CITY OF ALBUQUERQUE

March 25, 2009

Scott Medina, PE
Mark Goodwin & Associates
P.O. 90606
Albuquerque, NM 87199

Re: Talavera Subdivision Drainage Management Plan
Engineer's Stamp dated 1-7-09

Dear Mr. Medina,

Based on the information contained in the above reference DMP submitted dated 1-13-09, I offer the following comments since all of this property is outside the City limits, City criteria does not apply; however, if it is anticipated to annex this land into the City,

- In order to obtain public maintenance for pond #6, it would need to be 2 ac-ft in volume, minimum. Increasing the size would also alleviate the burden on the surge pond (12E) just downstream. Please consider that when the subdivisions within the Snow Vista basin are in design.

- Your basin map infers that all of 118th will drain into the Amole Arroyo. This would also infer that there will be a waterblock at all the roads connecting to 118th or that there will be enough storm drain to completely contain this basin. Looking at the topography of the area, it will be difficult to provide a waterblock at those intersections.

- Flows into Westgate subdivision should be kept to a minimum since there is a history of drainage problems on Benevides and any additional runoff entering this street may require some storm drain extension as part of your project.

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

Sincerely,

Bradley L. Bingham, PE
Principal Engineer, Planning Dept
Development and Building Services

C: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

City of Albuquerque Planning Department

One Stop Shop – Development and Building Services

01/13/2009 Issued By: PLNSDH

Permit Number: **2009 060 003** **Category Code 070**

Application Number: 09REV-60003, Review:Drain Plan-Lomr-Traffic Impact

Address:

Location Description: TALAVERA M-08

Project Number: null

Applicant

Agent / Contact
Mark Goodwin And Associates Pa
Mark Goodwin
P.O. Box 90606
Albuquerque NM 87199

mark@goodwinengineers.com

Application Fees

441006/4283000	REV Actions	

TOTAL:

11/13/09
NO FEE
BLB

RECEIVED
JAN 13 2009
HYDROLOGY
SECTION

DRAINAGE AND TRANSPORTATION INFORMATION SHEET
(Rev. 12/05)

M-08/D004

PROJECT TITLE: Talavera Subdivision Drainage Management Plan ZONE MAP/DRG. FILE #
DRB#: EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Lands of Grevey/Liberman Tract 3
CITY ADDRESS:

ENGINEERING FIRM: D. Mark Goodwin & Associates CONTACT: Scott Medina
ADDRESS: P.O. Box 90606 PHONE: 828-2200
CITY, STATE: Albuquerque, NM ZIP CODE: 87113

OWNER: Albuquerque Rio Bravo Partners CONTACT: Bill Allen
ADDRESS: 6330 Riverside Plaza Ln, Suite 220 PHONE: 898-5507
CITY, STATE: Albuquerque, NM ZIP CODE: 87120

ARCHITECT: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

SURVEYOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

CONTRACTOR: CONTACT:
ADDRESS: PHONE:
CITY, STATE: ZIP CODE:

TYPE OF SUBMITTAL:
__X__ DRAINAGE REPORT
_____ DRAINAGE PLAN 1st SUBMITTAL
_____ DRAINAGE PLAN RESUBMITTAL
_____ CONCEPTUAL G & D PLAN
_____ GRADING PLAN
_____ EROSION CONTROL PLAN
_____ ENGINEER'S CERT (HYDROLOGY)
_____ CLOMR/LOMR
_____ TRAFFIC CIRCULATION LAYOUT
_____ ENGINEER/ARCHITECT CERT (TCL)
_____ ENGINEER/ARCHITECT (DRB SITE PLAN)
_____ OTHER

CHECK TYPE OF APPROVAL SOUGHT:
_____ SIA/FINANCIAL GUARANTEE RELEASE
_____ PRELIMINARY PLAT APPROVAL
_____ S. DEV. PLAN FOR SUB'D APPROVAL
_____ S. DEV. FOR BLDG. PERMIT APPROVAL
_____ SECTOR PLAN APPROVAL
_____ FINAL PLAT APPROVAL
_____ FOUNDATION PERMIT APPROVAL
_____ BUILDING PERMIT APPROVAL
_____ CERTIFICATE OF OCCUPANCY (PERM)
_____ CERTIFICATE OF OCCUPANCY (TEMP)
_____ GRADING PERMIT APPROVAL
_____ PAVING PERMIT APPROVAL
__X__ WORK ORDER APPROVAL
__X__ OTHER (SPECIFY) City channel

The entire D.M.P.

RECEIVED
JAN 13 2009

WAS A PRE-DESIGN CONFERENCE ATTENDED:
_____ YES
_____ NO
_____ COPY PROVIDED

SUBMITTED BY: DATE: 11/13/2009

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location and scope to the proposed development define the degree of drainage detail. One or more of the following levels of submittal may be required based on the following:

1. **Conceptual Grading and Drainage Plan**: Required for approval of Site Development Plans greater than five (5) acres and Sector Plans.

2. **Drainage Plans**: Required for building permits, grading permits, paving permits and site plans less than five (5) acres.

3. **Drainage Report**: Required for subdivision containing more than ten (10) lots or constituting five (5) acres or more.

D. Mark Goodwin & Associates, P.A.
Consulting Engineers
P.O. BOX 90606, ALBUQUERQUE,NM 87199
(505) 828-2200 FAX 797-9539

~ 2008 ACEC/NM Award Winner for Engineering Excellence, Small Firm ~

January 6, 2009

Ms. Lynn Mazur, P.E., C.F.M.
AMAFCA
Development Review Engineer
2600 Prospect N.E.
Albuquerque, NM 87107

Re: Drainage Report for Talavera Subdivision, ZAP M-8

Ms. Lynn Mazur:

The following letter is in response to the comments provided in your letter dated November 3, 2008. I have provided clarifications to each of your comments below and revised the report to include the requested tables.

1. *The hydrologic model was developed in an effort to represent the worse case scenario. The A-H DMP requires the existing de-sedimentation pond to be expanded and the outfall flow rates to be restricted with future outfall improvements to match future development. Therefore, we concluded the existing conditions pose a greater impact with the higher peak flow rates and lower time to peak.*
2. *The flow rates upstream of the Talavera Subdivision are regulated by the existing de-sedimentation pond outfall structure. Any increase in volume will improvement the existing conditions by delaying the peak stage condition within the de-sedimentation pond.*
3. *In an effort to more accurately project the potential future development conditions, we performed slope analysis of Basins 10013 thru Basin 10017. We include a new exhibit illustrating the study area and the limits of the 9% area utilizing AMAFCA topography.*
4. *The area for the Powerline Ponds and Channel are included in Basin T101 thru T105. This is a conservative approach, due to the fact model will route this additional flow through the development.*
5. *Basin 380 was originally included in the South Powerline Basin. In the original A-H DMP, Basin 380 was planned to flow south into the Rio Bravo Basin. Subsequent developments with Andersen Heights Subdivision and the Amole Arroyo have changed the master plan to divert Basin 380 into the Amole Arroyo. These develop conditions were accounted for in the model, in order to evaluate the proposed improvements and the capacity of the Amole Arroyo.*
6. *The Talavera Subdivision was restricted to the 3 DU per acre (2.9 actual) as identified in the Southwest Sector Plan. We applied the same 3 DU per acre density to all the future developed conditions. Therefore, all future projections should be proportional with the Talavera Subdivision.*
7. *The model provided in the Drainage Report ends at the Amole Arroyo and Del Gado Road crossing. Since the modeled flow rate is less than the DMP flow rate in the Amole Channel, extending the model downstream will not be necessary.*
8. *The report has be revised to show analysis points at the Powerline/Amole Arroyo confluence and the at the Amole Arroyo/Del Gado crossing.*
9. *We will obtain City of Albuquerque approval of the following drainage report prior to preliminary plat submittal.*

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

Scott Medina, P.E.
Project Engineer
xc: Brad Bingham, City Hydrology

F:\1-Projects\2004\A04097 - Talavera\AMAFCA Response Ltr 1-6-09..doc

MARK GOODWIN
& ASSOCIATES
CONSULTING ENGINEERS

TALAVERA SUBDIVISION
DRAINAGE MANAGEMENT PLAN

Prepared for
Albuquerque Rio Bravo Partners, LLC
6330 Riverside Plaza Lane NW, Suite 220
Albuquerque, NM 87120
(505) 898-5051

Prepared by

Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199
(505) 828-2200

January 2009

TABLE OF CONTENTS

I. INTRODUCTION

In August 2007, a special use permit was approved for the Talavera Subdivision for a planned development within Bernalillo County. The proposed development consists of 241acres bounded by Timmaron West subdivision and Artisco Village to the east, the Amole Arroyo and Westgate Dam to the south, and properties of Westland to the west. One of the major components for the proposed development includes creating a Drainage Management Plan to identify the on-site and off-site grading and drainage requirements.

The AMFCA approved Amole-Hubbel Drainage Management Plan (Leedshill-Herkenhoff, 1999) identifies required drainage improvements for the Western Albuquerque Metropolitan Area, which directly affect the planned development area. The proposed site lies within Powerline Basin, Snow Vista Basin, and Amole Arroyo Basin as identified in the drainage management plan. In addition, several adjacent developments have expanded the various site-specific details such as the Timmaron West Subdivision and the recent Amole Arroyo improvements. The Talavera Drainage Management Plan will incorporate these drainage studies and recent improvements into the site-specific drainage concepts presented herein. The purpose of the Talavera Subdivision Drainage Management Plan is to obtain approval from AMAFCA and Bernalillo County in conformance with the special use permit.

II. HYDROLOGY

The Talavera Subdivision presently receives off-site flows from approximately 770 acres. The Talavera Subdivision consists of 141 acres within the Powerline Basin, 23 acres within the Snow Vista Basin, and 77 acres within the Amole Arroyo Basin. The majority of the upstream off-site properties are undeveloped land sloping predominantly southeast towards the Powerline Channel. The downstream off-site properties lying to the northeast are fully developed including the drainage infrastructure.

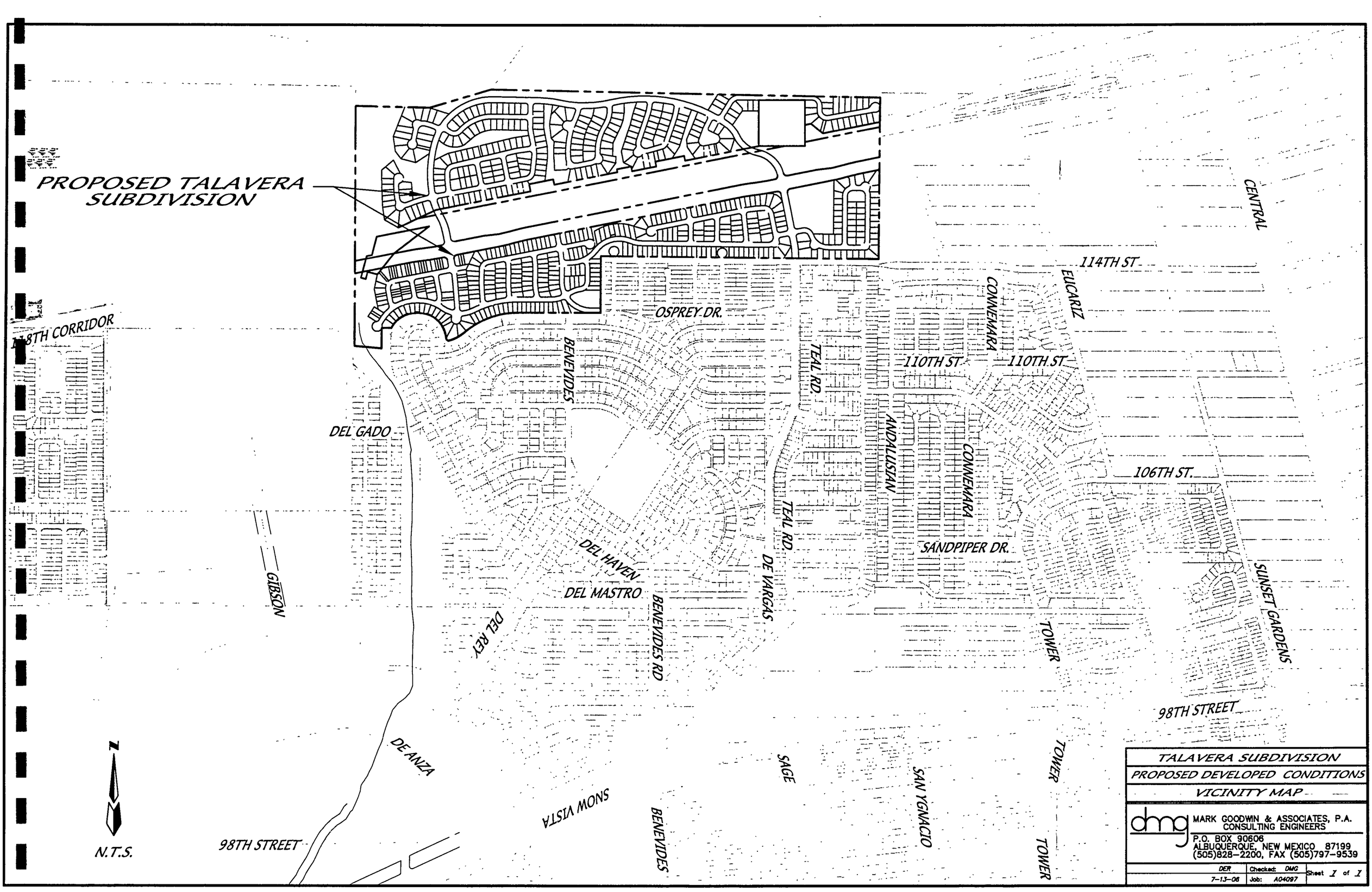
The storm water runoff within the Powerline Basin drains eastward with slopes ranging from 3% to 30%. Under existing conditions the Powerline Basin discharges 501 cfs as documented in the Amole-Hubbel Drainage Management Plan. These flows drain south in the Powerline Channel to combine with the Westgate Dam release at the confluence of the Powerline Channel and the Amole Arroyo.

The drainage area located along the northeast corner of the site, Basin T108, lies within the Snow Vista Basin. Currently temporary ponds on the east property line collect runoff and route through an existing storm drain and ponding system within the Timmaron West Subdivision.

The remaining property along the east side of the Powerline Channel lies within the Amole Arroyo Basin. These 77 acres currently drain south along the eastern property line, and discharges into the Amole Arroyo. In addition, a portion of the Timmaron West Subdivision Unit 5 currently drains into temporary ponds and will contribute to the flows for the proposed development.

Existing and proposed site hydrological conditions were analyzed and modeled for the 100-year, 6-hour storm event. The developed conditions model will provide an interim condition analysis the proposed development projecting a worse case scenario of all the off-site basins. All analysis and calculations supporting this report are located in Appendix B. Existing condition peak flows and developed condition peak flows were determined using the Arid-lands Hydrologic Model (AHYMO).

1.27



TALAVERA SUBDIVISION

PROPOSED DEVELOPED CONDITIONS

VICINITY MAP

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

DER	Checked: DMG	Sheet 1 of 1
7-13-06	Job: A04097	

III. PROPOSED DEVELOPED CONDITIONS

The Talavera Subdivision development consists of a combination of proposed developed conditions and existing conditions. In the Snow Vista Basin and Amole Arroyo Basin all the adjacent properties are fully developed, therefore a majority of the infrastructure is currently in place. The Powerline Basin and South Powerline Basin are mostly undeveloped requiring the interim conditions to be evaluated in addition to the fully developed conditions. Since the fully developed conditions for the Powerline Channel requires additional ponding volume within the channel restricting developed flows, the interim conditions will generate higher peak flow rates and additional sediment loading. Therefore the interim conditions will govern the design and required drainage improvements.

A. Off-Site Drainage

The original drainage management plan for the Powerline Basin required multiple linear detention ponds restricting the flows rates to 20 cfs. Currently, a single de-sedimentation pond exists immediately upstream of the proposed Talavera development. The existing de-sedimentation pond currently discharges approximately 120cfs during peak stage conditions. The peak flow rate and volume of water passing are substantially greater than the original drainage management plan. As such the design will maximize the ponding volume within the Powerline Channel located in the Talavera property limits, while restricting the pond volumes to less than 10 ac-ft and water heights to less than 10 ft. The proposed linear ponds will be designed to maintain the 100-year water surface elevation below the existing grade. By maintaining the 100-year water surface elevation below the existing grade, the proposed ponds will not require levees, the flooding risks for properties to the east is greatly reduced, and the operational requirements for AMAFCA will also be reduced.

In order to achieve the design constraints for the drainage improvements within the Powerline channel, the proposed discharge flow rate from the Powerline Basin into the Amole Arroyo will need to be increased to approximately 145 cfs. Currently the Amole Arroyo is designed to accommodate existing flow rates from the Powerline Basin and portions of the South Powerline Basin. These basins were planned to have restricted flows rates for developed conditions. Therefore, the existing conditions will have higher peak flows once developed. The Amole Arroyo at the Blake Road crossing has a designed hydraulic capacity of 784 cfs in order to accommodate these higher flow rates. The hydrologic analysis was expanded for the proposed developed conditions to include the outfall for the Westgate Dam, the South Powerline Basin, and portions of the Amole Arroyo Basin to determine if the increased flow rates from the Powerline Basin combined with the surrounding basins would remain within the Amole Arroyo capacity limitations. The developed conditions model projects a peak discharge flow rate of 662 cfs at the Blake Road crossing, which is well below the design capacity for the Amole Arroyo. (See Basin Map, Figure 2 in Appendix A.)

Powerline Channel Analysis Points

AP	Description	Existing Conditions	Proposed Conditions	Future Conditions
12	N. Talavera Property line	633.3 cfs	633.3 cfs	943.4 cfs
13	Powerline Channel Terminus	148.0 cfs	151.2 cfs	89.3 cfs
14	Powerline/Amole Arroyo	422.8 cfs	90.5 cfs	90.5 cfs
14.1	Del Gado Crossing	NA	618.7 cfs	618.7 cfs

Need

1. *Developed Conditions Model*

The developed conditions model utilized the same basins from the Amole-Hubbel DMP as shown in Figure 2. The drainage areas within the Talavera Subdivision were subtracted from the original basins while ensuring the total drainage area remains the same. The off-site drainage basins 10006 thru 10012 will remain in their existing condition continuing to drain along the Powerline Channel and route through the existing Powerline de-sedimentation basin. These basins utilized the percentage of developed areas (impervious area) as modeled in the Amole-Hubbel DMP.

Basins 10013 thru 10017are modeled as fully developed and continue to drain in their existing flow pattern up to the west property line of the Talavera Subdivision. Along the western boundary, the runoff will be diverted and collected into the four (4) existing arroyos. These four arroyos will be improved with storm drains and stabilized natural arroyos for open space and sediment transport. These arroyos will drain into the Powerline Channel and route through strategically located ponds within the Powerline Channel.

The impervious areas within Basins 10013 and 10017 were reevaluated for conformance with the Southwest Area Plan. All areas with slopes greater than 9% were considered undevelopable, and modeled in their existing conditions. The remaining developable area within these basins will use a projected maximum density of 3 DU's per acre for impervious area calculations, as required by the Southwest Area Plan. The slope analysis used a conservative approach, assuming all arroyos would be replaced with storm drains or hardlined systems, generating additional developable land.

Impervious Percentage Calculations for Basin 10014 thru 10018

Basin	A-H DMP Area acres	Talavera* Area acres	Channel* Area acres	9% Slope Area acres	Developable Area acres	New Basin Area acres	Impervious** Percentage
10014	55.10	4.95	3.25	19.30	27.60	46.90	19.6%
10015	62.46	14.69	10.69	8.25	28.84	37.09	25.9%
10016	63.36	14.97	6.15	12.34	29.89	42.24	23.6%
10017	61.44	10.60	4.67	21.77	24.41	46.17	17.6%
10018	42.24	23.80	7.18	11.26	0.0	11.26	0.0%

**Area within basin boundary*

***Percentage is base on 3 DU per acre of developable area*

2. *Off-Site Drainage Improvements*

The required drainage improvements will include the following:

- *Extending Amole Arroyo shot-crete channel approximately 1700' from the Blake Road crossing to the proposed alignment of 118th Street*
- *Extending Powerline Channel storm drain outfall from the Talavera property across 118th Street*
- *Constructing stabilize earth channel and storm drain crossing at 118th Street for the Westgate Dam outfall.*

B. *On-Site Drainage*

The Talavera development includes drainage areas within the Powerline Basin, Snow Vista Basin, and Amole Arroyo Basin as defined by the Amole-Hubbel DMP. The drainage areas within the proposed Talavera Subdivision will collect all storm water within the proposed streets and proposed storm drains. All

proposed storm water ponds will detain the 100-year, 6-hour storm event, discharge at flow rates equivalent to the existing capacities with the Amole Arroyo, and drain within 96 hours.

1. *Powerline Basins*

The proposed development located west of the Powerline Basins T101 thru T105, will collect storm water within localized storm drain networks for each sub-basin and discharge into strategically located detention ponds within the Powerline Channel. The county approved site plan proposes to grade stabilized natural channels, aligning with the existing arroyos extending into the adjacent western properties. These natural channels will accept existing flows in the interim condition until future development occurs. In the future, these channels will only provide flood relief and convey storm water collected with the natural channel.

2. *Snow Vista Basin*

The Talavera Subdivision consists of 23 acres (Basin T108) within the Snow Vista Basin. This portion of the development will collect all storm water runoff utilizing a local street networks and proposed storm drains. The storm water will be routed though a local 1 ac-ft pond designed to match the downstream storm drain and pond capacities. The proposed drainage plan will tie into the existing facilities within the Timmaron Subdivision Unit 4 in accordance with the Amole-Hubbel Drainage Management Plan and the Timmaron West Subdivision Unit 4 Drainage Management Plan.

3. *Amole Arroyo Basin*

The remaining Talavera property on the (east side of the Powerline Channel) includes 77 acres within the Amole Arroyo Basin. Basins T106 and T107, as shown on the basin map, will collect storm water in a single storm drain and convey the storm water south towards the Amole Arroyo. The storm drain will collect runoff from Basin 363 located within the Timmaron West Subdivision Unit 4 development as detailed in the Drainage Study for Timmaron Unit 3 & 4. These basins will free discharge into the Amole Arroyo approximately 500' upstream of the Blake Road crossing.

Table 1: Drainage Basins Land Treatments

Basin	Drainage Area (ac)	DU	Density	Land Treatment			
				A	B	C	D
T101	7.1	21	2.96	0%	34.1%	34.1%	31.9%
T102	11.1	23	2.07	0%	36.7%	36.7%	26.7%
T103	8.1	35	4.32	0%	30.8%	30.8%	38.5%
T104	18	43	2.39	0%	35.7%	35.7%	28.6%
T105	38.9	130	3.34	0%	33.1%	33.1%	33.9%
T106	18.12	84	4.64	0%	30.1%	30.1%	39.9%
T107	55.8	207	3.71	0%	32.2%	32.2%	35.7%
T108	24.64	52	2.11	0%	26.3%	25.7%	48.0%
T109	11.74	595		0%	7.5%	7.5%	85.0%

4. *On-Site Powerline Channel Drainage Improvements*

The drainage improvements required within the Powerline Channel include the following:

- *Construction of five (5) linear detention ponds ranging from 5 ac-ft to 8 ac-ft in volume.*
- *Each linear detention pond will require a controlled storm drain outfall and a shot-crete overflow weir.*
- *Build a 10 ft. maintenance road along the full length of the Powerline Channel*
- *Build four (4) 36" to 48" storm drain outfalls extending to the western property line.*

IV. SEDIMENT TRANSPORT

As detailed above, the Talavera Subdivision development will accept off-site flows from the adjacent properties to the west. These properties will remain in their existing condition; as such the design will accommodate the potential sediment loading from these drainage basins. The annual sediment loading estimates were made using the Modified Universal Loss Equation (MUSLE), as adapted to the Albuquerque area in the Design Guide (Mussetter 1994) shown below. Sediment loading calculations are summarized in Appendix D.

$$Y_S = C \cdot 95(V_W Q_P)^{.56} K \cdot LS \cdot C \cdot P$$

Y_S = *the total sediment yield in tons for the storm event*

The sediment analysis utilized the dominant flow rates for the offsite basins to the west. The estimated bed material transport volumes are summarized in Table 2. The average sediment volumes for each basin were estimated using the following equation that was taken from the Design Guide:

$$Y_m = 0.015Y_{100} + 0.015Y_{50} + 0.04Y_{25} + 0.08Y_{10} + 0.2Y_5 + 0.4Y_2$$

Y_m = *magnitude of the average annual event*

Y_i = *magnitude of the event for the 2-yr, 5-yr, 10-yr, 25-yr, and 100-yr storm*

The results indicate a relatively low volume of sediment transported within the individual arroyos on an annual basis. The proposed linear ponds will not be significantly impacted by these sediment volumes. In addition, the sediment loading will prevent the natural channels proposed within the Talavera Subdivision from degrading in the interim condition. In the future, the developed flows will be conveyed in storm drains, greatly reducing the flow rates within the natural channel, and eliminating potential erosion within these natural channels.

Table 2: Average Annual Sediment Loading

Basin	Ys (tons)	A (acres)	Vw (ac-ft)	Ys(t/acres)	Vsed (yds^3)
10014	43.50	55.10	0.149	0.789	32.22
10015	41.40	62.46	0.163	0.663	30.66
10016	28.09	63.36	0.165	0.443	20.81
10017	25.16	61.44	0.160	0.410	18.64

V. CONCLUSIONS

The Talavera Subdivision Drainage Management Plan provides solutions for the development that addresses both the projected future development and the interim drainage conditions. The proposed improvements will also provide future guidance for development within the Powerline Drainage Basin. All proposed drainage improvements addressed herein will be constructed in accordance with the current AMAFCA standards.

VI. *REFERENCES*

1. *Leedshill-Herkenhoff, Inc., 1999. Amole-Hubbel Drainage Management Plan. Prepared for Albuquerque Metropolitan Arroyo and Flood Control Authority.*

2. *Mussetter, R.A. Lagasse, P.F., and Harvey, M.D., 1994. Erosion and Sediment Design Guide. Prepared for Albuquerque Metropolitan Arroyo and Flood Control Authority.*

3. *Bohannan Huston, Inc., 2002. Timmaron Subdivision Unit 3& 4 Drainage Study Prepared for Albuquerque Metropolitan Arroyo and Flood Control Authority.*

4. *D. Mark Goodwin & Associates, P.A., 2004. Drainage Report for the Amole Channel Prepared for Albuquerque Metropolitan Arroyo and Flood Control Authority.*

APPENDIX A

BASIN MAPS

LEGEND

- AMOLE-HUBBEL BASIN BOUNDARY
- TALAVERA BASIN BOUNDARY
- (380) AMOLE-HUBBEL DRAINAGE BASIN ID
- [T105] TALAVERA DRAINAGE BASIN ID

N

SCALE: 1" = 1000'

"OVERALL BASIN" EXHIBIT

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Drawn: SPS | Checked: SM
Date: 12/12/2008 | Job: A04097

FIGURE 2

F:\A04JOBS\A4097\EXHIBIT\OBMap_exhibit.dwg

LEGEND

AMOLE-HUBBEL BASIN BOUNDARY

TALAVERA BASIN BOUNDARY

(380) AMOLE-HUBBEL DRAINAGE BASIN ID

[T105] TALAVERA DRAINAGE BASIN ID

SCALE: 1" = 400'

10017 10016 10015 10014 10013 10012

16 cfs 93 cfs 99 cfs 94 cfs 89 cfs 91 cfs

374 380 310

10018 POWERLINE BASIN

T105 T104 T103 T102 T101 T109 T106

33 cfs 44 cfs 27 cfs 128 cfs 68 cfs

POND #1 89 cfs

POND #2 81 cfs

POND #3 84 cfs

POND #4 114 cfs

POND #5 101 cfs

F:\A04JOBS\A4097\EXHIBIT\DBMaa_exhibit.dwg

"POWERLINE BASIN" EXHIBIT

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Drawn: SPS | Checked: SM | Date: 12/12/2000 | Job: A04097

FIGURE 3

SCALE: 1" = 400'

10018
T105
POWERLINE
BASIN
T104
128 cfs
T103
33 cfs
T102
44 cfs
27 cfs
T101
POND #1
89 cfs
POND #2
81 cfs
POND #3
84 cfs
POND #4
114 cfs
POND #5
101 cfs
68 cfs
T109
98 cfs
T106
T108
310
25 cfs
160 cfs
T107
303 cfs
43 cfs
352
352
POND 12E
340
320
OSPREY DR.
BENEVIDES
SPLIT 364
TEAL RD.
110TH ST
354
370
372
POND
DE VARGAS
TEAL RD.

LEGEND

- AMOLE-HUBBEL BASIN BOUNDARY
- TALAVERA BASIN BOUNDARY
- (380) AMOLE-HUBBEL DRAINAGE BASIN ID
- [T105] TALAVERA DRAINAGE BASIN ID

"AMOLE ARROYO BASIN"
EXHIBIT

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Drawn: SPS | Checked: SM
Date: 12/12/2008 | Job: A04097

FIGURE 4

F:\A04JOBS\A4097\EXHIBIT\exhibit.dwg exhibit.dwg

T105

T102

33 cfs

44 cfs

POND #1

89 cfs

POND #2

81 cfs

POND #3

84 cfs

SCALE: 1" = 400'

T109

T106

T108

310

77 cfs

POND #6

25 cfs

352

352

POND 12E

340

CONNEMARA

POND 10E

21.52 cfs

ANDALUSIAN

320

110TH ST

TEAL RD.

354

COLETT 3611

LEGEND

AMOLE-HUBBEL BASIN BOUNDARY

TALAVERA BASIN BOUNDARY

380 AMOLE-HUBBEL DRAINAGE BASIN ID

T105 TALAVERA DRAINAGE BASIN ID

"SNOW VISTA BASIN"

EXHIBIT

MARK GOODWIN & ASSOCIATES, P.A.
CONSULTING ENGINEERS
P.O. BOX 90606
ALBUQUERQUE, NEW MEXICO 87199
(505)828-2200, FAX (505)797-9539

Drawn: SPS RTT | Checked: SM
Date: 12/12/2008 | Job: A04097

FIGURE 5

APPENDIX B

AHYMO OUTPUT
EXISTING CONDITIONS

```
AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) -                    - VERSION:  1997.02d      RUN DATE (MON/DAY/YR) =12/15/2008
INPUT FILE = pl100eb.dat                                                             USER NO.= AHYMO-I-9702dGoodwinM-AH

                                FROM  TO                      PEAK        RUNOFF                  TIME TO    CFS       PAGE =   1
                HYDROGRAPH      ID    ID        AREA      DISCHARGE      VOLUME      RUNOFF        PEAK      PER
COMMAND       IDENTIFICATION    NO.   NO.     (SQ MI)       (CFS)       (AC-FT)    (INCHES)     (HOURS)    ACRE      NOTATION

START                                                                                                    TIME=       .00
*S
*S      POWERLINE CHANNEL
*S
*S
*S 100-YR, 24-HR STORM WITH SEDIMENT
*S FILE NAME: PL100E1B.DAT  (EXISTING CONDITIONS)
*S BY: RICHARD STOCKTON   PEER REVIEWED BY: CLINT DODGE
*S LAST REVISION: 05-14-96
*S**************************************************************************
*S THE PURPOSE OF THIS MODEL IS TO CALCULATE THE RUNOFF FROM THE POWERLINE
*S WATERSHED.  FLOW FROM THIS BASIN IS CONVEYED TO THE AMOLE DETENTION FACILITY
*S VIA THE AMOLE ARROYO.  BASIN BOUNDARIES WERE DETERMINED FROM NOVEMBER 1995
*S AERIAL, TOPOGRAPHICAL MAPS AND PREVIOUS STUDIES.
*S
*S**************************************************************************
*S ANALYSIS ASSUMPTIONS:
*S**************************************************************************
*S 1. ALL LAND IN THIS BASIN IS MODELED AS EXISTING CONDITION.
*S
*S 2. THE PUNCH HYD COMMAND WAS ADDED TO THE END OF THIS FILE SO THE OUTFALL.
*S    HYDROGRAPH COULD BE USED IN THE AMOLE ARROYO EXISTING CONDITIONS MODEL
*S    AA100E1B.DAT, WHICH WILL BE USED IN THE ANALYSIS OF THE AMOLE/HUBBLE
*S    LAKE DETENTION SYSTEM.
*S
*S 3. A BULKING FACTOR HAS BEEN ADDED TO EACH UNDEVELOPED SUB-BASIN.  THE BULKIN
*S    FACTOR IS BASED ON LAND TREATMENT AND SLOPE.  FOR SLOPES >20% (LAND
*S    TREATMENT C) THE BULKING FACTOR IS 54%, AND SLOPES <20% (LAND TREATMENTS A
*S    AND B) THE BULKING FACTOR IS 15% FOR EXISTING CONDITIONS.  A WEIGHTED
*S    AVERAGE WAS USED FOR SUB-BASINS CONTAINING BOTH SLOPE GROUPS.
*S
*S100 YEAR 24HR STORM EXISTING CONDITION
RAINFALL  TYPE= 2                                                                                        RAIN24=    2.660
*S CALCULATE THE FLOW FROM SUB-BASIN 10006.
*S BASIN 10006 MODELED AS EXISTING, BULK FLOWS 29.9%
SEDIMENT BULK                                                                                            PK BF =    1.30
COMPUTE NM HYD      10006.00   -     1        .28340       456.88      13.245       .87629    1.500    2.519 PER IMP=   2.00
*S ROUTE FLOW FROM SUB-BASIN 10006.1 THROUGH 2-12'x6' RCB UNDER CENTRAL.
*S NOTE: THE HYDRAULIC PROPERTIES OF 2-12'x6' RCB IS APPROXIMATELY THE
*S SAME AS A 169" DIA PIPE.
ROUTE               10006.10    1    2        .28340       456.65      13.245       .87629    1.550    2.518
*S CALCULATE THE FLOW FROM SUB-BASIN 10007.
*S BASIN 10007 MODELED AS UNDEVELOPED, BULK FLOWS 15%
SEDIMENT BULK                                                                                            PK BF =    1.15
COMPUTE NM HYD      10007.00   -     3        .04780        54.48       1.525       .59817    1.500    1.781 PER IMP=    .00
*S ROUTE FLOW FROM SUB-BASIN 10007 THROUGH 8'x4' RCB UNDER CENTRAL.
*S NOTE: THE HYDRAULIC PROPERTIES OF 8'x4' RCB IS APPROXIMATELY THE
*S SAME AS A 81" DIA PIPE.
ROUTE               10007.50    3    4        .04780        54.62       1.525       .59821    1.500    1.785
*S ROUTE FLOW FROM SUB-BASIN 10007.5 TO 200 FEET SOUTH OF CENTRAL AND
*S POWERLINE CHANNEL.
ROUTE               10007.60    4    5        .04780        46.10       1.525       .59821    1.600    1.507
*S CALCULATE THE FLOW FROM SUB-BASIN 10008.
*S BASIN 10008 IS CENTRAL AVE WEST OF POWERLINE
*S BASIN 10008 IS MODELED AS EXISTING CONDITIONS, BULK FLOWS 20.3%
SEDIMENT BULK                                                                                            PK BF =    1.20
```

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	10008.00	-	6	.02150	36.33	1.577	1.37500	1.550	2.640	PER IMP= 30.00
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10006.1 TO THE FLOW FROM SUB-BASIN 10008.										
ADD HYD	10008.10	6& 2	7	.30490	492.98	14.821	.91145	1.550	2.526	
*S ROUTE FLOW FROM SUB-BASIN 10008.1 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10009, 200 FEET SOUTH OF CENTRAL.										
ROUTE	10008.50	7	8	.30490	497.16	14.821	.91145	1.550	2.548	
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10007.6 TO THE ROUTED FLOW										
*S FROM SUB-BASIN 10008.5										
ADD HYD	10008.20	5& 8	9	.35270	538.62	16.346	.86900	1.550	2.386	
*S ROUTE FLOW FROM SUB-BASIN 10008.2 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10009, TO SEDIMENT BASIN ENTRANCE.										
ROUTE	10008.60	9	10	.35270	547.43	16.346	.86900	1.550	2.425	
*S CALCULATE THE FLOW FROM SUB-BASIN 10009.										
*S BASIN 10009 MODELED AS EXISTING, BULK FLOW 19.7%										
SEDIMENT BULK										
COMPUTE NM HYD	10009.00	-	11	.08150	85.82	2.564	.58979	1.550	1.645	PK BF = 1.20 PER IMP= .00
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10008.6 TO THE FLOW FROM										
*S SUB-BASIN 10009, FLOW ENTERS INTO SED BASIN.										
*S HYD NO. 10009.1 IS ******* AP 12 ******										
ADD HYD	10009.10	10&11	12	.43420	633.25	18.910	.81659	1.550	2.279	
*S**********										
*S CALCULATE THE FLOW FROM SUB-BASIN 10010.										
*S BASIN 10010 MODELED AS EXISTING, BULK FLOWS 18.4%										
SEDIMENT BULK										
COMPUTE NM HYD	10010.00	-	13	.05910	61.69	1.756	.55719	1.500	1.631	PK BF = 1.00 PER IMP= 1.00
*S ADD THE FLOW FROM SUB-BASIN 10010 TO THE COMBINED FLOW IN THE SED BASIN (1000										
ADD HYD	10010.10	13&12	14	.49330	692.46	20.666	.78551	1.550	2.193	
*S CALCULATE THE FLOW FROM SUB-BASIN 10011.										
*S BASIN 10011 MODELED AS EXISTING, BULK FLOWS 22.8%										
SEDIMENT BULK										
COMPUTE NM HYD	10011.00	-	15	.12400	164.30	4.492	.67923	1.500	2.070	PK BF = 1.23 PER IMP= .00
*S ADD THE FLOW FROM SUB-BASIN 10011 TO THE COMBINED FLOW IN THE SED BASIN.										
ADD HYD	10011.10	15&14	16	.61730	849.74	25.158	.76416	1.550	2.151	
*S CALCULATE THE FLOW FROM SUB-BASIN 10012.										
*S BASIN 10012 MODELED AS EXISTING CONDITIONS, BULK FLOWS 20.9%										
SEDIMENT BULK										
COMPUTE NM HYD	10012.00	-	17	.04890	55.72	1.573	.60331	1.500	1.780	PK BF = 1.21 PER IMP= .00
*S ADD THE FLOW FROM SUB-BASIN 10012 TO THE COMBINED FLOW IN THE SED BASIN.										
ADD HYD	10011.10	17&16	18	.66620	903.60	26.732	.75235	1.550	2.119	
*S ROUTE TOTAL FLOW THROUGH EXISTING SEDIMENTATION BASIN.										
ROUTE RESERVOIR	10012.80	18	19	.66620	148.40	26.309	.74046	1.900	.348	AC-FT= 18.704
*S HYD NO. 10012.8 IS ******* AP 13 ******										
*S ROUTE OUTFLOW FROM SED BASIN DOWN POWERLINE CHANNEL THROUGH SUB-BASIN 10013.										
ROUTE	10012.60	19	11	.66620	147.99	26.303	.74030	1.950	.347	
*S CALCULATE THE FLOW FROM SUB-BASIN 10013.										
*S BASIN 10013 IS CURRENTLY UNDEVELOPED, BULK FLOWS 15%										
SEDIMENT BULK										
COMPUTE NM HYD	10013.00	-	2	.09380	96.81	2.691	.53800	1.500	1.613	PK BF = 1.15 PER IMP= .00
*S ADD THE ROUTE FLOW FROM SUB-BASIN 10012.6 TO THE FLOW FROM SUB-BASIN 10013.										
ADD HYD	10013.10	11& 2	3	.76000	159.39	28.995	.71533	1.900	.328	
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10013.1 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10014.										
ROUTE	10013.50	3	11	.76000	159.84	28.991	.71524	1.900	.329	
*S CALCULATE THE FLOW FROM SUB-BASIN 10014.										
*S BASIN 10014 IS CURRENTLY UNDEVELOPED, BULK FLOWS 15%										
SEDIMENT BULK										
COMPUTE NM HYD	10014.00	-	2	.08610	88.54	2.470	.53800	1.500	1.607	PK BF = 1.15 PER IMP= .00
*S ADD THE ROUTE FLOW FROM SUB-BASIN 10013.5 TO THE FLOW FROM SUB-BASIN 10014.										

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =01/06/2009
INPUT FILE = tv-dev8.dat USER NO.= AHYMO-I-9702dGoodwinM-AH

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	PAGE = 1 NOTATION
START										TIME= .00
*S										
*S PROPOSED TALAVERA SUBDIVISION										
*S										
*S										
*S 100-YR, 24-HR STORM WITH SEDIMENT										
*S BY: SCOTT MEDINA										
*S LAST REVISION: 12-10-2008										
*S**********										
*S THE PURPOSE OF THIS MODEL IS TO CALCULATE THE RUNOFF FROM THE POWERLINE										
*S WATERSHED FOR USE IN DETERMINATION OF DRAINAGE REQUIREMENTS FOR THE TALAVERA										
*S THE MODEL ALSO INCLUDES PORTIONS OF THE AMOLE ARROYO LOCATED WITH THE SUBDIVI										
*S FLOW FROM THIS BASIN IS CONVEYED TO THE AMOLE DETENTION FACILITY										
*S VIA THE AMOLE ARROYO. BASIN BOUNDARIES WERE DETERMINED FROM NOVEMBER 1995										
*S AERIAL, TOPOGRAPHICAL MAPS AND PREVIOUS STUDIES.										
*S										
*S**********										
*S ANALYSIS ASSUMPTIONS:										
*S**********										
*S 1. IS BASIN IS MODELED AS INTERIM DEVELOPED CONDITIONS SCENARIO										
*S ONDITIONS ASSUME FULLY DEVELOPED FOR BASINS 10013 THRU 10018										
*S AND EXISTING CONDITIONS FOR BASINS 10006 THRU 10012.										
*S										
*S 2. TOR HAS BEEN ADDED TO EACH UNDEVELOPED SUB-BASIN. THE BULKI										
*S IS BASED ON LAND TREATMENT AND SLOPE. FOR SLOPES >20% (LAND										
*S THE BULKING FACTOR IS 54%, AND SLOPES <20% (LAND TREATMENTS										
*S E BULKING FACTOR IS 15% FOR EXISTING CONDITIONS. A WEIGHTED										
*S VERAGE WAS USED FOR SUB-BASINS CONTAINING BOTH SLOPE GROUPS.										
*S										
*S100 YEAR 24HR STORM										
RAINFALL TYPE= 2										RAIN24= 2.660
*S CALCULATE THE FLOW FROM SUB-BASIN 10006.										
*S BASIN 10006 MODELED AS EXISTING, BULK FLOWS 29.9%										
SEDIMENT BULK										
COMPUTE NM HYD	10006.00	-	1	.28340	456.88	13.245	.87629	1.500	2.519	PK BF = 1.30 PER IMP= 2.00
*S ROUTE FLOW FROM SUB-BASIN 10006.1 THROUGH 2-12'x6' RCB UNDER CENTRAL.										
*S NOTE: THE HYDRAULIC PROPERTIES OF 2-12'x6' RCB IS APPROXIMATELY THE										
*S SAME AS A 169" DIA PIPE.										
ROUTE	10006.10	1	2	.28340	456.65	13.245	.87629	1.550	2.518	
*S CALCULATE THE FLOW FROM SUB-BASIN 10007.										
*S BASIN 10007 MODELED AS UNDEVELOPED, BULK FLOWS 15%										
SEDIMENT BULK										
COMPUTE NM HYD	10007.00	-	3	.04780	54.48	1.525	.59817	1.500	1.781	PK BF = 1.15 PER IMP= .00
*S ROUTE FLOW FROM SUB-BASIN 10007 THROUGH 8'x4' RCB UNDER CENTRAL.										
*S NOTE: THE HYDRAULIC PROPERTIES OF 8'x4' RCB IS APPROXIMATELY THE										
*S SAME AS A 81" DIA PIPE.										
ROUTE	10007.50	3	4	.04780	54.62	1.525	.59821	1.500	1.785	
*S ROUTE FLOW FROM SUB-BASIN 10007.5 TO 200 FEET SOUTH OF CENTRAL AND										
*S POWERLINE CHANNEL.										
ROUTE	10007.60	4	5	.04780	46.10	1.525	.59821	1.600	1.507	
*S CALCULATE THE FLOW FROM SUB-BASIN 10008.										
*S BASIN 10008 IS CENTRAL AVE WEST OF POWERLINE										
*S BASIN 10008 IS MODELED AS EXISTING CONDITIONS, BULK FLOWS 20.3%										
SEDIMENT BULK										
COMPUTE NM HYD	10008.00	-	6	.02150	36.33	1.577	1.37500	1.550	2.640	PK BF = 1.20 PER IMP= 30.00

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	PAGE = 2 NOTATION
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10006.1 TO THE FLOW FROM SUB-BASIN 10008.										
ADD HYD	10008.10	6& 2	7	.30490	492.98	14.821	.91145	1.550	2.526	
*S ROUTE FLOW FROM SUB-BASIN 10008.1 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10009, 200 FEET SOUTH OF CENTRAL.										
ROUTE	10008.50	7	8	.30490	497.16	14.821	.91145	1.550	2.548	
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10007.6 TO THE ROUTED FLOW										
*S FROM SUB-BASIN 10008.5										
ADD HYD	10008.20	5& 8	9	.35270	538.62	16.346	.86900	1.550	2.386	
*S ROUTE FLOW FROM SUB-BASIN 10008.2 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10009, TO SEDIMENT BASIN ENTRANCE.										
ROUTE	10008.60	9	10	.35270	547.43	16.346	.86900	1.550	2.425	
*S CALCULATE THE FLOW FROM SUB-BASIN 10009.										
*S BASIN 10009 MODELED AS EXISTING, BULK FLOW 19.7%										
SEDIMENT BULK										
COMPUTE NM HYD	10009.00	-	11	.08150	85.82	2.564	.58979	1.550	1.645	PK BF = 1.20 PER IMP= .00
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10008.6 TO THE FLOW FROM										
*S SUB-BASIN 10009, FLOW ENTERS INTO SED BASIN.										
*S HYD NO. 10009.1 IS ******* AP 12 ******										
ADD HYD	10009.10	10&11	12	.43420	633.25	18.910	.81659	1.550	2.279	
*S**********										
*S CALCULATE THE FLOW FROM SUB-BASIN 10010.										
*S BASIN 10010 MODELED AS EXISTING, BULK FLOWS 18.4%										
SEDIMENT BULK										
COMPUTE NM HYD	10010.00	-	13	.05910	73.05	2.079	.65971	1.500	1.931	PK BF = 1.18 PER IMP= 1.00
*S ADD THE FLOW FROM SUB-BASIN 10010 TO THE COMBINED FLOW IN THE SED BASIN (1000										
ADD HYD	10010.10	13&12	14	.49330	703.35	20.989	.79779	1.550	2.228	
*S CALCULATE THE FLOW FROM SUB-BASIN 10011.										
*S BASIN 10011 MODELED AS EXISTING, BULK FLOWS 22.8%										
SEDIMENT BULK										
COMPUTE NM HYD	10011.00	-	15	.12400	164.30	4.492	.67923	1.500	2.070	PK BF = 1.23 PER IMP= .00
*S ADD THE FLOW FROM SUB-BASIN 10011 TO THE COMBINED FLOW IN THE SED BASIN.										
ADD HYD	10011.10	15&14	16	.61730	860.63	25.481	.77398	1.550	2.178	
*S CALCULATE THE FLOW FROM SUB-BASIN 10012.										
*S BASIN 10012 MODELED AS EXISTING CONDITIONS, BULK FLOWS 20.9%										
SEDIMENT BULK										
COMPUTE NM HYD	10012.00	-	17	.04890	55.72	1.573	.60331	1.500	1.780	PK BF = 1.21 PER IMP= .00
*S ADD THE FLOW FROM SUB-BASIN 10012 TO THE COMBINED FLOW IN THE SED BASIN.										
ADD HYD	10011.10	17&16	18	.66620	914.49	27.055	.76145	1.550	2.145	
*S ROUTE TOTAL FLOW THROUGH EXISTING SEDIMENTATION BASIN.										
ROUTE RESERVOIR	10012.80	18	19	.66620	151.69	26.631	.74953	1.900	.356	AC-FT= 18.893
*S HYD NO. 10012.8 IS ******* AP 13 ******										
*S ROUTE OUTFLOW FROM SED BASIN DOWN POWERLINE CHANNEL THROUGH SUB-BASIN 10013.										
ROUTE	10012.60	19	20	.66620	151.22	26.626	.74937	1.950	.355	
*S CALCULATE THE FLOW FROM SUB-BASIN 10013.										
*S BASIN 10013 MODELED AS EXISTING, BULK FLOWS 15%										
SEDIMENT BULK										
COMPUTE NM HYD	10013.00	-	21	.08841	91.01	2.537	.53800	1.500	1.608	PK BF = 1.15 PER IMP= .00
*S ADD THE ROUTE FLOW FROM SUB-BASIN 10012.6 TO THE FLOW FROM SUB-BASIN 10013.										
ADD HYD	10013.10	20&21	22	.75461	162.14	29.162	.72460	1.900	.336	
*S BASIN T101 MODELED AS DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T101	-	23	.01823	26.84	.935	.96190	1.500	2.300	PK BF = 1.00 PER IMP= 19.46
*S ADD THE FLOW FROM SUB-BASIN T101 TO THE FLOW FROM SUB-BASIN 10013.										
ADD HYD	10013.10	23&22	24	.77284	167.40	30.098	.73020	1.850	.338	
*S ROUTE TOTAL FLOW THROUGH POND#1.										
ROUTE RESERVOIR	10013.20	24	25	.77284	98.52	30.092	.73006	2.600	.199	AC-FT= 6.433
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10013.2 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10014.										
ROUTE	10013.50	25	26	.77284	98.14	30.088	.72996	2.650	.198	

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	PAGE = 3 NOTATION
*S CALCULATE THE FLOW FROM SUB-BASIN 10014.										
*S BASIN 10014 MODELED AS DEVELOPED, BULK FLOWS AT 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10014.00	-	1	.07330	103.14	3.708	.94846	1.500	2.199	PK BF = 1.05 PER IMP= 20.30
*S ADD THE ROUTE FLOW FROM SUB-BASIN T101 TO THE FLOW FROM SUB-BASIN 10014.1.										
ADD HYD	T101.1	1&26	2	.84614	124.95	33.796	.74889	1.550	.231	
*S BASIN T102 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T102	-	3	.03356	43.94	1.469	.82060	1.500	2.046	PK BF = 1.00 PER IMP= 13.60
*S ADD THE ROUTED FLOW FROM SUB-BASIN T102 TO THE FLOW FROM SUB-BASIN 10014.										
ADD HYD	T102.1	3& 2	4	.87970	166.18	35.264	.75163	1.500	.295	
*S ROUTE TOTAL FLOW THROUGH POND#2.										
ROUTE RESERVOIR	POND.2	4	5	.87970	81.33	35.261	.75156	3.500	.144	AC-FT= 4.941
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN T101.1 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10015.										
ROUTE	T101.2	5	6	.87970	81.30	35.253	.75138	3.600	.144	
*S CALCULATE THE FLOW FROM SUB-BASIN 10015.										
*S BASIN 10015 MODELED AS DEVELOPED, BULK FLOWS 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10015.00	-	7	.05790	93.41	3.500	1.13356	1.500	2.521	PK BF = 1.05 PER IMP= 27.80
*S ADD THE ROUTE FLOW FROM SUB-BASIN POND #2 TO THE FLOW FROM SUB-BASIN 10015.										
ADD HYD	10015.10	7& 6	8	.93760	115.90	38.753	.77498	1.550	.193	
*S BASIN T103 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T103	-	9	.01970	32.95	1.196	1.13827	1.500	2.613	PK BF = 1.00 PER IMP= 26.80
*S ADD THE FLOW FROM SUB-BASIN 10015 TO THE FLOW FROM SUB-BASIN T103.										
ADD HYD	T103.1	8& 9	10	.95730	148.08	39.949	.78246	1.500	.242	
*S CALCULATE THE FLOW FROM SUB-BASIN 10016.										
*S BASIN 10016 MODELED AS DEVELOPED, BULK FLOWS 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10016.00	-	11	.06600	98.70	3.614	1.02675	1.500	2.337	PK BF = 1.05 PER IMP= 23.40
*S ADD THE COMBINED FLOW FROM SUB-BASIN T103.1 TO THE FLOW FROM SUB-BASIN 10016.										
ADD HYD	10016.10	11&10	12	1.02330	246.79	43.563	.79821	1.500	.377	
*S ROUTE TOTAL FLOW THROUGH POND#3.										
ROUTE RESERVOIR	POND.3	12	1	1.02330	83.37	43.560	.79814	2.450	.127	AC-FT= 5.439
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN POND #3 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10017.										
ROUTE	10016.50	1	13	1.02330	83.37	43.556	.79808	2.450	.127	
*S BASIN T104 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T104	-	14	.06873	128.16	4.783	1.30491	1.500	2.914	PK BF = 1.00 PER IMP= 33.60
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10016.1 TO THE FLOW FROM SUB-BASIN T104.										
ADD HYD	T104.1	14&13	15	1.09203	161.83	48.339	.82998	1.500	.232	
*S CALCULATE THE FLOW FROM SUB-BASIN 10017.										
*S BASIN 10017 MODELED AS DEVELOPED, BULK FLOWS 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10017.00	-	16	.07215	96.43	3.399	.88324	1.500	2.088	PK BF = 1.05 PER IMP= 17.50
*S ADD THE COMBINE FLOW FROM SUB-BASIN 10016.1 TO THE FLOW FROM SUB-BASIN 10017.										
ADD HYD	10017.10	16&15	17	1.16418	258.27	51.738	.83328	1.500	.347	
*S ROUTE TOTAL FLOW THROUGH POND#4.										
ROUTE RESERVOIR	10017.20	17	2	1.16418	114.06	51.727	.83310	2.050	.153	AC-FT= 4.666
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10017.1 THRU SUB-BASIN 10018										
ROUTE	10017.50	2	16	1.16418	113.94	51.720	.83299	2.100	.153	
*S CALCULATE THE FLOW FROM SUB-BASIN 10018.										
*S BASIN 10018 IS CURRENTLY UNDEVELOPED, BULK FLOWS 15%										
SEDIMENT BULK										
COMPUTE NM HYD	10018.00	-	17	.01760	16.70	.474	.50526	1.500	1.482	PK BF = 1.15 PER IMP= .00
*S ADD THE FLOW FROM SUB-BASIN 10018 TO THE FLOW FROM SUB-BASIN T105.										

```
ADD HYD          10018.10 17&16  18       1.18178       115.24       52.194       .82811     2.050      .152


                          FROM   TO                      PEAK        RUNOFF                  TIME TO    CFS        PAGE =    4
                   HYDROGRAPH   ID    ID        AREA     DISCHARGE   VOLUME      RUNOFF      PEAK       PER
COMMAND          IDENTIFICATION NO.   NO.     (SQ MI)    (CFS)     (AC-FT)     (INCHES)    (HOURS)    ACRE       NOTATION
*S  ROUTE TOTAL FLOW THROUGH POND#5.
ROUTE RESERVOIR    10018.20    18     2       1.18178       86.48       52.190       .82805     4.100      .114  AC-FT=    5.987
*S ADD THE ROUTE FLOW FROM SUB-BASIN 10017.5 TO THE COMBINED FLOW FROM SUB-BASIN
*S BASIN T105 IS CURRENTLY FULLY DEVELOPED
SEDIMENT BULK
COMPUTE NM HYD        T105     -     19        .04267       68.15        2.423       1.06474    1.500      2.496  PK BF =    1.00
*S*****AP 14************                                                                                            PER IMP=  23.30
*S ADD THE FLOW FROM SUB-BASIN T105 TO THE POWERLINE CHANNEL.
ADD HYD          10018.10 19& 2  20       1.22445       90.50       54.613       .83629     1.500      .115
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10018.2 DOWN POWERLINE CHANNEL
*S TO THE AMOLE ARROYO (AP 02).
ROUTE          PL100E1B.HYD   20    21       1.22445       86.66       54.607       .83620     4.100      .111
*S********AMOLE ARROYO BASIN*********************
*S BASIN T106 IS CURRENTLY FULLY DEVELOPED, BULK FLOWS 5%
SEDIMENT BULK
COMPUTE NM HYD        T106     -     22        .04700       97.86        3.651       1.45639    1.500      3.253  PK BF =    1.05
*S BASIN 363 (TIMMARON WEST SUBDIVISION UNIT 5), BULK FLOWS 5%                                                      PER IMP=  35.46
SEDIMENT BULK
COMPUTE NM HYD        363.00   -     23        .01860       44.30        1.817       1.83171    1.500      3.722  PK BF =    1.05
*S ADD THE FLOW FROM SUB-BASIN 363 TO THE FLOW FROM SUB-BASIN T106.                                                 PER IMP=  56.00
ADD HYD               T106.1 23&22  24        .06560      142.16        5.468       1.56279    1.500      3.386
*S ROUTE THE FLOW FROM SUB-BASIN T106 THRU SUB-BASIN T107
ROUTE                 T106.2   24    25        .06560      141.93        5.468       1.56281    1.500      3.381
*S BASIN T106 IS CURRENTLY FULLY DEVELOPED, BULK FLOWS 5%
SEDIMENT BULK
COMPUTE NM HYD        T107     -     1         .07600      160.12        6.036       1.48915    1.500      3.292  PK BF =    1.05
*S ADD THE FLOW FROM SUB-BASIN T106.2 TO THE FLOW FROM SUB-BASIN T107.                                              PER IMP=  37.40
ADD HYD               T107.1 25& 1   2        .14160      302.05       11.504       1.52326    1.500      3.333
*S ADD THE FLOW FROM SUB-BASIN T107.1 TO THE FLOW FROM SUB-BASIN 10018.2.
ADD HYD          10018.10  2&21   3       1.36605       360.50       66.111       .90742     1.500      .412
*S ADD THE FLOW FROM POWERLINE BASIN TO THE AMOLE ARROYO BASIN.
ADD HYD               T106.1  3&21   4       2.59050      430.65      120.718       .87376     1.550      .260
*S***********WESTGATE DAM*********************
STORE HYD               WG    -     5      18.68360       75.41      278.863       .27985     9.000      .006
*S ADD THE FLOW FROM WESTGATE DAM TO THE AMOLE ARROYO BASIN.
ADD HYD               T106.1  5& 4   6      21.27410      462.05      291.758       .25714     1.550      .034
*S***********SOUTH POWERLINE BASIN************
*S BASIN 380 FROM THE SOUTH POWERLINE BASIN - (BLUFFS)
SEDIMENT BULK
COMPUTE NM HYD        D60104   -     7         .42000      215.23       11.119       .49641     1.700      .801   PK BF =    1.06
*S***********AP 14.1*********************                                                                          PER IMP=   1.00
*S ADD THE FLOW FROM SOUTH POWERLINE BASIN TO THE AMOLE ARROYO BASIN.
ADD HYD               380.20  7& 6   8      21.69410      618.67      302.878       .26177     1.550      .045
*S**********SNOW VISTA BASIN*****************
*S BASIN T108 IS WITHIN THE PROPOSED DEVELOPMENT, BULK FLOWS 6%
SEDIMENT BULK
COMPUTE NM HYD        T108     -     2         .03400       76.85        3.054       1.68443    1.500      3.532  PK BF =    1.06
*S  ROUTE TOTAL FLOW THROUGH POND#6.                                                                                PER IMP=  48.00
ROUTE RESERVOIR       T108.1     2     3         .03400       24.75        3.054       1.68442    1.800      1.137  AC-FT=    1.327
*S BASIN T108 DRAINS IN THE TIMMERON SUBDIVSION UNIT 4
FINISH
```

APPENDIX D

AHYMO OUTPUT
FUTURE CONDITIONS

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =01/06/2009
INPUT FILE = TV-DEV9.DAT USER NO.= AHYMO-I-9702dGoodwinM-AH

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
*S      FUTURE DEVELOPED CONDITIONS TALAVERA SUBDIVISION
*S
*S
*S 100-YR, 24-HR STORM WITH SEDIMENT
*S BY: SCOTT MEDINA
*S LAST REVISION: 12-22-2008
*S**************************************************************************
*S THE PURPOSE OF THIS MODEL IS TO CALCULATE THE RUNOFF FROM THE POWERLINE
*S WATERSHED FOR USE IN DETERMINATION OF DRAINAGE REQUIREMENTS FOR THE TALAVERA
*S THE MODEL ALSO INCLUDES PORTIONS OF THE AMOLE ARROYO LOCATED WITH THE SUBDIVI
*S FLOW FROM THIS BASIN IS CONVEYED TO THE AMOLE DETENTION FACILITY
*S VIA THE AMOLE ARROYO.  BASIN BOUNDARIES WERE DETERMINED FROM NOVEMBER 1995
*S AERIAL, TOPOGRAPHICAL MAPS AND PREVIOUS STUDIES.
*S
*S**************************************************************************
*S ANALYSIS ASSUMPTIONS:
*S**************************************************************************
*S 1. ALL LAND IN THIS BASIN IS MODELED AS DEVELOPED CONDITIONS SCENARIO.
*S
*S 2. A BULKING FACTOR HAS BEEN ADDED TO EACH UNDEVELOPED SUB-BASIN.  THE BULKIN
*S    FACTOR IS BASED ON LAND TREATMENT AND SLOPE.  FOR SLOPES >20% (LAND
*S    TREATMENT C) THE BULKING FACTOR IS 54%, AND SLOPES <20% (LAND TREATMENTS A
*S    AND B) THE BULKING FACTOR IS 15% FOR EXISTING CONDITIONS.  A WEIGHTED
*S    AVERAGE WAS USED FOR SUB-BASINS CONTAINING BOTH SLOPE GROUPS.
*S
*S100 YEAR 24HR STORM
RAINFALL  TYPE= 2                                                    RAIN24=  2.660
*S CALCULATE THE FLOW FROM SUB-BASIN 10006.
*S BASIN 10006 MODELED AS DEVELOPED CONDITIONS, BULK FLOWS 5.0%
SEDIMENT BULK
COMPUTE NM HYD      10006.00   -     1        .28340      624.24      26.966     1.78407    1.500     3.442  PK BF =  1.05
                                                                                                              PER IMP= 56.00
*S ROUTE FLOW FROM SUB-BASIN 10006.1 THROUGH 2-12'x6' RCB UNDER CENTRAL.
*S NOTE: THE HYDRAULIC PROPERTIES OF 2-12'x6' RCB IS APPROXIMATELY THE
*S SAME AS A 169" DIA PIPE.
ROUTE               10006.10    1    2        .28340      624.23      26.966     1.78407    1.500     3.442
*S CALCULATE THE FLOW FROM SUB-BASIN 10007.
*S BASIN 10007 MODELED AS UNDEVELOPED, BULK FLOWS 5.0%
SEDIMENT BULK
COMPUTE NM HYD      10007.00   -     3        .04780      117.58       5.129     2.01176    1.500     3.844  PK BF =  1.05
                                                                                                              PER IMP= 70.00
*S ROUTE FLOW FROM SUB-BASIN 10007 THROUGH 8'x4' RCB UNDER CENTRAL.
*S NOTE: THE HYDRAULIC PROPERTIES OF 8'x4' RCB IS APPROXIMATELY THE
*S SAME AS A 81" DIA PIPE.
ROUTE               10007.50    3    4        .04780      117.97       5.129     2.01177    1.500     3.856
*S ROUTE FLOW FROM SUB-BASIN 10007.5 TO 200 FEET SOUTH OF CENTRAL AND
*S POWERLINE CHANNEL.
ROUTE               10007.60    4    5        .04780      111.10       5.129     2.01177    1.550     3.632
*S CALCULATE THE FLOW FROM SUB-BASIN 10008.
*S BASIN 10008 IS CENTRAL AVE WEST OF POWERLINE
*S BASIN 10008 IS MODELED AS EXISTING CONDITIONS, BULK FLOWS 20.3%
SEDIMENT BULK
COMPUTE NM HYD      10008.00   -     6        .02150       31.71       1.376     1.20012    1.550     2.305  PK BF =  1.05
                                                                                                              PER IMP= 30.00
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10006.1 TO THE FLOW FROM SUB-BASIN 10008.
ADD HYD             10008.10  6& 2   7        .30490      654.31      28.342     1.74289    1.500     3.353
```

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
*S ROUTE FLOW FROM SUB-BASIN 10008.1 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10009, 200 FEET SOUTH OF CENTRAL.										
ROUTE	10008.50	7	8	.30490	652.16	28.342	1.74289	1.500	3.342	
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10007.6 TO THE ROUTED FLOW										
*S FROM SUB-BASIN 10008.5										
ADD HYD	10008.20	5& 8	9	.35270	751.15	33.470	1.77933	1.500	3.328	
*S ROUTE FLOW FROM SUB-BASIN 10008.2 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10009, TO SEDIMENT BASIN ENTRANCE.										
ROUTE	10008.60	9	10	.35270	763.97	33.470	1.77933	1.550	3.384	
*S CALCULATE THE FLOW FROM SUB-BASIN 10009.										
*S BASIN 10009 MODELED AS EXISTING, BULK FLOW 5.0%										
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	10009.00	-	11	.08150	194.32	8.705	2.00265	1.500	3.725	PER IMP= 69.00
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10008.6 TO THE FLOW FROM										
*S SUB-BASIN 10009, FLOW ENTERS INTO SED BASIN.										
*S HYD NO. 10009.1 IS ******* AP 12 ******										
ADD HYD	10009.10	10&11	12	.43420	943.36	42.175	1.82125	1.550	3.395	
*S**********										
*S CALCULATE THE FLOW FROM SUB-BASIN 10010.										
*S BASIN 10010 MODELED AS EXISTING, BULK FLOWS 5.0%										
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	10010.00	-	13	.05910	142.22	6.089	1.93170	1.500	3.760	PER IMP= 65.00
*S ADD THE FLOW FROM SUB-BASIN 10010 TO THE COMBINED FLOW IN THE SED BASIN (1000										
ADD HYD	10010.10	13&12	14	.49330	1069.03	48.264	1.83448	1.550	3.386	
*S CALCULATE THE FLOW FROM SUB-BASIN 10011.										
*S BASIN 10011 MODELED AS EXISTING, BULK FLOWS 5.0%										
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	10011.00	-	15	.12400	237.20	8.724	1.31917	1.500	2.989	PER IMP= 31.54
*S ADD THE FLOW FROM SUB-BASIN 10011 TO THE COMBINED FLOW IN THE SED BASIN.										
ADD HYD	10011.10	15&14	16	.61730	1295.69	56.988	1.73096	1.500	3.280	
*S CALCULATE THE FLOW FROM SUB-BASIN 10012.										
*S BASIN 10012 MODELED AS EXISTING CONDITIONS, BULK FLOWS 5.0%										
SEDIMENT BULK										PK BF = 1.05
COMPUTE NM HYD	10012.00	-	17	.04890	101.22	3.928	1.50598	1.500	3.234	PER IMP= 41.00
*S ADD THE FLOW FROM SUB-BASIN 10012 TO THE COMBINED FLOW IN THE SED BASIN.										
ADD HYD	10011.10	17&16	18	.66620	1396.91	60.916	1.71445	1.500	3.276	
*S ROUTE TOTAL FLOW THROUGH EXISTING SEDIMENTATION BASIN.										
ROUTE RESERVOIR	10012.80	18	19	.66620	89.57	60.202	1.69436	2.700	.210	AC-FT= 41.177
*S HYD NO. 10012.8 IS ******* AP 13 ******										
*S ROUTE OUTFLOW FROM SED BASIN DOWN POWERLINE CHANNEL THROUGH SUB-BASIN 10013.										
ROUTE	10012.60	19	20	.66620	89.28	60.184	1.69387	2.750	.209	
*S CALCULATE THE FLOW FROM SUB-BASIN 10013.										
*S BASIN 10013 MODELED AS EXISTING, BULK FLOWS 15%										
SEDIMENT BULK										PK BF = 1.15
COMPUTE NM HYD	10013.00	-	21	.08841	91.01	2.537	.53800	1.500	1.608	PER IMP= .00
*S ADD THE ROUTE FLOW FROM SUB-BASIN 10012.6 TO THE FLOW FROM SUB-BASIN 10013.										
ADD HYD	10013.10	20&21	22	.75461	114.09	62.721	1.55845	1.550	.236	
*S BASIN T101 MODELED AS DEVELOPED										
SEDIMENT BULK										PK BF = 1.00
COMPUTE NM HYD	T101	-	23	.01823	26.84	.935	.96190	1.500	2.300	PER IMP= 19.46
*S ADD THE FLOW FROM SUB-BASIN T101 TO THE FLOW FROM SUB-BASIN 10013.										
ADD HYD	10013.10	23&22	24	.77284	138.87	63.656	1.54437	1.550	.281	
*S ROUTE TOTAL FLOW THROUGH POND#1.										
ROUTE RESERVOIR	10013.20	24	25	.77284	80.08	63.638	1.54393	3.850	.162	AC-FT= 4.806
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10013.2 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10014.										
ROUTE	10013.50	25	26	.77284	80.08	63.626	1.54363	3.850	.162	

COMMAND	HYDROGRAPH IDENTIFICATION	ID NO.	ID NO.	AREA (SQ MI)	DISCHARGE (CFS)	VOLUME (AC-FT)	RUNOFF (INCHES)	PEAK (HOURS)	PER ACRE	NOTATION
*S CALCULATE THE FLOW FROM SUB-BASIN 10014.										
*S BASIN 10014 MODELED AS DEVELOPED, BULK FLOWS AT 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10014.00	-	1	.07330	103.14	3.708	.94846	1.500	2.199	PK BF = 1.05
*S ADD THE ROUTE FLOW FROM SUB-BASIN T101 TO THE FLOW FROM SUB-BASIN 10014.1.										PER IMP= 20.30
ADD HYD	T101.1	1&26	2	.84614	126.67	67.333	1.49207	1.550	.234	
*S BASIN T102 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T102	-	3	.03356	43.94	1.469	.82060	1.500	2.046	PK BF = 1.00
*S ADD THE ROUTED FLOW FROM SUB-BASIN T102 TO THE FLOW FROM SUB-BASIN 10014.										PER IMP= 13.60
ADD HYD	T102.1	3& 2	4	.87970	167.68	68.802	1.46646	1.550	.298	
*S ROUTE TOTAL FLOW THROUGH POND#2.										
ROUTE RESERVOIR	POND.2	4	5	.87970	77.67	68.792	1.46623	4.950	.138	AC-FT= 4.319
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN T101.1 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10015.										
ROUTE	T101.2	5	6	.87970	77.68	68.765	1.46567	5.000	.138	
*S CALCULATE THE FLOW FROM SUB-BASIN 10015.										
*S BASIN 10015 MODELED AS DEVELOPED, BULK FLOWS 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10015.00	-	7	.05790	93.41	3.500	1.13356	1.500	2.521	PK BF = 1.05
*S ADD THE ROUTE FLOW FROM SUB-BASIN POND #2 TO THE FLOW FROM SUB-BASIN 10015.										PER IMP= 27.80
ADD HYD	10015.10	7& 6	8	.93760	116.01	72.266	1.44516	1.550	.193	
*S BASIN T103 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T103	-	9	.01970	32.95	1.196	1.13827	1.500	2.613	PK BF = 1.00
*S ADD THE FLOW FROM SUB-BASIN 10015 TO THE FLOW FROM SUB-BASIN T103.										PER IMP= 26.80
ADD HYD	T103.1	8& 9	10	.95730	148.14	73.462	1.43885	1.500	.242	
*S CALCULATE THE FLOW FROM SUB-BASIN 10016.										
*S BASIN 10016 MODELED AS DEVELOPED, BULK FLOWS 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10016.00	-	11	.06600	98.70	3.614	1.02675	1.500	2.337	PK BF = 1.05
*S ADD THE COMBINED FLOW FROM SUB-BASIN T103.1 TO THE FLOW FROM SUB-BASIN 10016.										PER IMP= 23.40
ADD HYD	10016.10	11&10	12	1.02330	246.85	77.076	1.41227	1.500	.377	
*S ROUTE TOTAL FLOW THROUGH POND#3.										
ROUTE RESERVOIR	POND.3	12	1	1.02330	83.26	77.064	1.41204	2.350	.127	AC-FT= 5.420
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN POND #3 DOWN POWERLINE CHANNEL										
*S THROUGH SUB-BASIN 10017.										
ROUTE	10016.50	1	13	1.02330	83.27	77.052	1.41183	2.350	.127	
*S BASIN T104 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T104	-	14	.06873	128.16	4.783	1.30491	1.500	2.914	PK BF = 1.00
*S ADD THE ROUTED FLOW FROM SUB-BASIN 10016.1 TO THE FLOW FROM SUB-BASIN T104.										PER IMP= 33.60
ADD HYD	T104.1	14&13	15	1.09203	161.84	81.835	1.40510	1.500	.232	
*S CALCULATE THE FLOW FROM SUB-BASIN 10017.										
*S BASIN 10017 MODELED AS DEVELOPED, BULK FLOWS 5.0%										
SEDIMENT BULK										
COMPUTE NM HYD	10017.00	-	16	.07215	96.43	3.399	.88324	1.500	2.088	PK BF = 1.05
*S ADD THE COMBINE FLOW FROM SUB-BASIN 10016.1 TO THE FLOW FROM SUB-BASIN 10017.										PER IMP= 17.50
ADD HYD	10017.10	16&15	17	1.16418	258.27	85.234	1.37276	1.500	.347	
*S ROUTE TOTAL FLOW THROUGH POND#4.										
ROUTE RESERVOIR	10017.20	17	2	1.16418	114.07	85.197	1.37216	2.050	.153	AC-FT= 4.667
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10017.1 THRU SUB-BASIN 10018										
ROUTE	10017.50	2	16	1.16418	113.95	85.174	1.37180	2.100	.153	
*S CALCULATE THE FLOW FROM SUB-BASIN 10018.										
*S BASIN 10018 IS CURRENTLY UNDEVELOPED, BULK FLOWS 15%										
SEDIMENT BULK										
COMPUTE NM HYD	10018.00	-	17	.01760	16.70	.474	.50526	1.500	1.482	PK BF = 1.15
*S ADD THE FLOW FROM SUB-BASIN 10018 TO THE FLOW FROM SUB-BASIN T105.										PER IMP= .00
ADD HYD	10018.10	17&16	18	1.18178	115.25	85.649	1.35889	2.050	.152	
*S ROUTE TOTAL FLOW THROUGH POND#5.										
ROUTE RESERVOIR	10018.20	18	2	1.18178	86.02	85.635	1.35868	3.900	.114	AC-FT= 5.906

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
*S ADD THE ROUTE FLOW FROM SUB-BASIN 10017.5 TO THE COMBINED FLOW FROM SUB-BASIN										
*S BASIN T105 IS CURRENTLY FULLY DEVELOPED										
SEDIMENT BULK										
COMPUTE NM HYD	T105	-	19	.04267	68.15	2.423	1.06474	1.500	2.496	PK BF = 1.00
*S********AP 14**********										PER IMP= 23.30
*S ADD THE FLOW FROM SUB-BASIN T105 TO THE POWERLINE CHANNEL.										
ADD HYD	10018.10	19& 2	20	1.22445	90.50	88.058	1.34843	1.500	.115	
*S ROUTE THE COMBINED FLOW FROM SUB-BASIN 10018.2 DOWN POWERLINE CHANNEL										
*S TO THE AMOLE ARROYO (AP 02).										
ROUTE	PL100E1B.HYD	20	21	1.22445	86.22	88.038	1.34813	3.900	.110	
*S********AMOLE ARROYO BASIN**********										
*S BASIN T106 IS CURRENTLY FULLY DEVELOPED, BULK FLOWS 5%										
SEDIMENT BULK										
COMPUTE NM HYD	T106	-	22	.04700	97.86	3.651	1.45639	1.500	3.253	PK BF = 1.05
*S BASIN 363 (TIMMARON WEST SUBDIVISION UNIT 5), BULK FLOWS 5%										PER IMP= 35.46
SEDIMENT BULK										
COMPUTE NM HYD	363.00	-	23	.01860	44.30	1.817	1.83171	1.500	3.722	PK BF = 1.05
*S ADD THE FLOW FROM SUB-BASIN 363 TO THE FLOW FROM SUB-BASIN T106.										PER IMP= 56.00
ADD HYD	T106.1	23&22	24	.06560	142.16	5.468	1.56279	1.500	3.386	
*S ROUTE THE FLOW FROM SUB-BASIN T106 THRU SUB-BASIN T107										
ROUTE	T106.2	24	25	.06560	141.93	5.468	1.56281	1.500	3.381	
*S BASIN T106 IS CURRENTLY FULLY DEVELOPED, BULK FLOWS 5%										
SEDIMENT BULK										
COMPUTE NM HYD	T107	-	1	.07600	160.12	6.036	1.48915	1.500	3.292	PK BF = 1.05
*S ADD THE FLOW FROM SUB-BASIN T106.2 TO THE FLOW FROM SUB-BASIN T107.										PER IMP= 37.40
ADD HYD	T107.1	25& 1	2	.14160	302.05	11.504	1.52326	1.500	3.333	
*S ADD THE FLOW FROM SUB-BASIN T107.1 TO THE FLOW FROM SUB-BASIN 10018.2.										
ADD HYD	10018.10	2&21	3	1.36605	360.50	99.542	1.36628	1.500	.412	
*S ADD THE FLOW FROM POWERLINE BASIN TO THE AMOLE ARROYO BASIN.										
ADD HYD	T106.1	3&21	4	2.59050	430.65	187.580	1.35770	1.550	.260	
*S**********WESTGATE DAM**********										
STORE HYD	WG	-	5	18.68360	75.41	278.863	.27985	9.000	.006	
*S ADD THE FLOW FROM WESTGATE DAM TO THE AMOLE ARROYO BASIN.										
ADD HYD	T106.1	5& 4	6	21.27410	462.05	358.620	.31607	1.550	.034	
*S**********SOUTH POWERLINE BASIN**********										
*S BASIN 380 FROM THE SOUTH POWERLINE BASIN - (BLUFFS)										
SEDIMENT BULK										
COMPUTE NM HYD	D60104	-	7	.42000	215.23	11.119	.49641	1.700	.801	PK BF = 1.06
*S********AP 14.1**********										PER IMP= 1.00
*S ADD THE FLOW FROM SOUTH POWERLINE BASIN TO THE AMOLE ARROYO BASIN.										
ADD HYD	380.20	7& 6	8	21.69410	618.67	369.739	.31956	1.550	.045	
*S**********SNOW VISTA BASIN**********										
*S BASIN T108 IS WITHIN THE PROPOSED DEVELOPMENT, BULK FLOWS 6%										
SEDIMENT BULK										
COMPUTE NM HYD	T108	-	2	.03400	76.85	3.054	1.68443	1.500	3.532	PK BF = 1.06
*S ROUTE TOTAL FLOW THROUGH POND#6.										PER IMP= 48.00
ROUTE RESERVOIR	T108.1	2	3	.03400	24.75	3.054	1.68442	1.800	1.137	AC-FT= 1.327
*S BASIN T108 DRAINS IN THE TIMMERON SUBDIVSION UNIT 4										
FINISH										

□(s10H

APPENDIX E

SEDIMENT LOADING CALCULATIONS

LS Factors

Basin	Length (ft)	S avg (ft/ft)	n	LS
10014	2500	5	0.5	2.667
10015	1800	5	0.5	2.263
10016	2000	4.5	0.4	1.510
10017	1900	4.3	0.4	1.404

100-yr

Basin	Qp (cfs)	Vw (ac-ft)	K	LS	CP	Ys (tons)	A (acres)	Ys(t/acres)
10014	73.6	2.41	0.17	2.67	0.4	939.227	55.10	17.045
10015	83.8	2.33	0.17	2.26	0.4	840.991	62.46	13.464
10016	85.1	2.37	0.17	1.51	0.4	571.576	63.36	9.021
10017	82.4	2.29	0.17	1.40	0.4	511.863	61.44	8.331

50-yr

Basin	Qp (cfs)	Vw (ac-ft)	K	LS	CP	Ys (tons)	A (acres)	Ys(t/acres)
10014	54.88	1.526	0.17	2.67	0.4	616.953	55.10	11.196
10015	62.52	1.729	0.17	2.26	0.4	603.937	62.46	9.669
10016	63.46	1.754	0.17	1.51	0.4	409.742	63.36	6.467
10017	61.45	1.701	0.17	1.40	0.4	367.700	61.44	5.985

25-yr

Basin	Qp (cfs)	Vw (ac-ft)	K	LS	CP	Ys (tons)	A (acres)	Ys(t/acres)
10014	35.34	0.989	0.17	2.67	0.4	378.206	55.10	6.863
10015	40.21	1.121	0.17	2.26	0.4	370.051	62.46	5.924
10016	40.81	1.137	0.17	1.51	0.4	251.021	63.36	3.962
10017	39.53	1.103	0.17	1.40	0.4	225.345	61.44	3.668

10-yr

Basin	Qp (cfs)	Vw (ac-ft)	K	LS	CP	Ys (tons)	A (acres)	Ys(t/acres)
10014	14.57	0.41	0.17	2.67	0.4	140.632	55.10	2.552
10015	16.56	0.464	0.17	2.26	0.4	137.398	62.46	2.200
10016	16.8	0.471	0.17	1.51	0.4	93.222	63.36	1.471
10017	16.28	0.457	0.17	1.40	0.4	83.716	61.44	1.363

5-yr

Basin	Qp (cfs)	Vw (ac-ft)	K	LS	CP	Ys (tons)	A (acres)	Ys(t/acres)
10014	3.14	0.088	0.17	2.67	0.4	25.152	55.10	0.456
10015	3.56	0.1	0.17	2.26	0.4	24.596	62.46	0.394
10016	3.61	0.101	0.17	1.51	0.4	16.637	63.36	0.263
10017	3.50	0.096	0.17	1.40	0.4	14.773	61.44	0.240

Average Annual Sediment Loading

Basin	Ys (tons)	A (acres)	Vw (ac-ft)	Ys(t/acres)	Vsed (yds^3)
10014	43.50	55.10	0.149	0.789	32.22
10015	41.40	62.46	0.163	0.663	30.66
10016	28.09	63.36	0.165	0.443	20.81
10017	25.16	61.44	0.160	0.410	18.64

CITY OF
Albuquerque

A lbuquerque G eographic I nformation S ystem

PLANNING DEPARTMENT

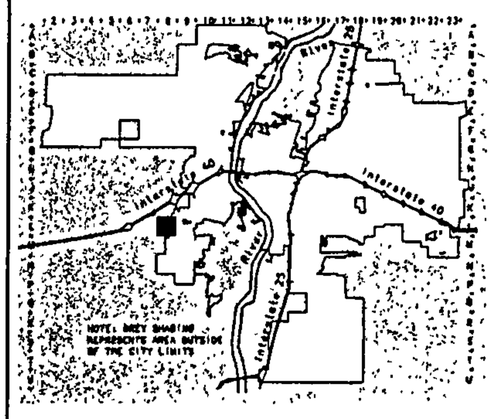
N

W E

S

GRAPHIC SCALE IN FEET

250 0 500 1000



Zone Atlas Page

L-8-Z

CITY OF
Albuquerque

A lbuquerque G eographic I nformation S ystem

PLANNING DEPARTMENT

© Copyright 1998

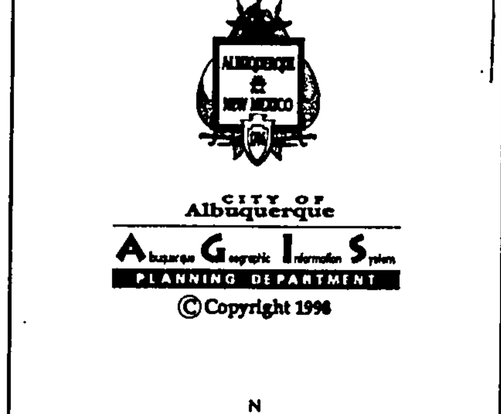
N

W E

S

GRAPHIC SCALE IN FEET

250 0 500 1000



Zone Atlas Page

M-8-Z

Map Amended through
December 09, 1998

M8/04

CENTEX HOMES

5111 Juan Tabo NE
Albuquerque, NM 87111
(505) 275-1035
Fax: (505) 275-1850

DATE: 4-27-98

NAME: Susan Calonge

COMPANY: C of A

FAX NUMBER: 924 3339

Number of pages being sent 03 (including cover sheet)

FROM: Norm Gregory
Land Development Manager
5111 Juan Tabo NE
Albuquerque, NM 87111

Office: 505-275-6305
Fax: 505-275-1850
Pager: 505-251-1947
Mobile: 505-252-6162

COMMENTS: Re Gregory/Liberman Bulk Land Plat
Final Consent & Dedication Statement
Please review & comment changes made
by Gregory/Liberman Legal Counsel

If you do not receive all the pages, please call [illegible] at (505) ~~275-1035~~. Thank you.

MEMORANDUM

TO: Norm Gregory (fax: 275-1850) (Fax only)

FROM: James P. Houghton

DATE: April 24, 1998

RE: Centex-Grevey/Liberman REPA
Computer No. 36717-115
Comments on proposed Dedication Statement with AMAFCA/Bernalillo County/City of Albuquerque (storm drainage)

Pursuant to our discussions and discussions you had with Carl Hackenson, the following are my comments on the proposed Dedication Statement and drawing and notes of the drainage easements you sent over on the draft bulk land plat:

1: Enclosed please find the modified "Free Consent and Dedication Statement". Grevey/Liberman do not want to consent to accessory recreational uses of the flood plain easements nor assume any ongoing maintenance or improvement obligations of what appear to be "natural arroyos".

2: Pluralize "easement" and add "(approximately 75 feet to 100 feet in width)" in note 3 as we discussed. In note 4, provide for a 30 foot wide temporary drainage easement (from 50 feet).

I understand that your current schedule is such that Centex would like to close in early May so that you can start "moving dirt" by the middle of May.

The Purchase Agreement is still being circulated within the Grevey/Liberman group and hopefully it should be back soon.

cc: (w/enclosure)(regular mail)
Tim Mullane
Helen Grevey
Tom Houser

W0014711.WPD

FREE CONSENT AND DEDICATION STATEMENT

This Free Consent and Dedication Statement is made by Owner (hereinafter "Grantor") by which it dedicates to the Albuquerque Metropolitan Arroyo Flood Control Authority (including it successors and assigns) (as "Grantee") those easements designated as "Flood Plain Easements" in accordance with the notes on this Bulk Land Plat and further dedicates to the City of Albuquerque and/or County of Bernalillo, their successors and assigns, (also as "Grantee") those Temporary Drainage Easements as shown on the Bulk Land Plat and the notes pertaining thereto. These easements and dedications granted herein are for the purpose of surface drainage, flood control, conveyance of storm water, and the construction, operation, and maintenance of facilities and improvements related thereto within such easements. Except with written approval of the benefited Grantee, Grantor, its successors and assigns, shall not build any fence, wall, building or other obstruction in said easements, nor shall they alter any of the grades or contours of the easements.

All such easements are vacatable upon presentation by the Grantor, its successors or assigns, of an acceptable alternative drainage management plan with any required associated easements, to either:

- The Executive Engineer, in the case of easements held by the Albuquerque Metropolitan Arroyo Flood Control Authority; or
- The City Hydrologist, in the case of easements held by the City of Albuquerque; or
- The County Drainage Engineer, in the case of easements held by Bernalillo County.

Any portion of any lands or easements granted herein shall revert to the Grantor, its successors or assigns, as and to the extent said portion is declared unnecessary for flood control or drainage by the controlling jurisdiction holding said easement. Any reversion shall be conveyed by quitclaim deed. Vacation approval consistent with the City of Albuquerque or Bernalillo County subdivision ordinances may also be required.

W0014707.WPD

New

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Grevey/Liberman Bulk Land Plat ZONE ATLAS/DRNG. FILE #: ~~D-8~~ M8 D604

LEGAL DESCRIPTION: See Plat

CITY ADDRESS: DeVargas & 114th Street NW

ENGINEERING FIRM: Community Sciences Corp CONTACT: Kent Whitman

ADDRESS: Box 1328, Corrales PHONE: 897 0000

OWNER: Centex Homes CONTACT: Norm Gregory

ADDRESS 5111 Juan Tabo NE PHONE: 275 6305

ARCHITECT: NA CONTACT:

ADDRESS: PHONE:

SURVEYOR: Southwest Surveying CONTACT: Dan Graney

ADDRESS: 333 Lomas Blvd NE PHONE: 247 4444

CONTRACTOR: NA CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO. 98-47

EPC NO.

PROJ. NO.

TYPE OF SUBMITTAL:

___ DRAINAGE REPORT

___ DRAINAGE PLAN

X CONCEPTUAL GRADING AND DRAINAGE PLAN

___ GRADING PLAN

___ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL

___ PRELIMINARY PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

X OTHER Bulk Land Plat (SPECIFY)

DATE SUBMITTED: 3/30/98

BY: Kent M. Whitman

CITY OF
Albuquerque

April 14, 1998

Kent Whitman, P.E.
Community Sciences Corporation
Post Office Box 1328
Corrales, New Mexico 87048

RE: Conceptual Grading and Drainage Plan for Lands of Grevey/Liberman Bulk Land Plat (M8/D4)

Dear Mr. Whitman:

Prior to approval for Bulk Land Plat, the above referenced plan must be revised to address the following comments:

1. The Engineer's stamp, with signature and date, is required on all conceptual drainage plans. City hydrology should not have accepted this plan for review without the Engineer's stamp.

2. On the plan, please identify the City/County boundary. Also clearly identify the property lines to show what area is being platted. Provide a copy of the preliminary bulk land plat.

3. Provide a copy of the FEMA flood map showing the site delineated on it. Also show the limits of the existing FEMA floodplains on the conceptual plan. What are the proposed floodplain easements to AMAFCA based on?

4. Please show the off-site drainage basins. Where is the "portion of Tract 2" which drains to the Amole? Where is the AHYMO run? Do the runoff calculations include off-site flows?

More information will be required to determine the width of the drainage easements needed to cross the Tracts. If you have any questions, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: DRB-98-47
Norm Gregory, Centex Homes
File

community sciences corporation
P.O. Box 1328
Corrales, NM 87048-1328

897-0000 ✱ 898-5195

Letter of Transmittal

To: Fred Aguirre
City Hydrologist
COA

Date 3/30/98 | Job No. 399 06 060

Attention

RE: Grevey / Centex Bulk Land Plat

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

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications
☐ Copy of letter ☐ Change order ☐ _____

Copies	Date	No.	Description
1			Conceptual Drainage Plan

THESE ARE TRANSMITTED as checked below

☐ For approval ☐ Approved as submitted ☐ Resubmit ____ copies for approval
☐ For your use ☐ Approved as noted ☐ Submit ____ copies for distribution
☐ As requested ☐ Returned for corrections ☐ Return ____ corrected prints
☐ For review and comment ☐ _____
☐ FOR BIDS DUE _____ 19 ____ PRINTS RETURNED AFTER LOAN TO US

REMARKS To support Southwest Survey bulk land plat application.

Received By

COPY TO _____ SIGNED: Kent M. Whitman

County of Bernalillo

State of New Mexico

ONE CIVIC PLAZA, N.W.
ALBUQUERQUE, NEW MEXICO 87102
ADMINISTRATION (505) 768-4000
COMMISSION (505) 763-4217
FAX (505) 768-4329

Any comments about this from City PWD?

February 25, 1999

Mr. Vincent Griego, President
Albuquerque City Council
One Civic Plaza NW
Albuquerque, NM 87102

Dear Mr. Griego:

At the February 23, 1999, meeting the Board of County Commissioners reviewed two pending annexations submitted for County comment pursuant to 3-7-17.1 NMSA, 1978 as amended. The law states that the Council shall consider the impact of annexations on existing County contracts and provision of services such as fire protection, solid waste collection and water and sewer service. The City may make agreements with the County to continue such services if it is in the interest of the County, the City, or the residents of the area proposed for annexation. County comments are summarized below.

O-60 proposes annexing 63 acres near the west end of Cavett Street, northwest of Carlos Rey Elementary School. The recommended zoning is SU-1 for a Planned Residential Development at 9 dwelling units per acre. O-61 proposes annexing 3.1 acres at the southeast corner of Paseo del Norte and Wyoming. The site includes five lots fronting Paseo del Norte. The lots are currently vacant and abut the City of Albuquerque to the north, west and south. The recommended zoning is SU-1 for C-1 uses.

For O-60, an existing 25-foot "Public Easement for Ingress/Egress" traverses Tract 2 as an extension of the Cavett Street SW right-of-way. Future platting of Tract 2 should address the expansion and dedication of this easement to provide for the construction of the extension of Cavett Street SW to serve the area west of Tract 2. This right-of-way dedication should be evaluated in order to provide sufficient width to meet both City of Albuquerque and Bernalillo County street standards. The Lutheran church parcel is adjacent to and served by this easement. Please coordinate with Bernalillo County Public Works Division to establish the service requirements for the unincorporated area west of Tract 2.

Tract 2 was encumbered by a "Blanket Temporary Drainage Easement" that was granted to Bernalillo County. The intent of this easement was to accommodate off-site drainage reaching Tract 2 from the west. Bernalillo County can transfer this easement to the City

of Albuquerque with the understanding that the easement remain in place until other accommodations are made for this off-site drainage.

Bernalillo County has purchased a portion of one of the lots included in annexation request O-61 to accommodate the construction of the County's Paseo del Norte expansion project. This particular lot, Lot 5, is the eastern most lot of this request. We note that it also appears that the retail development proposal included with the submittal packet does not account for the land previously acquired by Bernalillo County. Coordination with Bernalillo County Public Works Division in conjunction with the construction of Paseo del Norte is requested.

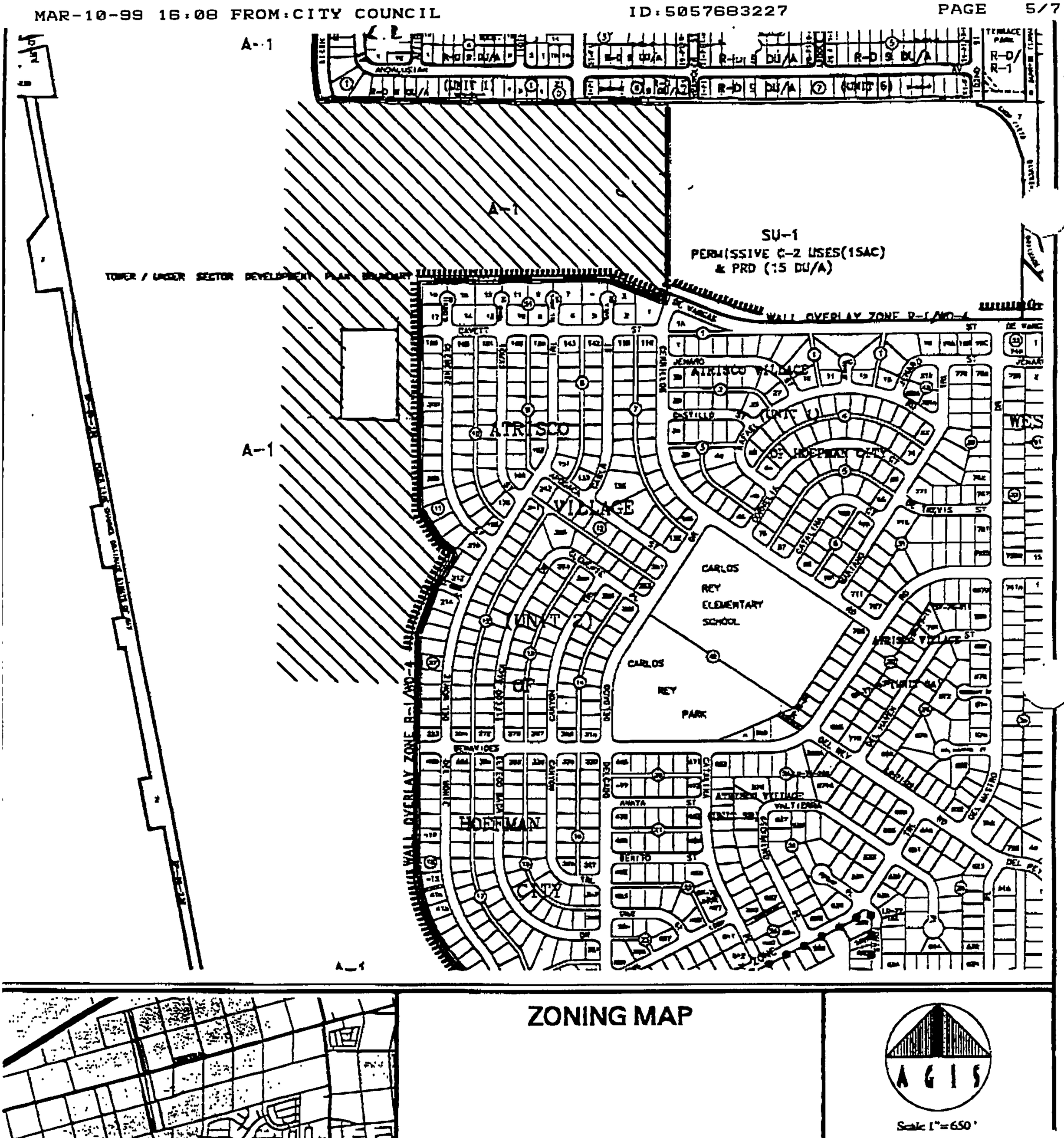
The Solid Waste program notes that these annexations would have no immediate impact on solid waste collection, but that development of pockets or islands within the County could escalate future collection costs. This item was also reviewed by the Sheriff's, Fire and Rescue, and Communications Departments. They do not report any adverse impact to their areas of responsibility

Comments regarding annexations are intended to further our coordinated planning efforts. Please note that final action on all annexation cases should include notice to the County so that the public safety agencies can be advised that these properties are within the City's boundaries and jurisdiction.

Sincerely,

Sanford Fish
Zoning, Building and Planning Director

cc: Mayor Jim Baca
Councillor Alan B. Armijo
Councillor Adele Baca-Hundley
Councillor Sam Bregman
Councillor Ruth Adams
Councillor Mike M. McEntee
Councillor Michael Brasher
Councillor Tim Kline
Councillor Tim Cummins
Laura Mason, City Council Senior Policy Analyst
Robert McCabe, City Planning Director
Richard Dineen, Development Services Program Manager
Juan Vigil, County Manager
Thaddeus Lucero, County Community Services Division Director



Note: Shaded area indicates County Not to Scale

ZONING MAP

AGIS

Scale 1"=650'

CASE PLANNER

HEARING DATE

MAP NO.
L-M8

FILE NO.

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

City Council

Phone: (505)768-3100
Fax: (505)768-3227
Web Site: http://www.cabq.gov/council

Fax Transmission

Please deliver the following pages to the appropriate person. Thank you.

TO: Fred Aguirre

Fax #: 924-3864

From: Laura Mason

Date: 3-10-99

Pages: 6, **including this cover sheet**

Comments: Fred - there may be a question about this at tonight's LUPZ meeting. Thanks.

If you receive this fax incomplete or if any of the pages are unclear, please call 768-3100.

Re: O-60
Item No. 5 on 3-10-99 LUPZ Agenda

COVER ANALYSIS

Z-98-90/AX-98-11/SD-87-1-17

On November 19,1998, the Environmental Planning Commission voted to recommend to the City Council Annexation of 63 acres of land in the Southwest Mesa; Establishment of Zoning of SU-1/PRD 9du/acre for the entire 63 acres, and; Amendment of the *Tower/Unser Sector Development Plan* to reflect the established zoning inasmuch as it changes the Sector Plan's zoning in the area of the annexation that lies within the *Tower/Unser Plan* - the northern 35 acres.

There was no neighborhood opposition to the request.

CITY OF ALBUQUERQUE AGENCY COMMENTS

PLANNING DEPARTMENT

Zoning Enforcement

"Reviewed, no comment."

PUBLIC WORKS DEPARTMENT

Transportation Development Services:

Transportation Planning:

Conditions of the proposed "**annexation, sector development plan amendment, site development plan for subdivision purposes, and site development plan for building permit purposes**" approvals should include:

- Dedication of 43 feet of right of way from the roadway centerline for Sage Road (De Vargas Road) between Cerrillos Road and the Snow Vista Channel, a Minor Arterial street on the Long Range Major Street Plan.
- Dedication of 86 feet of right of way for Sage Road (De Vargas Road) between the western boundary of the submittal to Cerrillos Road, a Minor Arterial street on the Long Range Major Street Plan.
- Dedication of an additional 6 feet of right of way along Sage Road (De Vargas Road) between Cerrillos Road and the Snow Vista Channel for a bike lane consistent with *Policy 6.24 of the Westside Strategic Plan.*
- Dedication of an additional 12 feet of right of way along Sage Road (De Vargas Road) between the western boundary of the submittal to Cerrillos Road for a bike lane consistent with *Policy 6.24 of the Westside Strategic Plan.*
- Dedication of 68 feet of right of way for 114th Street, a Collector street on the Long Range Major Street Plan.
- Dedication of appropriate right of way, as determined by the Trails Coordinator, along the Snow Vista Channel for a bike path/trail consistent with the *Trails and Bikeways Facilities Plan.*
- Implementation of appropriate transportation infrastructure required by the Traffic Impact Study.

The applicant is advised that the *Bikeways Master Plan* identifies an existing bike route on 114th Street, which requires no additional rights of way.

Utility Development:

Hydrology Division:

The Hydrology Section has no objection to the zone map amendment request and annexation. An approved drainage report is required for site plan approval.

Traffic Engineering Operations:

Huge area to be developed. Transportation and traffic considerations at this point are crucial to maintain good patterns and keep traffic on Collectors/Arterials and away from cut through of neighborhood streets, present and future. Signals may need to be considered as a part of this project.

Trails and Bikeways, along with connections, will need to be coordinated with the Trails Planner, Diane Scena, at 857-8632.

OPEN SPACE DIVISION

"The applicant should be made aware of detached open space requiremetns that may be generated with 9 dwelling units per acre in RD zoning. An accurate accounting of useable on site open space neds to be calculated."

POLICE DEPARTMENT/Planning

SOLID WASTE MANAGEMENT DEPARTMENT

Refuse Division
"Approved on conditions will need storage area for rufuse automated carts not visible from street call Ira Gibson 761-8149."

FIRE DEPARTMENT/Planning

TRANSIT DEPARTMENT

"Reviewed, no adverse comment."

C(ENTS FROM OTHER AGENCIES:

BERNALILLO COUNTY

ALBUQUERQUE FLOOD CONTROL AUTHORITY

No specific comments on Unit 2 however, AMAFCA's concerns for Unit 1 must be addressed as they may impact the Unit 2 design. The Unit 1 comments were as follows:

This site has a limited discharge due to capacity constraints of the Snow Vista Channel. An approved grading and drainage plan is required. AMAFCA must approve the connection to the channel from the detention facility. Notwithstanding phasing, the proposed drainage system must stand alone, and not rely on the second phase. Please coordinate with COA regarding operation and maintenance (City or HOA) of the interior drainage facilities. Has the developer considered using the northwest corner of De Vargas and the Snow Vista Channel for detention ponding? Detention ponds must consider upstream runoff.

ALBUQUERQUE PUBLIC SCHOOLS

"The 111 lots in the propoed Timarron Estates Unit 2, will affect Carlos Rey Elementary School, Truman Middle School, and West Mes High School. The APS facilities in the area are at or approaching site capacity as a consequence of the ongoing West Side development. The APS facilities in the area are either at or approaching site capacity. The district will open a new elementary school (Painted Sky) in fall, 1998, and a middle school around the turn of the century. Regardless of the recent and planned additions to existing educational facilities,

County of Bernalillo

State of New Mexico

2400 BROADWAY, S.E.
ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

June 8, 1998

Kent M. Whitman, P.E.
Community Sciences Corporation
Post Office Box 1328
Corrales, New Mexico 87048

RE: Conceptual Grading and Drainage Plan for Lands of Grevey/Liberman Bulk Land Plat (M8/D4) Engineer's Stamp Dated 5/4/98.

Dear Mr. Whitman:

This letter is a compilation of comments from my office as well as from County Public Works and AMAFCA. Based on the information provided, the above referenced submittal is acceptable to the City and the County for Bulk Land Variance approval.

Prior to Plat approval, however, the drainage easements must be shown on the Plat. The Plat must also contain the language provided by the City, County and AMAFCA regarding the easements.

Prior to any development, site specific Grading and Drainage plans will be required. The blanket drainage easements may be later defined with future developments and platting of the tracts.

If you have any questions, please call me at 924-3982.

Sincerely,

Susan M. Calongne, P.E.
City/County Floodplain Administrator

c: Fred Aguirre, DRB-98-47
Roger Paul, Bernalillo County Public Works Division, SRP5-98-2
Brad Catanach, Bernalillo County Public Works Division
Lisa Ann Manwill, Albuquerque Metropolitan Arroyo Flood Control Authority
File

PROJECT TITLE: ~~Timarron Estates~~ Gregory & Liberman Bulk Land Plat ZONE ATLAS/DRNG. FILE #: ~~M-8~~/M-8 D004

LEGAL DESCRIPTION: Easterly portion of the north half (N½) of section 32, Township 10 N, Range 2E, NMPM

CITY ADDRESS: North of De Vargas Road, SW; west of Snow Vista Channel

ENGINEERING FIRM: Community Sciences Corporation CONTACT: Kent M. Whitman/ Billy O. McCarty

ADDRESS: P.O. Box 1328, Corrales, N. M. 87048 PHONE: 897-0000

OWNER: Centex Homes CONTACT: Norm Gregory

ADDRESS: 5111 Juan Tabo NE PHONE: 275-1035

ARCHITECT: N/A CONTACT: N/A

ADDRESS: PHONE:

SURVEYOR: N/A CONTACT:

ADDRESS: PHONE:

CONTRACTOR: N/A CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

___ YES

_X_ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

DRB NO.

EPC NO. Z-98-53

PROJ. NO.

HYDROLOGY SECTION
RECEIVED
MAY 05 1998

TYPE OF SUBMITTAL:

_X_ DRAINAGE REPORT

___ DRAINAGE PLAN

_X_ CONCEPTUAL GRADING AND DRAINAGE PLAN

___ GRADING PLAN

_X_ EROSION CONTROL PLAN

___ ENGINEER'S CERTIFICATION

RECEIVED
APR 10 1998
HYDROLOGY SECTION

CHECK TYPE OF APPROVAL SOUGHT:

___ SKETCH PLAT APPROVAL Bulk Land

_X_ ~~PRELIMINARY~~ PLAT APPROVAL

___ SITE DEVELOPMENT PLAN APPROVAL

___ FINAL PLAT APPROVAL

___ BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

DATE SUBMITTED: ~~4-10-98~~ 5-5-98

OTHER _____(SPECIFY)

BY: Billy O McCarty

Call

Co & Amx did not receive

Portion Tract 2 to Amole

```
    AHYMO PROGRAM (AHYMO194) - AMAFCA Hydrologic Model - January, 1994
         RUN DATE (MON/DAY/YR) = 05/01/1998
         START TIME (HR:MIN:SEC) = 12:03:13     USER NO.= DAGGETTK.S94
         INPUT FILE = TRACT2.DAT

START                  TIME=0.0
*S PORTION OF TRACT 2 DRAINING TO THE AMOLE ARROYO INC. OFFSITE AREA
RAINFALL               TYPE=1  RAIN QUARTER=0.0
                       RAIN ONE=1.87 IN  RAIN SIX=2.20
                       RAIN DAY=2.66 DT=.0333

              COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
DT =    .033300 HOURS        END TIME =    5.994000 HOURS
   .0000  .0016   .0033   .0050   .0067   .0085   .0103
   .0121  .0140   .0160   .0180   .0200   .0221   .0243
   .0265  .0288   .0312   .0336   .0361   .0387   .0414
   .0442  .0471   .0501   .0533   .0566   .0600   .0636
   .0674  .0714   .0757   .0808   .0863   .0922   .1044
   .1323  .1754   .2374   .3221   .4335   .5756   .7527
   .9690 1.1767  1.2619  1.3336  1.3972  1.4551  1.5084
  1.5579 1.6041  1.6474  1.6881  1.7266  1.7629  1.7973
  1.8298 1.8607  1.8900  1.9178  1.9442  1.9515  1.9573
  1.9627 1.9680  1.9729  1.9777  1.9823  1.9867  1.9909
  1.9950 1.9990  2.0029  2.0066  2.0102  2.0137  2.0172
  2.0205 2.0238  2.0269  2.0300  2.0331  2.0360  2.0389
  2.0418 2.0446  2.0473  2.0500  2.0526  2.0552  2.0578
  2.0603 2.0627  2.0651  2.0675  2.0698  2.0721  2.0744
  2.0766 2.0788  2.0810  2.0832  2.0853  2.0873  2.0894
  2.0914 2.0934  2.0954  2.0974  2.0993  2.1012  2.1031
  2.1050 2.1068  2.1086  2.1104  2.1122  2.1140  2.1157
  2.1174 2.1191  2.1208  2.1225  2.1242  2.1258  2.1274
  2.1290 2.1306  2.1322  2.1338  2.1353  2.1369  2.1384
  2.1399 2.1414  2.1429  2.1444  2.1459  2.1473  2.1487
  2.1502 2.1516  2.1530  2.1544  2.1558  2.1571  2.1585
  2.1599 2.1612  2.1625  2.1639  2.1652  2.1665  2.1678
  2.1691 2.1703  2.1716  2.1729  2.1741  2.1754  2.1766
  2.1778 2.1791  2.1803  2.1815  2.1827  2.1839  2.1850
  2.1862 2.1874  2.1886  2.1897  2.1909  2.1920  2.1931
  2.1943 2.1954  2.1965  2.1976  2.1987  2.1998
```



```
*S BASIN DESIGNATION = 100.0
COMPUTE NM HYD         ID=1 HYD NO=100.0 DA=0.078 SQ MI
                       PER A=58 PER B=10 PER C=10 PER D=22 TP=-0.13333
                       RAIN=-1

    K =   .072928HR    TP =   .133330HR    K/TP RATIO =   .546973     SHAPE CONSTANT, N =  7.073624
    UNIT PEAK =   67.535    CFS   UNIT VOLUME =    .9992       B =   524.73      P60 = 1.8700
    AREA =      .017160 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300


    K =   .150629HR    TP =   .133330HR    K/TP RATIO =  1.129749     SHAPE CONSTANT, N =  3.132617
    UNIT PEAK =   133.45    CFS   UNIT VOLUME =    .9998       B =   292.46      P60 = 1.8700
    AREA =      .060840 SQ MI    IA =    .59231 INCHES    INF =   1.50846 INCHES PER HOUR
    RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033300

PRINT HYD              ID=1 CODE=10

                                PARTIAL HYDROGRAPH   100.00
```

TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS	TIME HRS	FLOW CFS
.000	.0	1.665	58.9	3.330	.7	4.995	.3	6.660	.0
.333	.0	1.998	17.5	3.663	.5	5.328	.3	6.993	.0
.666	.0	2.331	5.1	3.996	.3	5.661	.3		
.999	.0	2.664	2.3	4.329	.3	5.994	.3		
1.332	14.6	2.997	1.2	4.662	.3	6.327	.0		

RUNOFF VOLUME = .83720 INCHES = 3.4827 ACRE-FEET
PEAK DISCHARGE RATE = 107.80 CFS AT 1.499 HOURS BASIN AREA = .0780 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 12:03:20

community sciences corporation

May 1, 1998

Ms. Susan Cologne
City of Albuquerque
Hydrology Division
600 2nd St., NW
2nd Foor
Albuquerque, NM 87102

RE: Conceptual Drainage Plan - Lands of Grevey & Liberman

Dear Ms. Cologne:

I will address the comments in your letter of 4/14/98 in the order written. Please be aware that the contents of this plan resulted from a conference meeting with Fred Aguirre, Kurt Browning & Roger Paul.

1) Corrected;
2) Complied as requested;
3) FEMA map enclosed; The proposed easements to AMAFCA are the FEMA floodplain limits per direction from Kurt Browning;
4) Complied and clarified as requested; The AHYMO run is enclosed; The runoff calculation now includes offsites for simplicity sake, even though the original intent was that these flows would pass through the parcel and be covered by the blanket easement to the County.

Please confer with Fred as this plan is only intended to support a bulk land plat & provides blanket easements as decided in the above referenced conference. No further easement description should be required until further platting occurs.

Sincerely,

Kent M. Whitman, P.E.
Vice President

KMW/lls

CSC#399-06-062/399-06DT.REP

P.O. Box 1328
Corrales, New Mexico 87048
(505) 897-0000 Fax (505) 898-5195

ET

ZONE X

EXISTING

TOWER

114TH

STREET

SAN

ZONE A

ZONE A

DIVERSION

Portion of Property Impacted by FEMA flood plains

ZONE A

ZONE A

ZONE X

ZONE A

ZONE A

DIKE

ZONE A

BERNALILLO COUNTY
UNINCORPORATED AREAS
350001

ZONE AE
(EL. 5411)

T OF
D STUDY

PONDING
AREA 20

WESTGATE DAM

ZONE X

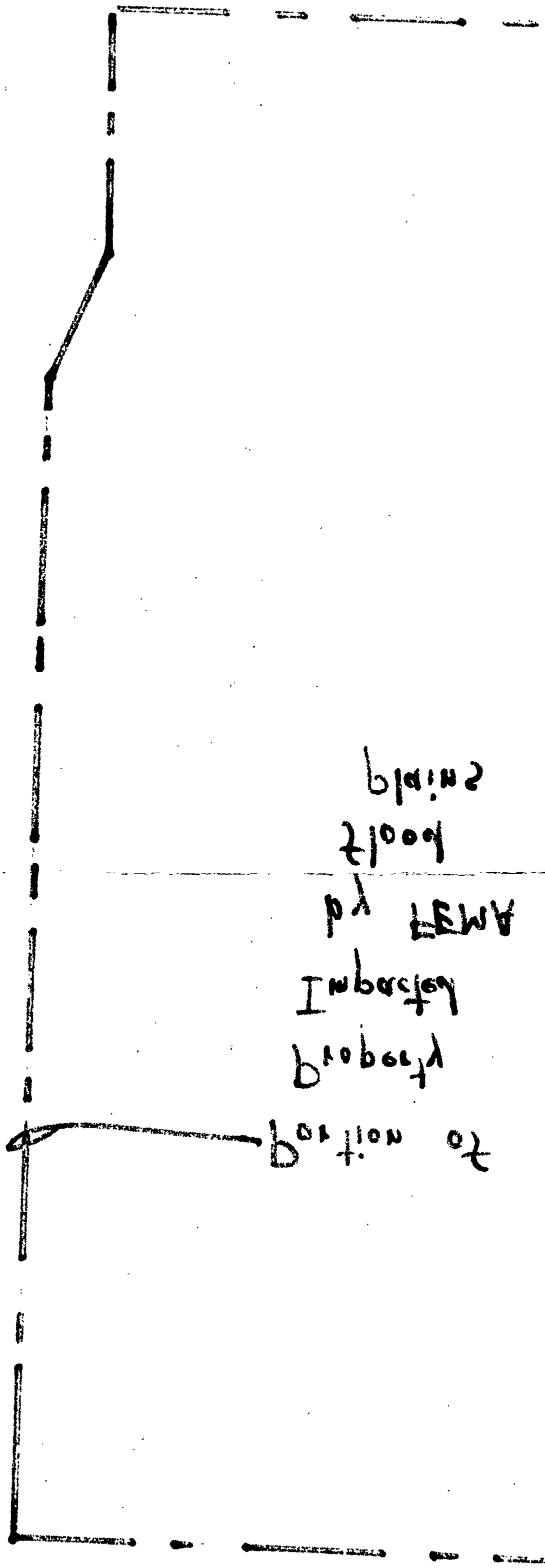
ZONE A

ZONE AO
(DEPTH 1)

LIMIT OF
DETAILED ST

Amole

Arroyo



M8/D004
#6539981

-3.00

PERMANENT EASEMENT

Grant of Permanent Easement, between Marc Louis Liberman, a married man as his sole and separate estate; Bank of America, N.A., as Trustee of the Marc Louis Liberman Trust established under the Marguerite Liberman Revocable Trust, under Trust Agreement dated March 10, 1981, as thereinafter amended and restated September 20, 1989, as amended March 27, 1990; Bank of America, N.A., as Trustee of the Michele Louise Liberman Trust established under the Marguerite Liberman Revocable Trust, under Trust Agreement dated March 10, 1981, as thereinafter amended and restated September 20, 1989, as amended March 27, 1990; Bank of America, N.A., as Trustee of the Michele Louise Liberman Trust under Trust Agreement dated 4/4/79; Joseph Grevey, sole surviving Trustee of the Joseph and Simone Grevey Trust, established as provided in Trust Agreement dated April 14, 1989; Wells Fargo Bank of New Mexico, N.A., and Frances S. Liberman, Co-Trustees of the Ira L. Liberman and Frances S. Liberman Revocable Trust UTA dated January 12, 1993; Joanne M. Grevey Marital Trust, Eileen Grevey (a/k/a Eileen Grevey Hillson) Trustee; Eileen Grevey Hillson as Trustee of Lisa Marie Clifford Trust #1 dated May 4, 1994; Eileen Grevey Hillson as Trustee of Sean David Clifford Trust #1 dated May 4, 1994; and Eileen Grevey (a/k/a Eileen Grevey Hillson), as her sole and separate property (Grantor), whose address is c/o Helen Grevey, 2015 Wyoming Blvd., NE, Suite G, Albuquerque, NM 87112 and the City of Albuquerque, a New Mexico municipal corporation (City), whose address is P.O. Box 1293, Albuquerque, New Mexico 87103.

Grantor grants to the city an exclusive, permanent easement ("Easement") in, over, upon and across the real property described on Exhibit "A" attached hereto ("Property") for the construction, installation, maintenance, repair, modification, replacement and operation of Public Roadway, drainage, water, sewer mains, together with the right to remove trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of this Easement.

In the event Grantor constructs any improvements within the Easement, the City has the right to enter upon the Property at any time and perform whatever inspection, installation, maintenance, repair, modification or removal ("Work") it deems appropriate without liability to the City. If the work effects any Improvements or Encroachments made by the Grantor on the Property, the City will not be financially or otherwise responsible for rebuilding or repairing of Improvements or Encroachments. If in the opinion of the City, the work to be performed by the City could endanger the structural integrity or otherwise damage the Improvements or Encroachments, the Grantor shall, at its own expense, take whatever protective measures are required to safeguard the Improvements or Encroachments.

Grantor covenants and warrants that Grantor is the owner in fee simple of the Property; that Grantor 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.

Mary Herrera Bern. Co. EASE R 23.00
2001010889
5481518
Page: 1 of 9
02/01/2001 11:52A
Bk-A14 Pg-9439

The grant and other provisions of this Easement constitute covenants running with the land for the benefit of the City and its successors and assigns until terminated.

This easement shall not be effective until approved by the City Engineer in the signature block below

WITNESS my hand and seal this 15th day of December, 2000.

APPROVED:

City Engineer

1-31-01

Dated

GRANTOR:

Marc Louis Liberman

Bank of America, N.A., as Trustee of the Marc Louis Liberman Trust established under the Marguerite Liberman Revocable Trust, under Trust Agreement dated March 10, 1981, as thereinafter amended and restated September 20, 1989, as amended March 27, 1990

By: _____
Timothy P. Mullane, Vice President

Bank of America, N.A., as Trustee of the Michele Louise Liberman Trust established under the Marguerite Liberman Revocable Trust, under Trust Agreement dated March 10, 1981, as thereinafter amended and restated September 20, 1989, as amended March 27, 1990

By: _____
Timothy P. Mullane, Vice President

Bank of America, N.A., as Trustee of the Michele Louise Liberman Trust under Trust Agreement dated 4/4/79

By: _____
Timothy P. Mullane, Vice President

Mary Herrera Bern. Co. EASE R 23.00

2001010889
5461518
Page: 2 of 9
02/01/2001 11:52A
Bk-A14 Pg-9439

Permanent Easement/City of Albuquerque
(12/13/00)
(W0146804.WPD) (JPH) (36717-115)

Joseph Grevey, sole surviving Trustee of the Joseph and Simone Grevey Trust, established as provided in Trust Agreement dated April 14, 1989

Joseph A. Grevey by Helen A. Grevey, P.O.A.
Joseph Grevey

Eileen Grevey (a/k/a Eileen Grevey Hillson), as Trustee of the Joanne M. Grevey Marital Trust, UTA dated March 2, 1983

Eileen Grevey
Eileen Grevey, Trustee

Eileen Grevey (a/k/a Eileen Grevey Hillson), Trustee of the Lisa Marie Clifford Trust #1 dated May 4, 1994

Eileen Grevey
Eileen Grevey, Trustee

Eileen Grevey (a/k/a Eileen Grevey Hillson), Trustee of the Sean David Clifford Trust #1 dated May 4, 1994

Eileen Grevey
Eileen Grevey, Trustee

Eileen Grevey
Eileen Grevey, a married woman as her sole and separate estate

Wells Fargo Bank of New Mexico, N.A. and Frances S. Liberman, Co-Trustees of the Ira L. Liberman and Frances S. Liberman Revocable Trust UTA dated January 12, 1993

Frances S. Liberman
Frances S. Liberman

Wells Fargo Bank of New Mexico, N.A.:

By: Patrick M. Butler
Name: Patrick M. Butler
Title: Specialty Asset Manager/VP

ACKNOWLEDGMENTS

STATE OF _____
COUNTY OF _____

This instrument was acknowledged before me on _____, 2000, by MARC LOUIS LIBERMAN.

(Seal, if any)

_____
Notary Public

My commission expires: _____

Joseph Grevey, sole surviving Trustee of the Joseph and Simone Grevey Trust, established as provided in Trust Agreement dated April 14, 1989

_____

Joseph Grevey

Eileen Grevey (a/k/a Eileen Grevey Hillson), as Trustee of the Joanne M. Grevey Marital Trust, UTA dated March 2, 1983

_____

Eileen Grevey, Trustee

Eileen Grevey (a/k/a Eileen Grevey Hillson), Trustee of the Lisa Marie Clifford Trust #1 dated May 4, 1994

_____

Eileen Grevey, Trustee

Eileen Grevey (a/k/a Eileen Grevey Hillson), Trustee of the Sean David Clifford Trust #1 dated May 4, 1994

_____

Eileen Grevey, Trustee

_____

Eileen Grevey, a married woman as her sole and separate estate

Wells Fargo Bank of New Mexico, N.A. and Frances S. Liberman, Trustees of the Ira L. Liberman and Frances S. Liberman Revocable Trust UTA dated January 12, 1993

_____

Frances S. Liberman

Wells Fargo Bank of New Mexico, N.A.:

By:_____
Name:_____
Title:_____

ACKNOWLEDGMENTS

STATE OF MAINE
COUNTY OF Sagadahoc

This instrument was acknowledged before me on Dec 20th, 2000, by MARC LOUIS LIBERMAN.

(Seal, if any)

Ralph A Newton
Notary Public

My commission expires: RALPH A. NEWTON NOTARY PUBLIC, MAINE MY COMMISSION EXPIRES JULY 6, 2003

Permanent Easement/City of Albuquerque
(12/13/00)
(W0146804.WPD) (JPH) (36717-115)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on December 14, 2000, by TIMOTHY P. MULLANE, as Vice President of BANK OF AMERICA, N.A. as Trustee of the MARC LOUIS LIBERMAN TRUST established under the MARGUERITE LIBERMAN REVOCABLE TRUST under Trust Agreement dated March 10, 1981, amended and restated September 20, 1989, as amended March 27, 1990.

(Seal, if any) OFFICIAL SEAL ELENA BRANDIGER NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 1-23-2002

Notary Public
My commission expires: 1-23-2002

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on December 14, 2000, by TIMOTHY P. MULLANE, as Vice President of BANK OF AMERICA, N.A. as Trustee of the MICHELE LOUISE LIBERMAN TRUST established under the MARGUERITE LIBERMAN REVOCABLE TRUST under Trust Agreement dated March 10, 1981, amended and restated September 20, 1989, as amended March 27, 1990.

(Seal, if any) OFFICIAL SEAL ELENA BRANDIGER NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 1-23-2002

Notary Public

My commission expires: 1-23-2002

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on December 14, 2000, by TIMOTHY P. MULLANE, as Vice President of BANK OF AMERICA, N.A. as Trustee of the MICHELE LOUISE LIBERMAN TRUST under Trust Agreement dated 4/4/79.

(Seal, if any) OFFICIAL SEAL ELENA BRANDIGER NOTARY PUBLIC STATE OF NEW MEXICO My Commission Expires 1-23-2002

Notary Public

My commission expires: 1-23-2002

Permanent Easement/City of Albuquerque
(12/13/00)
(W0146804.WPD) (JPH) (36717-115)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

Helen A. Grevey
P.O.A. for

This instrument was acknowledged before me on 12/21, 2000, by JOSEPH GREVEY as Trustee of the JOSEPH AND SIMONE GREVEY TRUST established as provided in Trust Agreement dated April 14, 1989.

(Seal, if any)

OFFICIAL SEAL
Peter F. McCanna
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires 7/28/03

Notary Public

My commission expires:_____

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on 12/21, 2000, by EILEEN GREVEY as Trustee of the Joanne M. Grevey Marital Trust, UTA dated March 2, 1983.

(Seal, if any)

OFFICIAL SEAL
Peter F. McCanna
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires 7/28/03

Notary Public

My commission expires:_____

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on 12/21, 2000, by EILEEN GREVEY as Trustee of the Lisa Marie Clifford Trust #1 dated May 4, 1994.

(Seal, if any)

OFFICIAL SEAL
Peter F. McCanna
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires 7/28/03

Notary Public

My commission expires:_____

2001010889
5461518
Page: 6 of 9
02/01/2001 11:52A
Bk-A14 Pg-9439
Mary Herrera Bern. Co. EASE R 23.00

Permanent Easement/City of Albuquerque
(12/13/00)
(W0146804.WPD) (JPH) (36717-115)

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on 12/21, 2000, by EILEEN GREVEY as Trustee of the Sean David Clifford Trust #1 dated May 4, 1994.

Peter F. McCanna
Notary Public

(Seal, if any)

OFFICIAL SEAL
Peter F. McCanna
NOTARY PUBLIC - STATE OF NEW MEXICO
My commission expires 7/28/03

My commission expires:

STATE OF NEW MEXICO
COUNTY OF BERNALILLO

This instrument was acknowledged before me on December 29, 2000, by Patrick M. Butler as Specility Asset Mngr/VP of WELLS FARGO BANK NEW MEXICO, N.A., and FRANCES S. LIBERMAN Co-Trustees of the IRA L. LIBERMAN REVOCABLE TRUST.

Janice Halowell
Notary Public

(Seal)

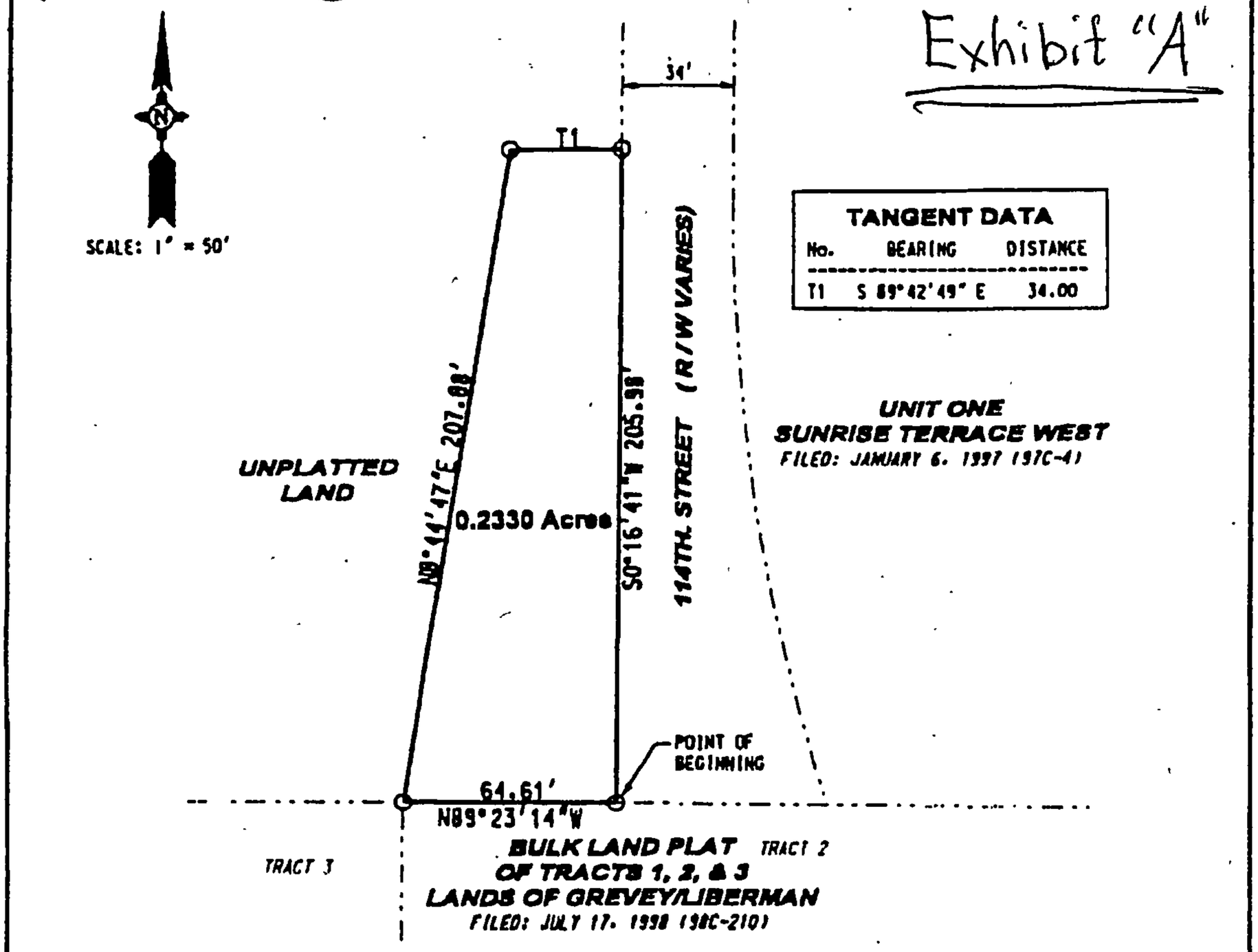
My commission expires:

OFFICIAL SEAL
JANICE HALOWELL
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: April 7, 2001

2001010889
5461518
Page: 7 of 9
02/01/2001 11:52A
Bk-A14 Pg-9439
Mary Herrera Bern. Co. EASE R 23.00

EXHIBIT A
(real property description attached)

Exhibit "A"



TANGENT DATA		
No.	BEARING	DISTANCE
T1	S 89°42'49" E	34.00

DESCRIPTION

A certain tract of land situate within unplatted lands within the Town of Atrisco Grant, in the southwest one-quarter of projected Section 29, Township 10 North, Range 2 East, New Mexico Principal Meridian, Bernalillo County, New Mexico, Said tract being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at the southwest corner of UNIT ONE, SUNRISE TERRACE WEST, as the same is shown and designated on the plat recorded in the office of the County Clerk of Bernalillo County, New Mexico on January 6, 1997 in Book 97C, folio 4, thence running along the north boundary line of TRACT 2, as the same is shown on the plat of the LANDS OF GREVEY/LIBERMAN, recorded in the office of the County Clerk of Bernalillo County, New Mexico, on July 17, 1998 in Book 98C, page 210:
N89°23'17"W a distance of 64.61 feet to the northwest corner of said TRACT 2; thence along the west boundary line of the tract herein described:
N89°44'47"E a distance of 207.88 feet; thence along the north boundary line of the tract herein described,
S89°42'49"E a distance of 34.00 feet to a point on the west boundary line of said UNIT ONE, SUNRISE TERRACE WEST; thence along said west boundary line,
S00°16'41"W a distance of 205.98 feet to the point and place of beginning.

This tract contains 0.2330 of and acre (10,150 square feet), more or less.

SURVEYOR'S CERTIFICATION

I, Thomas G. Klingenmagen, registered New Mexico Surveyor No. 5978, hereby certify that the above Site Map and Description are true and correct to the best of my knowledge and belief.

Bohannan-Huston Inc.
Courtyard I
7500 Jefferson NE
Albuquerque, NM 87109
(505)823-1000

TOM KLINGENMAGEN NEW MEXICO 5978 REGISTERED PROFESSIONAL SURVEYOR

Thomas G. Klingenmagen
NM Surveyor No. 5978

Date: 11-28-2000

Bohannan Huston

Courtyard One 7500 JEFFERSON NE Albuquerque NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS SURVEYORS SOFTWARE DEVELOPERS

P:\99470\SURVEY\A2-15\GRAPHICS\EXHIBITS
99470EXHIBITA.DGN

JOB NO. 99470A2 15

13.00

PERMANENT EASEMENT

653981

01-09-01

Grant of Permanent Easement, between Centex Homes (Grantor), whose address is 6700 Jefferson Ne. 87109 and the City of Albuquerque, a New Mexico municipal corporation (City), whose address is P.O. Box 1293, Albuquerque, New Mexico, 87103.

Grantor grants to the City an exclusive, permanent easement ("Easement") in, over, upon and across the real property described on Exhibits "A 1 & A 2" attached hereto ("Property") for the construction, installation, maintenance, repair, modification, replacement and operation of Water Mains, together with the right to remove trees, bushes, undergrowth and any other obstacles upon the Property if the City determines they interfere with the appropriate use of this Easement.

In the event Grantor constructs any improvements within the easement, the City has the right to enter upon Grantors property at any time and perform whatever inspection, installation, maintenance, repair modification or removal ("Work") it deems appropriate without liability to the City. If the work effects any Improvements of Encroachments made by the Grantor, the City will not be financially or otherwise responsible for rebuilding or repairing of Improvements or Encroachments. If in the opinion of the City, the Work to be performed by the City could endanger the structural integrity or otherwise damage the Improvements of Encroachments, the Grantor shall, at its own expense, take whatever protective measures are required to safeguard the Improvements or Encroachments.

Grantor covenants and warrants that Grantor is the owner in fee simple of the Property, that Grantor 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.

The grant and other provisions of this Easement constitute covenants running with the land for the benefit of the City and its successors and assigns until terminated.

WITNESS my hand and seal this _____ day of _____, 20____.

APPROVED:

City Engineer

1-09-01

Dated

KR 1/8/01

GRANTOR:

_____
(individual)

GRANTOR:.

By: _____

Its: PRESIDENT
(~~Corporation~~ or partnership)

2001004889
5455461
Page: 1 of 4
01/17/2001 11:10A
Bk-A14 Pg-3468
Mary Herrera Bern. Co. EASE R 13.00

PARTNERSHIP

STATE OF New Mexico)
)SS
COUNTY OF Bernalillo)

This instrument was acknowledged before me on this 30th day of December 2000, by Tom Houser, Division President of Centex Real Estate Corporation, a Nevada Corporation, managing general partner of Centex Homes, a Nevada General Partnership, on behalf of said corporation and partnership.

Notary Public

My commission expires:

11/10/2001

OFFICIAL SEAL
NORMAN A. GREGORY
NOTARY PUBLIC-STATE OF NEW MEXICO
My commission expires: 11/10/2001

DESCRIPTION

A twenty foot wide strip of land situate within the Town of Atrisco Grant, in the southwest one-quarter of projected Section 29, Township 10 North, Range 2 East, New Mexico Principal Meridian, Bernalillo County, New Mexico. Said tract being a northwesterly portion of TRACT 2, as the same is shown on the plat of the LANDS OF GREVEY/LIBERMAN, recorded in the office of the County Clerk of Bernalillo County, New Mexico, on July 17, 1998 in Book 98C, page 210 and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at the northwest corner of the tract herein described, being the intersection of the west boundary line of said TRACT 2 and the southerly boundary line of an existing 86 foot wide Public Roadway, Utility, and Drainage Easement as shown on said LANDS OF GREVEY/LIBERMAN plat, whence the northwest corner of said TRACT 2 bears N00°37'32"E a distance of 886.72 feet; thence along said easement boundary line,
S89°56'43"E a distance of 20.00 feet; thence along the easterly boundary line of the tract herein described,
S00°37'31"W a distance of 262.03 feet to a point on the southerly boundary line of an existing 5 foot PNM and MST&T easement recorded in the office of the County Clerk of Bernalillo County, New Mexico on September 14, 1981 in Book 611, page 148; thence along said easement boundary line,
N89°54'36"W a distance of 20.00 feet to a point on the westerly boundary line of said TRACT 2; thence along said westerly boundary line,
N00°37'31"E a distance of 262.01 feet to the point and place of beginning.

This tract contains 0.1203 of an acre (5,240 square feet), more or less.

DESCRIPTION

A sixty-eight foot wide strip of land situate within the Town of Atrisco Grant, in the southwest one-quarter of projected Section 29, Township 10 North, Range 2 East, New Mexico Principal Meridian, Bernalillo County, New Mexico. Said tract being a northwesterly portion of TRACT 2, as the same is shown on the plat of the LANDS OF GREVEY/LIBERMAN, recorded in the office of the County Clerk of Bernalillo County, New Mexico, on July 17, 1998 in Book 98C, page 210 and being more particularly described by New Mexico State Plane Grid Bearings (Central Zone) and ground distances as follows:

BEGINNING at the northwest corner of said TRACT 2; thence along the northerly boundary line of said TRACT 2,
S89°23'16"E a distance of 68.00 feet; thence along the easterly boundary line of the tract herein described,
S00°37'31"W a distance of 886.06 feet to a point on the southerly boundary line of an existing 86 foot wide Public Roadway, Utility, and Drainage Easement as shown on said LANDS OF GREVEY/LIBERMAN plat; thence along said easement boundary line,
N89°56'43"W a distance of 68.00 feet to a point on the westerly boundary line of said TRACT 2; thence along said westerly boundary line,
N00°37'31"E a distance of 886.72 feet to the point and place of beginning.

This tract contains 1.3837 acres, more or less.

SURVEYOR'S CERTIFICATION

I, Thomas G. Klingenhagen, registered New Mexico Surveyor No. 5978, hereby certify that the above Site Map and Descriptions are true and correct to the best of my knowledge and belief.

Bohannan-Huston Inc.
Courtyard I
7500 Jefferson NE
Albuquerque, NM 87109
(505)823-1000

Thomas G. Klingenhagen
NM Surveyor No. 5978

Date: 11-28-2000

TOM KLINGENHAGEN
NEW MEXICO
5978
REGISTERED PROFESSIONAL SURVEYOR

Bohannan ▲ Huston

Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS
SURVEYORS SOFTWARE DEVELOPERS

2001004889
5455461
Page: 4 of 4
01/17/2001 11:10A
Bk-A14 Pg-3468
Mary Herrera Bern. Co. EASE R 13.00

P:\99470\SURVEY\A2-15\GRAPHICS\EXHIBITS
99470EXHIBITB.DGN

JOB NO. 99470A2 15

EXHIBIT A-1

SCALE: 1" = 100'

TANGENT DATA		
No.	BEARING	DISTANCE
T1	S 89°23'16" E	68.00
T2	N 89°56'43" W	68.00
T3	S 89°56'43" E	20.00
T4	N 89°54'36" W	20.00

UNPLATTED LAND

114TH. ST. (R/W VARIES)

UNIT ONE
SUNRISE TERRACE WEST
FILED: JANUARY 6, 1997 (97C-4)

T1

POINT OF BEGINNING

68'

EXISTING WATERLINE EASEMENT
FILED: JUNE 3, 1996
(BCR 96-16, PG. 4562)
EXISTING PUBLIC ROADWAY, UTILITY, AND DRAINAGE EASEMENT
FILED: JULY 17, 1998 (98C-210)

68'

TRACT 3

N0°37'31"E 886.72'

1.3837 Acres

S0°37'31"W 886.06'

BULK LAND PLAT
OF TRACTS 1, 2, & 3
LANDS OF GREVEY/LIBERMAN
FILED: JULY 17, 1998 (98C-210)

TRACT 2

EXISTING 86' PUBLIC ROADWAY, UTILITY & DRAINAGE EASEMENT
FILED: JULY 17, 1998 (98C-210)

86'

T2

T3

POINT OF BEGINNING

20'

N0°37'31"E 262.01'

0.1203 Acres

S0°37'31"W 262.03'

EXISTING 25' PUBLIC ACCESS EASEMENT
FILED: JULY 17, 1998 (98C-210)

EXISTING 5' PNM AND MST&T EASEMENT
FILED: SEPTEMBER 14, 1961 (BK. 611, PG. 148)

25'

10'

5'

T4

2001004889
5455461
Page: 3 of 4
01/17/2001 11:10A
Bk-A14 Pg-3468
R 13.00
Mary Herrera Bern. Co. EASE R

Bohannan ▲ Huston

Courtyard One
7500 JEFFERSON NE
Albuquerque
NEW MEXICO 87109

ENGINEERS PLANNERS PHOTOGRAMMETRISTS
SURVEYORS SOFTWARE DEVELOPERS

SHEET 1 OF 2

P:\99470\SURVEY\A2-15\GRAPHICS\EXHIBITS
99470EXHIBITB.DGN

JOB NO. 99470A2 15