

# CITY OF ALBUQUERQUE



January 14, 2011

Graeme Means, PE  
High Mesa Consulting Group  
6010-B Midway Park Blvd. NE  
Albuquerque, NM 87109

**Re: Rich Court Grading Plan Certification**  
**Engineer's Stamp dated 11-9-10 (C20/D44)**

Dear Mr. Means,

Based upon the information provided in your submittal dated 11-10-10, the above referenced certification is approved for release of SIA and Financial Guarantee.

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

PO Box 1293

Albuquerque

NM 87103

[www.cabq.gov](http://www.cabq.gov)

Sincerely,

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

C: Marilyn Maldonado, CPN 751983  
file

**Date Site Plan Approved:**

## INFRASTRUCTURE LIST

Date Preliminary Plat Approved:

**Date Preliminary Plat Expires:**

**EXHIBIT "A"**

**TO SUBDIVISION IMPROVEMENTS AGREEMENT**

### DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

**Rich Court Subdivision**

**Lots 25-27, Block 3, North Albuquerque Acres, Tract 3, Unit 3**

Following is a summary of PUBLIC/PRIVATE Infrastructure required to be constructed or financially guaranteed for the above development. This Listing is not necessarily a complete listing. During the SIA process the DRC Chair determines that appellant items and/or unbeseeen items have not been included in the infrastructure listing, the DRC Chair may include those items in the listing and related financial guarantee. Likewise, if the DRC Chair determines that appellant or non-essential items can be deleted from the listing, those items may be deleted as well as the related portions of the financial guarantees. All such revisions require approval by the DRC Chair, the User Department and agent/owner. If such approvals are obtained, these revisions to the listing will be incorporated administratively. In addition, any unbeseeen items which arise during construction which are necessary to complete the project and which normally are the Subdivider's responsibility will be required as a condition of project acceptance and close out by the City.

[illegible]

Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnet Engineer
28" F-F	Residential Pavement w/mt C&G	Rich Court NE	Alameda Blvd NE	Tract A	/	/	/
4'	Sidewalk (Both Sides)	Rich Court NE	Alameda Blvd NE	Tract A	/	/	/
8"	Public Water Line	Rich Court NE	Alameda Blvd NE	Tract A	/	/	/
8"	Public Sanitary Sewer	Rich Court NE	Alameda Blvd NE	Tract A	/	/	/
8"	Public Water Line	Alameda Blvd NE	Lot 30, Blk 3	Rich Court NE	/	/	/
8"	Public Sanitary Sewer	Alameda Blvd NE	Lot 30, Blk 3	Rich Court NE	/	/	/
6'	Sidewalk (North Side)	Alameda Blvd NE	SW Corner Lot 1	SW Corner Tract A	/	/	/
30'	Arterial Pavement w/ std C&G (North)	Alameda Blvd NE	SW Corner Lot 1	SW Corner Tract A	/	/	/
Varies	Signage per DRC Requirements	TBD @ DRC			/	/	/
6'	Public Drainage Channel	Lot 3 Easement	Cul-de-Sac	North PL	/	/	/
12' Wide	Eastbound Left Turn Lane	Alameda Blvd NE	TBD @ DRC	Rich Court NE	/	/	/
30'	Arterial Pavement w/ std C&G (North)	Alameda Blvd NE	SW Corner Tract A	SE Corner Tract A	/	/	/
6'	Sidewalk (North Side)	Alameda Blvd NE	SW Corner Lot 1	SE Corner Tract A	/	/	/
8"	Public Water Line	Alameda Blvd NE	Rich Court NE	SE Corner Tract A	/	/	/
8"	Public Sanitary Sewer	Alameda Blvd NE	Rich Court NE	SE Corner Tract A	/	/	/
10'-Bottom	Public (MMAF&A) Concrete Drainage	Tract A	Tract A-1, Esteve	Lot 24, Blk-8	/	/	/
8-6" Deep Channel	not req'd at this time bbb		Court	ALAMEDA	/	/	/
27" H.V				Lot 24, Block 3	/	/	/
AS REQ'D.	TEMP PAVING	ALAMEDA	TBD e DRC	(130' LF)	/	/	/

10-Bottom Public (WMAFA) Concrete Drainage Tract A Tract A-1, Estrada Lot 24, Bldg 3  
 9.5' Deep Channel not req'd ALAMEDA  
 ZTHV at this time Lot 24, Block 3  
TEMP PAVING ALAMEDA TBD DEC (130' LF)

ORIGINAL

NOTES

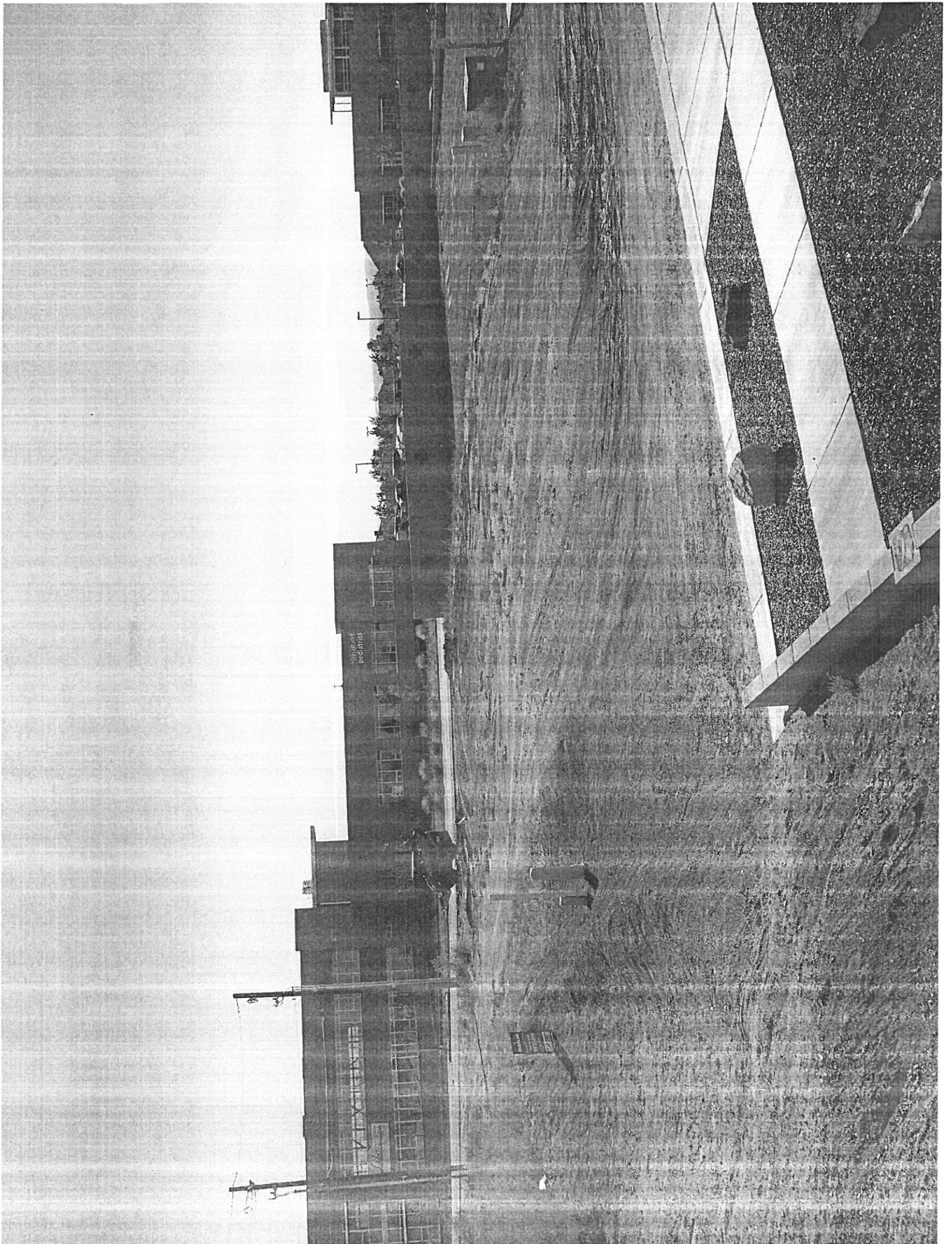
- 1 Street Lights per DPM Standards
- 2 Engineer's Certification of Grading and Drainage is Required for F.G. Release
- 3 Wall Certification from Engineer is Required for F.G. Release
- 4 Landscaping ~~is required~~ for Alameda

Approved LOMZ Required for F.G. Release (From FEMA)

AGENT / OWNER	DEVELOPMENT REVIEW BOARD MEMBER APPROVALS	
<b>J. Graeme Means</b> NAME (print)  <b>Jeff Mortensen &amp; Assoc.</b> FIRM <i>Jeff Mortensen</i> 8/29/2006 SIGNATURE - date  MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: _____	<i>Andrew Means</i> 8/30/06 DRB CHAIR - date <i>8/30/06</i> TRANSPORTATION DEVELOPMENT - date <i>8/30/06</i> UTILITY DEVELOPMENT - date <i>8/30/06</i> <b>Bradley J. Bingham</b> 8/30/06 CITY ENGINEER - date	<i>Blanchard</i> 8/30/06 PARKS & GENERAL SERVICES - date  AMAFCA - date  - date  - date

DESIGN REVIEW COMMITTEE REVISIONS			
REVISION	DATE	DRB CHAIR	USER DEPARTMENT
1	6-26-08	<i>Andrew Means</i>	<i>Bradley J. Bingham</i>
2	2-26-09	<i>Blanchard</i>	<i>Bradley J. Bingham</i>

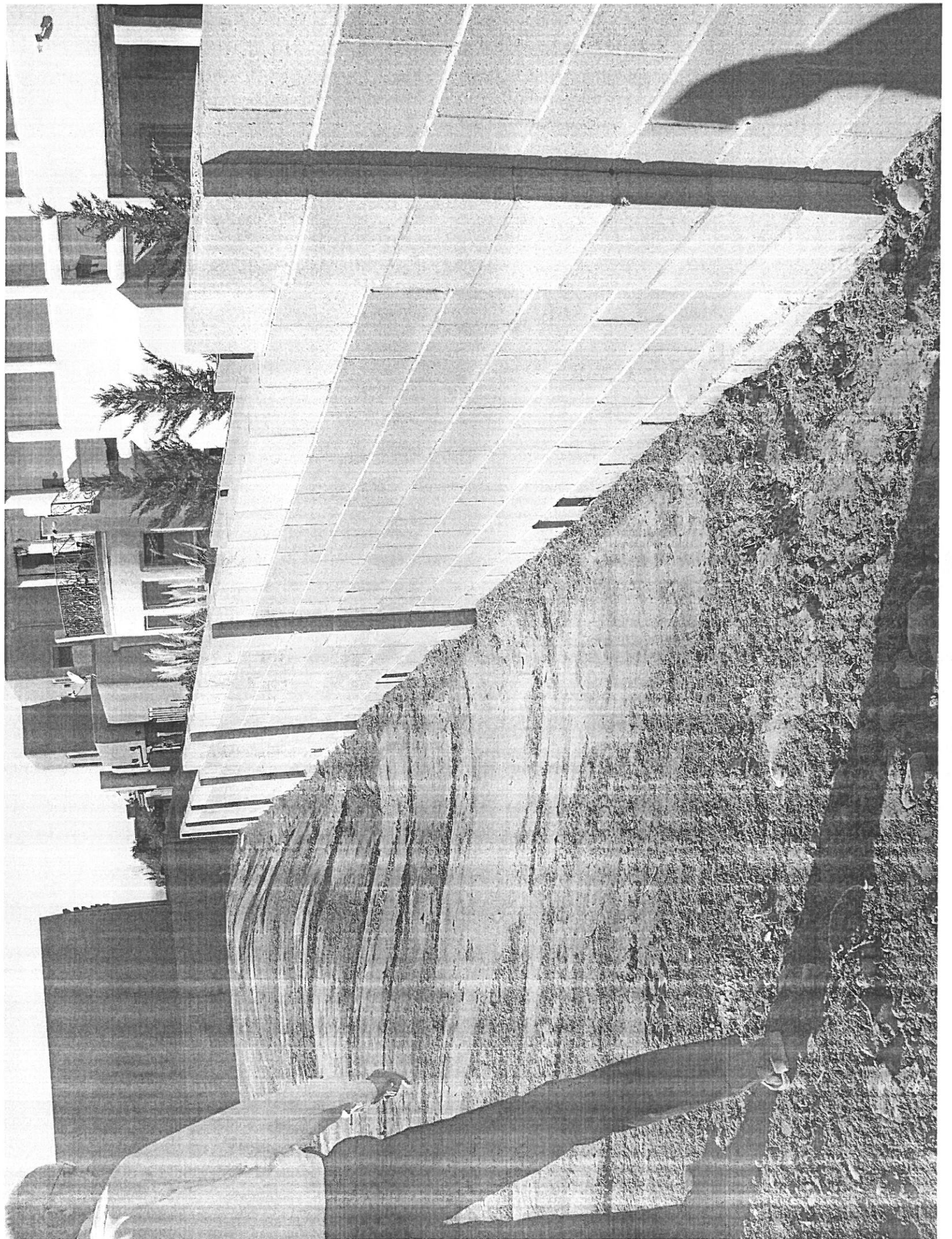




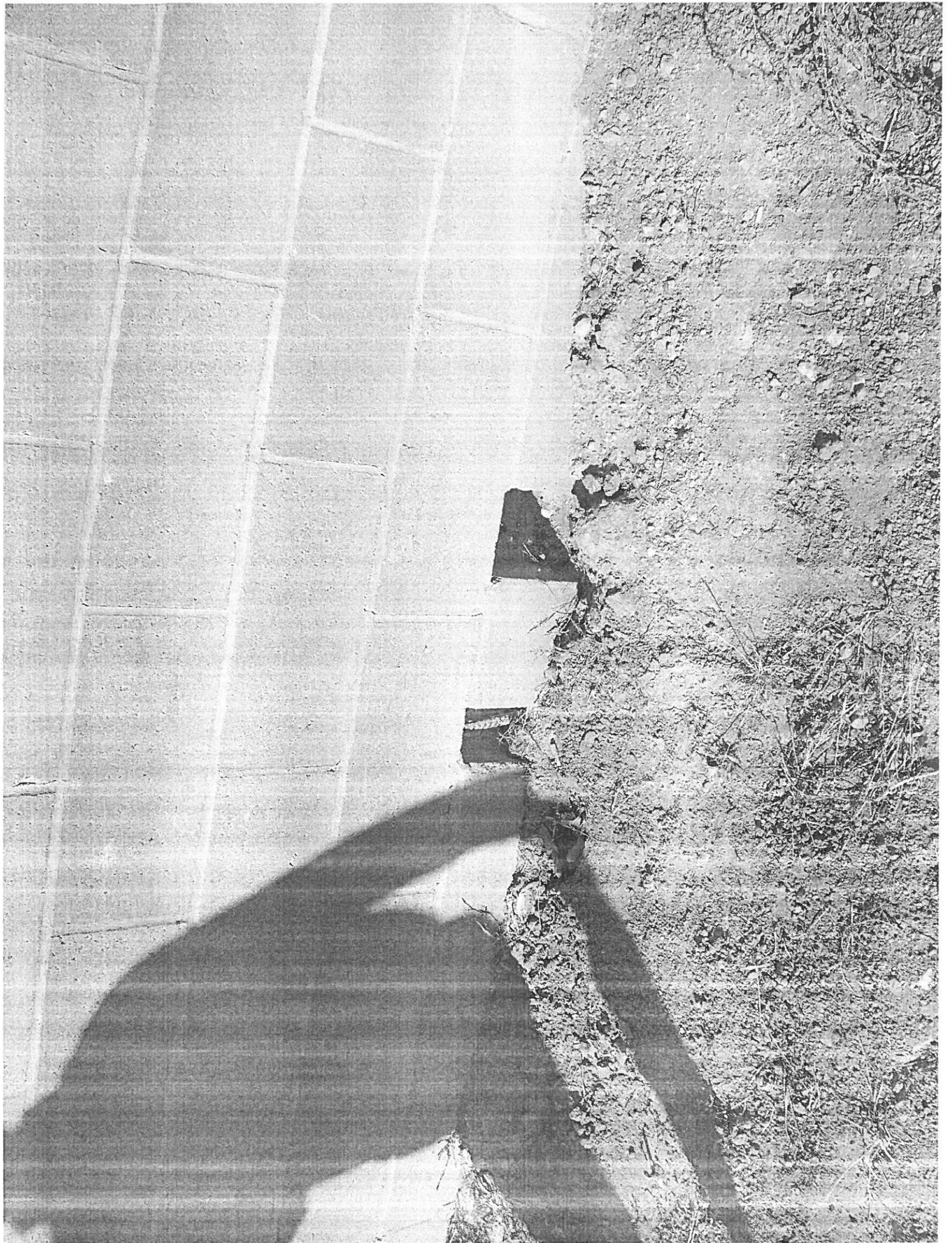




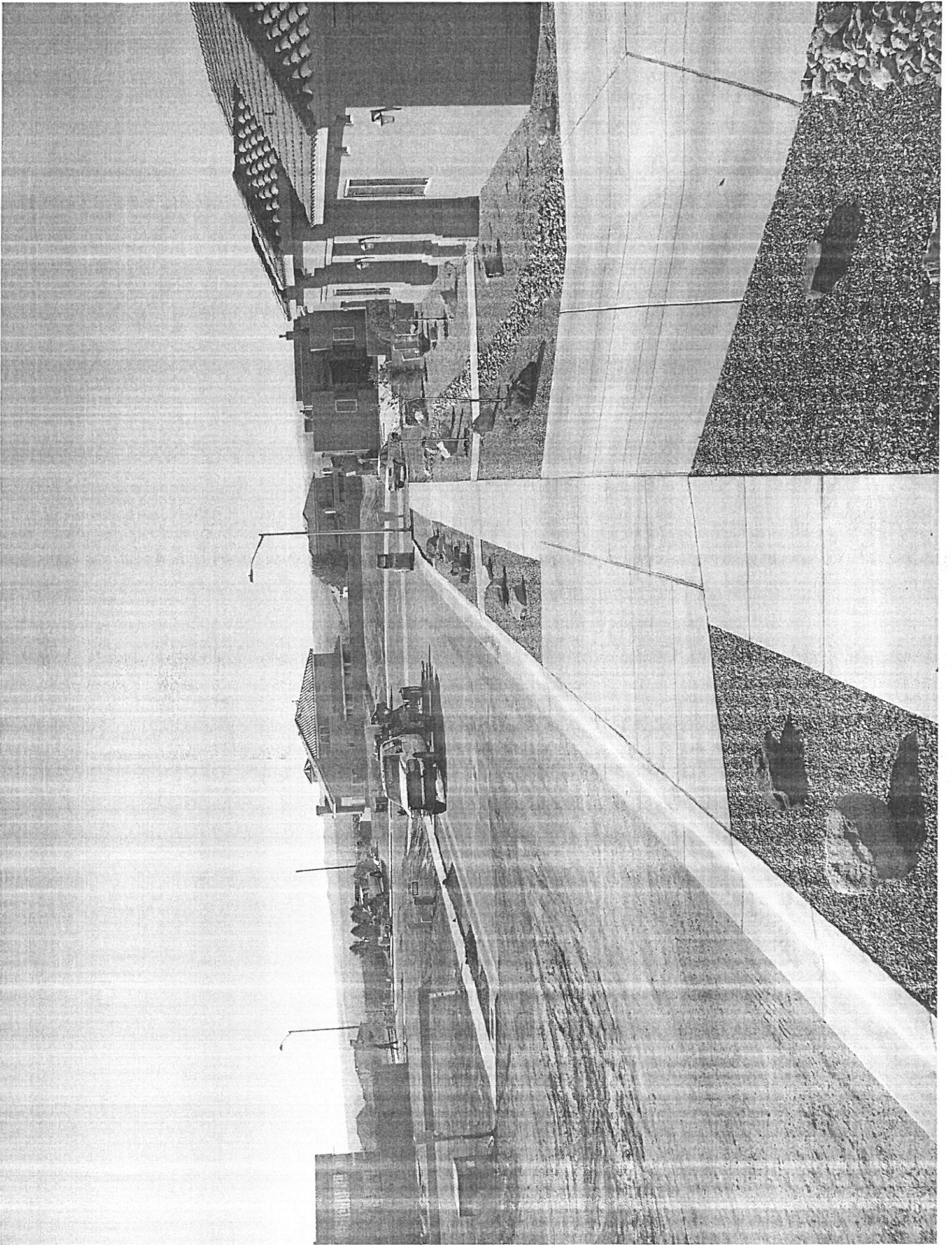




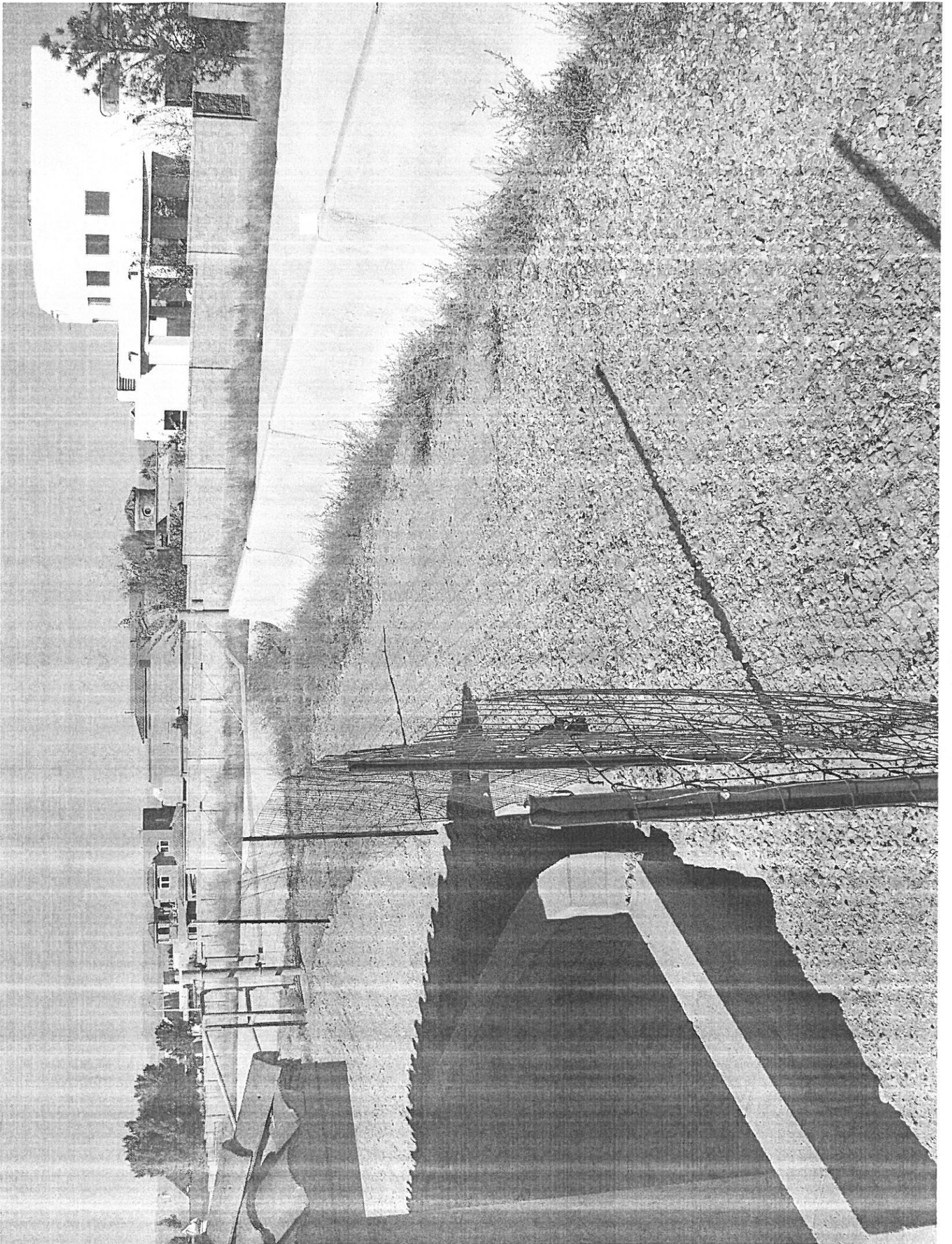




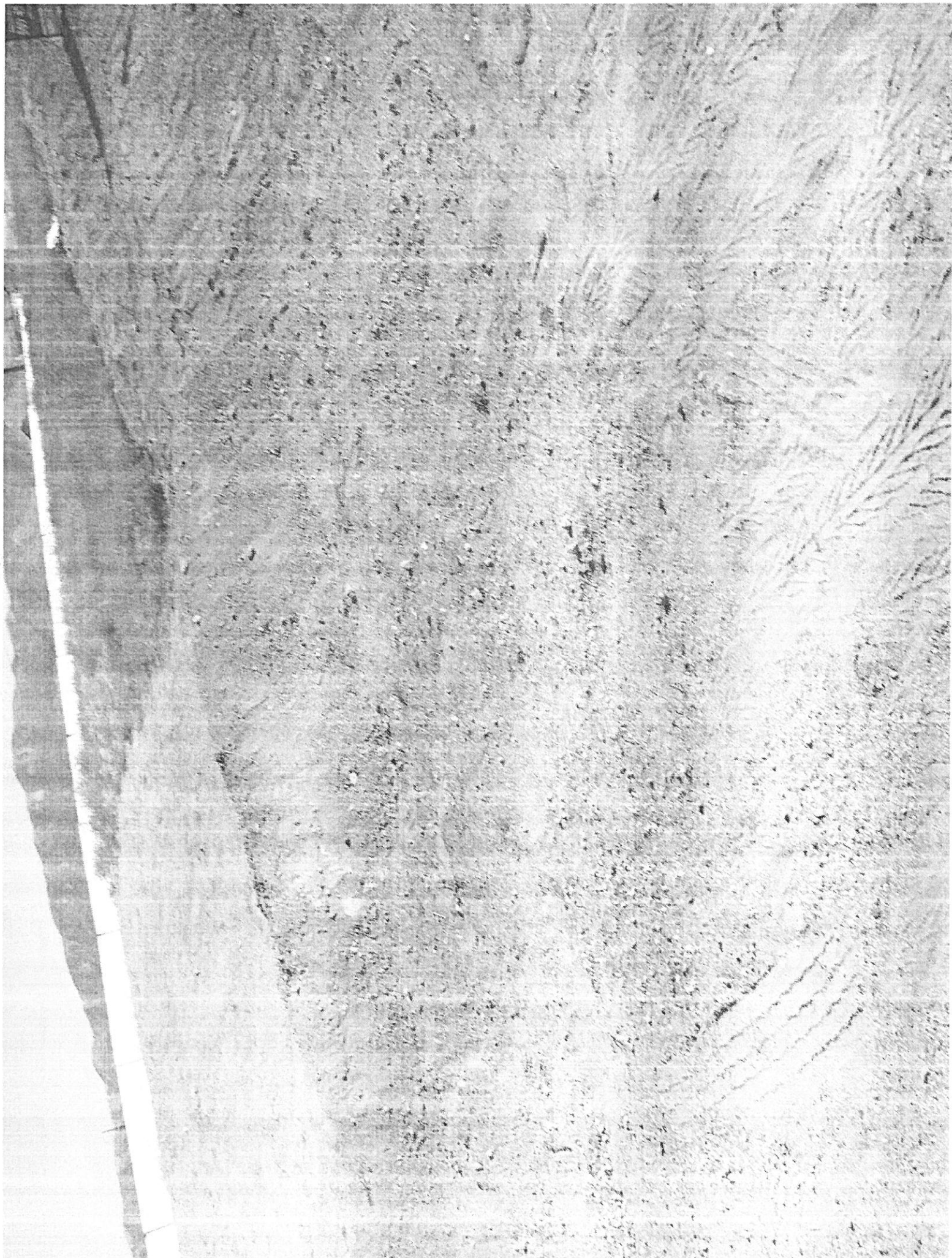




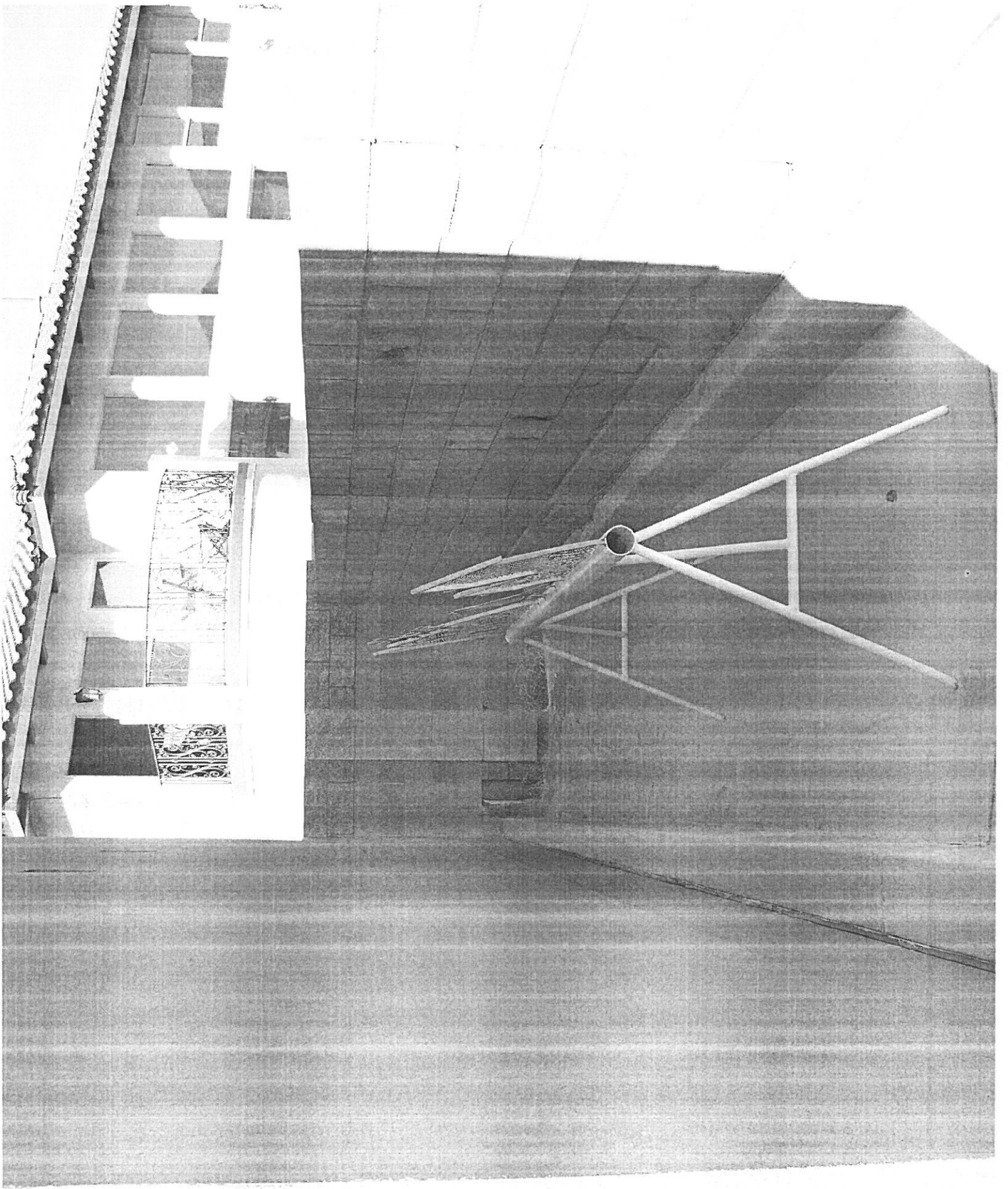


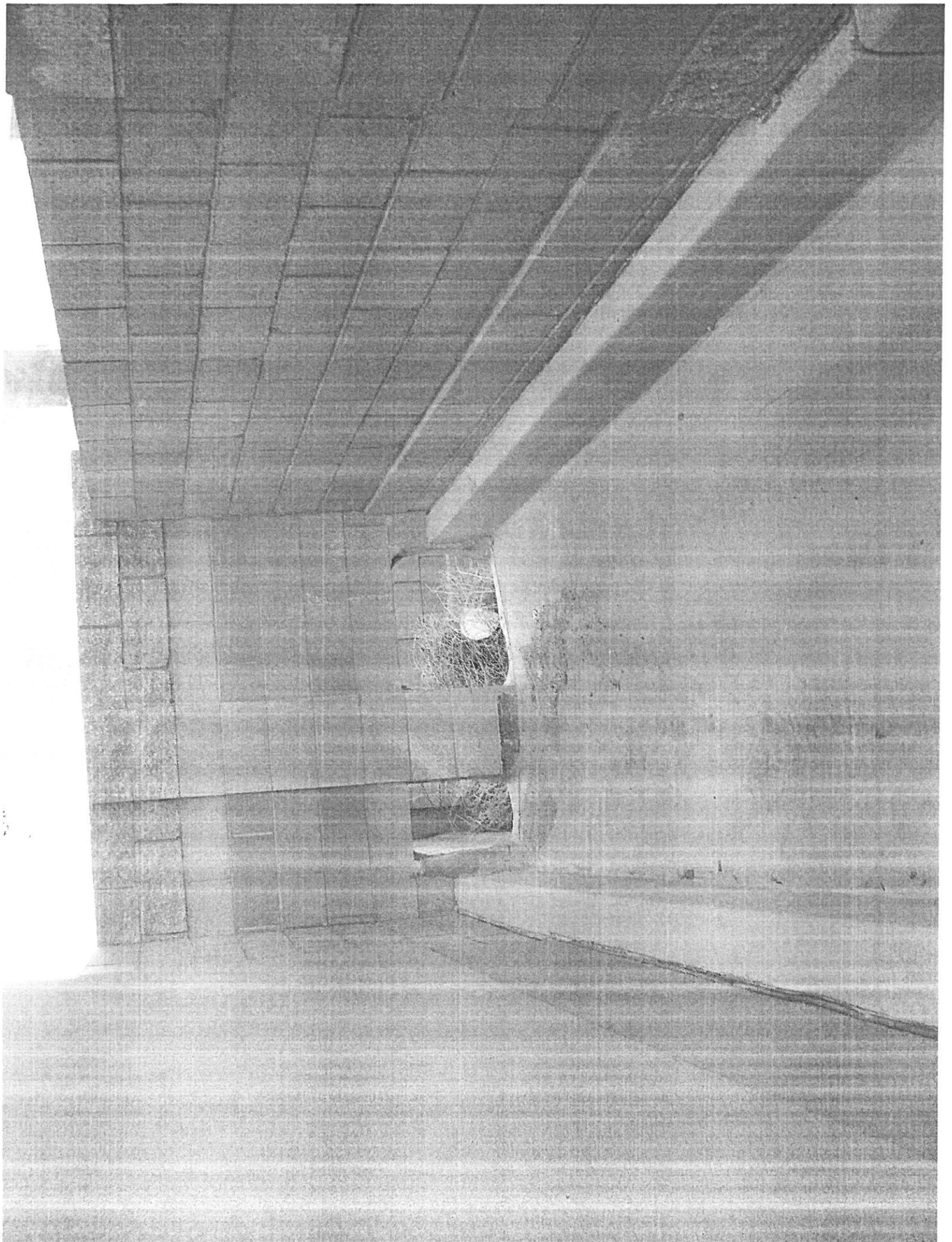














Tim Eichenberg, Chair  
Linda Stover, Vice-Chair /  
Asst. Secretary-Treasurer  
Ronald D. Brown, Secretary-Treasurer  
Daniel Hernandez, Director  
Daniel Lyon, Director

John P. Kelly, P.E.  
Executive Engineer



**Albuquerque  
Metropolitan  
Arroyo  
Flood  
Control  
Authority**

2600 PROSPECT N.E. - ALBUQUERQUE, NM 87107  
TELEPHONE (505) 884-2215 FAX (505) 884-0214

C-20/D44

February 5, 2004

Mr. Phil Clark, P.E.  
Clark Consulting Engineers  
19 Ryan Road  
Edgewood, NM 87015

Re: Preliminary Plans for La Cueva Channel Improvements, ZAP C-20  
Engineer's Stamp Dated January 26, 2004

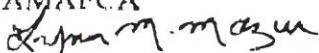
Dear Mr. Clark:

AMAFCA has reviewed the preliminary plans for a portion of the La Cueva Channel between Alameda Boulevard and Oakland Avenue. This arroyo is part of a master planned facility with a design flow of 3000 cfs. The conceptual design section presented in the "North Albuquerque Acres Master Drainage Plan" (RTI, October 1998) is soil cement banks with a natural bottom.

The plan as submitted is not ready for approval. We offer the following comments as a cursory review:

1. Project construction must extend to the existing improved channel at Nor Este Estates.
2. The 80-foot right-of-way as shown is not adequate. In the City of Albuquerque's "Facility Plan for Arroyos," the La Cueva Arroyo is listed as a Major Open Space Link. Facilities of this type require a 20-foot trail/maintenance access on one or both sides of the channel.
3. The 3-foot exposed drop structures are not conducive to Open Space uses. Drop structures are typically buried so that a smooth channel profile is maintained.
4. A design analysis report will be required with calculations for energy grade line, riprap selection and scour depth.
5. If AMAFCA agrees to maintain the channel, an agreement for construction and maintenance approved by the Board of Directors will be required.

If you have any questions, please call me at 884-2215.

Sincerely,  
AMAFCA  
  
Lynn M. Mazur, P.E., C.F.M.  
Development Review Engineer

Cc: Brad Bingham, City Hydrology



# DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 01/06 – KDM)

PROJECT TITLE: Rich Court ZONE MAP: C20/D44  
 DRB#: 1003674 EPC#: \_\_\_\_\_ WORK ORDER#: 751983  
 LEGAL DESCRIPTION: Lots 1-6, Rich Court  
 CITY ADDRESS: Rich Court NE

ENGINEERING FIRM: High Mesa Consulting Group CONTACT: Graeme Means #13676  
 ADDRESS: 6010-B Midway Park Blvd NE PHONE: 345-4250  
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

OWNER: Kirby Jefferson CONTACT: Ted Lowe  
 ADDRESS: c/o Ted Lowe, Lowe-Bo Homes PO Box 6613 PHONE: (505)991-2555  
 CITY, STATE: ABQ, NM ZIP CODE: 87197

ARCHITECT: N/A CONTACT: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
 CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

SURVEYING FIRM: High Mesa Consulting Group LICENSED SURVEYOR: Chuck Cala, #11184  
 ADDRESS: 6010-B Midway park Blve NE PHONE: 345-4250  
 CITY, STATE: Albuquerque, NM ZIP CODE: 87109

CONTRACTOR: N/A CONTACT: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
 CITY, STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_

## TYPE OF SUBMITTAL:

\_\_\_\_ DRAINAGE REPORT  
 \_\_\_\_ DRAINAGE PLAN 1<sup>st</sup> SUBMITTAL  
 \_\_\_\_ DRAINAGE PLAN RESUBMITTAL  
 \_\_\_\_ CONCEPTUAL G & D PLAN  
 \_\_\_\_ GRADING PLAN  
 \_\_\_\_ EROSION CONTROL PLAN  
**X** **ENGINEER'S CERT (HYDROLOGY)**  
 \_\_\_\_ CLOMR/LOMR  
 \_\_\_\_ TRAFFIC CIRCULATION LAYOUT  
 \_\_\_\_ ENGINEER'S CERT (TCL)  
 \_\_\_\_ ENGINEER'S CERT (DRB SITE PLAN)  
 \_\_\_\_ OTHER

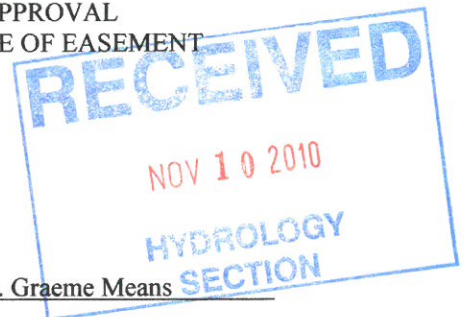
## CHECK TYPE OF APPROVAL SOUGHT:

**X** **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  
 \_\_\_\_ GRADING PERMIT APPROVAL  
 \_\_\_\_ PAVING PERMIT APPROVAL  
 \_\_\_\_ OTHER SO#19 APPROVAL  
 \_\_\_\_ OTHER RELEASE OF EASEMENT

## WAS A PRE-DESIGN CONFERENCE ATTENDED:

\_\_\_\_ YES  
 \_\_\_\_ NO  
 \_\_\_\_ COPY PROVIDED

DATE SUBMITTED: 11/10/2010 BY: J. Graeme Means



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 defines 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.



## DRAINAGE REPORT

### I. EXECUTIVE SUMMARY AND INTRODUCTION

THE PROPOSED DEVELOPMENT IS LOCATED IN THE LA CUEVA SECTOR PLAN AREA OF NORTH ALBUQUERQUE ACRES. THE DRAINAGE OUTFALL FOR THE SITE IS TO AN EXISTING PUBLIC DRAINAGE CHANNEL CONSTRUCTED BY CPN 7519.82 THAT WAS SIZED FOR THIS DISCHARGE. OFFSITE FLOWS ASSOCIATED WITH THE LA CUEVA ARROYO IMPACT THE SITE. THE SITE LIES WITHIN A DESIGNATED FLOOD HAZARD ZONE AND A LETTER OF MAP REVISION FROM FEMA WILL BE REQUESTED UPON COMPLETION OF THE LA CUEVA ARROYO CHANNEL BY THE SAME DEVELOPER UNDER A SEPARATE CONTRACT (CPN 757781). A LARGE PART OF THE SITE (TRACT A) WILL REMAIN UNDEVELOPED AT THIS TIME DUE TO PHASED LA CUEVA CHANNEL CONSTRUCTION AND THE IMPENDING REALIGNMENT OF ALAMEDA BLVD NE. THE PURPOSE OF THIS DRAINAGE REPORT IS TO OBTAIN PRELIMINARY PLAT, ROUGH GRADING, FINAL PLAT, AND WORK ORDER APPROVALS.

### II. PROJECT DESCRIPTION:

AS SHOWN BY VICINITY MAP C-20 AT RIGHT, THE SITE IS LOCATED IN NORTH ALBUQUERQUE ACRES ON THE NORTH SIDE OF ALAMEDA BLVD NE, BETWEEN BARSTOW STREET NE AND VENTURA STREET NE. THE SITE LIES ADJACENT TO THE LA CUEVA ARROYO, THE DOWNSTREAM REACH OF WHICH IS CURRENTLY UNDER CONSTRUCTION FOR PERMANENT CHANNELIZATION BY A SEPARATE PROJECT BY THE SAME DEVELOPER. THE SITE IS UNDEVELOPED. THE SITES TO THE NORTH AND WEST ARE DEVELOPED RESIDENTIALLY. THE SITES TO THE SOUTH AND EAST ARE UNDEVELOPED. THE EXISTING LEGAL DESCRIPTION IS LOTS 25-27, BLOCK 3, NORTH ALBUQUERQUE ACRES, TRACT 3, UNIT 3. THE SITE IS CURRENTLY ZONED R-D (3 DU/GROSS ACRE) BY THE LA CUEVA SECTOR PLAN. AS SHOWN BY PANEL 141 OF 825 OF THE NATIONAL FLOOD INSURANCE PROGRAM FLOOD INSURANCE RATE MAPS, BERNALILLO COUNTY, NEW MEXICO, AND INCORPORATED AREAS, DATED NOVEMBER 19, 2003, A LARGE PORTION OF THE SITE LIES WITHIN A DESIGNATED FLOOD HAZARD ZONE (AO, DEPTH 2) ASSOCIATED WITH THE LA CUEVA ARROYO.

### III. BACKGROUND DOCUMENTS

THE FOLLOWING IS A LIST OF DOCUMENTS RELATED TO THE SITE AND SURROUNDING AREA. THIS LIST MAY NOT BE INCLUSIVE, HOWEVER, REPRESENTS A SUMMARY OF RELEVANT PLANS AND DOCUMENTS KNOWN TO THE ENGINEER AT THE TIME OF PLAN PREPARATION.

- FINAL NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN PREPARED FOR THE CITY OF ALBUQUERQUE BY RTI DATED OCTOBER, 1998. THE SUBJECT SITE LIES WITH BASIN 111.3 WHICH ASSUMED RESIDENTIAL DEVELOPMENT WITH AN OUTFALL TO THE LA CUEVA ARROYO VIA SD-25 IN BARSTOW.
- CONSTRUCTION PLANS FOR ESTRADA COURT SUBDIVISION BY RIO GRANDE ENGINEERING DATED 8/28/2005 (CPN 751982). THESE PLANS ADDRESS THE SUBDIVISION TO THE NORTH THAT IS CURRENTLY UNDER CONSTRUCTION AND PROVIDES A PUBLIC DRAINAGE CHANNEL THAT IS THE OUTFALL FOR THE RICH COURT SUBDIVISION.
- CONSTRUCTION PLANS FOR LA CUEVA ARROYO CHANNEL IMPROVEMENTS BY RIO GRANDE ENGINEERING (CPN 757781). THESE PLANS ADDRESS THE PERMANENT CHANNELIZATION OF THE DOWNSTREAM PORTION OF THE LA CUEVA ARROYO TO BARSTOW STREET NE AND INCLUDE A TEMPORARY RIP-RAP LINED DIVERSION BERM ALONG THE EAST EDGE OF THE RICH COURT SITE. THIS PROJECT IS CURRENTLY UNDER CONSTRUCTION AND WILL PROTECT RICH COURT FROM THE HAZARD OF FLOODING.

THE PROPOSED CONSTRUCTION DRAINING DIRECTLY AND FREELY TO EXISTING PUBLIC DRAINAGE IMPROVEMENTS AS PROPOSED AND DESCRIBED HEREIN IS IN ACCORDANCE WITH THE POLICIES AND REQUIREMENTS OF THE ABOVE LISTED DOCUMENTS.

### IV. EXISTING CONDITIONS:

THE SITE IS UNDEVELOPED WITH A SPARSE GROUND COVER OF NATIVE VEGETATION. THERE IS EVIDENCE OF RECENT DISTURBANCE FROM NEARBY CONSTRUCTION. THE SITE SLOPES FROM SOUTHEAST TO NORTHWEST. A CMU WALL HAS BEEN CONSTRUCTED ALONG THE NORTH PROPERTY LINE BY THE SAME DEVELOPER FOR THE ESTRADA COURT SUBDIVISION (REFERENCE B). A PUBLIC DRAINAGE CHANNEL WAS ALSO CONSTRUCTED BY THE ESTRADA COURT PROJECT AND THERE ARE NUMEROUS WALL OPENINGS IN THE AFOREMENTIONED CMU WALL. OFFSITE FLOWS ENTER THE SITE FROM THE LA CUEVA ARROYO. BASED ON REFERENCE A, THE 100-YEAR PEAK FLOW RATE ASSOCIATED WITH THE ARROYO IS BETWEEN 3094 CFS AND 3048 CFS. THE LA CUEVA CHANNEL, CURRENTLY UNDER CONSTRUCTION, IS DESIGNED TO ACCEPT AND CONFINE THESE FLOWS.

### V. DEVELOPED CONDITIONS

THE PROJECT WILL BE PHASED. THE FIRST 6 LOTS WILL BE AS SHOWN BY THIS PROPOSAL. A SEPARATE SUBMITTAL WILL ADDRESS FUTURE EXPANSION TO THE EAST THAT WILL REQUIRE EXTENSION OF THE LA CUEVA CHANNEL AND OFFICIAL ESTABLISHMENT OF THE ALAMEDA REALIGNMENT. AS SHOWN BY THE GRADING PLAN ON SHEET 2, THE PROPOSED LOTS WILL DRAIN INTERNALLY VIA SURFACE FLOW TO A PROPOSED PUBLIC DRAINAGE CHANNEL THAT WILL OUTLET TO THE PUBLIC DRAINAGE CHANNEL RECENTLY CONSTRUCTED BY THE ESTRADA COURT PROJECT. THE DOWNSTREAM AND ADJACENT LA CUEVA CHANNEL IMPROVEMENTS ARE CURRENTLY BEING CONSTRUCTED BY SEPARATE WORK ORDER AND WILL BE MAINTAINED BY AMAFCA. A PERIMETER WALL IS PROPOSED AS SHOWN. THE DEVELOPER WILL CONSTRUCT THE WALL AND IT WILL RETAIN NO MORE THAN 18 INCHES AT ANY LOCATION. THE INTENT OF THE PLAN IS TO BLEND IN WITH EXISTING GRADES TO THE MAXIMUM EXTENT POSSIBLE.

### VI. GRADING PLAN

THE GRADING PLAN ON SHEET 2 SHOWS: 1) EXISTING GRADES INDICATED BY CONTOURS AT 1 FT, 0 IN INTERVALS FROM THE MAY 9, 2006 TOPOGRAPHIC AND BOUNDARY SURVEY CONDUCTED BY THIS OFFICE, NMPS 11184, 2) PROPOSED GRADES INDICATED BY PAD ELEVATIONS, SPOT ELEVATIONS, TOP OF CURB ELEVATIONS AND FLOWLINES, 3) THE LIMIT AND CHARACTER OF THE EXISTING IMPROVEMENTS AS SHOWN BY THE AFOREMENTIONED SURVEY AND SUPPLEMENTED WITH PROPOSED CHANNEL IMPROVEMENTS TAKEN FROM THE PLANS BY RIO GRANDE ENGINEERING, AND 4) THE LIMIT AND CHARACTER OF THE PROPOSED IMPROVEMENTS.

### VII. CALCULATIONS

THE CALCULATIONS, WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6-HOUR RAINFALL EVENT. THE PROCEDURE FOR 40-ACRE AND SMALLER BASINS, AS SET FORTH IN THE REVISION OF SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA, DATED JANUARY, 1993, HAS BEEN USED TO QUANTIFY THE PEAK RATE OF DISCHARGE AND VOLUME OF RUNOFF GENERATED. AS DEMONSTRATED BY THE CALCULATIONS, THERE WILL BE AN INCREASE ATTRIBUTABLE TO DEVELOPMENT. MANNING'S EQUATION WAS USED TO EVALUATE THE PROPOSED PUBLIC DRAINAGE CHANNEL.

### VIII. CONCLUSIONS

- THE PROPOSED SITE IMPROVEMENTS AND DRAINAGE CONCEPT ARE CONSISTENT WITH THE DEVELOPMENT CRITERIA ESTABLISHED BY PREVIOUSLY APPROVED PLANS FOR NORTH ALBUQUERQUE ACRES AND THE LA CUEVA ARROYO.
- DEVELOPED RUNOFF FROM THIS SITE WILL DRAIN FREELY TO EXISTING PERMANENT DOWNSTREAM PUBLIC STORM DRAINAGE IMPROVEMENTS SIZED FOR THIS DISCHARGE.
- THERE ARE NO DRAINAGE RELATED DPM DESIGN VARIANCES, OR DRAINAGE COVENANTS ANTICIPATED AT THIS TIME.
- A LOMR WILL BE REQUIRED TO ELIMINATE THE EXISTING FLOOD HAZARD ZONE UPON COMPLETION OF THE LA CUEVA CHANNEL IMPROVEMENTS.

## CALCULATIONS

### SITE CHARACTERISTICS

- PRECIPITATION ZONE = 3
- $P_{6,100} = P_{300} = 2.60$
- TOTAL PROJECT AREA ( $A_t$ ) = 114,354 SF  
2.63 AC
- EXISTING LAND TREATMENT
 

TREATMENT	AREA (SF/AC)	%
A	57,054 / 1.31	50
B	57,300 / 1.32	50

### 5. DEVELOPED LAND TREATMENT

A. BASIN	114,354 SF = 2.63 AC		
TREATMENT	AREA (SF/AC)	%	
B	24,227 / 0.56	21	
C	24,227 / 0.56	21	
D	65,900 / 1.51	58	

### EXISTING CONDITION

- VOLUME
 
$$E_w = (E_{wA} + E_{wB} + E_{wC} + E_{wD}) / A_t$$

$$E_w = ((1.31 \times 0.92) + (1.32 \times 1.29)) / 2.63 = 1.11 \text{ IN}$$

$$V_{100} = (E_w / 12) A_t = (1.11 / 12) 2.63 = 0.2433 \text{ AC-FT} = 10,580 \text{ CF}$$
- PEAK DISCHARGE
 
$$Q_p = Q_{pA} + Q_{pB} + Q_{pC} + Q_{pD}$$

$$Q_p = Q_{100} = (1.31 \times 2.6) + (1.32 \times 3.45) = 8.0 \text{ CFS}$$

### DEVELOPED CONDITION

- VOLUME
 
$$E_w = (E_{wA} + E_{wB} + E_{wC} + E_{wD}) / A_t$$

$$E_w = ((0.56 \times 0.92) + (0.56 \times 1.29) + (1.51 \times 2.36)) / 2.63 = 1.83 \text{ IN}$$

$$V_{100} = (E_w / 12) A_t = (1.83 / 12) 2.63 = 0.4011 \text{ AC-FT} = 17,440 \text{ CF}$$
- PEAK DISCHARGE
 
$$Q_p = Q_{pA} + Q_{pB} + Q_{pC} + Q_{pD}$$

$$Q_p = Q_{100} = (0.56 \times 2.6) + (0.56 \times 3.45) + (1.51 \times 5.02) = 11.0 \text{ CFS}$$

### COMPARISON

- VOLUME
 
$$\Delta V_{100} = 17,440 - 10,580 = 6,860 \text{ CF (INCREASE)}$$
- PEAK DISCHARGE
 
$$\Delta Q_{100} = 11.0 - 8.0 = 3.0 \text{ CFS (INCREASE)}$$



### ENGINEER'S CERTIFICATION FINANCIAL GUARANTY RELEASE

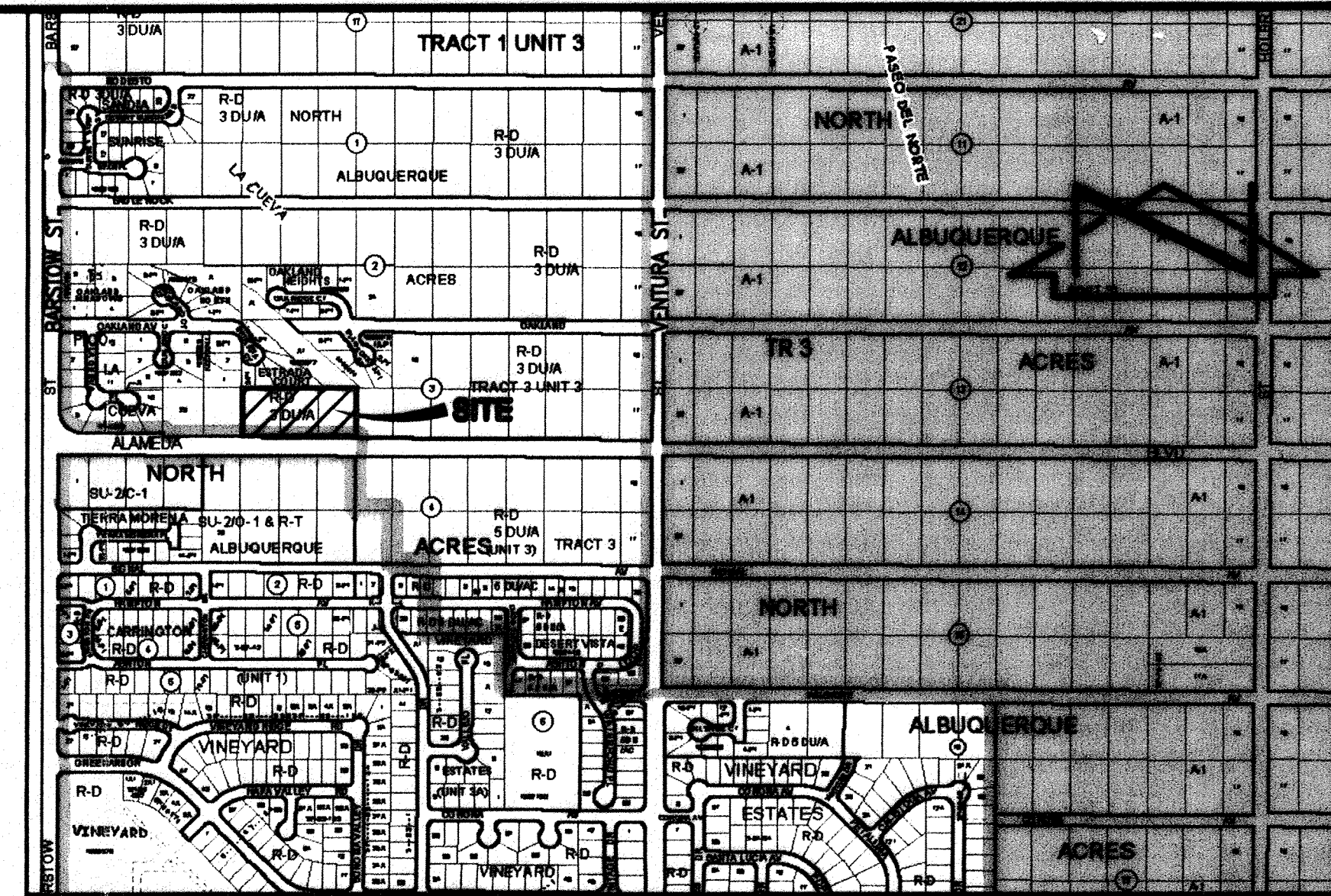
I, J. GRAEME MEANS, NMPE 13676, OF THE FIRM HIGH MESA CONSULTING GROUP HEREBY CERTIFY THAT THE SITE HAS BEEN CONSTRUCTED IN SUBSTANTIAL COMPLIANCE WITH AND IN ACCORDANCE WITH THE DESIGN INTENT OF THE APPROVED GRADING PLAN DATED 07/25/2006. THIS CERTIFICATION IS SUBMITTED FOR FINANCIAL GUARANTY RELEASE WITH THE UNDERSTANDING THE A LOMR FROM FEMA IS ALSO REQUIRED FOR FINANCIAL GUARANTY RELEASE.

THE RECORD SURVEY INFORMATION EDITED ONTO THE APPROVED PLAN IS FROM A DRAINAGE CERTIFICATION SURVEY CONDUCTED 10/19/2010 UNDER THE DIRECT SUPERVISION OF CHARLES G. CALA, JR., PS 11184, ALSO OF THE FIRM HIGH MESA CONSULTING GROUP.

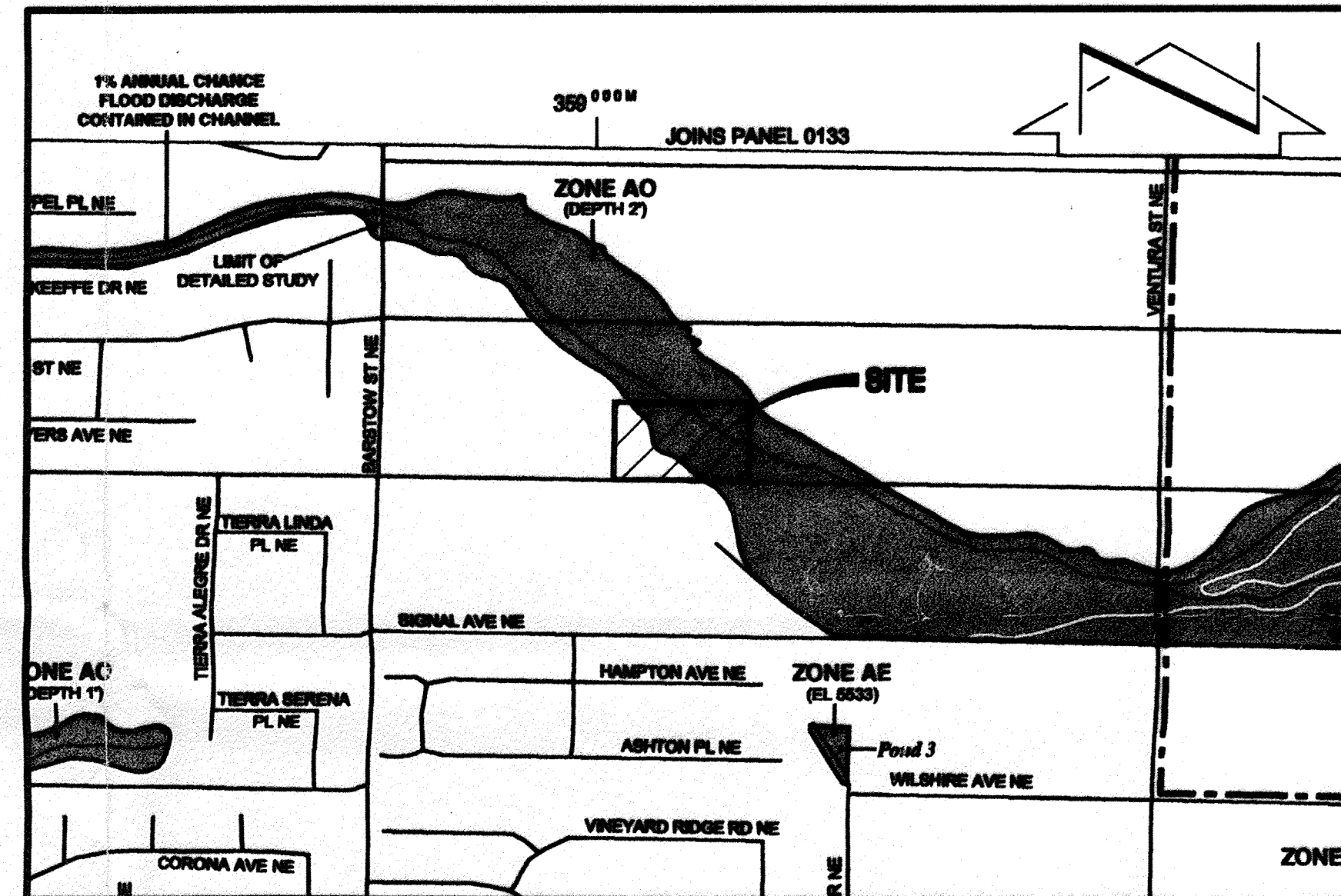
HOME CONSTRUCTION INCLUDES NUMEROUS ACTIVITIES THAT MAY DISRUPT SITE GRADING, PARTICULARLY FOOTING EXCAVATION, LANDSCAPING, WALL CONSTRUCTION, AND PRIVATE UTILITY INSTALLATION. CHANGES TO THE GRADES ATTRIBUTABLE TO SUBSEQUENT PRIVATE CONSTRUCTION ACTIVITIES ARE BEYOND OUR CONTROL, AND FINISHED GRADING FOR ALL LOTS SHALL BE RESTORED AND COMPLETED UPON DEVELOPMENT AND LANDSCAPING OF EACH LOT BY THEIR RESPECTIVE BUILDERS. THE FINISHED LOT ELEVATIONS AND SLOPES MUST CONFORM TO THE APPROVED PLAN.

THE RECORD INFORMATION PRESENTED HEREIN IS NOT NECESSARILY COMPLETE, AND DOES NOT ADDRESS COMPLIANCE WITH A.D.A. GUIDELINES, AND IS INTENDED ONLY TO VERIFY SUBSTANTIAL COMPLIANCE OF THIS PROJECT. THOSE RELYING ON THIS RECORD DOCUMENT ARE ADVISED TO OBTAIN INDEPENDENT VERIFICATION OF ITS ACCURACY BEFORE USING IT FOR ANY OTHER PURPOSE.

J. GRAEME MEANS  
NMPE NO. 13676  
11/09/2010  
DATE



VICINITY MAP  
SCALE: 1" = 750'±



F.I.R.M.

SCALE: 1" = 500'±

### LEGAL DESCRIPTION

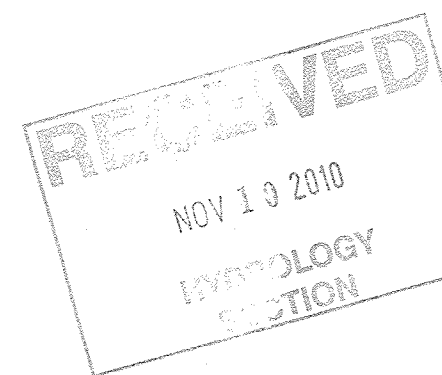
LOTS 25-27, BLOCK 3, NORTH ALBUQUERQUE ACRES, TRACT 3, UNIT 3

### PROJECT BENCHMARK

AN ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 11-C19" EPOXY TO TOP OF A CONCRETE CURB LOCATED AT THE NNW RETURN OF BARSTOW ST. AND OAKLAND AVENUE N.E. ELEVATION = 5480.97 FEET (NGVD 1929)

### T.B.M.

- T.B.M. #1  
A SPIKE WITH JMA RED CAP LOCATED APPROXIMATELY 114 FEET NORTH OF THE NORTH EDGE OF ALAMEDA BLVD. N.E. AND APPROXIMATELY 80 FEET EAST OF A CMU WALL AS SHOWN ON SHEET 2.  
ELEVATION = 5515.76 FEET
- T.B.M. #2  
A SPIKE WITH JMA RED CAP LOCATED NORTH OF THE SITE AS SHOWN ON SHEET 2.  
ELEVATION = 5522.79 FEET



7/25/2010  
11/09/2010

## RECORD DRAWING

DRB PROJECT # 1003674

2010.035.1

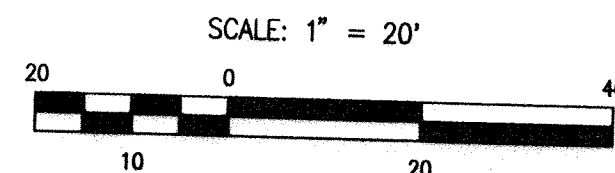
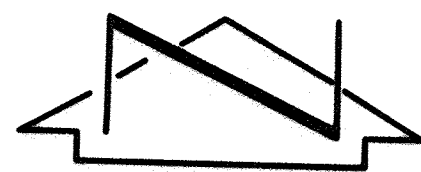
DESIGNED BY	DATE	BY	REVISIONS	JOB NO.
GM/J.D.S.	11/0	G.M.	ENG. CERTIFICATION	2005-870.4
DRAWN BY	DATE	BY	REVISIONS	DATE
JLP				07-2006
APPROVED BY	DATE	BY	REVISIONS	SHEET
J.G.M.				1 OF 2

## COVER SHEET, VICINITY MAP, FIRM, INDEX OF DRAWINGS AND DRAINAGE REPORT RICH COURT



JEFF MORTENSEN & ASSOCIATES, INC.  
6010-B MIDWAY PARK BLVD. NE  
ALBUQUERQUE, NEW MEXICO 87109  
ENGINEERS & SURVEYORS (505) 345-4250  
FAX: (505) 345-4254 ESTABLISHED 1977





# KEYED NOTES

## EXISTING EASEMENT

- ① TEMPORARY PUBLIC DRAINAGE EASEMENT GRANTED BY DOCUMENT FILED 04-19-2005, BOOK A95, PAGE 3821, DOC. #2005053982

## NEW EASEMENTS

- ② PUBLIC UTILITY EASEMENT  
③ 6" PUBLIC DRAINAGE EASEMENT  
④ PUBLIC ROADWAY EASEMENT (TO BE VACATED AT A LATER DATE UPON DEDICATED RE-ALIGNMENT OF ALAMEDA BOULEVARD N.E.)  
⑤ PRIVATE DRAINAGE EASEMENT

## VACATED RIGHT-OF-WAY

- ⑥ FORMER ALAMEDA BOULEVARD N.E. STREET RIGHT-OF-WAY, PUBLIC ROADWAY EASEMENT (TO BE VACATED AT A LATER DATE UPON DEDICATED RE-ALIGNMENT OF ALAMEDA BOULEVARD N.E.)

# RECORD INFORMATION LEGEND

- AS-CONSTRUCTED = AS-DESIGNED  
(VERIFIED BY AS-BUILT SURVEY)  
X 31.8  
+ 26.9  
31.25.22  
RECORD INFORMATION FROM AS-BUILT SURVEY  
RECORD INFORMATION FROM AS-BUILT SURVEY

# PROJECT BENCHMARK

AN ACS 1 3/4" ALUMINUM DISK STAMPED "ACS BM, 11-C19" EPOXYED TO TOP OF A CONCRETE CURB LOCATED AT THE NW CORNER OF BARSTOW ST. AND OAKLAND AVENUE N.E. ELEVATION = 5480.97 FEET (NGVD 1929)

# T.B.M.

T.B.M. #1  
A SPIKE WITH JMA RED CAP LOCATED APPROXIMATELY 114 FEET NORTH OF THE NORTH EDGE OF ALAMEDA BLVD. N.E. AND APPROXIMATELY 80 FEET EAST OF A CMU WALL AS SHOWN HEREON. ELEVATION = 5515.76 FEET

T.B.M. #2  
A SPIKE WITH JMA RED CAP LOCATED NORTH OF THE SITE AS SHOWN HEREON. ELEVATION = 5522.79 FEET

# LEGEND

- CMU CONCRETE MASONRY UNIT  
EA EDGE OF ASPHALT  
NG NATURAL GROUND  
OHC(1) OVERHEAD COMMUNICATION (NO. OF LINES)  
OHC(2) OVERHEAD ELECTRIC (NO. OF LINES)  
TA TOP OF ASPHALT  
TR TELEPHONE RISER  
TW TOP OF WALL  
WPP WOOD POWER POLE  
+ 19.6 EXISTING SPOT ELEVATION  
EXISTING CONTOUR  
EXISTING CONIFEROUS TREE  
PROPOSED ASPHALT PAVEMENT  
PROPOSED CONCRETE  
PROPOSED TEMPORARY PAVEMENT  
PERIMETER WALL  
RIP-RAP (BY CPN 757781)

# RECORD DRAWING FOR CERTIFICATION, SEE SHEET 1

THIS IS NOT A BOUNDARY SURVEY. APPARENT PROPERTY CORNERS ARE SHOWN HEREON FOR ORIENTATION PURPOSES ONLY. BOUNDARY AND TOPOGRAPHIC DATA SHOWN HEREON IS FROM A SURVEY DATED 5/09/06 BY THIS OFFICE, NMPS 11184. PROPOSED LOTS AND EASEMENTS ARE FROM THE PRELIMINARY SURVEY PLAT PREPARED BY THIS OFFICE, NMPS 11184. RECORD SURVEY DATA DEPICTED HEREON WAS COLLECTED BY THIS OFFICE 10/10/2010, JOB NO. 2010.035.1

RECEIVED  
NOV 10 2010  
HYDROLOGY  
SECTION



2010.035.1

JOB NO. 2005-070.4

DATE 07-2006

SHEET 2 OF 42

File Path: C:\WORK\2010\11-09-2010\100351\_SHT2.DWG  
File Name: 100351\_SHT2.DWG  
Plot Date: 11-09-2010  
Plot Time: 08:48 am



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FAX: 505 345-4254  
ESTABLISHED 1977

APPROVED FOR ROUGH GRADING

CITY HYDROLOGY DATE

# GRADING PLAN RICH COURT

DESIGNED BY J.D.S./G.M.

DRAWN BY S.G.H.

APPROVED BY G.M.

NO. DATE BY REVISIONS  
11/10 G.M. ENGINEER'S CERTIFICATION

JOB NO. 2005-070.4

DATE 07-2006

SHEET 2 OF 42