.100        4.2        3.300        .4         4.500        .0

    RUNOFF VOLUME =      .44014 INCHES     =       1.5478 ACRE-FEET
    PEAK DISCHARGE RATE =      55.34 CFS  AT   1.530 HOURS   BASIN AREA =   .0659 SQ. MI.


*S
*S  BASIN C-1
COMPUTE NM HYD       ID=1   HYD NO= 101.1   DA=0.0167 SQ MI
                     PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                     RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   37.666    CFS   UNIT VOLUME =     .9996       B =   526.28      P60 = 1.8700
     AREA =      .009519 SQ MI    IA =     .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .111458HR    TP =   .133000HR    K/TP RATIO =   .838033     SHAPE CONSTANT, N =  4.253269
     UNIT PEAK =   20.070    CFS   UNIT VOLUME =     .9995       B =   371.72      P60 = 1.8700
     AREA =      .007181 SQ MI    IA =     .38488 INCHES    INF =    .92767 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD            ID=1 CODE=10

                                PARTIAL HYDROGRAPH   101.10

     TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW          TIME      FLOW
      HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS           HRS       CFS
     .000        .0          1.500       38.9        3.000        .4         4.500        .2         6.000        .2
     .300        .0          1.800       12.9        3.300        .2         4.800        .2         6.300        .0
     .600        .0          2.100        5.7        3.600        .2         5.100        .2         6.600        .0
     .900        .0          2.400        1.5        3.900        .2         5.400        .2         6.900        .0
    1.200        .5          2.700         .7        4.200        .2         5.700        .2

    RUNOFF VOLUME =      1.51100 INCHES     =       1.3458 ACRE-FEET
```

PEAK DISCHARGE RATE = 38.88 CFS AT 1.500 HOURS BASIN AREA = .0167 SQ. MI.

```
*S
*S  BASIN C-2
COMPUTE NM HYD      ID=2   HYD NO= 102.1   DA=0.0223 SQ MI
                    PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                    RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 50.297 CFS UNIT VOLUME = .9996 B = 526.28 P60 = 1.8700
AREA = .012711 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .111458HR TP = .133000HR K/TP RATIO = .838033 SHAPE CONSTANT, N = 4.253269
UNIT PEAK = 26.800 CFS UNIT VOLUME = .9997 B = 371.72 P60 = 1.8700
AREA = .009589 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

```
*S
PRINT HYD           ID=2 CODE=10
```

PARTIAL HYDROGRAPH 102.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	51.9	3.000	.5	4.500	.2	6.000	.3
.300	.0	1.800	17.2	3.300	.3	4.800	.2	6.300	.0
.600	.0	2.100	7.6	3.600	.3	5.100	.2	6.600	.0
.900	.0	2.400	2.0	3.900	.2	5.400	.2	6.900	.0
1.200	.6	2.700	.9	4.200	.2	5.700	.2		

RUNOFF VOLUME = 1.51100 INCHES = 1.7971 ACRE-FEET
PEAK DISCHARGE RATE = 51.91 CFS AT 1.500 HOURS BASIN AREA = .0223 SQ. MI.

```
*S
*S  BASIN C-3
COMPUTE NM HYD      ID=3   HYD NO= 103.1   DA=0.0169 SQ MI
                    PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                    RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 38.117 CFS UNIT VOLUME = .9996 B = 526.28 P60 = 1.8700
AREA = .009633 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .111458HR TP = .133000HR K/TP RATIO = .838033 SHAPE CONSTANT, N = 4.253269
UNIT PEAK = 20.310 CFS UNIT VOLUME = .9995 B = 371.72 P60 = 1.8700
AREA = .007267 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

```
*S
PRINT HYD           ID=3 CODE=10
```

PARTIAL HYDROGRAPH 103.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	39.3	3.000	.4	4.500	.2	6.000	.2
.300	.0	1.800	13.1	3.300	.2	4.800	.2	6.300	.0
.600	.0	2.100	5.7	3.600	.2	5.100	.2	6.600	.0
.900	.0	2.400	1.5	3.900	.2	5.400	.2	6.900	.0
1.200	.5	2.700	.7	4.200	.2	5.700	.2		

RUNOFF VOLUME = 1.51100 INCHES = 1.3619 ACRE-FEET
PEAK DISCHARGE RATE = 39.34 CFS AT 1.500 HOURS BASIN AREA = .0169 SQ. MI.

```
*S
*S - BASIN C-4 -
COMPUTE NM HYD      ID=4   HYD NO= 104.1   DA=0.0010
                    PER A=0 PER B=15 PER C=0  PER D=85 TP=-.133
                    RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 3.3634 CFS UNIT VOLUME = .9962 B = 526.28 P60 = 1.8700
AREA = .000850 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .130697HR TP = .133000HR K/TP RATIO = .982685 SHAPE CONSTANT, N = 3.593454
UNIT PEAK = .36890 CFS UNIT VOLUME = .9634 B = 327.09 P60 = 1.8700
AREA = .000150 SQ MI IA = .50000 INCHES INF = 1.25000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=4 CODE=10

PARTIAL HYDROGRAPH 104.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	2.6	3.000	.0	4.500	.0	6.000	.0
.300	.0	1.800	.9	3.300	.0	4.800	.0	6.300	.0
.600	.0	2.100	.4	3.600	.0	5.100	.0		
.900	.0	2.400	.1	3.900	.0	5.400	.0		
1.200	.0	2.700	.0	4.200	.0	5.700	.0		

RUNOFF VOLUME = 1.77184 INCHES = .0945 ACRE-FEET
PEAK DISCHARGE RATE = 2.59 CFS AT 1.500 HOURS BASIN AREA = .0010 SQ. MI.

*S
*S BASIN C-5
COMPUTE NM HYD ID=5 HYD NO= 105.1 DA=0.0048
PER A=0 PER B=10 PER C=33 PER D=57 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 10.826 CFS UNIT VOLUME = .9988 B = 526.28 P60 = 1.8700
AREA = .002736 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .111458HR TP = .133000HR K/TP RATIO = .838033 SHAPE CONSTANT, N = 4.253269
UNIT PEAK = 5.7686 CFS UNIT VOLUME = .9979 B = 371.72 P60 = 1.8700
AREA = .002064 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=5 CODE=10

PARTIAL HYDROGRAPH 105.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	11.2	3.000	.1	4.500	.0	6.000	.1
.300	.0	1.800	3.7	3.300	.1	4.800	.0	6.300	.0
.600	.0	2.100	1.6	3.600	.1	5.100	.0	6.600	.0
.900	.0	2.400	.4	3.900	.0	5.400	.0		
1.200	.1	2.700	.2	4.200	.0	5.700	.1		

RUNOFF VOLUME = 1.51100 INCHES = .3868 ACRE-FEET
PEAK DISCHARGE RATE = 11.19 CFS AT 1.500 HOURS BASIN AREA = .0048 SQ. MI.

*S
*S BASIN A-3A North Portion APS Site
*s ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL
COMPUTE NM HYD ID=6 HYD NO= 106.1 DA=0.00825
PER A=0 PER B=22 PER C=21 PER D=57 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 18.608 CFS UNIT VOLUME = .9993 B = 526.28 P60 = 1.8700
AREA = .004703 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .118454HR TP = .133000HR K/TP RATIO = .890634 SHAPE CONSTANT, N = 3.981979
UNIT PEAK = 9.4413 CFS UNIT VOLUME = .9988 B = 353.97 P60 = 1.8700
AREA = .003548 SQ MI IA = .42674 INCHES INF = 1.04488 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=6 CODE=10

PARTIAL HYDROGRAPH 106.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS

.000	.0	1.500	18.7	3.000	.2	4.500	.1	6.000	.1
.300	.0	1.800	6.2	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	2.7	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	.7	3.900	.1	5.400	.1		
1.200	.2	2.700	.3	4.200	.1	5.700	.1		

RUNOFF VOLUME = 1.47005 INCHES = .6468 ACRE-FEET
PEAK DISCHARGE RATE = 18.66 CFS AT 1.500 HOURS BASIN AREA = .0083 SQ. MI.

```
*S
*S  BASIN A-3B South Portion APS Site
*s    ASSUME DEVELOPED CONDITION - 6 DU/ACRE RESIDENTIAL
COMPUTE NM HYD      ID=7   HYD NO= 107.1   DA=0.00738
                    PER A=0 PER B=22 PER C=21  PER D=57 TP=-.133
                    RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 16.645 CFS UNIT VOLUME = .9992 B = 526.28 P60 = 1.8700
AREA = .004207 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .118454HR TP = .133000HR K/TP RATIO = .890634 SHAPE CONSTANT, N = 3.981979
UNIT PEAK = 8.4457 CFS UNIT VOLUME = .9986 B = 353.97 P60 = 1.8700
AREA = .003173 SQ MI IA = .42674 INCHES INF = 1.04488 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

```
*S
PRINT HYD           ID=7 CODE=10
```

PARTIAL HYDROGRAPH 107.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	16.7	3.000	.2	4.500	.1	6.000	.1
.300	.0	1.800	5.5	3.300	.1	4.800	.1	6.300	.0
.600	.0	2.100	2.5	3.600	.1	5.100	.1	6.600	.0
.900	.0	2.400	.6	3.900	.1	5.400	.1		
1.200	.2	2.700	.3	4.200	.1	5.700	.1		

RUNOFF VOLUME = 1.47005 INCHES = .5786 ACRE-FEET
PEAK DISCHARGE RATE = 16.69 CFS AT 1.500 HOURS BASIN AREA = .0074 SQ. MI.

```
*S
*S  BASIN B-1
COMPUTE NM HYD      ID=8   HYD NO= 108.1   DA=0.0190 SQ MI
                    PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                    RAIN=-1
```

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 42.854 CFS UNIT VOLUME = .9996 B = 526.28 P60 = 1.8700
AREA = .010830 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .111458HR TP = .133000HR K/TP RATIO = .838033 SHAPE CONSTANT, N = 4.253269
UNIT PEAK = 22.834 CFS UNIT VOLUME = .9997 B = 371.72 P60 = 1.8700
AREA = .008170 SQ MI IA = .38488 INCHES INF = .92767 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

```
*S
PRINT HYD           ID=8 CODE=10
```

PARTIAL HYDROGRAPH 108.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	44.2	3.000	.4	4.500	.2	6.000	.2
.300	.0	1.800	14.7	3.300	.3	4.800	.2	6.300	.0
.600	.0	2.100	6.5	3.600	.2	5.100	.2	6.600	.0
.900	.0	2.400	1.7	3.900	.2	5.400	.2	6.900	.0
1.200	.5	2.700	.8	4.200	.2	5.700	.2		

RUNOFF VOLUME = 1.51100 INCHES = 1.5311 ACRE-FEET
PEAK DISCHARGE RATE = 44.23 CFS AT 1.500 HOURS BASIN AREA = .0190 SQ. MI.

```
*S
*S  BASIN B-2A
```

```
COMPUTE NM HYD       ID=9   HYD NO= 109.1   DA=0.0169 SQ MI
                     PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                     RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   38.117    CFS   UNIT VOLUME =    .9996       B =   526.28      P60 = 1.8700
     AREA =      .009633 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .111458HR    TP =   .133000HR    K/TP RATIO =   .838033     SHAPE CONSTANT, N =  4.253269
     UNIT PEAK =   20.310    CFS   UNIT VOLUME =    .9995       B =   371.72      P60 = 1.8700
     AREA =      .007267 SQ MI    IA =    .38488 INCHES    INF =    .92767 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD            ID=9 CODE=10
```

PARTIAL HYDROGRAPH 109.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	39.3	3.000	.4	4.500	.2	6.000	.2
.300	.0	1.800	13.1	3.300	.2	4.800	.2	6.300	.0
.600	.0	2.100	5.7	3.600	.2	5.100	.2	6.600	.0
.900	.0	2.400	1.5	3.900	.2	5.400	.2	6.900	.0
1.200	.5	2.700	.7	4.200	.2	5.700	.2		

```
     RUNOFF VOLUME =     1.51100 INCHES      =       1.3619 ACRE-FEET
     PEAK DISCHARGE RATE =      39.34 CFS  AT   1.500 HOURS   BASIN AREA =   .0169 SQ. MI.


*S
*S
*S  BASIN B-2B
COMPUTE NM HYD       ID=10   HYD NO= 110.1   DA=0.0316 SQ MI
                     PER A=0 PER B=10 PER C=33  PER D=57 TP=-.133
                     RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   71.273    CFS   UNIT VOLUME =    .9997       B =   526.28      P60 = 1.8700
     AREA =      .018012 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .111458HR    TP =   .133000HR    K/TP RATIO =   .838033     SHAPE CONSTANT, N =  4.253269
     UNIT PEAK =   37.977    CFS   UNIT VOLUME =    .9999       B =   371.72      P60 = 1.8700
     AREA =      .013588 SQ MI    IA =    .38488 INCHES    INF =    .92767 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000

*S
PRINT HYD            ID=10 CODE=10
```

PARTIAL HYDROGRAPH 110.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	73.5	3.000	.7	4.500	.3	6.000	.4
.300	.0	1.800	24.4	3.300	.5	4.800	.3	6.300	.0
.600	.0	2.100	10.7	3.600	.4	5.100	.3	6.600	.0
.900	.0	2.400	2.8	3.900	.3	5.400	.3	6.900	.0
1.200	.9	2.700	1.3	4.200	.3	5.700	.3		

```
     RUNOFF VOLUME =     1.51100 INCHES      =       2.5465 ACRE-FEET
     PEAK DISCHARGE RATE =      73.55 CFS  AT   1.500 HOURS   BASIN AREA =   .0316 SQ. MI.


*S
*S  BASIN D-1
COMPUTE NM HYD       ID=11   HYD NO= 111.1   DA=0.005648 SQ MI
                     PER A=43 PER B=20 PER C=20  PER D=17 TP=-.133
                     RAIN=-1

     K =   .072485HR    TP =   .133000HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.7993    CFS   UNIT VOLUME =    .9967       B =   526.28      P60 = 1.8700
     AREA =      .000960 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .030000


     K =   .141555HR    TP =   .133000HR    K/TP RATIO =  1.064324     SHAPE CONSTANT, N =  3.317999
     UNIT PEAK =   10.814    CFS   UNIT VOLUME =    .9988       B =   306.80      P60 = 1.8700
     AREA =      .004688 SQ MI    IA =    .54157 INCHES    INF =   1.36639 INCHES PER HOUR
```

RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=11 CODE=10

PARTIAL HYDROGRAPH 111.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	8.0	3.000	.1	4.500	.0	6.000	.0
.300	.0	1.800	2.2	3.300	.0	4.800	.0	6.300	.0
.600	.0	2.100	.9	3.600	.0	5.100	.0		
.900	.0	2.400	.3	3.900	.0	5.400	.0		
1.200	.0	2.700	.1	4.200	.0	5.700	.0		

RUNOFF VOLUME = .82984 INCHES = .2500 ACRE-FEET
PEAK DISCHARGE RATE = 8.03 CFS AT 1.530 HOURS BASIN AREA = .0056 SQ. MI.

*S
*S BASIN D-2
COMPUTE NM HYD ID=12 HYD NO= 112.1 DA=0.002841 SQ MI
PER A=0 PER B=0 PER C=93 PER D=7 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = .78692 CFS UNIT VOLUME = .9855 B = 526.28 P60 = 1.8700
AREA = .000199 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .105629HR TP = .133000HR K/TP RATIO = .794199 SHAPE CONSTANT, N = 4.514851
UNIT PEAK = 7.7107 CFS UNIT VOLUME = .9984 B = 388.14 P60 = 1.8700
AREA = .002642 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=12 CODE=10

PARTIAL HYDROGRAPH 112.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	5.4	3.000	.0	4.500	.0	6.000	.0
.300	.0	1.800	1.6	3.300	.0	4.800	.0		
.600	.0	2.100	.5	3.600	.0	5.100	.0		
.900	.0	2.400	.1	3.900	.0	5.400	.0		
1.200	.0	2.700	.1	4.200	.0	5.700	.0		

RUNOFF VOLUME = 1.06243 INCHES = .1610 ACRE-FEET
PEAK DISCHARGE RATE = 5.43 CFS AT 1.500 HOURS BASIN AREA = .0028 SQ. MI.

*S
*S
*S BASIN D-3
COMPUTE NM HYD ID=13 HYD NO= 113.1 DA=0.03627 SQ MI
PER A=43 PER B=20 PER C=20 PER D=17 TP=-.133
RAIN=-1

K = .072485HR TP = .133000HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 24.398 CFS UNIT VOLUME = .9994 B = 526.28 P60 = 1.8700
AREA = .006166 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

K = .141555HR TP = .133000HR K/TP RATIO = 1.064324 SHAPE CONSTANT, N = 3.317999
UNIT PEAK = 69.443 CFS UNIT VOLUME = .9999 B = 306.80 P60 = 1.8700
AREA = .030104 SQ MI IA = .54157 INCHES INF = 1.36639 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .030000

*S
PRINT HYD ID=13 CODE=10

PARTIAL HYDROGRAPH 113.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	51.5	3.000	.5	4.500	.1	6.000	.1
.300	.0	1.800	14.4	3.300	.3	4.800	.1	6.300	.0
.600	.0	2.100	5.5	3.600	.2	5.100	.1	6.600	.0
.900	.0	2.400	1.9	3.900	.1	5.400	.1		

1.200	.3	2.700	.9	4.200	.1	5.700	.1

RUNOFF VOLUME = .82984 INCHES = 1.6052 ACRE-FEET
PEAK DISCHARGE RATE = 51.48 CFS AT 1.530 HOURS BASIN AREA = .0363 SQ. MI.

```
*S
*S--------------------------------------------------------------
*S  BEGIN SIZING STORM DRAIN-WEST-OF-AMOLE DEL NORTE ARROYO
*S--------------------------------------------------------------
*--------------------------------------------------------------
*--------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-1A
*S  ROUTE PARCEL 7 TO AP1 OVERLAND AND COMBINE AT AP-1
*S
*--------------------------------------------------------------
*--------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=1 NO SEGS=1
                      MIN ELEV 100 MAX ELEV 102.5
                      CH SLP = 0.02  FP SLP = 0.02 N=0.045
                      DIST 200
                      DIST   ELEV    DIST ELEV   DIST ELEV
                      0      102.5     40  100   160   100
                      200    102.5
```

RATING CURVE VALLEY SECTION 1.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	TOP WIDTH FT
100.00	.00	.00	120.00
100.13	16.07	19.19	124.21
100.26	32.69	61.30	128.42
100.39	49.86	121.27	132.63
100.53	67.59	197.19	136.84
100.66	85.87	288.00	141.05
100.79	104.71	393.02	145.26
100.92	124.10	511.80	149.47
101.05	144.04	644.06	153.68
101.18	164.54	789.57	157.89
101.32	185.59	948.22	162.10
101.45	207.20	1119.92	166.31
101.58	229.36	1304.62	170.53
101.71	252.07	1502.33	174.74
101.84	275.34	1713.05	178.95
101.97	299.16	1936.82	183.16
102.11	323.54	2173.70	187.37
102.24	348.47	2423.75	191.58
102.37	373.95	2687.04	195.79
102.50	399.99	2963.66	200.00

```
COMPUTE TRAVEL TIME ID=59  REACH NO=1 NO VS=1 L=750 FT
                    SLP=0.020
```

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.132	16.066	19.19	.1744
.263	32.686	61.30	.1111
.395	49.861	121.27	.0857
.526	67.589	197.19	.0714
.658	85.871	288.00	.0621
.789	104.707	393.02	.0555
.921	124.097	511.80	.0505
1.053	144.041	644.06	.0466
1.184	164.540	789.57	.0434
1.316	185.592	948.22	.0408
1.447	207.198	1119.92	.0385
1.579	229.358	1304.62	.0366
1.710	252.072	1502.33	.0350
1.842	275.340	1713.05	.0335
1.974	299.162	1936.82	.0322
2.105	323.538	2173.70	.0310
2.237	348.469	2423.75	.0300
2.368	373.953	2687.04	.0290
2.500	399.991	2963.66	.0281

```
ROUTE          ID=59 HYD=259.1 IN ID=14 DT=0.0
PRINT HYD      ID=59 CODE=10
```

PARTIAL HYDROGRAPH 259.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.200	.0	2.400	4.0	3.600	.3	4.800	.0
.300	.0	1.500	19.8	2.700	2.0	3.900	.2	5.100	.0
.600	.0	1.800	24.7	3.000	1.0	4.200	.1	5.400	.0
.900	.0	2.100	9.2	3.300	.6	4.500	.0	5.700	.0

RUNOFF VOLUME = .44015 INCHES = 1.5479 ACRE-FEET
PEAK DISCHARGE RATE = 37.28 CFS AT 1.620 HOURS BASIN AREA = .0659 SQ. MI.

*S
ADD HYD ID=58 HYD NO=258.1 ID=59 ID=8
PRINT HYD ID=58 CODE 10

PARTIAL HYDROGRAPH 258.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	64.0	3.000	1.5	4.500	.2	6.000	.2
.300	.0	1.800	39.4	3.300	.8	4.800	.2	6.300	.0
.600	.0	2.100	15.6	3.600	.5	5.100	.2	6.600	.0
.900	.0	2.400	5.7	3.900	.3	5.400	.2	6.900	.0
1.200	.5	2.700	2.7	4.200	.3	5.700	.2		

RUNOFF VOLUME = .67969 INCHES = 3.0790 ACRE-FEET
PEAK DISCHARGE RATE = 71.74 CFS AT 1.560 HOURS BASIN AREA = .0849 SQ. MI.

*S
*S
*----------
*----------
*S
*S ANALYSIS POINT AP-1
*S ROUTE OFFSITE BASIN B-1 IN STORM DRAIN BLAKE AND COMBINE W/B-2A
*S
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*S
COMPUTE RATING CURVE CID=1 VS NO=11 NO SEGS=-1
PIPE SLOPE 0.018 PIPE DIA 3.0 N 0.013

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.16	.14	.47	1.33
.31	.39	2.04	1.83
.47	.71	4.74	2.18
.63	1.07	8.52	2.44
.78	1.46	13.30	2.63
.94	1.89	18.98	2.78
1.09	2.33	25.43	2.89
1.25	2.79	32.51	2.96
1.41	3.26	40.08	2.99
1.56	3.72	47.97	3.00
1.72	4.19	56.00	3.00
1.88	4.65	63.98	3.00
2.03	5.10	71.71	3.00
2.19	5.53	78.95	3.00
2.35	5.93	85.43	3.00
2.50	6.30	90.82	3.00
2.66	6.62	94.68	3.00
2.81	6.89	96.26	3.00
3.00	7.07	96.26	3.00

COMPUTE TRAVEL TIME ID=60 REACH NO=1 NO VS=1 L=450 FT
SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.47	.0374
.313	.391	2.04	.0240
.469	.706	4.74	.0186
.625	1.068	8.52	.0157
.782	1.465	13.30	.0138
.938	1.889	18.98	.0124

1.094	2.332	25.43	.0115
1.251	2.790	32.51	.0107
1.407	3.255	40.08	.0102
1.563	3.724	47.97	.0097
1.720	4.191	56.00	.0094
1.876	4.650	63.98	.0091
2.032	5.097	71.71	.0089
2.189	5.525	78.95	.0087
2.345	5.928	85.43	.0087
2.501	6.297	90.82	.0087
2.658	6.622	94.68	.0087
2.814	6.887	96.26	.0089
3.000	7.069	96.26	.0092

ROUTE ID=60 HYD=260.1 IN ID=58 DT=0.0
PRINT HYD ID=60 CODE=10

PARTIAL HYDROGRAPH 260.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	61.8	3.000	1.5	4.500	.2	6.000	.2
.300	.0	1.800	40.3	3.300	.9	4.800	.2	6.300	.0
.600	.0	2.100	16.2	3.600	.5	5.100	.2	6.600	.0
.900	.0	2.400	5.8	3.900	.4	5.400	.2	6.900	.0
1.200	.2	2.700	2.8	4.200	.3	5.700	.2		

RUNOFF VOLUME = .67969 INCHES = 3.0790 ACRE-FEET
PEAK DISCHARGE RATE = 71.70 CFS AT 1.560 HOURS BASIN AREA = .0849 SQ. MI.

*S
ADD HYD ID=61 HYD NO=260.1 ID=60 ID=9
PRINT HYD ID=61 CODE 10

PARTIAL HYDROGRAPH 260.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	101.1	3.000	1.9	4.500	.4	6.000	.4
.300	.0	1.800	53.3	3.300	1.1	4.800	.4	6.300	.1
.600	.0	2.100	21.9	3.600	.7	5.100	.4	6.600	.0
.900	.0	2.400	7.3	3.900	.5	5.400	.4	6.900	.0
1.200	.7	2.700	3.5	4.200	.4	5.700	.4		

RUNOFF VOLUME = .81764 INCHES = 4.4409 ACRE-FEET
PEAK DISCHARGE RATE = 107.44 CFS AT 1.530 HOURS BASIN AREA = .1018 SQ. MI.

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*S
*S ANALYSIS POINT AP-2
*S ROUTE OFFSITE COMBINED BASIN B-1, B-2A IN STORM DRAIN IN BLAKE
*S AND COMBINE W/B-2B
*S
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*----------
*S
COMPUTE RATING CURVE CID=1 VS NO=11 NO SEGS=-1
PIPE SLOPE 0.018 PIPE DIA 3.5 N 0.013

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.18	.19	.71	1.56
.36	.53	3.07	2.14
.55	.96	7.15	2.54
.73	1.45	12.85	2.84
.91	1.99	20.07	3.07
1.09	2.57	28.63	3.25
1.28	3.17	38.36	3.37
1.46	3.80	49.04	3.45
1.64	4.43	60.46	3.49
1.82	5.07	72.35	3.50
2.01	5.70	84.47	3.50
2.19	6.33	96.51	3.50
2.37	6.94	108.17	3.50
2.55	7.52	119.09	3.50

2.74	8.07	128.86	3.50
2.92	8.57	136.99	3.50
3.10	9.01	142.81	3.50
3.28	9.37	145.20	3.50
3.50	9.62	145.20	3.50

COMPUTE TRAVEL TIME ID=61 REACH NO=1 NO VS=1 L=450 FT
SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.182	.191	.71	.0338
.365	.532	3.07	.0216
.547	.961	7.15	.0168
.730	1.453	12.85	.0141
.912	1.994	20.07	.0124
1.094	2.571	28.63	.0112
1.277	3.175	38.36	.0103
1.459	3.797	49.04	.0097
1.641	4.431	60.46	.0092
1.824	5.069	72.35	.0088
2.006	5.704	84.47	.0084
2.189	6.330	96.51	.0082
2.371	6.938	108.17	.0080
2.553	7.520	119.09	.0079
2.736	8.069	128.86	.0078
2.918	8.571	136.99	.0078
3.101	9.014	142.81	.0079
3.283	9.374	145.20	.0081
3.500	9.621	145.20	.0083

ROUTE ID=62 HYD=262.1 IN ID=61 DT=0.0
*S
ADD HYD ID=63 HYD NO=263.1 ID=62 ID=10
*S
*S
PRINT HYD ID=63 CODE 10

PARTIAL HYDROGRAPH 263.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	172.1	3.000	2.6	4.500	.7	6.000	.8
.300	.0	1.800	78.8	3.300	1.6	4.800	.7	6.300	.1
.600	.0	2.100	33.5	3.600	1.1	5.100	.7	6.600	.0
.900	.0	2.400	10.4	3.900	.9	5.400	.7	6.900	.0
1.200	1.1	2.700	4.9	4.200	.7	5.700	.7		

RUNOFF VOLUME = .98183 INCHES = 6.9874 ACRE-FEET
PEAK DISCHARGE RATE = 178.45 CFS AT 1.530 HOURS BASIN AREA = .1334 SQ. MI.

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*S
*S ANALYSIS POINT AP-3
*S ROUTE OFFSITE COMBINED BASIN B-1, B-2A, B-2B IN STORM DRAIN IN
*S BLAKE AND COMBINE A-3A AND A-3B
*S
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*----------
*S
ADD HYD ID=64 HYD NO 264.1 ID=6 ID=7
PRINT HYD ID=64 CODE 10

PARTIAL HYDROGRAPH 264.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	35.3	3.000	.3	4.500	.1	6.000	.2
.300	.0	1.800	11.7	3.300	.2	4.800	.1	6.300	.0
.600	.0	2.100	5.2	3.600	.2	5.100	.2	6.600	.0
.900	.0	2.400	1.4	3.900	.2	5.400	.2		
1.200	.4	2.700	.6	4.200	.1	5.700	.2		

RUNOFF VOLUME = 1.47002 INCHES = 1.2254 ACRE-FEET
PEAK DISCHARGE RATE = 35.35 CFS AT 1.500 HOURS BASIN AREA = .0156 SQ. MI.

*S

COMPUTE RATING CURVE CID=1 VS NO=11 NO SEGS=-1
PIPE SLOPE 0.018 PIPE DIA 4.0 N 0.013

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	1.01	1.78
.42	.69	4.39	2.44
.63	1.25	10.20	2.91
.83	1.90	18.35	3.25
1.04	2.60	28.65	3.51
1.25	3.36	40.88	3.71
1.46	4.15	54.76	3.85
1.67	4.96	70.02	3.94
1.88	5.79	86.31	3.99
2.08	6.62	103.30	4.00
2.29	7.45	120.60	4.00
2.50	8.27	137.80	4.00
2.71	9.06	154.44	4.00
2.92	9.82	170.03	4.00
3.13	10.54	183.98	4.00
3.34	11.20	195.59	4.00
3.54	11.77	203.89	4.00
3.75	12.24	207.31	4.00
4.00	12.57	207.31	4.00

COMPUTE TRAVEL TIME ID=65 REACH NO=1 NO VS=1 L=850 FT
SLP=0.018

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	1.01	.0583
.417	.695	4.39	.0374
.625	1.255	10.20	.0290
.834	1.898	18.35	.0244
1.042	2.604	28.65	.0215
1.251	3.358	40.88	.0194
1.459	4.146	54.76	.0179
1.668	4.960	70.02	.0167
1.876	5.788	86.31	.0158
2.084	6.621	103.30	.0151
2.293	7.451	120.60	.0146
2.501	8.267	137.80	.0142
2.710	9.062	154.44	.0139
2.918	9.823	170.03	.0136
3.127	10.539	183.98	.0135
3.335	11.195	195.59	.0135
3.544	11.773	203.89	.0136
3.752	12.243	207.31	.0139
4.000	12.566	207.31	.0143

ROUTE ID=65 HYD=261.1 IN ID=63 DT=0.0
*S
ADD HYD ID=66 HYD NO=266.1 ID=65 ID=64
*S
*S
PRINT HYD ID=66 CODE 10

PARTIAL HYDROGRAPH 266.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	199.8	3.000	3.1	4.500	.8	6.000	1.0
.300	.0	1.800	93.1	3.300	1.9	4.800	.8	6.300	.3
.600	.0	2.100	40.7	3.600	1.3	5.100	.8	6.600	.0
.900	.0	2.400	12.4	3.900	1.0	5.400	.9	6.900	.0
1.200	.7	2.700	5.9	4.200	.9	5.700	.9	7.200	.0

RUNOFF VOLUME = 1.03302 INCHES = 8.2128 ACRE-FEET
PEAK DISCHARGE RATE = 211.46 CFS AT 1.530 HOURS BASIN AREA = .1491 SQ. MI.

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*S
*S ANALYSIS POINT AP-4
*S ROUTE OFFSITE COMBINED IN STORM DRAIN IN BLAKE TO DISCHARGE
*S POINT AT AMOLE DEL NORTE ARROYO

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*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.018 PIPE DIA 4.0 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	1.01	1.78
.42	.69	4.39	2.44
.63	1.25	10.20	2.91
.83	1.90	18.35	3.25
1.04	2.60	28.65	3.51
1.25	3.36	40.88	3.71
1.46	4.15	54.76	3.85
1.67	4.96	70.02	3.94
1.88	5.79	86.31	3.99
2.08	6.62	103.30	4.00
2.29	7.45	120.60	4.00
2.50	8.27	137.80	4.00
2.71	9.06	154.44	4.00
2.92	9.82	170.03	4.00
3.13	10.54	183.98	4.00
3.34	11.20	195.59	4.00
3.54	11.77	203.89	4.00
3.75	12.24	207.31	4.00
4.00	12.57	207.31	4.00

```
COMPUTE TRAVEL TIME ID=67  REACH NO=1 NO VS=1 L=225 FT
                    SLP=0.018
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.208	.250	1.01	.0154
.417	.695	4.39	.0099
.625	1.255	10.20	.0077
.834	1.898	18.35	.0065
1.042	2.604	28.65	.0057
1.251	3.358	40.88	.0051
1.459	4.146	54.76	.0047
1.668	4.960	70.02	.0044
1.876	5.788	86.31	.0042
2.084	6.621	103.30	.0040
2.293	7.451	120.60	.0039
2.501	8.267	137.80	.0037
2.710	9.062	154.44	.0037
2.918	9.823	170.03	.0036
3.127	10.539	183.98	.0036
3.335	11.195	195.59	.0036
3.544	11.773	203.89	.0036
3.752	12.243	207.31	.0037
4.000	12.566	207.31	.0038

```
    ROUTE               ID=67 HYD=267.1 IN ID=66 DT=0.0
TRAVEL TIME TABLE EXCEEDED
    PRINT HYD           ID=67 CODE=10
```

PARTIAL HYDROGRAPH 267.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	197.3	3.000	3.1	4.500	.8	6.000	1.0
.300	.0	1.800	93.9	3.300	2.0	4.800	.8	6.300	.3
.600	.0	2.100	41.4	3.600	1.4	5.100	.8	6.600	.1
.900	.0	2.400	12.5	3.900	1.1	5.400	.9	6.900	.0
1.200	.4	2.700	6.0	4.200	.9	5.700	.9	7.200	.0

RUNOFF VOLUME = 1.03303 INCHES = 8.2128 ACRE-FEET
PEAK DISCHARGE RATE = 210.78 CFS AT 1.530 HOURS BASIN AREA = .1491 SQ. MI.

Q = 211 cfs

SLIGHT Pressure flow

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*S
*S
*S-----------------------------------------------------------------
*S   BEGIN SIZING STORM DRAIN EAST OF AMOLE DEL NORTE ARROYO
*S-----------------------------------------------------------------
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*S
*------------------------------------------------------------------
*------------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-5
*S  ROUTE OFFSITE BASIN C-1 IN STORM DRAIN BLAKE AND COMBINE W/C-2
*S
*------------------------------------------------------------------
*------------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.018 PIPE DIA 2.25 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.12	.08	.22	1.00
.23	.22	.95	1.37
.35	.40	2.20	1.63
.47	.60	3.96	1.83
.59	.82	6.18	1.98
.70	1.06	8.81	2.09
.82	1.31	11.81	2.17
.94	1.57	15.10	2.22
1.06	1.83	18.61	2.25
1.17	2.09	22.27	2.25
1.29	2.36	26.00	2.25
1.41	2.62	29.71	2.25
1.52	2.87	33.30	2.25
1.64	3.11	36.66	2.25
1.76	3.33	39.67	2.25
1.88	3.54	42.17	2.25
1.99	3.72	43.96	2.25
2.11	3.87	44.70	2.25
2.25	3.98	44.70	2.25

```
COMPUTE TRAVEL TIME ID=68  REACH NO=1 NO VS=1 L=265 FT
                    SLP=0.018
```

TRAVEL TIME TABLE

REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.117	.079	.22	.0267
.235	.220	.95	.0171
.352	.397	2.20	.0133
.469	.601	3.96	.0112
.586	.824	6.18	.0098
.704	1.062	8.81	.0089
.821	1.312	11.81	.0082
.938	1.569	15.10	.0077
1.055	1.831	18.61	.0072
1.173	2.095	22.27	.0069
1.290	2.357	26.00	.0067
1.407	2.616	29.71	.0065
1.524	2.867	33.30	.0063
1.641	3.108	36.66	.0062
1.759	3.334	39.67	.0062
1.876	3.542	42.17	.0062
1.993	3.725	43.96	.0062
2.111	3.874	44.70	.0064
2.250	3.976	44.70	.0065

```
ROUTE                ID=68 HYD=268.1 IN ID=1 DT=0.0
PRINT HYD            ID=68 CODE=10
```

PARTIAL HYDROGRAPH 268.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	38.6	3.000	.4	4.500	.2	6.000	.2
.300	.0	1.800	13.1	3.300	.2	4.800	.2	6.300	.0
.600	.0	2.100	5.9	3.600	.2	5.100	.2	6.600	.0
.900	.0	2.400	1.5	3.900	.2	5.400	.2	6.900	.0
1.200	.2	2.700	.7	4.200	.2	5.700	.2		

RUNOFF VOLUME = 1.51101 INCHES = 1.3458 ACRE-FEET
PEAK DISCHARGE RATE = 38.60 CFS AT 1.500 HOURS BASIN AREA = .0167 SQ. MI.

*S

```
ADD HYD          ID=69  HYD NO=260.1 ID=68  ID=2
ADD HYD          ID=90  HYD NO=290.1 ID=69  ID=4
PRINT HYD        ID=90 CODE 10
```

PARTIAL HYDROGRAPH 290.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	93.1	3.000	.9	4.500	.4	6.000	.5
.300	.0	1.800	31.3	3.300	.6	4.800	.4	6.300	.1
.600	.0	2.100	13.9	3.600	.5	5.100	.4	6.600	.0
.900	.0	2.400	3.6	3.900	.4	5.400	.4	6.900	.0
1.200	.9	2.700	1.6	4.200	.4	5.700	.4		

RUNOFF VOLUME = 1.51750 INCHES = 3.2373 ACRE-FEET
PEAK DISCHARGE RATE = 93.09 CFS AT 1.500 HOURS BASIN AREA = .0400 SQ. MI.

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*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-5A
*S  ROUTE OFFSITE BASIN C-1 AND C-2 IN STORM DRAIN BLAKE
*S  AND COMBINE W/D-1, C-4
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.018 PIPE DIA 3.00 N 0.013
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RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.16	.14	.47	1.33
.31	.39	2.04	1.83
.47	.71	4.74	2.18
.63	1.07	8.52	2.44
.78	1.46	13.30	2.63
.94	1.89	18.98	2.78
1.09	2.33	25.43	2.89
1.25	2.79	32.51	2.96
1.41	3.26	40.08	2.99
1.56	3.72	47.97	3.00
1.72	4.19	56.00	3.00
1.88	4.65	63.98	3.00
2.03	5.10	71.71	3.00
2.19	5.53	78.95	3.00
2.35	5.93	85.43	3.00
2.50	6.30	90.82	3.00
2.66	6.62	94.68	3.00
2.81	6.89	96.26	3.00
3.00	7.07	96.26	3.00

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COMPUTE TRAVEL TIME ID=70  REACH NO=1 NO VS=1 L=310 FT
                    SLP=0.018
```

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS
.156	.140	.47	.0258
.313	.391	2.04	.0165
.469	.706	4.74	.0128
.625	1.068	8.52	.0108
.782	1.465	13.30	.0095
.938	1.889	18.98	.0086
1.094	2.332	25.43	.0079
1.251	2.790	32.51	.0074
1.407	3.255	40.08	.0070
1.563	3.724	47.97	.0067
1.720	4.191	56.00	.0064
1.876	4.650	63.98	.0063
2.032	5.097	71.71	.0061
2.189	5.525	78.95	.0060
2.345	5.928	85.43	.0060
2.501	6.297	90.82	.0060
2.658	6.622	94.68	.0060
2.814	6.887	96.26	.0062

```
                                3.000        7.069        96.26        .0063
ROUTE                ID=70 HYD=268.1 IN ID=90 DT=0.0
PRINT HYD            ID=70 CODE=10
```

PARTIAL HYDROGRAPH 268.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	92.1	3.000	.9	4.500	.4	6.000	.5
.300	.0	1.800	31.7	3.300	.6	4.800	.4	6.300	.1
.600	.0	2.100	14.4	3.600	.5	5.100	.4	6.600	.0
.900	.0	2.400	3.7	3.900	.4	5.400	.4	6.900	.0
1.200	.4	2.700	1.7	4.200	.4	5.700	.4		

RUNOFF VOLUME = 1.51751 INCHES = 3.2373 ACRE-FEET
PEAK DISCHARGE RATE = 92.13 CFS AT 1.500 HOURS BASIN AREA = .0400 SQ. MI.

```
*S
ADD HYD              ID=71 HYD NO=271.1 ID=70  ID=3
PRINT HYD            ID=71 CODE 10
```

PARTIAL HYDROGRAPH 271.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	131.5	3.000	1.3	4.500	.5	6.000	.7
.300	.0	1.800	44.8	3.300	.8	4.800	.5	6.300	.1
.600	.0	2.100	20.2	3.600	.6	5.100	.6	6.600	.0
.900	.0	2.400	5.2	3.900	.6	5.400	.6	6.900	.0
1.200	.9	2.700	2.3	4.200	.5	5.700	.6		

RUNOFF VOLUME = 1.51557 INCHES = 4.5992 ACRE-FEET
PEAK DISCHARGE RATE = 131.47 CFS AT 1.500 HOURS BASIN AREA = .0569 SQ. MI.

```
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-6
*S  ROUTE COMBINED C-1, C-2, & D1 TO AND COMBINE WITH D-2 & D-3, C-3
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                     PIPE SLOPE 0.021 PIPE DIA 3.50 N 0.013
```

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.18	.19	.76	1.56
.36	.53	3.32	2.14
.55	.96	7.72	2.54
.73	1.45	13.88	2.84
.91	1.99	21.67	3.07
1.09	2.57	30.92	3.25
1.28	3.17	41.43	3.37
1.46	3.80	52.97	3.45
1.64	4.43	65.30	3.49
1.82	5.07	78.15	3.50
2.01	5.70	91.24	3.50
2.19	6.33	104.25	3.50
2.37	6.94	116.84	3.50
2.55	7.52	128.63	3.50
2.74	8.07	139.19	3.50
2.92	8.57	147.97	3.50
3.10	9.01	154.25	3.50
3.28	9.37	156.84	3.50
3.50	9.62	156.84	3.50

```
COMPUTE TRAVEL TIME ID=72  REACH NO=1 NO VS=1 L=640 FT
                    SLP=0.021
```

TRAVEL TIME TABLE
REACH= 1.0

WATER DEPTH FEET	AVERAGE AREA SQ.FT.	FLOW RATE CFS	TRAVEL TIME HRS

	.182	.191	.76	.0445
	.365	.532	3.32	.0285
	.547	.961	7.72	.0221
	.730	1.453	13.88	.0186
	.912	1.994	21.67	.0164
	1.094	2.571	30.92	.0148
	1.277	3.175	41.43	.0136
	1.459	3.797	52.97	.0127
	1.641	4.431	65.30	.0121
	1.824	5.069	78.15	.0115
	2.006	5.704	91.24	.0111
	2.189	6.330	104.25	.0108
	2.371	6.938	116.84	.0106
	2.553	7.520	128.63	.0104
	2.736	8.069	139.19	.0103
	2.918	8.571	147.97	.0103
	3.101	9.014	154.25	.0104
	3.283	9.374	156.84	.0106
	3.500	9.621	156.84	.0109

```
ROUTE       ID=72 HYD=272.1 IN ID=71-DT=0.0
ADD HYD     ID=73 HYD 273.1 ID I 72 ID II 12
ADD HYD     ID=74 HYD 274.1 ID I 73  ID II 13
PRINT HYD   ID=91 HYD 291.1 ID I 74 ID 11 3
            ID=91 CODE=10
```

PARTIAL HYDROGRAPH 291.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	193.8	3.000	2.0	4.500	.7	6.000	.8
.300	.0	1.800	64.2	3.300	1.2	4.800	.7	6.300	.2
.600	.0	2.100	28.2	3.600	.9	5.100	.7	6.600	.0
.900	.0	2.400	7.8	3.900	.7	5.400	.7	6.900	.0
1.200	.6	2.700	3.6	4.200	.7	5.700	.8		

RUNOFF VOLUME = 1.22015 INCHES = 6.6154 ACRE-FEET
PEAK DISCHARGE RATE = 196.60 CFS AT 1.530 HOURS BASIN AREA = .1017 SQ. MI.

```
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
*S  ANALYSIS POINT AP-7
*S  ROUTE FULL FLOW TO PROPOSED STORM DRAIN IN COORS BLVD
*S
*-----------------------------------------------------------------
*-----------------------------------------------------------------
*S
COMPUTE RATING CURVE  CID=1  VS NO=11 NO SEGS=-1
                      PIPE SLOPE 0.015 PIPE DIA 4.00 N 0.013
```

SLIGHT PRESSURE FLOW

RATING CURVE PIPE SECTION 11.0

WATER SURFACE ELEV	FLOW AREA SQ FT	FLOW RATE CFS	MAX WIDTH FT
.00	.00	.00	.00
.21	.25	.92	1.78
.42	.69	4.01	2.44
.63	1.25	9.31	2.91
.83	1.90	16.75	3.25
1.04	2.60	26.15	3.51
1.25	3.36	37.31	3.71
1.46	4.15	49.99	3.85
1.67	4.96	63.92	3.94
1.88	5.79	78.79	3.99
2.08	6.62	94.30	4.00
2.29	7.45	110.09	4.00
2.50	8.27	125.79	4.00
2.71	9.06	140.99	4.00
2.92	9.82	155.22	4.00
3.13	10.54	167.95	4.00
3.34	11.20	178.55	4.00
3.54	11.77	186.13	4.00
3.75	12.24	189.24	4.00
4.00	12.57	189.25	4.00

```
COMPUTE TRAVEL TIME ID=75  REACH NO=1 NO VS=1 L=875 FT
                    SLP=0.009
```

TRAVEL TIME TABLE

REACH= 1.0

WATER	AVERAGE	FLOW	TRAVEL

DEPTH FEET	AREA SQ.FT.	RATE CFS	TIME HRS
.208	.250	.92	.0658
.417	.695	4.01	.0422
.625	1.255	9.31	.0328
.834	1.898	16.75	.0275
1.042	2.604	26.15	.0242
1.251	3.358	37.31	.0219
1.459	4.146	49.99	.0202
1.668	4.960	63.92	.0189
1.876	5.788	78.79	.0179
2.084	6.621	94.30	.0171
2.293	7.451	110.09	.0164
2.501	8.267	125.79	.0160
2.710	9.062	140.99	.0156
2.918	9.823	155.22	.0154
3.127	10.539	167.95	.0153
3.335	11.195	178.55	.0152
3.544	11.773	186.13	.0154
3.752	12.243	189.24	.0157
4.000	12.566	189.25	.0161

ROUTE ID=75 HYD=275.1 IN ID=91 DT=0.0
TRAVEL TIME TABLE EXCEEDED
ADD HYD ID=92 HYD 292.1 ID I 75 ID II 5
PRINT HYD ID=92 CODE=10

PARTIAL HYDROGRAPH 292.10

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.500	193.2	3.000	2.2	4.500	.7	6.000	.9
.300	.0	1.800	71.0	3.300	1.4	4.800	.7	6.300	.4
.600	.0	2.100	31.7	3.600	1.0	5.100	.7	6.600	.1
.900	.0	2.400	8.7	3.900	.8	5.400	.8	6.900	.0
1.200	.3	2.700	4.0	4.200	.7	5.700	.8	7.200	.0

RUNOFF VOLUME = 1.23326 INCHES = 7.0022 ACRE-FEET
PEAK DISCHARGE RATE = 205.88 CFS AT 1.530 HOURS BASIN AREA = .1065 SQ. MI.

*S
FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 21:31:28

PROPOSED TEMPORARY DRAINAGE FACILITIES

SUNSHINE COUNTRY MOBILE HOME PARK
PHASE II

INTERIM CONDITION STORM DRAIN

PROBLEM: EXISTING RUNOFF FROM ALL DRAINAGE BASINS WEST OF THE ARROYO del NORTE ARROYO CONVERGE AT A POINT WEST OF THE ENTRANCE ROAD TO THE MOBILE HOME PARK PHASE II. SOME RUNOFF IS CONVEYED TO THE ARROYO VIA A 24" CULVERT ON THE NORTH SIDE OF BLAKE ROAD. THE REMAINING RUNOFF MUST BE INTERCEPTED WEST OF THE ENTRANCE ROAD AND CONVEYED SAFELY TO THE ARROYO.

ASSUMPTIONS:- UNSER BLVD MAY NOT BE CONSTRUCTED FOR SEVERAL YEARS. THEREFORE, PARCEL 7 (WEST OF THE PROPOSED UNSER ROW) NEEDS TO BE INCLUDED.
- PARCEL 7 AS DESCRIBED ABOVE WILL BE CONSIDERED UNDEVELOPED. IF PARCEL 7 DEVELOPS, SOME FORM OF STORM DRAIN WILL BE CONSTRUC-

ED TO HANDLE THE DEVELOPED FLOW.

- SINCE ONLY 1 PARCEL IS NOT WITHIN THE CITY LIMITS, IT WILL BE CONSIDERED DEVELOPED.
- ALL OTHER PARCELS WILL BE CONSIDERED IN THEIR EXISTING CONDITION. IF THEY DEVELOP, THE PROPOSED STORM DRAIN WILL REQUIRE EXTENSION.

RUNOFF TOTAL: CONSERVATIVE 100-YR

PARCEL 1+ - Q_{100} = 55.34 UNDEVELOPED
BASIN B-1 - Q_{100} = 15.92 UNDEVELOPED
BASIN B-2A - Q_{100} = 39.34 DEVELOPED
BASIN B-2B - Q_{100} = 26.48 UNDEVELOPED
TOTAL Q_{100} = 137.1 cfs (NON-ROUTED)

PROVIDE 8' DIAMETER MANHOLE WITH A BAR GRATE (SIMILAR TO THE ONES USED AT CORONADO & ELBANK IN NORTH ALBUQUERQUE ACRES)

WEIR - $137.1 = 2.5 * \pi(8') * h^{3/2}$

$h = 1.68'$

MANHOLE RIM @ 5001.10 SHEET G2

HIGH WATER = 5001.10 + 1.68 = 5002.68

TOP OF POND = 5003 SHEET G2

BOTTOM OF POND = 5001.00 TO PROVIDE SOME SEDIMENT CONTROL

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

November 29, 2000

Larry D. Read, PE
Larry Read & Associates
12836-B Lomas NE
Albuquerque, NM 87112

Re: Sunshine Country Mobile Home Park Phase 2 Drainage Report
Engineer's Stamp dated 11-5-00 (N10/D04)

Dear Mr. Read,

Based upon the information provided in your submittal dated 11-7-00, the above referenced site is approved for Site Plan for Building Purposes and Building Permit action by the Development Review Board.

If you have any questions, please contact me at 924-3986.

Sincerely,

Bradley L. Bingham

Bradley L. Bingham, PE
Sr. Engineer, Hydrology

C: file

THE CITY OF ALBUQUERQUE IS AN EQUAL OPPORTUNITY/REASONABLE ACCOMMODATION EMPLOYER

DRAINAGE REPORT

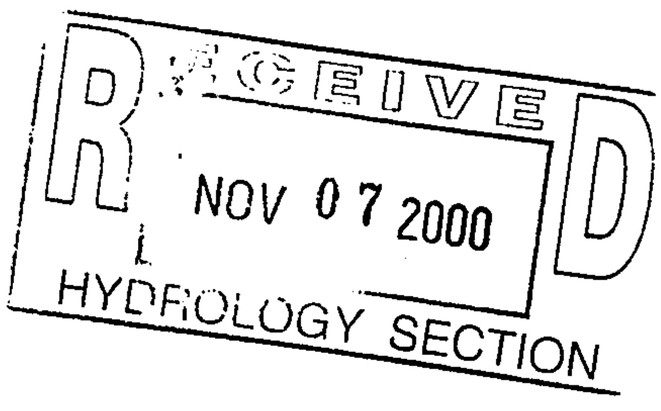
for

SUNSHINE COUNTRY MOBILE HOME COURT - PHASE II

SUNSHINE COUNTRY SUBDIVISION

ALBUQUERQUE, NEW MEXICO

November 3, 2000



Prepared by
Larry Read & Associates
12836-B Lomas Blvd., N.E.
Albuquerque, New Mexico 87112
(505) 237-8421

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Schematic Storm Drain System.....Appendix C

On-site Grading Plans (G1 & G2)..... Rear Cover

Blake Road Profile and Strom Drain System.....Rear Cover

DRAINAGE REPORT

for

SUNSHINE COUNTRY MOBILE HOME COURT - PHASE II

SUNSHINE COUNTRY SUBDIVISION

ALBUQUERQUE, NEW MEXICO

November 3, 2000

LOCATION & DESCRIPTION

The proposed site is 6.4461 acres and located on the south side of Blake Road NW and on the west side of the Amole del Norte Drainage Diversion Channel as shown on Exhibit 1 - Vicinity Map. The site is about 3000 feet west of Coors Road, S.W. and was annexed to the City of Albuquerque by City Council Ordinance O-3 on February 27, 1998.

At the time of annexation to the City, Phase II (west of the Amole del Norte Arroyo) has been graded and all utilities installed per plans prepared by Larry Read & Associates and approved by Bernalillo County Public Works Department on April 13, 1998. The final Grading and Paving Plans were in review at the County at the time of annexation.

The owner of this parcel proposes to finish development of this parcel as the second phase of the Sunshine Country Mobile Home Park. This proposed development provides 49 rental lots for mobile homes. The proposed mobile homes vary in size but can be a maximum size of 16' wide and 80' long. The lots are typically 40' wide X 100' deep. The proposed development provides paved roads that are approximately 29.25 feet wide (back of curb to back of curb) with a 4' wide concrete sidewalk at the back of curb on each side. The typical street section is center crowned and provides a 2% cross slope and a 0.5% longitudinal slope. The street section utilizes City of Albuquerque 8" tall by 2'-7 1/2" standard curb and gutter section. Each lot is graded at approximately 0.5% toward the front street so no cross-lot drainage occurs.

HISTORICAL and EXISTING DRAINAGE

This project is shown on Exhibit 3 and Exhibit 4. These exhibits are a section of the Plate 4 Master

Drainage portion of the Rio Bravo Sector Development Plan prepared by Community Sciences in June, 1989. This site is on the west side of the Amole del Norte Diversion Channel, on the south side of Blake Road S.W. and on the north right-of-way line of the Amole Detention Facility. The historical drainage pattern was from west to east at an average grade of 1.8%. When the Amole del Norte Arroyo was lined and improved, it's grade is such that it is above the historical elevations. As part of the construction of the Amole del Norte Diversion Channel, the land for several hundred feet west of the arroyo was regraded, using spoils from the arroyo, to raise and flatten the grade to it's current 0.5% from west to east. This is the existing grade west of this site.

The offsite drainage affecting the site is from two locations. In it's undeveloped state, the runoff from the APS property (Basin E-1) west of this site runs across this site near Wildflower Road where it, along with runoff generated on this site is conveyed into the hardened Amole channel by the earthen side channel. We propose to allow this pattern to continue for historical runoff rates only by placing a drainage easement along Wildflower Road for the full width of the site. When the APS site is developed, runoff would be diverted directly to the Amole Detention Facility as approved by AMAFCA verbally on October 10, 2000. Runoff from the south half of Blake Road and several parcels on the north side of Blake Road as shown on Exhibit 3 currently flow in shallow channels adjacent to both sides of the pavement to the Amole Channel.

OFF-SITE DRAINAGE

The "Rio Bravo Sector Development Plan" prepared by Community Sciences in June, 1989 identified the proposed storm drainage improvements to be constructed with the construction of Unser Boulevard. A portion of Plate 4 of that report was used as the base to prepare Exhibits 3 and 4. This exhibit shows that runoff generated west of the Unser Boulevard Right-of-Way will be intercepted by a proposed 48" storm drain in Unser Blvd. and will not affect this site when Unser is constructed.

Since the construction of Unser Blvd has not been scheduled at this time, two Basins (Basins C-1 and C-2 - Exhibit 3) have been included in the off-site runoff affecting this site. Additionally, runoff generated by the first tier of lots on the north side of Blake Road and east Unser Blvd (Basins B-1, B-2A and B-2B) will be conveyed east in the storm drain master planned with this project discharge into the Amole del Norte Diversion Channel. Any land north of the first tier of lots will discharge into the existing 42" storm drain along their south property line. The eastern most lot, Basin B-3, will most likely discharge directly into the Amole del Norte Arroyo via the existing earthen side channel since this will be more economical than discharging directly into Blake Road.

There has been sufficient development of some parcels of land on the south side of Blake Road (Basins A-1, A-1A and A-1B - Exhibit 4) such that the runoff has been diverted toward the south to discharge directly into the Amole Detention Facility. The exception is the parcel immediately west of this site owned by Albuquerque Public Schools. This parcel (Basin E-1 - Exhibit 4) retains it's west to east slope and contributes runoff to this site as addressed in "Existing Conditions Above".

The developed runoff (Land Treatments assumed are for 6 du/acre per current R-1 zoning) from this lot has not been included in the runoff to be intercepted by this proposed storm drain in Blake Road. This parcel will be allowed to drain directly into the Amole Detention Facility per verbal approval by AMAFCA Additionally, historic runoff rates from this parcel have been used to analyze the capacity of Widlflower Road to assure this road will safely pass the historic runoff from the APS property as well as developed runoff from on-site Basin A-4 to the Amole Side Channel east of this site.

PROPOSED ON-SITE CONDITIONS

The onsite drainage is divided into 4 drainage subbasins as shown on Exhibit 5. Blake Court, the only north-south street, has been graded to provide a crest vertical curve (grade break) approximately half way between each of the four east-west streets. The east-west streets are graded at approximately 0.5% from west to east to convey the runoff east into the existing side channel of the Amole del Norte Drainage Diversion Channel. Since a 6' tall, CMU wall is proposed at all boundaries of the development, where the wall crosses the east/west streets every other CMU block at street level will be left out of the wall to provide at least 19, 16" long X 8" high openings for drainage to exit the site into the side channel. In order to prevent erosion in the side channel where the clean water enters from the proposed streets, the Site Plan calls for a concrete rundown to be installed from the face of the wall to the channel. The channel invert will be lined with asphalt pavement to prevent erosion, prevent weed growth, and eliminate ponding.

The proposed drainage for this site provides direct discharge to the Amole side channel. Although in this drainage basin it is normal practice to restrict developed discharge from the site, discussions with the City of Albuquerque indicate that the Amole is operating over design capacity. Since this site is immediately adjacent to the Amole Detention Facility, if we detain the runoff from the site we will increase the peak flows in the channel and peak quantity of runoff in the Detention Facility. By providing direct discharge from the site, the runoff will be through the arroyo and detention facility before the peak from upstream arrives and this site has not added to the over capacity problem that exists.

The onsite developed land treatments have been considered 58% Type 'D' soil to account for the roads, mobile home roofs, and paved driveways, and the balance Type 'C' soil since southwest type landscaping has been proposed by the developer.

PROPOSED CONDITIONS

As a temporary measure to handle historic offsite runoff, we are proposing to provide the City with the required covenants and easements to allow runoff from the undeveloped APS property (Basin E-1) to cross the Phase II site within Wildflower Road. This pattern and the easement will remain

until the APS property is developed and the runoff can be diverted north into the proposed storm drain or diverted south directly into the Amole Detention Facility.

Additionally, to handle existing off-site flows, the permanent storm drain system in Blake Road across the frontage of this site and inlets east of the access drive to this parcel will be constructed as shown on the Blake Road Plan and Profile in the pocket at the end of this report. These inlets have been sized to intercept all off-site runoff in the existing condition and will be significantly oversized for the developed conditions when Blake Road is completed and the storm drain and inlets have been constructed. The on-site runoff will directed west in the internal street system as shown on Exhibit 5. The on-site runoff will be discharged to the Amole Side Channel via rundowns from the end of each street. The invert of the side channel will be asphalt lined to help hold the grade and prohibit weed growth.

As shown on the Schematic Storm Drain Plan and Profile, numerous inlets have been proposed along the permanent section of Blake Road. These inlets have been located to keep a 10' minimum lane dry both directions in a 10-year storm. The inlets have also been checked to assure no overtop of the curb will occur in a 100-year storm. Also, stubouts have been proposed to most parcels as shown on the Storm Drain Schematic Plan and Profile. These stubbouts have been sized to handle a 100-year storm from the respective parcel..

FLOODPLAIN STATUS

This project, as shown on FEMA Floodway Map 35001C0336D (Exhibit 2) is not within any designated 100-year floodplain.

METHODOLOGY

The hydrology for this project was analyzed using the 1997.02c version of the AHYMO computer modeling program as distributed by Cliff Anderson. All procedures are in accordance with those shown in the January 1993 release of the City of Albuquerque Development Process Manual, Section 22.2.

The specific values used for this analysis are as follows:

-Precipitation Zone 1

-Design Storm 100-year, 6-hour duration
i = 2.66 inches (t_c = 0.2 hours)

SU-1 MH PARK
COX—ROGER SOUTHWEST DEVELOPMENT

SITE

SUNSHINE
SU-1 FOR
MOBILE
HOME
PARK

COUNTRY

SU-1
FOR MOBILE HOME PARK

AMOLE ARROYO DESIGN OVERLAY ZONE

BLAKE

COORS RD

CITY OF
Albuquerque
Albuquerque Geographic Information System
PLANNING DEPARTMENT

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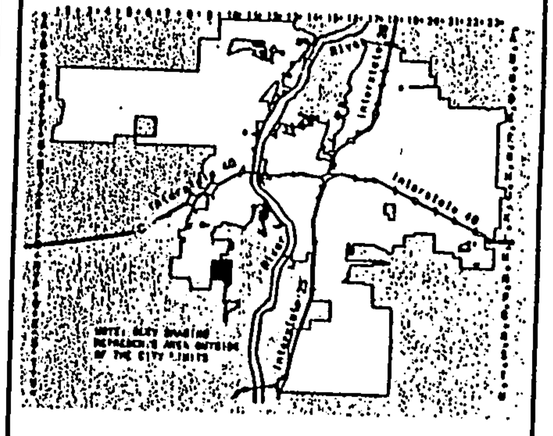
N
W
E
S

GRAPHIC SCALE IN FEET
250 0 500 1000



Zone Atlas Page
N-10-Z

Map Amended through
December 04, 1998

EXHIBIT 1
VICINITY MAP

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO AND INCORPORATED AREAS

PANEL 336 OF 825
(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0336	D
BERNALILLO COUNTY, UNINCORPORATED AREAS	350001	0336	D

MAP NUMBER
35001C0336 D

EFFECTIVE DATE:
SEPTEMBER 20, 1996

Federal Emergency Management Agency

BLAKE ROAD

WENDELL ROAD

CORPORATE LIMITS

SITE

BLAKE

JOEL PLACE

JOEL COURT

JOEL STREET

WENDELL ROAD

BERNALILLO COUNTY
UNINCORPORATED AREAS
350001

ZONE A

100-YEAR FLOOD CONFINED TO CONSTRUCTED CHANNEL

ZONE X

ZONE A

Hubbell Lake Diversion Channel

ZONE X

ZONE AE

ZONE AE

BARCELONA PLACE

CITY OF ALBUQUERQUE

BERNALILLO COUNTY

LOOD CONFINED TO
TED CHANNEL

106°43'07"

ELDER

ELDER COURT

AYNE ROAD

PAYNE ROAD

ROAD

PAYNE

ROAD

EN

EXHIBIT 2
FEMA FLOODPLAIN M

APPENDIX A

OFF-SITE EXISTING CONDITIONS

STORM INLET ANALYSIS

PROJECT: _____ **LARRY READ & ASSOCIATES** CALCULATIONS
Civil Engineers

DATE: _____ By: _____ Pg: ___ of ___

CHECK INLET CONDITIONS - STA 13+00

EXISTING CONDITIONS

TOTAL FLOW TO SITE -

Q100 DEVECORP CONDITIONS -

Q100 EXISTING CONDITIONS - 53CFS

NOTE: TEMPORARY CONDITIONS CONTROL

ASSUME FLOW IS EVENLY DIVIDED IN NORTH & SOUTH SIDE OF STREET NORTH SIDE HAS 24" CMP DRAIN TO CHANNEL.

$Q = 53cfs/2 = 27cfs$

INLETS REQUIRED

WEIR EQN $Q = CLH^{3/2}$

$L = 7' + 2.5' + 2.5' = 12'$

$h = 0.67$ (CURB DEPTH)

$C = 2.67$

$Q = 2.67 * 12 * (0.67)^{3/2} = 17.6 cfs$ ← 2 INLETS

TO PROVIDE FOR CLOGGING (SUMP CONDITION) USE 3 INLETS

$Q_{CAP} = 17.6 * 3 = 52.8 cfs$

CLOGGING = $27/52.8 = 51\%$ OK

APPENDIX B

ON-SITE DEVELOPED CONDITIONS

AHYMO ANALYSES

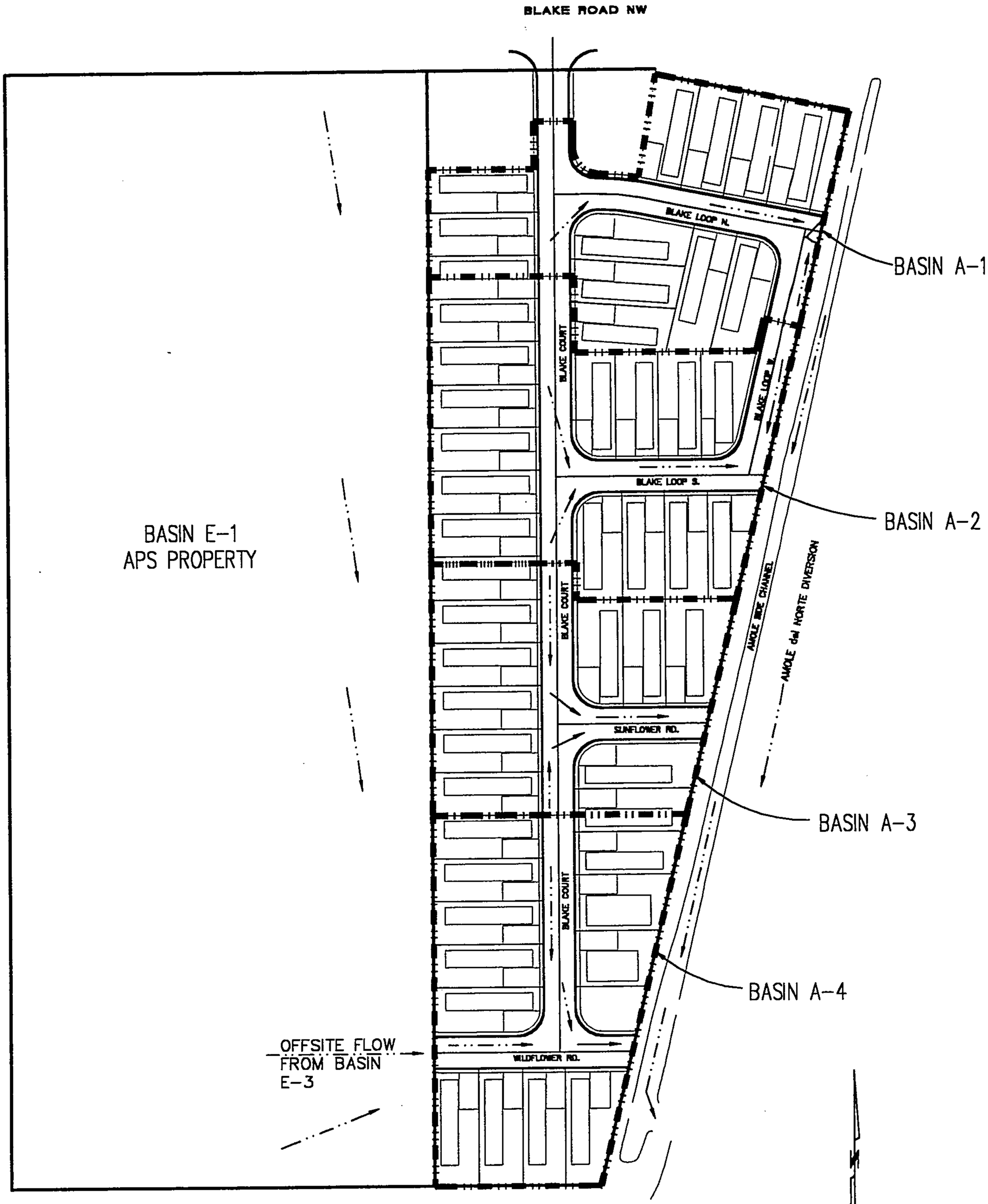


EXHIBIT 5
ON-SITE DRAINAGE BASINS

N10/D004
File
#575382

-ArcMap
Scanned to DMD
Mapped

AGREEMENT AND COVENANT

(1-17-00)

This Agreement and Covenant, between the City of Albuquerque, New Mexico ("City") and Sunshine Country LLC, ("User") is made in Albuquerque, New Mexico and is entered into as of the date of recording this Agreement with the Bernalillo County Clerk.

1. Recital. The User is the owner of certain real property ("User's Property") located at 1000 Block of Blake Street SW, in Albuquerque, New Mexico, and more particularly described as: (give legal description and filing information) Tract 1, Sunshine Country Subdivision, filed in the Office of the County Clerk of Bernalillo County New Mexico, July 1, 1987 in Volume C39, Folio 13.

The City is the owner of certain real property, easement or public right-of-way ("City's Property") in the vicinity of, contiguous to, abutting or within User's Property, and more particularly described as: 0.7639 acre portion of Tract 1 Sunshine Country Subdivision (see attached Exhibit A)

The User wishes to construct upon, improve or repair and to maintain the following "Improvement" on the City's Property (or already has done so):

A sketch of the proposed or existing Improvement is attached as Exhibit A and made a part of this Agreement.

The City agrees to permit the Improvement to exist on the City's Property provided the User complies with the terms of this Agreement.

2. City Use of City's Property and City Liability. The City has the right to enter upon the City's Property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the User. If the Work affects the Improvement the City will not be financially or otherwise responsible for rebuilding or repairing the Improvement. The User promptly will repair the Improvement to the City's satisfaction. The cost of repairing the Improvement will be paid by User.

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Judy D. Woodward Bern. Co. AGRE R 21.00

3. User's Responsibility for Improvement. The User will be solely responsible for constructing, maintaining, repairing and, if required, removing the Improvement, all in accordance with standards required by the City as per the approved Grading and Drainage Plan N10/D009 on file at the City Engineer's office. The User will be solely responsible for paying all related costs. The User will be solely responsible for paying all related costs. The User will not permit the Improvement to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the City's Property. The User will conform with all applicable laws, ordinances and regulations.

4. Use of the Improvement. If the City's Property is a public right-of-way, it shall be open to the use of the general public at all times, subject to reasonable curtailment during periods of construction, maintenance or repair.

5. Demand for Repair, Modification or Removal. The City may send written notice ("Notice") to the User requiring the User to repair, modify or remove the Improvement within 30 days ("Deadline") and the User will comply promptly with the requirements of the Notice. If removal is demanded, the City also may require the User to return the City's Property to its original condition by the Deadline. The User will perform all required work by the Deadline, at User's sole expense.

6. Failure to Perform by User and Emergency Work by City. If the User fails to comply with the terms of the Notice by the Deadline stated, or, if the City determines that an emergency condition exists, the City may perform the work itself. The City then may assess the User for the cost of the work and for any other expenses or damages which result from User's failure to perform. The User agrees promptly to pay the City the amount assessed. If the User fails to pay the City within thirty (30) days after the City gives the User written notice of the amount due, the City may impose a lien against User's Property for the total resulting amount.

7. Cancellation of Agreement and Release of Covenant. This Agreement may be canceled and User's covenants released by the City at will by the City's mailing to the User notice of the City's intention to record a Cancellation and Release with the Bernalillo County Clerk. The Cancellation and Release will be effective thirty (30) days after the date of mailing the notice to the User unless a later date is stated in the notice or the Cancellation and Release. After the effective date, the City will record the Cancellation and Release with the Bernalillo County Clerk.

8. Condemnation. If any part of the User's Property is ever condemned by the City, the User will forego all claims to compensation for any portion of User's structure which encroaches on City Property and for severance damage to the remaining portion of User's structure on User's Property.

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Page: 2 of 8
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Judy D. Woodward Bern. Co. AGRE R 21.00

9. Assessment. Nothing in this Agreement shall be construed to relieve the User, his heirs, assigns and successors from an assessment against User's Property for improvements to the City Property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the Improvement will not reduce the amount assessed by the City.

10. Notice. For purposes of giving formal written notice to the User, User's address is:

Sunshine Country, LLC
12409 Coronado Avenue NE
Albuquerque NM 87122

Notice may be given to the User either in person or by mailing the notice by regular U.S. mail, postage paid. Notice will be considered to have been received by the User within 3 days after the notice is mailed if there is no actual evidence of receipt. The User may change User's address by giving written notice of the change by certified mail, return receipt requested, to the City Engineer at P.O. Box 1293, Albuquerque, New Mexico 87103.

11. Indemnification. The User 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 as a result of User's use of the City's Property. To the extent, if at all, Section 56-7-1 NMSA 1978 is applicable to this Agreement, this Agreement to indemnify will not extend to liability, claims, damages, losses or expenses, including attorney's fees, arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications by the indemnitee, or the agents or employees of the indemnitee; or (2) the giving of or the failure to give direction or instructions by the indemnitee, where such giving or failure to give directions or instructions is the primary cause of bodily injury to persons or damage to property.

12. Term. This Agreement shall continue until revoked by the City pursuant to Section 7 above.

13. Binding on User's Property. The covenants and obligations of the User set forth herein shall be binding on User, his heirs assigns and successors and on User's Property and constitute covenants running with User's Property until released by the City.

14. Entire Agreement. This Agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral or written, whether previous to the execution hereof or contemporaneous herewith.

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Judy D. Woodward Bern. Co. AGRE R 21.00 Bk-A1 Pg-5772

15. Changes of Agreement. Changes to this Agreement are not binding unless made in writing, signed by both parties.

16. Construction and Severability. If any part of this Agreement is held to be invalid or unenforceable, the remainder of the Agreement will remain valid and enforceable if the remainder is reasonably capable of completion.

17. Captions. The captions to the sections or paragraphs of this Agreement are not part of this Agreement and will not affect the meaning or construction of any of its provisions.

CITY OF ALBUQUERQUE:

By: _____
Chief Administrative Officer

Dated: 1-17-00

USER:

By: _____
Title: PRESIDENT

Dated: Sept 21-99

APPROVED:

_____ 1/17/00
Director, Public Works Dept.

Reviewed by:

_____ 1/17/00
City Engineer

1-12-00

KJL 1/13/00

CITY'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on January 17th, 19~~99~~ 2000, by Fred J. Aguirre for Chief Administrative Officer for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

_____
Gloria O. Saavedra
Notary Public

My Commission Expires:

11-15-2003

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Page: 4 of
01/19/2000 1
Judy D. Woodward Bern. Co. AGRE R 21.00 Bk-A1 Pg-577

USER'S ACKNOWLEDGMENT

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

This instrument was acknowledged before me on SEPTEMBER 21, 19 99, by JOSEPH SANTANGELO, PRESIDENT, on behalf of Sunstone County LLC.

Notary Public

My Commission Expires:

OFFICIAL SEAL
Janice R. Hennequinn
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires: 6-1-03

Judy D. Woodward Bern. Co. AGRE R 21.00
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Page: 5 of 8
01/19/2000 10:56A
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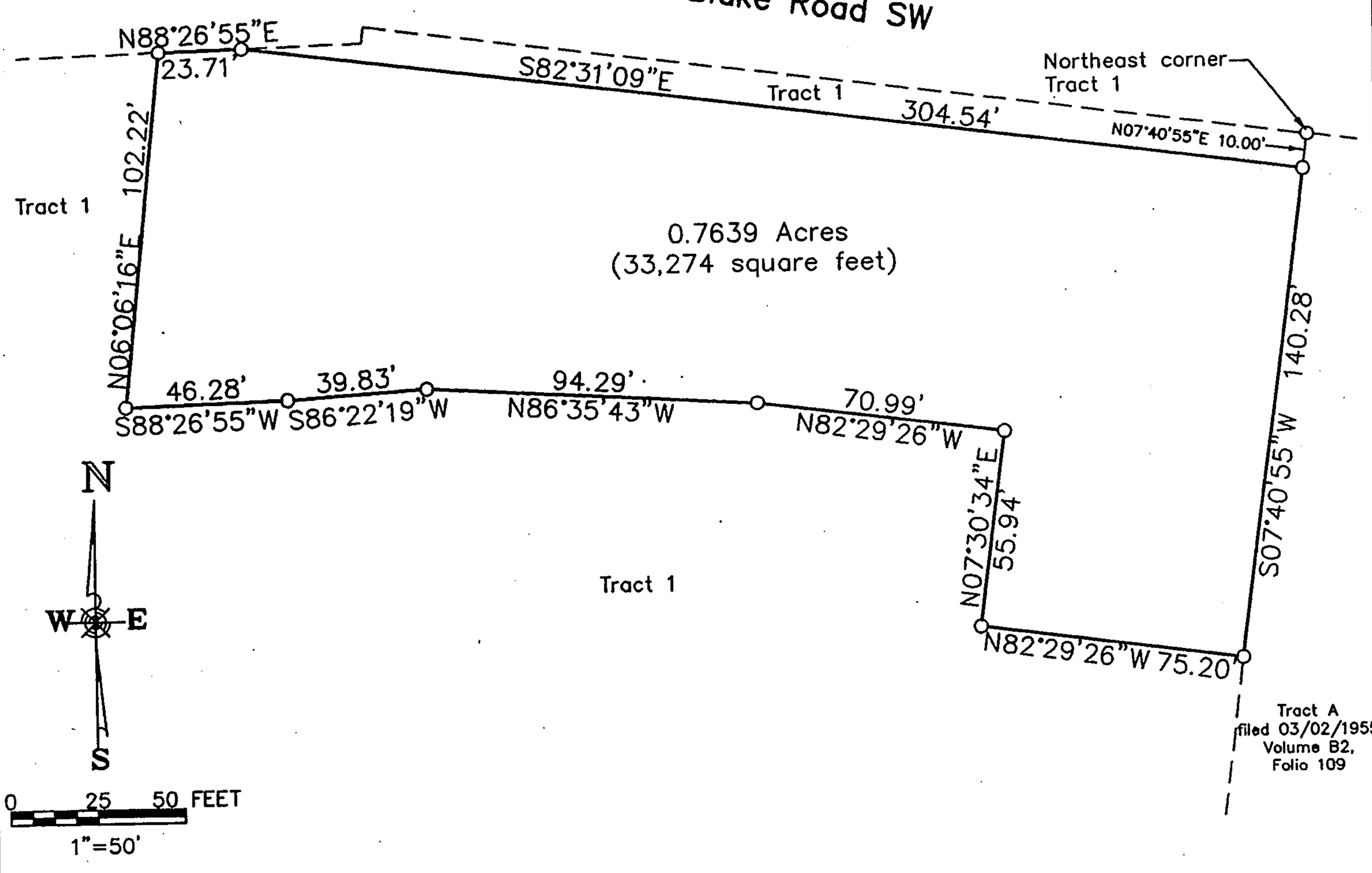
Exhibit A Pg. 1 of 1

0.7639 acre portion of
Tract 1
Sunshine Country Subdivision
September 1999



A certain parcel of land situate within the exterior boundaries of Tract 1, Sunshine Country Subdivision, as the same is shown and designated on the plat entitled "REPLAT OF TRACT B, AND PORTIONS OF TRACTS C,D,E & F, PLAT OF TRACTS A,B,C,D,E,F & G ON THE ATRISCO GRANT, BERNALILLO COUNTY, NEW MEXICO, G.S. BARBOA, OWNER, NOW COMPRISING TRACTS 1 & 2, SUNSHINE COUNTRY SUBDIVISION", filed in the Office of the County Clerk of Bernalillo County, New Mexico on July 1, 1987 in Volume C34, Folio 13 and being more particularly described by metes and bounds as follows:

Beginning at the northeast corner of the parcel herein described, a point on the east line of said Tract 1, whence the northeast corner of said Tract 1 bears N07°40'55"E, a distance of 10.00 feet;
Thence, S07°40'55"W, a distance of 140.28 feet along said east line of Tract 1, to the southeast corner of the parcel herein described;
Thence, N82°29'26"W, a distance of 75.20 feet to a point;
Thence, N07°30'34"E, a distance of 55.94 feet to a point;
Thence, N82°29'26"W, a distance of 70.99 feet to a point;
Thence, N86°35'43"W, a distance of 94.29 feet to a point;
Thence, S86°22'19"W, a distance of 39.83 feet to a point;
Thence, S88°26'55"W, a distance of 46.28 feet to the southwest corner of the parcel herein described;
Thence, N06°06'16"E, a distance of 102.22 feet to a point on the north line of said Tract 1 and the northwest corner of the parcel herein described;
Thence, N88°26'55"E, a distance of 23.71 feet along said north line of Tract 1, to a point;
Thence, S82°31'09"E, a distance of 304.54 feet to the northeast corner and point of beginning of the parcel herein described and containing 0.7639 acres (33,274 square feet) more or less.

PROFESSIONAL SURVEYOR STATE OF NEW MEXICO 6126 RONALD A. FORSTBAUER

Ronald A. Forstbauer, PS
New Mexico License No. 6126
September 20, 1999

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Judy D. Woodward Bern. Co. AGRE R 21.00

TEMPORARY PUBLIC DRAINAGE EASEMENT

THIS GRANT OF TEMPORARY EASEMENT, by and between Sunshine Country LLC, A New Mexico Corporation ("Grantor"), whose address is 12709 Corona Ave. NE, Albq. NM 87122, and the City of Albuquerque, a New Mexico Municipal Corporation ("City"), whose address is P.O. Box 1293, Albuquerque, New Mexico 87103

1. **Grant of Temporary Public Drainage Easement.** The Grantor grants to the City an exclusive, temporary public drainage easement ("Easement"), for Storm water detention ponding sys included within easement shown on Exhibit A ("Public Improvement"), on, over, across, and through the property described below ("Property"), together with the right of the City to operate, maintain, repair, replace and construct the Public Improvement and the right to remover trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of this Easement. The Property is described as follows: Tract 1 Sunshine Country Subdivision filed in the office of the county clerk of Bernalillo County, New Mexico, July 1, 1987 in Volume C39, Folio 13.

2. **Warranties.** Grantor covenants and warrants that it is the owner in fee simple of the Property and that it has a good lawful right to convey the Property or any part thereof and that Grantor will forever warrant and defend the title to the Property against all claims from all persons or entities.

3. **Binding on Grantor's Property.** The grant and other provisions of this Easement constitute covenants running with title to the Property for the benefit of the City and its successors and assigns until terminated.

4. **Temporary.** This easement will be released by the City when the City Engineer determines that the Easement is no longer required.

WITNESS my hand and seal this 21 day of Sept, 19 99.

GRANTOR: Joseph Santangelo

BY: JOSEPH SANTANGELO
ITS: PRESIDENT

STATE OF NEW MEXICO)
)SS
COUNTY OF BERNALILLO)

This instrument was acknowledged before me this 21st day of Sept, 1999 by JOSEPH SANTANGELO, its PRESIDENT, on behalf of SUNSHINE COUNTRY LLC.

BY: _____
NOTARY PUBLIC

My Commission Expires: _____

OFFICIAL SEAL
Janice R. Hennequinn
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires: 6-1-03

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01/19/2000 10:56A
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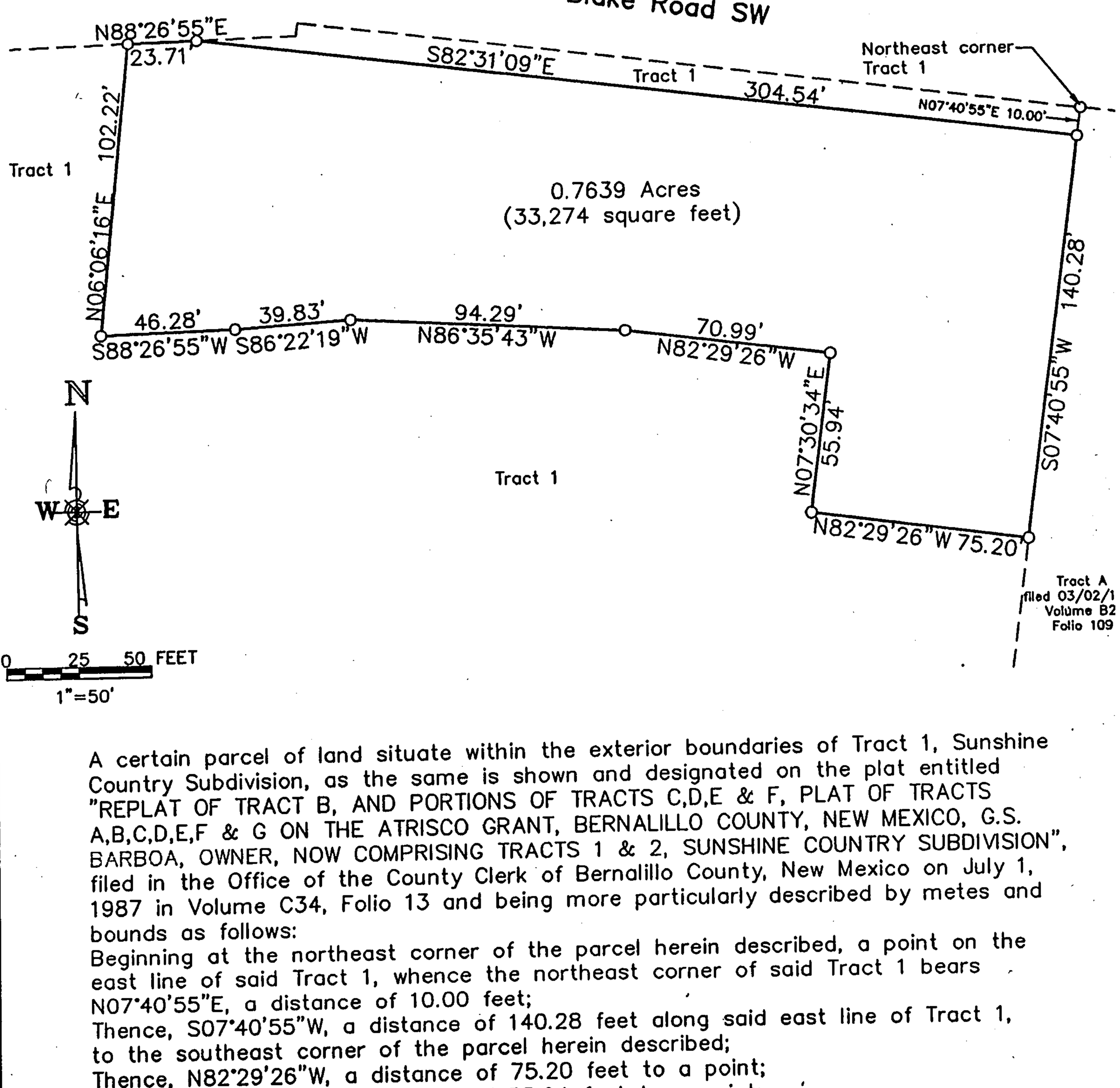
Judy D. Woodward Bern. Co. AGRE R 21.00

Exhibit A Pg. 1 of 1

0.7639 acre portion of Tract 1 Sunshine Country Subdivision September 1999



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Thence, S07°40'55"W, a distance of 140.28 feet along said east line of Tract 1, to the southeast corner of the parcel herein described;
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Thence, S86°22'19"W, a distance of 39.83 feet to a point;
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Thence, S82°31'09"E a distance of 304.54 feet to the northeast corner and point of beginning of the parcel herein described and containing 0.7639 acres (33,274 square feet) more or less.

PROFESSIONAL SURVEYOR STATE OF NEW MEXICO 6126 RONALD FORSTBAUER

Ronald A. Forstbauer, PS
New Mexico License No. 6126
September 20, 1999

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Judy D. Woodward Bern. Co. AGRE R 21.00

ADDENDUM TO COVER PAGE

1-5-00
(Date)

TO: Kevin Curran, Assistant City Attorney, Legal Department

FROM: Project Administrator, Project Review Sec., PWD

SUBJECT: PROJECT TITLE: SUNSHINE COUNTRY M.H.P. PROJECT # 575382

The attached documents have been review, approved, initialed and/or signed by the DRC Chairman and are submitted for your action as noted.

ITEM	ACTION	
	Review & Approval	Reference
Procedure "A"		
Procedure "B"		
Procedure "B" Modified Non Work Order		
Procedure "C"		
Procedure "C" Modified		
Special Agreement		
Sidewalk Deferral Agreement		
Amendment		
Financial Guarantee		
Construction Paperwork:		
Contractors Proposal		
Performance/Warranty Bonds		
Labor/Material Bonds		
Certificate of Insurance		
Engineers Cost Estimate		
Extension		
Release/Agreement		
Release/Financial Guarantee		
Calling Notice		
Letter of Commitment		
Reduction Letter		
License Agreement		
Easement	✓	
Monitoring Well Permit		
Agreement & Covenant	✓	
Drainage Covenant		
Revocable Permit		
Encroachment		
Permanent Easement		

Other:
1
2
3

Please Call Terri at 924-3497 if you have any questions regarding the above or when the documents are ready to be picked up.

ATTACHMENTS (2)

@ 1-12-00

[redacted]

CONTRACT CONTROL FORM

PRELIMINARY REVIEW

Project # 575382

CCN # 9801309

~~Non-Or~~ Ext. # _____

Contact Person TERRI

Phone No. 924-3997

Type of Agreement : AGREEMENT AND COVENANT

Description/Project: SUNSHINE COUNTRY M.H.P.

Public Works/Div.: Project Review Section

Developer: COUNTRYSIDE LLC

Contract Amount $ ~~0~~

Contract Amount $ _____

SIA Contract Period: 1-17-00 Perm.

SW'S Contract Period: _____ - _____

Project Completed Date: _____

DRAFT CONTRACT:

Rec'd by Legal: _____ Rejected/Returned to Dept.: _____/_____

Returned to Legal: _____/_____ Approved: _____ Initials: _____

FINANCIAL GUARANTY:

Letter of Credit No.: _____ Date: _____ Attached: Yes___ No___ Initial_____

Other: Type _____ Date: _____ Attached: Yes___ No___ Initial_____

FINAL CONTRACT REVIEW

APPROVALS REQUIRED:

	Date Delivered	Returned to Dept.	Approved By	Approval Date:
~~Purchasing:~~ HYDRO:	1-5-00	_____	BLB 1-11-00	_____
Asst. City Attorney:	1-13-00	_____	HC	1/13/00
CIP:	_____	_____	_____	_____
City Attorney:	[redacted]	_____	_____	_____
CAO:	_____	_____	_____	_____
Other:	_____	_____	_____	_____
Council:	EC No.: _____	Approved: _____	Date: _____	

DISTRIBUTION:	Date:	By:
User Department	1-19-00	
Vendor		
City Clerk	1-24-00	
Treasury	_____	_____
_____	_____	_____

Revised 9/6/95 WP+125805/tsl

BOARD OF COUNTY COMMISSIONERS
ART DE LA CRUZ, CHAIR
DISTRICT 2
MAGGIE HART STEBBINS, VICE CHAIR
DISTRICT 3
ALAN B. ARMIJO, MEMBER
DISTRICT 1
MICHAEL C. WIENER, MEMBER
DISTRICT 4
MICHAEL BRASHER, MEMBER
DISTRICT 5

THADDEUS LUCERO, COUNTY MANAGER

County of Bernalillo
State of New Mexico

KAREN L. MONTOYA, ASSESSOR
MAGGIE TOULOUSE OLIVER, CLERK
MERRI RUDD, PROBATE JUDGE
MANUEL GONZALES III, SHERIFF
PATRICK J. PADILLA, TREASURER

Bernalillo County Public Works
2400 Broadway S.E.
Albuquerque, NM 87102
505-848-1500
Fax 505-848-1510

Ceja Vista Unit
1
N10

March 29, 2010

Brad Bingham, P.E.
Principal Engineer, Planning Dept.
City of Albuquerque
P.O. Box 1293
Albuquerque, NM 87102

Re: **City of Albuquerque (COA) responsibilities for that portion of a storm drainage facility along a portion of Senator Dennis Chavez Boulevard, SW, currently under jurisdiction of Bernalillo County.**

Dear Mr. Dourte,

Bernalillo County Public Works Division (BCPWD) has been informed that a storm drainage facility is to be located within the public ROW of Senator Dennis Chavez Boulevard, SW, to accommodate flows being generated by the Ceja Vista subdivision. The facility will begin within the portion of public ROW under jurisdictional authority of the COA immediately north of the subdivision (see attached reference letter dated February 22, 2010 for clarification on City vs. County jurisdiction) and extend easterly into public ROW under jurisdiction of Bernalillo County before outfalling into AMAFCA's Hubbell Dam just west of Coors Boulevard.

Bernalillo County will allow this drainage facility to be located within County ROW with the following conditions.

1. The COA will maintain the storm drainage facility within County ROW. All maintenance must be performed by the COA and any damage to County facilities caused by failure of this storm drainage facility will be repaired by the COA to County satisfaction.

2. The storm drainage facility must be designed to accommodate additional flow generated by development of property to the south that is within the jurisdiction of Bernalillo County. Thus the developer must include this area in his hydrologic study which determines the size of the drainage facility.
3. Stubouts will be required to be constructed to the Public ROW limits to accommodate this additional flow.
4. The developer's hydrologic study (or grading and drainage plan) and construction plans for this drainage facility must be submitted to BCPWD for review and approval and all appropriate fees paid prior to BCPWD issuance of required construction permits.

If you have any additional questions or comments, please do not hesitate to call me at 848-1532.

Sincerely,

Kevin Grovet
Development Review Section Manager

Attachment: February 22, 2010 letter

Cc: Roger A. Paul, P.E. Technical Services Director
David K. Mitchell, P.E. Operations and Maintenance Director
Wilfred Gallegos, P.E. Division Manager, Street Maintenance, COA
John MacKenzie, P.E. D. Mark Goodwin & Associates