

July 2, 1997

Martin J. Chávez, Mayor

Billy McCarty Community Sc8iences P.O. Box 1328 Corrales, NM 87048

STEWART BUILDING (L20-D57). GRADING AND DRAINING PLAN FOR RE: BUILDING AND SO #19 PERMIT APPROVALS. ENGINEER'S STAMP DATE JUNE 25, 1997.

Dear Mr. McCarty:

Based on the information provided on your June 26, 1997 submittal, the above referenced project is approved for Building and SO #19 Permits.

A separate permit is required for construction within the City rightof-way. A copy of this approval letter must be on hand when applying for the excavation permit.

Prior to Certificate of Occupancy approval, an Engineer's Certification will be required.

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

Engineering Assoc./Hyd.

Andrew Garcia



# CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT

July 3, 1997

#### INTEROFFICE CORRESPONDENCE

HYDROLOGY DIVISION

TO:

Desiderio Salas, Street Maintenance Division

FROM:

Lisa Ann Manwill, P.E. Engineering Associate, PWD

SUBJECT: PRIVATE DRAINAGE FACILITIES WITHIN PUBLIC RIGHT-OF-WAY

DRAINAGE FILE NUMBER L20-D57.

Transmitted herewith, is a copy of the approved drainage plan for the referenced project incorporating the SO #19 design.

This plan is being submitted to you for permitting and inspection. Please provide this section with a signed-off copy per the signature block upon construction and acceptance by your office.

As you are aware, the signed off SO #19 is required by this office for Certificate of Occupancy release; therefore your expeditious processing of this plan would be greatly appreciated and would avoid any unnecessary delay in the release of the Certificate of Occupancy.

Thank you for your cooperation and if you should have any questions and/or comments, please feel free to call me at 924-3984.

Attachment

· COS EARCH

### DRAINAGE INFORMATION SHEET

PROJECT TITLE: Stewart BUilding Site	ZONE ATLAS/DRNG. FILE #: $L20-D57$
LEGAL DESCRIPTION: Lots 1 thru 10, Block 38	of the Skyline Heights Subdivision
CITY ADDRESS: Southwest of Central Av	venue and Eubank Blvd.
ENGINEERING FIRM: Community Sciences	CONTACT: Billy O. McCarty
ADDRESS: P.O. Box 1328, Corrales	, NM 87048HONE: (505) 897-0000
OWNER:Al_Stewart	CONTACT: (505) 251-3185
ADDRESS:	PHONE:_(
ARCHITECT:	CONTACT:
ADDRESS:	PHONE:
SURVEYOR:	CONTACT:
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	GRADING/PAVING PERMIT APPROVAL
SUBMITTED:	OTHER:(SPECIFY)

BY: Billy O. McCarty

# community sciences

This Fax is sent to you by:

PO Box 1328, Corrales, New Mexico 87048

Facsimile Cover Sheet

Number of pages:

Including cover page

This Fax is sent to you by:	Main Office: Voice - (505) 897-0000, FAX - (505) 898-5195 Engineering / Technical Production					
		FAX - (505) 898-2305				
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TO JAY NIDA

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RE: SKYLINE HEIGHTS PLAT

The Plat to combine 10 Lots into 1 Tract was approved at all city levels in July 1996. Kym Dicome the city of Albuquerque planner, the only one left to sign on the plat, would sign the plat when the dispute between the Stewarts and PNM was over and the size of utility easement was resolve.

Scott September was the person to get the details work out between PNM and owners about the size of the easement and to let CSC know when this occurs so the plat could be recorded.

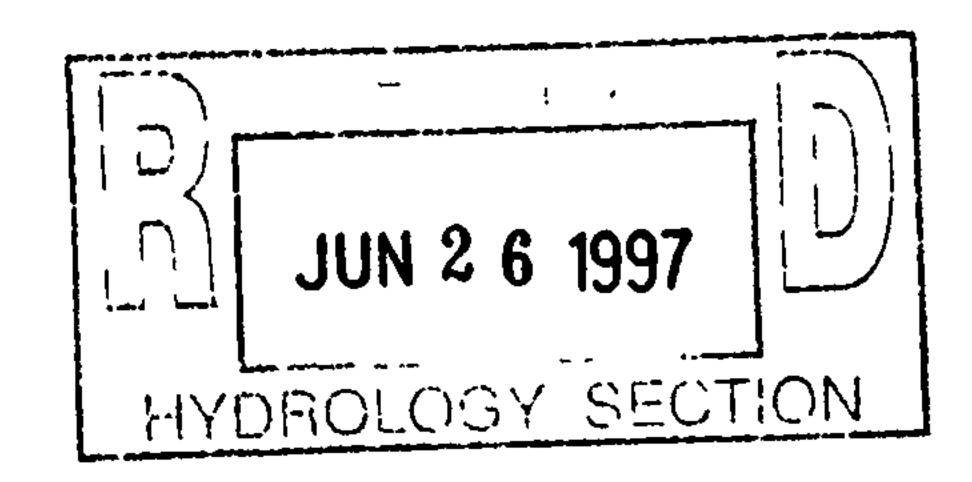
The Plat as it stands today will be voided the end of July, 1997 when the vacation request expires.

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June 25, 1997

Ms. Lisa Manwell City of Albuquerque Hydrology Department 600 2nd St. NW Albuquerque, NM 87102



RE: Drainage Plan for Stewart Building (L20-D57)

Dear Ms. Manwell:

The review comments made by Carlos Montoya in his letter dated June 11, 1997 for the above referenced project have been addressed as follows:

- 1. The SO#19 for the sidewalk culvert will be processed at the time of construction.
- 2. A copy of the plat is attached. It has not been recorded at this time due to an issue between PNM and Mr. Stewart. As soon as this is resolved, Kym Dicome will sign the plat and it will be recorded. The attached FAX indicates Community Sciences Corporation latest attempts to bring this to closure. Please proceed with this drainage review assuming the plat will be recorded by the July deadline.
- 3. Per your request during our phone conversation on June 19, 1997, an erosion control berm has been added to the west property line of this site. This will prevent cross lot drainage until a permanent solution is incorporated with the next phase of development.
- 4. A typical detail for the swale has been added to the plans.
- 5. The direction of roof drain for the mobile home and storage building is not known. However, all of the flow from the storage building is conveyed to the pond via curb and gutter or valley gutters. Therefore, how the roof drains does not impact the drainage. Similarly, the mobile home drains to the northwest corner of the property as it does in its existing state. The erosion control berm which has been added to the plans ensures that the discharge point will be at the driveway. This meets the criteria we discussed on June 19, 1997.
- 6. The asphalt drains for the finished floor elevation of the storage building to the curb and valley gutters. Therefore, additional spot elevations are not needed. Existing flow line elevations have been added at the driveways. This provides elevations at the four corners.
- 7. A fence has been added around the pond.

If you have any questions, please call me at 897-0000.

Sincerely,

Billy O. McCarty Design Engineer

BOM/IIs

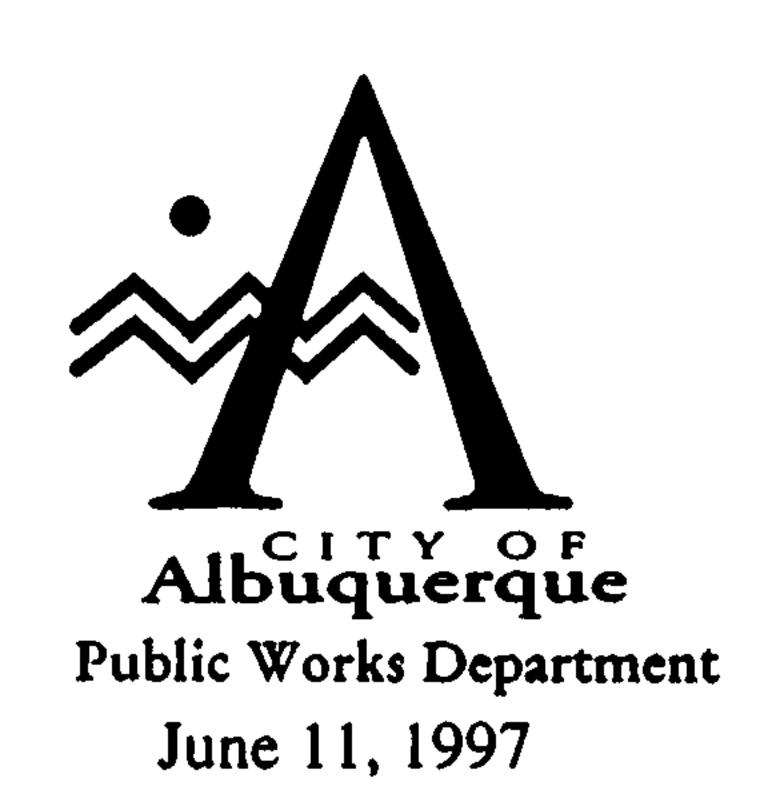
cc: Voice Stream Wireless

Al Stewart

Attachments: Plat (2 pages)

Fax to Jay Nida (2 pages)

Revised Grading and Drainage Plan



Martin J. Chávez, Mayor

Robert E. Gurulé, Director

Kent Whitman
Community Sciences Corporation
P.O. Box 1328
Corrales, New Mexico 87048

RE: Drainage Plan for Stewart Building (L20-D57) Received May 27, 1997

#### Dear Mr Whitman:

I have reviewed the referenced Plan dated May 23, 1997 and forward the following comments.

- 1. The construction of the sidewalk culvert in the City Right-of-Way will need to be processed through an SO #19.
- 2. Please submit the new plat with your next submittal. Otherwise, I need an agreement that allows cross lot drainage for the 10 lots.
- 3. When a property is developed you cannot discharge on to the downstream private property. If you do discharge on to the private property you need concurrence from the downstream owner.
- 4. Please give a detail of the proposed swales.
- 5. Please show the roof drains for the building and the mobile home.
- 6. Show proposed spot elevations for the proposed asphalt parking lot and 24 foot asphalt entrance.



7. If the pond depth is greater than 18 inches then the pond needs to be fenced.

If you have any questions please call me at 924-3984.

Sincerely,

Carlos A. Montoya

Project Manager

c: Andrew Garcia File



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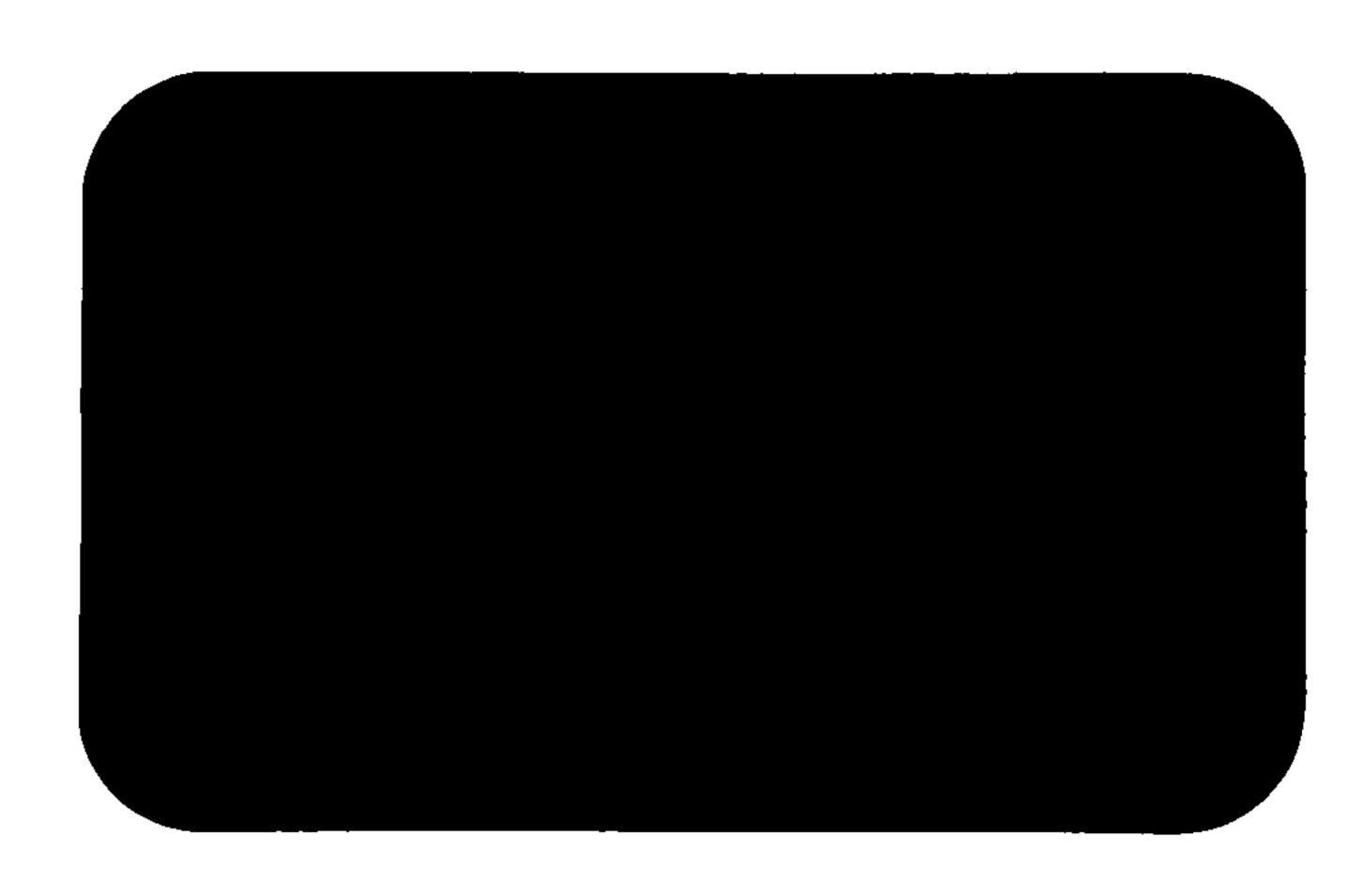
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#### DRAINAGE INFORMATION SHEET

PROJECT TITLE: <u>STEWART BUIDING SITE</u> ZONE ATLAS/	DRNG. FILE #: <u>L-20</u>
LEGAL DESCRIPTION: LOTS 1-10, BLOCK 38, SKYLINE HEIGHT	S SUBDIVISION
CITY ADDRESS: <u>SOUTH WEST OF ACOMA ROAD AND EUBA</u>	NK BLVD.
ENGINEERING FIRM: COMMUNITY SCIENCES CORPORATION	CONTACT: KENT M. WHITMAN
ADDRESS: P.O. BOX 1328. CORRALES, NM 87048	PHONE: (505)897-0000
OWNER: AL STEWART	CONTACT: <u>251-3185</u>
ADDRESS:	PHONE:
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# community sciences corporation



SURVEYING
ENGINEERING
LAND PLANNING
RESIDENTIAL MARKETING
DEVELOPMENT CONSULTANTS

Community Sciences Corporation (CSC) was founded in 1974 by Georgia C. and Cliff A. Spirock This followed Cliff's executive experience with a subsidiary of the nation's seventh largest engineering, planning, and architectural firm. He brought to CSC a philosophy and function somewhat different from that of a large, multi-faceted organization; namely, if a professional consulting firm is to compete on the excellence of its service, the size and type of services offered must be kept manageable and specifically limited by a small number of key production personnel. By gearing most of its services to the development of land, and by maintaining experienced long-term staff, CSC is able to serve the client's needs with proficiency, sensitivity and cost-consciousness.

Sharing these basic business objectives for client-sensitive engineering is our engineering staff and chief civil engineer. Since 1975 this team, in addition to managing the construction design, has excelled in drainage management and hydrologic modeling

Producing plan and graphic preparations is the purview of our Technical Services Department. It has developed an ability to produce technical media using the most sophisticated methods, including Computer Assisted Drafting (CAD) techniques.

Our chief surveyor manages a surveying division which complements both the property and design aspects of land development through physical construction. All equipment and techniques are modern and efficient, and operations are directly supervised by a registered surveyor. Computer-aided data collection techniques can be employed using our state of the art facilities

Land use planning and site design activities are the most integrated disciplines offered. All personnel have an involvement with these projects and, depending on the nature of the planning activity, the effort is directed by one of our Certified Planners (AICP). Mr. Spirock principally gives personal attention to large, complicated landholdings where his years of development consulting and regulatory negotiations serve the project. Together with the full CSC complement, this team can direct projects where site design and physical relationships are paramount. In addition to Residential Marketing advice, we engage in those planning activities which involve environmental mediation, neighborhood liaison and urban planning from a broad perspective.

CSC has participated in development projects of all types and sizes. From its involvement in very large new community subdivisions, planned unit developments and projects of a regional impact, the firm has attained a broad experience level and the facilities to provide a complete, integrated service. Because the firm continues to serve smaller scale projects, including daily surveying and design problems, it can offer personal service with hands-on, nuts-and-bolts communication.

Offices are located in Corrales, New Mexico, a rural suburb of Albuquerque. The staff enjoys the setting even though it is a departure from the environments we usually create. This location in no way conflicts with the firm's ability to serve clients in Albuquerque on a competitive basis or to consult in many locations in the State of New Mexico (principally Las Cruces, Santa Fe and Roswell), and occasionally in the states of Colorado, Arizona, Texas and Oklahoma.

For large projects or projects requiring "special treatment," CSC can contract as a prime professional and manage the complexities of the physical work, as well as coordinating the work of other professionals. It has taken projects from the design and planning stages through physical construction, including contract management.

The CSC staff fluctuates between 15 and 30 individuals and includes certified planners, registered surveyors, professional engineers, development designers, technicians and support staff. All have brought capabilities and experience in land development consulting, including residential, commercial, recreational and environmental planning Residential Marketing consultation, particularly to homebuilders and project developers, is an adjunct to land-use planning which complements our abilities to stay in tune with market trends.

The firm is a closely-held private corporation with the majority ownership held by Georgia Spirock. The staff represents over 80 years of professional experience.

Personal professional service is our goal.

**FOR** 

LOTS 1 THROUGH 10 **BLOCK OF THE** SKYLINE HEIGHTS SUBDIVISION

#### PREPARED FOR

**VOICE STREAM** 4830 PAN AMERICAN FWY NE ALBUQUERQUE, NM

#### PREPARED BY

COMMUNITY SCIENCES CORPORATION P.O. BOX 1328 CORRALES, NEW MEXICO (505)897-0000 W. WHITH

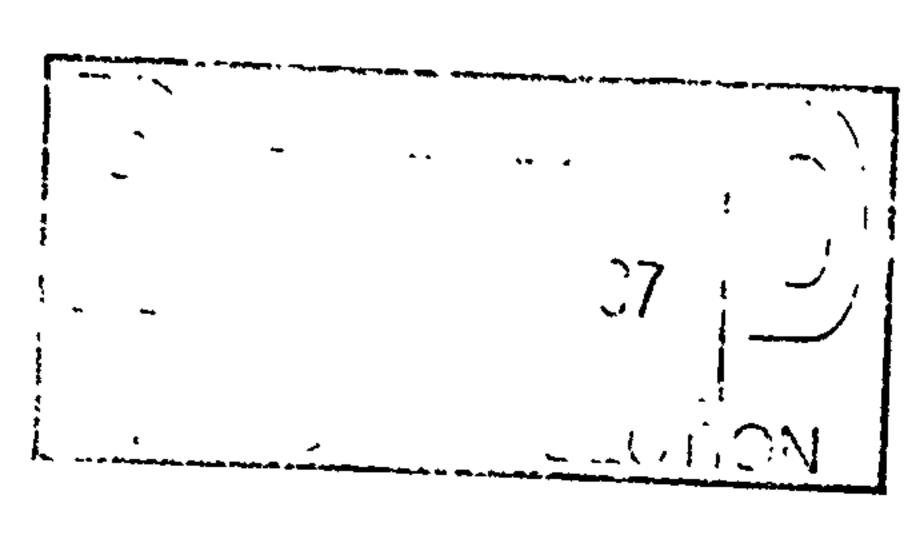
KENT M. WHITMAN, PE

328 New Mexico 87048 '-0000 Fax (505) 898-5195 P.O. Box Corrales, (505) 897

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SURVEYING LAND PLANNING CIVIL ENGINEERING

DEVELOPMENT CONSULTANTS

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Pocket - Steward Building Site Grading, Drainage Plan and Vicinity Map	

#### **PURPOSE**

This drainage plan is for the first phase of construction for storage buildings on Lots 1 through 10, Block 38 of Skyline Heights Subdivision. A building permit is being requested for a 60' x 250' storage building and parking lot on the east half of the site. A future drainage plan will have to be prepared prior to development of the west half of the site.

#### **PLANNING HISTORY**

The site consists of Lots 1 through 10, Block 38, Skyline Heights Subdivision as originally recorded in 1948. There is no drainage plan for that subdivision and the area is almost completely built out with commercial and industrial uses. These ten (10) lots were being combined into a single lot (1.86 acres) by a plat which was to be recorded by June 1996. The status of this replat is unknown by Community Sciences Corporation (CSC). This replat does not affect the hydrology or hydraulics of this report.

# -Xa

#### **EXISTING CONDITIONS**

On-Site - The site slopes to the northwest at a slope of 1.5%. Drainage on the west edge of the site is diverted to the north by an existing building and associated site improvements on Lot 6, Block 39, thus preventing cross lot drainage onto that lot. A substantial portion of the site sheet drains into Lot 5, Block 39, where the drainage is controlled by swales in the asphalt paving on that lot. This site is covered by compacted soil and some asphalt pavement. It is presently used for storage of construction materials and supplies, including soil stockpiles as indicated by the existing topography. Voice Stream has also constructed a tower on the site.

No

Off-Site - There are no significant off-site areas draining into this site. The roof of the adjacent building to the east appears to drain into this property. Acoma Avenue conveys approximately 366 cfs from Eubank Avenue to a floodplain on Moon Street west of the site. See FIRM Map panel 36 for the location of this floodplain. The South Eubank Area Storm Drainage Analysis, prepared by Smith Engineering, November 1995, identifies two (2) storm drains which are to be constructed by the City of Albuquerque (COA). The first of these storm drains is planned to be constructed in the Fall of 1997 and will decrease the Acoma Avenue flow to 233 cfs. The second, a 54" storm in Eubank Boulevard will be funded at a later time. Between these two (2) storm drains, the flow in Acoma Avenue will be decreased from the current 366 cfs to a proposed 93 cfs. This reduced flow will be contained by Acoma Avenue which has a capacity of 104 cfs according to this report.

The storm drain in Moon Street is inadequate for existing conditions, therefore, creating the A0, depth 1, Flood Hazard Zone identified on FIRM Panel 36. The South Eubank Study does not analyze the effects the proposed storm drains will have on this floodplain. It only states that the flow will be decreased from 366 cfs to 93 cfs (25.1 ac-ft to 1.60 ac-ft).

Hoodplin

#### PROPOSED CONDITIONS

The finished floor elevation for the proposed storage building is set over three feet (3') above the flow line in Acoma Avenue at the northeast corner of the site. This is above the flow depth of 1.2' for the 366 cfs flow in Acoma Avenue which currently exists. Therefore, no flood / protection is being provided to keep this flow out of this site. The future COA projects will remove this flow from entering this site.

Show

A drainage swale shall be constructed in the six foot (6') landscaping strip along the east boundary to this site. This swale will drain the roof from the existing building to the east to Acoma Avenue. This prevents off-site runoff from entering this development.

A temporary pond will be constructed on the west half of the site to control the discharge from this development to Acoma Avenue. Appendix A contains the AHYMO Summary and Detailed Output for both existing and proposed conditions. The pond will discharge to Acoma Avenue over a 24-hour period. This will decrease the run-off from 6.4 cfs to 0.4 cfs. Although the total run-off volume increases, this reduced rate should not have an adverse affect on the floodplain in Moon Street.

This pond will divert the majority of the flow from Lot 5, Block 39, which will reduce the cross lot drainage to this lot. It is anticipated that the west half of this site will be developed in about one (1) year. At this time, a retaining wall or some other drainage structure will eliminate the cross lot drainage. Another drainage study will have to be completed at that time.

Table 1
Hydrologic Conditions

Precipitatio	Land Treatment Existing	Existing	Proposed
$P_{e0} = 2.14$ "	C = 100%	$Q_{100} = 6.39 \text{ cfs}$	$Q_{100} = 8.36 \text{ cfs}$
P <sub>360</sub> = 2.14"	Proposed	V <sub>100</sub> = 0.20 ac-	V <sub>100</sub> = 0.37 ac-ft
P <sub>144</sub> = 3.10"	C=30%, D=70%		Pond outfall = 0.41 cfs

#### POND OUTLET CALCULATIONS

 $Q = 0.6 A (2 gh)^{1/2}$ 

 $Q_{avg} = (0.37 \text{ ac-ft}) (43,560 \text{ ft}^2/\text{ac}) + 86,400 \text{ sec}$ 

 $Q_{avg} = 0.19 \text{ cfs}$ 

 $A = 0.049 \text{ ft}^2 \text{ Q}$ 

H (ft)	Q (cfs)	Storage (ac- ft)
0.0	0.00	0.00
0.5	0.17	0.01
1.0	0.24	0.04
1.5	0.30	0.09
2.0	0.33	0.14
2.5	0.37	0.20
3.0	0.41	0.26
3.5	0.44	0.33

Maximum storage depth = 3.0' at elevation 59.0

## **APPENDIX A**

# AHYMO SUMMARY AND DETAILED OUTPUT

## SUMMARY OUTPUT

FINISH

AHYMO SUMMARY TABLE (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) =05/15/1997 INPUT FILE = ACOMA.DAT USER NO. = DAGGETTK.S94 FROM TO PEAK RUNOFF TIME TO PAGE = 1CFS HYDROGRAPH ID DISCHARGE AREA VOLUME RUNOFF PEAK PER IDENTIFICATION COMMAND NO. NO. (SQ MI) (CFS) (AC-FT) (INCHES) ACRE (HOURS) NOTATION \*S 100 YEAR PRE- AND POST-DEVELOPMENT START TIME= .00 TYPE= 2 RAINFALL RAIN24= 3.100 \*\*\*\*\*\*\*\* \*S \*100 YEAR PRE-DEVELOPMENT\* \*S **\***\$ \*\*\*\*\*\*\*\*\* 100.00 - 1 .00291 COMPUTE NM HYD 6.39 1.29037 .200 1.500 3.431 PER IMP= .00 \*S \*\*\*\*\*\*\*\* **\***\$ \*100 YEAR POST-DEVELOPMENT\* \*S \*\*\*\*\*\*\*\* 100.00 -.00291 8.36 COMPUTE NM HYD 2.38716 1.500 .370 4.491 PER IMP= 70.00 100.10 .00291 ROUTE RESERVOIR .370 2.38704 2.350 .219 AC-FT= .257

# DETAILED OUTPUT

AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994 RUN DATE (MON/DAY/YR) = 05/15/1997 START TIME (HR:MIN:SEC) = 12:16:20 USER NO. = DAGGETTK.S94 INPUT FILE = ACOMA.DAT

\*S 100 YEAR PRE- AND POST-DEVELOPMENT

TIME=0.0 HR PUNCH CODE=0
RAINFALL TYPE=2 RAIN QUARTER=0.0

RAIN ONE=2.14 IN RAIN SIX=2.60 IN RAIN DAY=3.10 IN DT=0.05 ERS

COMPUTED 24-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR. .050000 HOURS END TIME = 24.000000 HOURS DT =.0084 .0123 .0000 .0041 .0269 .0173 .0220 .0319 .0372 .0606 .0672 .0427 .0484 .0543 .0741 .0814 .1263 .0892 .0975 .1063 .1159 .1353 .1453 .1742 .2424 .3597 .5412 .8026 1.1599 1.4418 1.5691 1.6754 1.7685 1.8518 1.9272 1.9960 2.0591 2.1173 2.1709 2.2204 2.2663 2.2773 2.2875 2.2971 2.3061 2.3146 2.3226 2.3303 2.3377 2.3447 2.3515 2.3580 2.3643 2.3704 2.3763 2.3820 2.3875 2.3929 2.3982 2.4033 2.4083 2.4132 2.4179 2.4226 2.4271 2.4316 2.4360 2.4403 2.4445 2.4486 2.4526 2.4566 2.4605 2.4644 2.4682 2.4719 2.4755 2.4792 2.4827 2.4862 2.4897 2.4931 2.4964 2.4998 2.5030 2.5063 2.5094 2.5126 2.5157 2.5188 2.5218 2.5248 2.5278 2.5307 2.5336 2.5365 2.5393 2.5421 2.5449 2.5477 2.5504 2.5531 2.5558 2.5584 2.5610 2.5636 2.5662 2.5688 2.5713 2.5738 2.5763 2.5787 2.5812 2.5836 2.5860 2.5884 2.5907 2.5931 2.5954 2.5977 2.6000 2.6021 2.6043 2.6064 2.6085 2.6106 2.6127 2.6148 2.6169 2.6190 2.6211 2.6231 2.6252 2.6272 2.6293 2.6313 2.6333 2.6354 2.6374 2.6394 2.6414 2.6434 2.6454 2.6474 2.6493 2.6513 2.6533 2.6552 2.6572 2.6591 2.6611 2.6630 2.6649 2.6668 2.6688 2.6707 2.6726 2.6745 2.6763 2.6782 2.6801 2.6820 2.6838 2.6857 2.6876 2.6894 2.6912 2.6931 2.6949 2.6967 2.6986 2.7004 2.7022 2.7040 2.7058 2.7076 2.7094 2.7111 2.7129 2.7147 2.7165 2.7182 2.7200 2.7217 2.7235 2.7252 2.7270 2.7287 2.7304 2.7321 2.7339 2.7356 2.7373 2.7390 2.7407 2.7424 2.7441 2.7457 2.7474 2.7491 2.7508 2.7524 2.7541 2.7558 2.7574 2.7591 2.7607 2.7623 2.7640 2.7656 2.7672 2.7688 2.7705 2.7721 2.7737 2.7753 2.7769 2.7785 2.7801 2.7817 2.7832 2.7848 2.7864 2.7880 2.7895 2.7911 2.7927 2.7942 2.7958 2.7973 2.7989 2.8004 2.8019 2.8035 2.8050 2.8065 2.8081 2.8096 2.8111 2.8126 2.8141 2.8156 2.8171 2.8186 2.8201 2.8216 2.8231 2.8245 2.8260 2.8275 2.8290 2.8304 2.8319 2.8334 2.8348 2.8363 2.8377 2.8392 2.8406 2.8421 2.8435 2.8449 2.8464 2.8478 2.8492 2.8506 2.8520 2.8535 2.8549 2.8563 2.8577 2.8591 2.8605 2.8619 2.8633 2.8647 2.8660 2.8674 2.8688 2.8702 2.8716 2.8729 2.8743 2.8757 2.8770 2.8784 2.8797 2.8811 2.8824 2.8838 2.8851 2.8865 2.8878 2.8892 2.8905 2.8918 2.8931 2.8945 2.8958 2.8971 2.8984

2.8997 2.9011 2.9024 2.9037 2.9050 2.9063 2.9076

```
2.9089 2.9102 2.9115 2.9127 2.9140 2.9153 2.9166
2.9179 2.9191 2.9204 2.9217 2.9229 2.9242 2.9255
2.9267 2.9280 2.9292 2.9305 2.9317 2.9330 2.9342
2.9355 2.9367 2.9380 2.9392 2.9404 2.9416 2.9429
2.9441 2.9453 2.9465 2.9478 2.9490 2.9502 2.9514
2.9526 2.9538 2.9550 2.9562 2.9574 2.9586 2.9598
2.9610 2.9622 2.9634 2.9646 2.9658 2.9669 2.9681
2.9693 2.9705 2.9717 2.9728 2.9740 2.9752 2.9763
2.9775 2.9787 2.9798 2.9810 2.9821 2.9833 2.9844
2.9856 2.9867 2.9879 2.9890 2.9902 2.9913
2.9936 2.9947 2.9958 2.9970 2.9981
                                    2.9992
3.0014 3.0026 3.0037 3.0048 3.0059 3.0070 3.0081
3.0092 3.0103
                             3.0137
              3.0114
                                     3.0147
3.0169 3.0180
              3.0191
                      3.0202
                             3.0213
3.0245 3.0256
                     3.0278
                             3.0289
              3.0267
3.0321 3.0331
             3.0342
                     3.0353
                             3.0363
3.0395 3.0406
              3.0416 3.0427
                             3.0437
      3.0479
3.0469
              3.0489
                     3.0500
                             3.0510
3.0541
      3.0552
              3.0562
                     3.0572
                             3.0582
3.0613
       3.0623
              3.0634
                     3.0644
                             3.0654
3.0684
      3.0694
              3.0704
                     3.0715
                             3.0725
      3.0765
              3.0775
                     3.0785
                             3.0795
3.0824
       3.0834
              3.0844
                      3.0854
                             3.0864
3.0893
       3.0903
                             3.0932
                      3.0922
              3.0913
                                    3.0942 3.0952
3.0961 3.0971
              3.0981 3.0990 3.1000
```

COMPUTE NM HYD ID=1 HYD NO=100.0 DA=0.00291 SQ MI

PER A=0.0 PER B=0.0 PER C=100.0 PER D=0.0

TP=-0.1333 HR MASS RAIN=-1

K = .108912HR TP = .133300HR K/TP RATIO = .817047 SHAPE CONSTANT, N = 4.373949 UNIT PEAK = 8.2820 CFS UNIT VOLUME = 1.000 B = 379.38 P60 = 2.1400 AREA = .002910 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

PRINT HYD ID=1 CODE=1

#### PARTIAL HYDROGRAPH 100.00

RUNOFF VOLUME = 1.29037 INCHES = .2003 ACRE-FEET
PEAK DISCHARGE RATE = 6.39 CFS AT 1.500 HOURS BASIN AREA = .0029 SQ. MI.

COMPUTE NM HYD ID=1 HYD NO=100.0 DA=0.00291 SQ MI

PER A=0.0 PER B=0.0 PER C=30.0 PER D=70.0

TP=-0.1333 HR MASS RAIN=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420 UNIT PEAK = 8.0422 CFS UNIT VOLUME = .9978 B = 526.28 P60 = 2.1400 AREA = .002037 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR

#### RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .050000

K = .108912HR TP = .133300HR K/TP RATIO = .817047 SHAPE CONSTANT, N = 4.373949 UNIT PEAK = 2.4846 CFS UNIT VOLUME = .9972 B = 379.38 P60 = 2.1400 AREA = .000873 SQ MI IA = .35000 INCHES INF = .83000 INCHES PER HOUR RUNOFF COMPUTED BY INITIAL ABSTRACTION/DEFILTRATION NUMBER METHOD - DT = .050000

PRINT HYD ID=1 CODE=1

#### PARTIAL EYDROGRAPH 100.00

RUNOFF VOLUME = 2.38716 INCHES = .3705 ACRE-FEET

PEAK DISCHARGE RATE = 8.36 CFS AT 1.500 HOURS BASIN AREA = .0029 SQ. MI.

ROUTE 1	RESERVOIR	ID=2 HYD NO=10	0.1 INFLOW ID=1	CODE=5
		OUTFLOW (CFS)	STORAGE (AC FT)	ELEV (FT)
		0.00	0.30	56.0
		0.17	0.01	56.5
		0.24	0.04	57.0
		0.30	0.09	57.5
		0.33	0.14	58.0
		0.37	0.20	58.5
		0.41	0.25	59.0
		0.44	0.33	59.5

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

TIME	INFLOW	ELEV	VOLUME	CUTFLOW
(HRS)	(CFS)	(FEET)	(AC-FT)	(CFS)
				•
:00	.00	56.00	.000	.00
.25	.00	56.00	.000	.00
.50	.00	56.00	.000	.00
.75	.00	56.00	.000	.00
1.00	.09	56.02	.000	.01
1.25	.81	56.25	.005	.09
1.50	8.36	57.52	.092	.30
1.75	3.26	58.48	.197	.37
2.00	1.90	58.84	.241	.40
2.25	.56	58.97	.257	.41
2.50	.27	58.97	.257	.41
2.75	.16	58.94	.252	.40
3.00	.10	58.89	.247	.40
3.25	.08	58.84	.240	.40
3.50	.07	58.78	.234	.39
3.75	.06	58.72	.227	.39
4.00	.06	58.67	.220	.38
4.25	.06	58.61	.213	.38
4.50	.06	58.56	.207	.37
4.75	.05	58.50	.200	.37
5.00	.06	58.45	.194	.37
5.25	.06	58.39	.187	.36
5.50	.06	58.34	.191	.36
5.75	.06	58.29	.175	.35

<b>6</b> 00	۸۲	E0 24	1.60	<b>1</b> C
6.00	.06	58.24	.169	.35
6.25	.06	58.19	.163	.35
6.50	.06	58.14	.157	.34
6.75	.05	58.09	.151	.34
7.00	.05	58.04	.145	.33
7.25	.05	58.00	.140	.33
7.50	.05	57.94	.134	.33
7.75	.05	57.88	.128	.32
8.00	.05	57.83	.123	.32
8.25	.05	57.77	.117	.32
8.50	.05	57.72	.112	.31
8.75	.05	57.66	.106	.31
9.00	.05	57.61	.101	.31
9.25	.05	57.55	.095	
9.50	.05	57.50		.30
			.090	.30
9.75	.04	57.45	.085	.29
10.00	.04	57.40	.080	.29
10.25	.04	57.35	.075	.28
10.50	.04	57.30	.070	.28
10.75	.04	57.25	.065	.27
11.00	.04	57.21	.061	.26
11.25	.04	57.16	.056	.26
11.50	.04	57.12	.052	.25
11.75	.04	57.07	.047	.25
12.00	.04	57.03	.043	.24
12.25	.04	56.98	.039	.24
12.50	.04	56.91	.035	.23
12.75	.04	56.85	.031	.22
13.00	.04	56.79	.027	.21
13.25	.04	56.73	.024	.20
13.50	.04	56.68	.021	.19
13.75	.04	56.62	.017	.19
13.13	.04	J0.02	.017	• 17.3
TIME	INFLOW	ELEV	VOLUME	OUTFLOW
(HRS)	(CFS)	(FEET)	(AC-FT)	(CFS)
4 4 4 4		44		
14.00	.04	56.57	.014	.18
14.25	.04	56.52	.011	.17
14.50	.04	56.44	.009	.15
14.75	.04	56.34	.007	.11
15.00	.03	56.27	.005	.09
15.25	.03	56.22	.004	.07
15.50	.03	56.18	.004	.06
15.75	.03	56.16	.003	.05
16.00	.03	56.14	.003	.05
16.25	.03	56.13	.003	.04
16.50	.03	56.12	.002	.04
16.75	.03	56.11	.002	.04
17.00	.03	56.11	.002	.04
17.25	.03	56.10	.002	.04
17.50	.03	56.10	.002	.03
17.75	.03	56.10	.002	.03
18.00	.03	56.10	.002	
18.25				.03
	.03	56.09	.002	.03
18.50	.03	56.09	.002	.03
18.75	.03	56.09	.002	.03
19.00	.03	56.09	.002	.03
19.25	.03	56.09	.002	.03

```
19.50
                         56.09
                 .03
                                      .002
                                                 .03
   19.75
                                                 .03
                 .03
                         56.09
                                      .002
   20.00
                                                 .03
                 .03
                         56.09
                                      .002
   20.25
                 .03
                                                 .03
                         56.09
                                      .002
   20.50
                         56.09
                                                 .33
                 .03
                                      .002
   20.75
                                                 .93
                 .03
                         56.08
                                      .002
   21.00
                                                 .03
                 .03
                         56.08
                                      .002
   21.25
                 .03
                         56.08
                                                 . 33
                                      .002
   21.50
                         56.08
                 .03
                                                 .33
                                      .002
   21.75
                         56.08
                 .03
                                                 .33
                                      .002
   22.00
                 .03
                         56.08
                                                 .93
                                      .002
   22.25
                 .03
                         56.08
                                      .002
   22.50
                         56.08
                 .03
                                      .002
                                                 .03
   22.75
                         56.08
                 .03
                                      .002
   23.00
                         56.08
                 .03
                                      .002
                                                 .33
   23.25
                 .03
                         56.08
                                      .002
   23.50
                         56.08
                 .03
                                      .002
                                                 .33
   23.75
                         56.08
                 .03
                                      .002
                                                 .93
   24.00
                 .03
                         56.08
                                                 .03
                                      .002
   24.25
                 .00
                         56.07
                                      .001
                                                 .02
   24.50
                         56.05
                 .00
                                                 .02
                                      .001
   24.75
                         56.03
                 .00
                                      .001
                                                 .01
   25.00
                         56.02
                                                 .01
                 .00
                                      .000
   25.25
                         56.02
                 .00
                                      .000
                                                 .11
   25.50
                         56.01
                 .00
                                      .000
                                                 .00
PEAK DISCHARGE =
                          .408 CFS - PEAK OCCURS AT HOUR
                                                             2.35
MAXIMUM WATER SURFACE ELEVATION =
                                         58.979
                           .2574 AC-FT
MAXIMUM STORAGE =
                                             INCREMENTAL TIME=
                                                                    .050000HRS
```

PRINT HYD ID=2 CODE=1

#### PARTIAL HYDROGRAPH 100.10

RUNOFF VOLUME = 2.38704 INCHES = .3705 ACRE-FEET

PEAK DISCHARGE RATE = .41 CFS AT 2.350 HOURS BASIN AREA = .0029 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (ER:MIN:SEC) = 12:16:21

## APPENDIX B

# SOUTH EUBANK AREA STORM DRAINAGE ANALYSIS INFORMATION

						<del></del>	<u> </u>	<u> </u>				<del></del>					
			De	scription	•	SD Pipe Flows (Existing Facilities)						Surface Runoff					
	AP #	Plate #	Street	Location	Upstream MH #	Dia.* (In.)	Pipe* Capacity (cfs)	(cfs)	(actr.)	Q <sub>100</sub> * (cfs)	VOL <sub>no</sub> * (ac.ft.)	Street** Capec. (cfs)	Q <sub>p</sub> (cfs)	VOL <sub>26</sub> (ac.ft.)	Q <sub>100</sub> (cfs)	VOL, (ac.fl.)	
	26	44	Jane	Intersection @ Buena Ventura	S-973	48	126	122	9.9	122	12.8	72	122	2.5	256	7.8	
	21	44	Chico	Intersection @ Jane	S-772	48*	142	152	11.1	152	14.7	132	115	3.0	274	8.7	
	22	4.4	Chico	Intersection @ Morris	S-743	54*	145	162	12.9	162	17.2	107	221	8.6	435	18.8	
	23	44	N/A	Flow into existing 36° inlet pipe	•	36*	•	54	6.3	70	10.8	N/A	N/A	N/A	N/A	N/A	
	24	4.4	Chloo	Intersection @ Eubank	8-705	54*	156	219	20.1	235	29 0	107	193	8.3	420	18.8	
	25	44	Eubenk	Intersection @ Chico	8-704	60*	161	235	28 9	235	39 0	37	385	179	625	33.0	
1	16	44	Соррег	Intersection @ Bubank	N/A	N/A	•	•	•	•		107	250	9.0	510	23.1	
	7	44	N/A	Eubank Outfall @ I-40	S-304	72*	344	395	42.1	395	55.7	N/A	N/A	N/A	N/A	N/A	
1		4C	Southern	Intersection @ Elizabeth	N/A	N/A	•	•	•	•	•	103	101	5.5	160	9.0	
<u> </u>	•	4C	Acoma	Intersection @ Eubank	N/A	N/A	•	•		•		104	226	15.5	366	25.1	
3	•	4C	South of Southern	Intersection @ Eubank	N/A	N/A	•	-	-	•	•	82***	94	4.4	166	8.0	
3	1	4C	Proposed Elizabeth	Existing Retention Fond	N/A	N/A	•		•	•	•	N/A	397	20.8	744	38.9	
]_3	2	4C	Proposed Elizabeth	Flow @ Bubank	N/A	N/A	•			•	•	N/A	487	26.9	848	49.0	
3	3	4E	N/A	Olf at Outlet of Subbasin 603	N/A	N/A	•	•	•	•	•	N/A	84	4.2	147	74	
3	4	4E	N/A	Existing Retention Pond	N/A	N/A	•	•				N/A	143	8.2	218	13.0	
3.	5	4E	N/A	South West Corner of Landfill	N/A	N/A	•	•	•	•	•	N/A	159	9.8	289	17.9	

Pipe diameter and flow characteristics are at the entiet of the designated manhole. Pipe Capacity is from Manning's equation.

<sup>\*\*</sup>Flow is evenly distributed on both sides of street (except for Central Ave.). \*\*\*Read is not built.

Proposed Eubank SD

TABLE 8
PROPOSED SYSTEMS - OPTIONS A AND B

		0	PTION	Α .	О	OPTION B		
Pipe	Length (ft.)	Diam.	Slope (ft/ft)	Flow* (cfs)	Diam.	Slope (ft/ft)	Flow• (cfs)	Comments
1	300	48*	0.009	125	48"	0.009	125	
2	1620	54*	0.013	175	54*	0.013	175	
3	900	48*	0.0033	70	48*	0.0033	70	
4	1020	60*	0.0118	241	60°	.0118	241	OUTLETS AT TOMLINSON OUTFALL
5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PROPOSED DETENTION POND (BOTH OPTIONS)
6	650	60"	0.01	236	•	•	-	CONNECT INTO EXISTING CATTLE GUARD
7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	PROPOSED DETENTION POND (OPTION A ONLY)
8	1050	30"	0.005	30		<b>-</b>	-	CONNECT INTO MH S-902
9	1282	•	•	•	60*	0.012	300	REMOVE 36" AND REPLACE WITH 60"
10	914	•	•	<u>-</u>	60"	0.01	242	PARALLEL EXISTING 48" WITH 60"
11	670	•	-	•	84"	0.0053	404	
12	1450	•	•	•	72*	0.0126	402	
13	1120	84"	0.01	492	•	•	•	CONNECT INTO MH S-743
14	1450	84"	0.0072	488	72*	0.0126	402	OUTLETS INTO I-40 CHANNEL
15	150	54"	0.033	140	54*	0.033	140	CONNECT INTO MH S-103
16	400	84	0.0035	293	84*	0.005	369	CONNECT INTO MH S-42
17	1030	96*	0.0025	360	96"	0.003	441	
18	1075	96*	0.0035	499	96"	0.0051	592	

\*100-Year, 6-hour event

	DESCRIPTION .			OPTION A				OPTION B				Developed Cond.***		
AP	Plate #	Street* Capacity (cfs)	Street	Location	Q <sub>se</sub> (cfs)	VOL, (ac.ft.)	Q <sub>100</sub> (cfs)	VOL <sub>100</sub> (ac.ft.)	Q <sub>30</sub> (cfs)	VOL <sub>30</sub>	Q <sub>100</sub> (cfs)	VOL <sub>100</sub>	Q <sub>10</sub> (4)	Q <sub>1m</sub>
19	4C	55	Bubank	Intersection @ Central	0	0	•	0	0	0	•	0 .	0	
29	44	72	Jane	Intersection @ Buena Ventura	65	1.7	156	4.5	0	0	36	0.6	122	256
21	44	132	Chi∞	Intersection @ Jane	37	0.6	139	3.4	8	0.2	31	0.8	115	274
22	44	107	Chi∞	Intersection @ Morris	0	0	•	0	55	2.9	156	6.4	221	435
23	4.4	N/A	N/A	Flow into existing 36° inlet pipe	•	•	•	•		•			N/A	N/A
24	44	107	Chico	Intersection @ Rubank	0	0	•	0	17	0.5	108	3.6	193	420
25	44	37	Eubank	Intersection @ Chico	•	0	25	0.5	112	2.5	242	9.5	385	625
26	44 .	107	Copper	Intersection @ Bubank	0	. 0		0	0	0	150	4.4	250 .	510
27	44	N/A	N/A	Eubank Outfall	•	•	•	•	•				N/A	N/A
28	4C	103	Southern	Intersection @ Elizabeth	0	0	•	0	0	0	•	0	101	160
29	4C	104	Acoma	Intersection @ Eubank	10	0.1	93	1.6	10	0.1	93	1.6	226	366
30	4C	82**	?	Intersection @ Eubank	77	2.9	120	4.6	77	2.9	120	4.6	94	166
31	4C	N/A**	Proposed Elizabeth	Existing Retention Pond	0	0	•	Ó	0	0	•	0	397	744
32	4C	N/A**	Proposed Elizabeth	Flow @ Bubank	0	0	•	0	0	0	•	0	487	348
33	4 <b>P</b>	N/A	N/A	OLF @ Outlet of Subbasin 603	84	4.2	147	7.4	84	4.2	147	7.4	84	147
34	4E	N/A	N/A	Existing Retention Pond	0	0	•	Ó	0	0	•	0	143	218
35	4E	N/A	N/A	Southwest Corner of Landfill	9	0.4	25	1.1	9	0.4	25	1.1	159	289

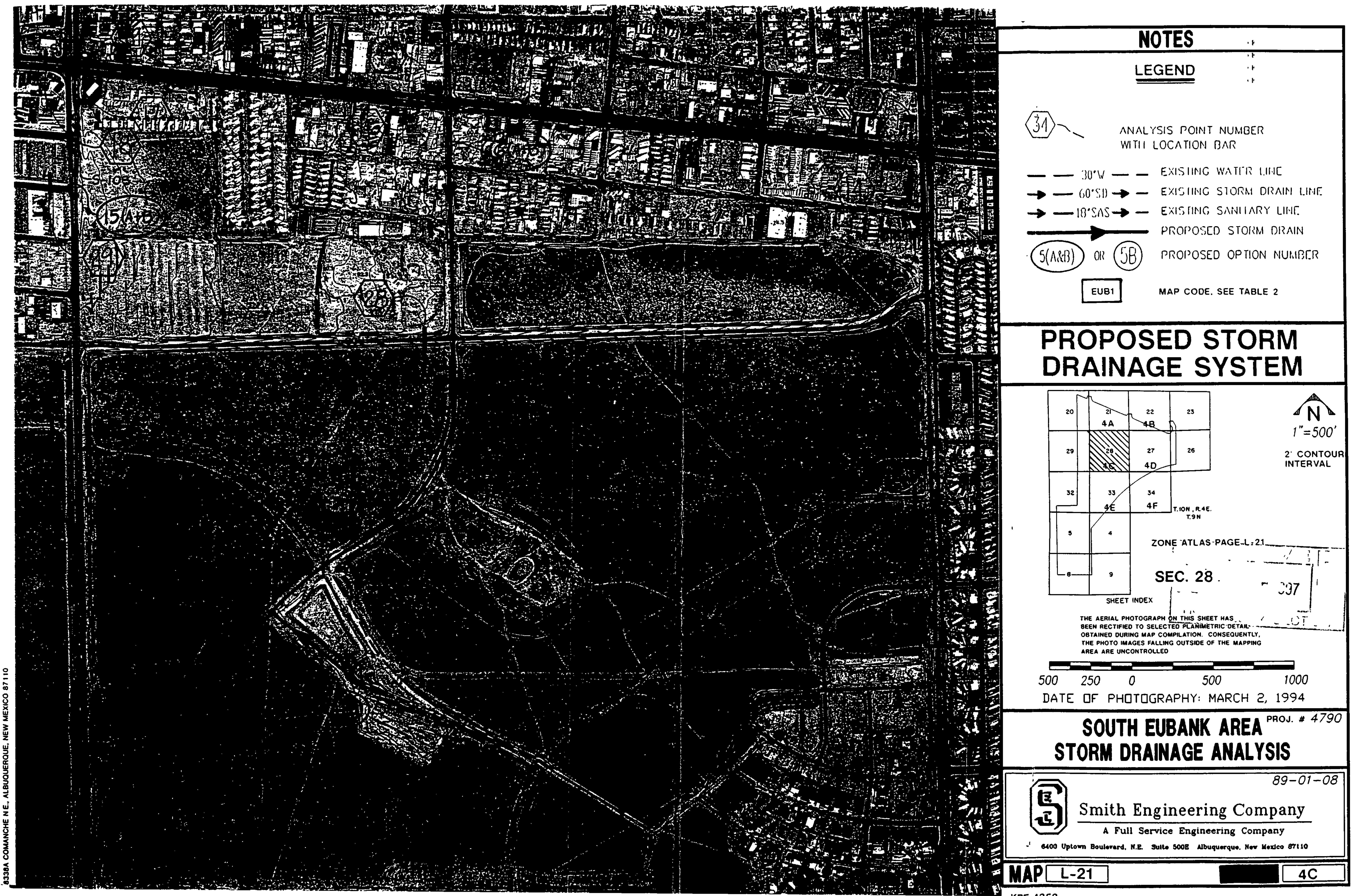
<sup>\*</sup>Flow is evenly distributed on both sides of street(except for Central Ave.) (Assumed depth of flow at curb line is 8".)

42

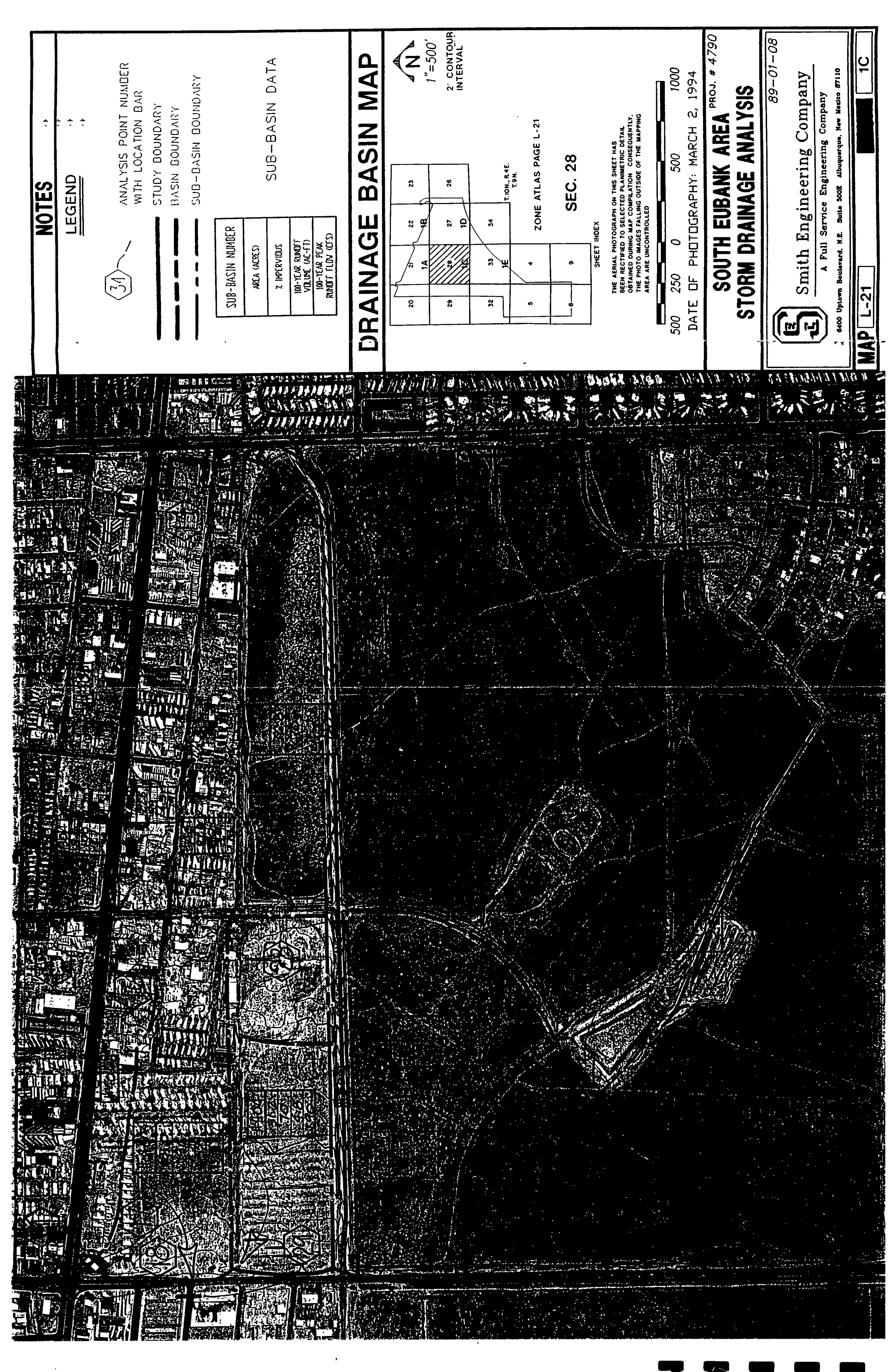
Acoma

<sup>\*\*</sup>Road is not built

<sup>\*\*\*</sup>Existing overland flow, developed conditions, from Table 6

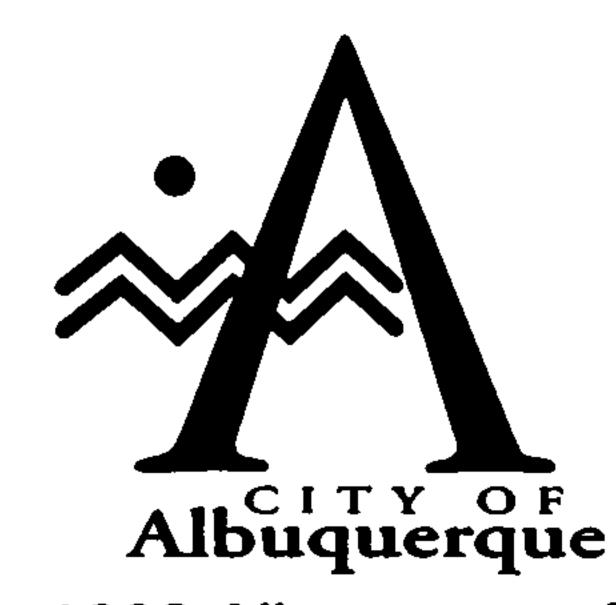


GLE & FUULS ....NE ..... 3, 1.



#### DRAINAGE INFORMATION SHEET

PROJECT TITLE: Stewart Buildings 10200 Acoma Ave.	ZONE ATLAS/DRNG. FILE #: L-20/4/10 5/						
LEGAL DESCRIPTION: Tract A, Block 38, Skyline Heigh	ts -						
CITY ADDRESS: 10200 Acoma Avenue							
ENGINEERING FIRM: Community Sciences Corporation	CONTACT:lames_DHughesP.E						
ADDRESS: P.O. Box 1328, Corrales, N. M. 87048	PHONE:897-0000						
OWNER: Al Stewart	CONTACT: Al Stewart						
ADDRESS:	PHONE:						
ARCHITECT:N/A	CONTACT:						
ADDRESS:	PHONE:						
SURVEYOR:N/A	CONTACT:						
ADDRESS:	PHONE:						
CONTRACTOR: Unknown	CONTACT:						
ADDRESS:	PHONE:`						
PRE-DESIGN MEETING: YES	DRB NO						
XNO	EPC NO						
COPY OF CONFERENCE RECAP SHEET PROVIDED							
TYPE OF SUBMITTAL:	CHECK TYPE OF APPROVAL SOUGHT:						
DRAINAGE REPORT	SKETCH PLAT APPROVAL						
X DRAINAGE PLAN	PRELIMINARY PLAT APPROVAL						
CONCEPTUAL GRADING AND DRAINAGE PLAN 6	SITE DEVELOPMENT PLAN APPROVAL						
X_GRADING PLAN	FINAL PLAT APPROVAL						
EROSION CONTROL PLAN	X BUILDING PERMIT APPROVAL						
ENGINEER'S CERTIFICATION	FOUNDATION PERMIT APPROVAL						
	CERTIFICATE OF OCCUPANCY APPROVAL  X ROUGH GRADING PERMIT APPROVAL						
, <u></u>	GRADING/PAVING PERMIT APPROVAL						
DATE SUBMITTED:	OTHER(SPECIFY)						
BY:	•						



P.O. Box 1293 Albuquerque, NM 87103

June 28, 1996

Martin J. Chávez, Mayor

James D. Hughes, PE Community Science Corp P.O. Box 1328 Corrales, NM 87048

RE: GRADING & DRAINAGE PLAN FOR W.W. SKYLINE ANTENNAE SITE (L-20/D57)
RECEIVED JUNE 5, 1996 FOR ROUGH GRADING & BUILDING PERMIT
ENGINEER'S STAMP DATED 6-4-96

Dear Mr. Hughes:

Based on the information included in the submittal referenced above, City Hydrology accepts the grading & drainage plan for Building Permit.

Include a copy of the grading & drainage plan in the set of construction documents that will be submitted to Code Administration for the Building Permit.

Engineer's Certification of grading & drainage per DPM checklist must be accepted by City Hydrology before the Certificate of Occupancy is released.

A Rough Grading Permit is only required when 1 acre or more than 500 cubic yards are involved.

If you have any questions about this project, You may contact me at 768-2727.

Sincerely,

John P. Curtin, P.E.

Civil Engineer, Hydrology

c: Andrew Garcia
Skip Sterling, Western Wireless, 4830 Pan American Freeway Suite A, 87109



#### DRAINAGE INFORMATION SHEET

PROJECT TITLE: Western Wireless Skyline Site	ZONE ATLAS/DRNG. FILE #: L-20Z / //						
LEGAL DESCRIPTION: Tract A, Block 38 Skyline Heights							
CITY ADDRESS: 10200 Acoma Avenue							
ENGINEERING FIRM: Community Sciences Corporation	CONTACT: James D. Hughes, P.E.						
ADDRESS: P.O. Box 1328, Corrales, N. M. 87048	PHONE:897-0000						
OWNER: <u>Western Wireless</u>	CONTACT: Skip Sterling						
ADDRESS: <u>4830 Pan American Freeway. Suite A</u>	PHONE: 878-6860						
Albuquerque, NM 87109 ARCHITECT:	CONTACT:						
ADDRESS:	PHONE:						
SURVEYOR:,	CONTACT:						
* ADDRESS:	PHONE:						
CONTRACTOR:	CONTACT:						
ADDRESS:	PHONE:						
PRE-DESIGN MEETING:							
YES	DRB NO						
X_ NO	EPC NO						
COPY OF CONFERENCE RECAP SHEET PROVIDED	PROJ. NO						
TYPE OF SUBMITTAL:	CHECK TYPE OF APPROVAL SOUGHT:						
DRAINAGE REPORT	SKETCH PLAT APPROVAL						
X DRAINAGE PLAN	PRELIMINARY PLAT APPROVAL						
CONCEPTUAL GRADING AND DRAINAGE PLAN 6	SITE DEVELOPMENT PLAN APPROVAL						
X_GRADING PLAN	FINAL PLAT APPROVAL						
EROSION CONTROL PLAN	X BUILDING PERMIT APPROVAL						
ENGINEER'S CERTIFICATION	FOUNDATION PERMIT APPROVAL						
	CERTIFICATE OF OCCUPANCY APPROVAL						
F 1096	X_ ROUGH GRADING PERMIT APPROVAL						
I'. JUN 3 133	GRADING/PAVING PERMIT APPROVAL						
DATE SUBMITTED:	OTHER(SPECIFY)						
DV.							

