CITY OF ALBUQUERQUE

November 10, 2015

David Soule, PE
Rio Grande Engineering
1606 Central SE Suite 201
Albuquerque, NM 87106

RE: **Mesa Del Rio**
Pad Certification for lots 36 - 43
Engineers Stamp Date 11/3/15 (J10D012)
Certification Date 10/21/15

Dear Mr. ~~Bohannan,~~ SOULE

Based upon the information provided in your submittal received 11/10/2015, the above referenced Certification for Mesa Del Rio is acceptable for building permit.

If you have any questions, please contact me at 924-3986 or Totten Elliott at 924-3982.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

TE/RH
C: File

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Mesa Del Rio **Building Permit #:** _____ **City Drainage #:** J10D012

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: Lots# 43; 42; 41; 40; 39; 38; 37; 36 (corresponding addresses in order below)

City Address: 812; 816; 820; 824; 828; 832; 836; 840 Mesa Del Rio Street N.W.

Engineering Firm: Rio Grande Engineering **Contact:** David Soule

Address: 5300 Sequoia Road N.W. Albuquerque, N.M. 87120

Phone#: 505 872 0999 **Fax#:** _____ **E-mail:** david@riograndeengineering.com

Owner: Greater Albuquerque Habitat for Humanity **Contact:** Bill Reilly

Address: 4900 Menaul Blvd. N.E. Albuquerque, N.M. 87110

Phone#: 505 350 6114 **Fax#:** 505 265 0937 **E-mail:** bill@habitatabq.org

Architect: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Other Contact: _____ **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Check all that Apply:

DEPARTMENT:

x HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

X ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
____ GRADING PLAN
____ DRAINAGE MASTER PLAN
____ DRAINAGE REPORT
____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
X GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

RECEIVED
NOV 10 2015
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: ____ Yes X No

DATE SUBMITTED: 11/9/2015 By: Bill Reilly Construction Manager - Grtr Abq Habitat for Humanity

---

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ____

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: MESA DEL RIO **Building Permit #:** _____ **City Drainage #:** J10D012

DRB#: _____ **EPC#:** _____ **Work Order#:** _____

Legal Description: MESA DEL RIO LOTS 36, 37, 38, 39, 40, 41, 42, 43

City Address: _____

Engineering Firm: DAVID SOULE, P.E. **Contact:** DAVID SOULE

Address: 1606 CENTRAL AVE S.E. #201 ABQ NM 87106

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Owner: GRTR ABQ HFH **Contact:** BILL RELLEY

Address: 4900 MENAUL BLVD N.E. ABQ NM 87110

Phone#: 505-350-6114 **Fax#:** _____ **E-mail:** billc@habitatabq.org

Architect: SUMMERTREE HOMES **Contact:** ROSETTA CAMPBELL

Address: P.O. BOX 90925 ABQ NM 87199

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Other Contact: — **Contact:** _____

Address: _____

Phone#: _____ **Fax#:** _____ **E-mail:** _____

Check all that Apply:

DEPARTMENT:

X HYDROLOGY/ DRAINAGE
____ TRAFFIC/ TRANSPORTATION
____ MS4/ EROSION & SEDIMENT CONTROL

TYPE OF SUBMITTAL:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
____ GRADING PLAN
____ DRAINAGE MASTER PLAN
____ DRAINAGE REPORT
____ CLOMR/LOMR

____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

NO-VERBAL

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
X GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: ____ Yes X No

DATE SUBMITTED: 10-28-15 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

CITY OF ALBUQUERQUE

October 29, 2015

David Soule, PE
Rio Grande Engineering
1606 Central SE Suite 201
Albuquerque, NM 87106

RE: **Mesa Del Rio**
Pad Certification for lots 36 - 43
Engineers Stamp Date 11/28/05 (J10D012)
Certification Date 6/8/06

Dear Mr. ~~Bohannan,~~ SOULE

Based upon the information provided in your submittal received 10/28/2015, the above referenced Certification for Mesa Del Rio is acceptable for building permit.

If you have any questions, please contact me at 924-3986 or Totten Elliott at 924-3982.

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Hydrology
Planning Department

TE/RH
C: File

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

*Phone (505) 889-8056 * Fax (505) 889-8645*

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 43, which is located at 812 Mesa Del Rio Street N.W. To be at an elevation of 5122.95 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

Phone (505) 889-8056 * Fax (505) 889-8645

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 42, which is located at 816 Mesa Del Rio Street N.W. To be at an elevation of 5122.95 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

Phone (505) 889-8056 * Fax (505) 889-8645

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 41, which is located at 820 Mesa Del Rio Street N.W. To be at an elevation of 5123.30 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

Phone (505) 889-8056 * Fax (505) 889-8645

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 40, which is located at 824 Mesa Del Rio Street N.W. To be at an elevation of 5123.30 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

*Phone (505) 889-8056 * Fax (505) 889-8645*

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 39, which is located at 828 Mesa Del Rio Street N.W. To be at an elevation of 5123.6 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

*Phone (505) 889-8056 * Fax (505) 889-8645*

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 38, which is located at 832 Mesa Del Rio Street N.W. To be at an elevation of 5123.6 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

*Phone (505) 889-8056 * Fax (505) 889-8645*

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 37, which is located at 836 Mesa Del Rio Street N.W. To be at an elevation of 5123.95 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

Harris Surveying, Inc.
2412-D Monroe Street NE
Albuquerque, NM 87110

Phone (505) 889-8056 * Fax (505) 889-8645

October 21, 2015

Bill Reilly
Greater Habitat for Humanity of Albuquerque

Re: Pad Grades

This letter is to certify that Harris Surveying Inc. verified the pad height of Lot 36, which is located at 840 Mesa Del Rio Street N.W. To be at an elevation of 5123.95 feet.

If there are any questions please feel free to contact me at my office.

Sincerely,

Anthony L. Harris
Harris Surveying Inc.

RECEIVED
OCT 28 2015
LAND DEVELOPMENT SECTION

CITY OF ALBUQUERQUE

June 13, 2006

Mr. David Soule, PE
RIO GRANDE ENGINEERING
1606 Central Avenue SE, Suite 201
Albuquerque, NM 87106

RE: MESA DEL RIO SUBDIVISION, (J-10/D12)
Engineers Certification for Release of Financial Guaranty
Engineers Stamp dated 11/28/2005
Engineers Certification dated 06/08/2006

Dear David:

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Based upon the information provided in your Engineer's Certification Submittal dated 06/13/2006, the above referenced plan is adequate to satisfy the Grading and Drainage Certification for Release of Financial Guaranty.

If you have any questions, you can contact me at 924-3982

Sincerely,

Arlene V. Portillo

Arlene V. Portillo
Plan Checker, Planning Dept.- Hydrology
Development and Building Services

C: Marilyn Maldonado, COA #774281
File

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 01/28/2003rd)

PROJECT TITLE: *Mesa Del Rio Subdivision* ZONE MAP/DRG. FILE #: J10 /D12

DRB #: EPC #: WORK ORDER #: 774281

LEGAL DESCRIPTION: **Tract 180, Airport Addition, Lands of Atrisco Grant**

CITY ADDRESS: 76th street between Fortuna and Glen Rio

ENGINEERING FIRM:	Rio Grande Engineering	CONTACT:	David Soule, PE
ADDRESS:	1606 Central SE, Suite 201	PHONE:	(505)321-9099
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87106
OWNER:	*Enchantment Homes of NM, LLC*	CONTACT:	David Soule
ADDRESS:	*1606 Central SE*	PHONE:	872-0999
CITY, STATE:	*Albuquerque, NM*	ZIP CODE:	87106
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	GSI	CONTACT:	John Gallegos
ADDRESS:		PHONE:	505-975-4567
CITY, STATE:		ZIP CODE:	
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, *REQUIRES TCL or equal*
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- x ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEERS CERTIFICATION (TCL)
- ___ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- x SIA / FINANACIAL GUARANTEE RELEASE
- ___ PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- x CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- ___ GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- x YES
- ___ NO
- ___ COPY PROVIDED

RECEIVED
JUN 12 2006
HYDROLOGY SECTION

DATE SUBMITTED: 6/12/2006 BY: David Soule

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

1. **Conceptual Grading and Drainage Plans**: 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

CITY OF ALBUQUERQUE

THREE HUNDRED YEARS
1706 • 2006
ALBUQUERQUE
Making History

December 2, 2005

David Soule, P.E.
Rio Grande Engineering
1606 Central Ave SE Suite 201
Albuquerque, NM 87106

Re: Mesa Del Rio Subdivision, 76th St. Between Fortuna and Glen Rio
Grading and Drainage Plan
Engineer's Stamp dated 11-28-05 (J10-D12)

Dear Mr. Soule,

P.O. Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Based upon the information provided in your submittal received 11-28-05, the above referenced plan is approved for Preliminary Plat Action by DRB. Once the Board has approved the plan, please submit a Mylar copy of the grading plan for my signature in order to obtain a Grading Permit.

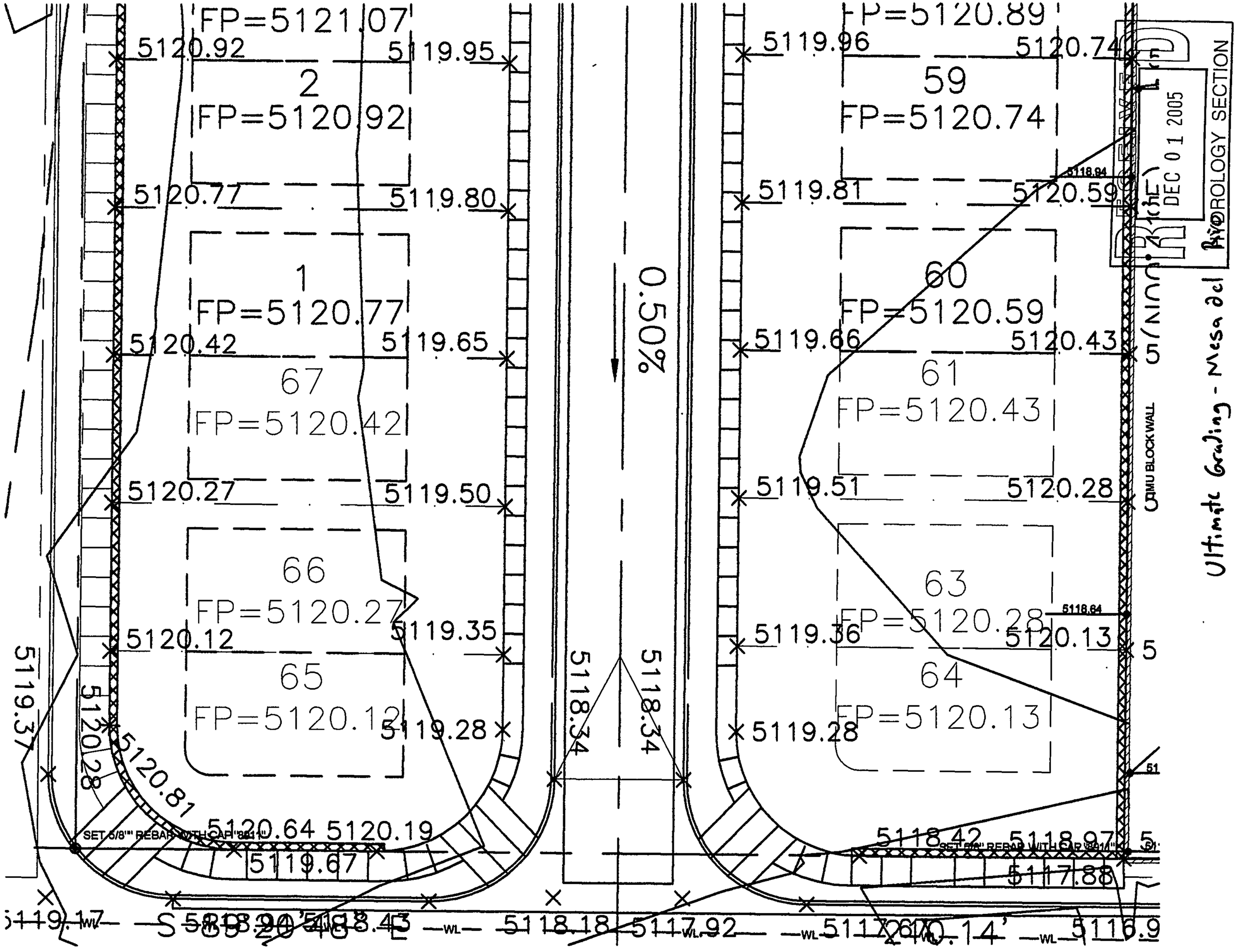
This project requires a National Pollutant Discharge Elimination System (NPDES) permit. If you have any questions regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Charles Caruso).

If you have any questions, you can contact me at 924-3695.

Sincerely,

Rudy E. Rael, Associate Engineer
Planning Department.
Development and Building Services

C: Charles Caruso, DMD Storm Drainage Design
File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FP=5120.12
5119.28
5119.37
5120.28
5120.81
5120.64
5120.19
5119.67
SET 5/8" REBAR WITH CAP "8011"
5119.17
S 88°20'48" E
5118.43
5118.18
5117.92
5117.67
5116.9
0.50%
5118.34
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63
FP=5120.28
5118.64
5119.36
5120.13
64
FP=5120.13
5119.28
5118.42
5118.97
5117.88
SET 5/8" REBAR WITH CAP "8011"
CMU BLOCK WALL
RECEIVED
DEC 01 2005
HYDROLOGY SECTION
Ultimate Grading - Mesa del Sol

RIO GRANDE ENGINEERING

(505) 321-9099
1606 Central SE, Suite 201 Albuquerque, NM 87106

LETTER OF TRANSMITTAL

DATE: 12/1/2005	JOB NO: 2514
ATTENTION: Rudy	
RE: Mesa Del Rio	

TO Rudy Rael
Hydrology Department
City of Albuquerque
Plaza del Sol

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

☐ Shop drawings ☐ Prints ☐ Plans ☐ Samples ☐ Specifications

☐ Copy of letter ☐ Change order ☐ _____

COPIES	DATED	NO.	DESCRIPTION
1			ultimate grades for pond

THESE ARE TRANSMITTED as checked below:

☐ For approval ☐ Approved as submitted ☐ **FOR SIGNATURE(S)**

☒ For your use ☐ Approved as noted ☐ _____

☐ As requested ☐ Returned for corrections

☐ For review and comments ☐ _____

☐ FOR BIDS DUE _____ 19 _____ ☐ PRINTS RETURNED AFTER LOAN TO US

REMARKS Please call should you have any quesitions. Thanks!

COPY TO _____

RECEIVED BY Sandy Hardley SIGNED David Soule

RECEIVED
DEC 01 2005
HYDROLOGY SECTION

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 01/28/2003rd)

PROJECT TITLE: *Mesa Del Rio Subdivision* ZONE MAP/DRG. FILE #: J-10 012

DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION: **Tract 180, Airport Addition, Lands of Atrisco Grant**

CITY ADDRESS: **76th street between Fortuna and Glen Rio**

ENGINEERING FIRM:	Rio Grande Engineering	CONTACT:	David Soule, PE
ADDRESS:	1606 Central SE, Suite 201	PHONE:	(505)321-9099
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87106
OWNER:	*David and Jennifer Soule*	CONTACT:	David Soule
ADDRESS:	*9101 Wilshire NE*	PHONE:	321-9099
CITY, STATE:	*Albuquerque, NM*	ZIP CODE:	87122
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	GSI	CONTACT:	John Gallegos
ADDRESS:		PHONE:	505-975-4567
CITY, STATE:		ZIP CODE:	
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

x DRAINAGE REPORT
__ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
__ DRAINAGE PLAN RESUBMITTAL
__ CONCEPTUAL GRADING & DRAINAGE PLAN
x GRADING PLAN
__ EROSION CONTROL PLAN
__ ENGINEER'S CERTIFICATION (HYDROLOGY)
__ CLOMR/LOMR
__ TRAFFIC CIRCULATION LAYOUT (TCL)
__ ENGINEERS CERTIFICATION (TCL)
__ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
__ OTHER

Resub

CHECK TYPE OF APPROVAL SOUGHT:

__ SIA / FINANACIAL GUARANTEE RELEASE
x PRELIMINARY PLAT APPROVAL
__ S. DEV. PLAN FOR SUB'D. APPROVAL
__ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
__ SECTOR PLAN APPROVAL
__ FINAL PLAT APPROVAL
__ FOUNDATION PERMIT APPROVAL
__ BUILDING PERMIT APPROVAL
__ CERTIFICATE OF OCCUPANCY (PERM.)
__ CERTIFICATE OF OCCUPANCY (TEMP.)
x GRADING PERMIT APPROVAL
__ PAVING PERMIT APPROVAL
__ WORK ORDER APPROVAL
__ OTHER (SPECIFY)

RECEIVED
NOV 28 2005
HYDROLOGY SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED:

x YES
__ NO
__ COPY PROVIDED

DATE SUBMITTED: 11/28/2005 BY: David Soule

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

1. **Conceptual Grading and Drainage Plans:** 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

REVISED
DRAINAGE REPORT

For

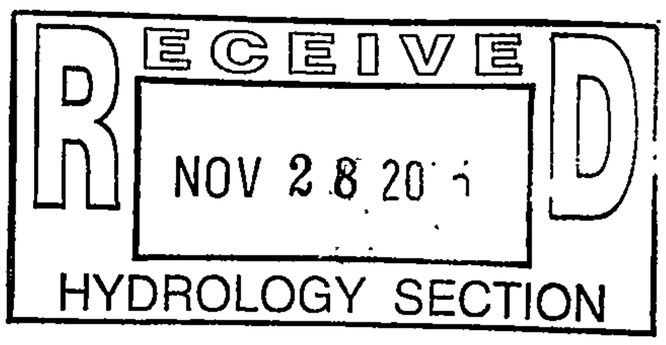
MESA DEL RIO SUBDIVISION
Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
1606 Central SE
Albuquerque, New Mexico 87106

November 2005

David Soule P.E. No. 14522



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Purpose 3
Introduction 3
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Existing Conditions 5
Proposed Conditions 5
Summary 6

Appendix

Onsite Hydraulic Calculations ..... A
Site Hydrology ..... B
West Mesa Stormdrain C

Map Pocket

Site Grading and Drainage Plan

321-9099

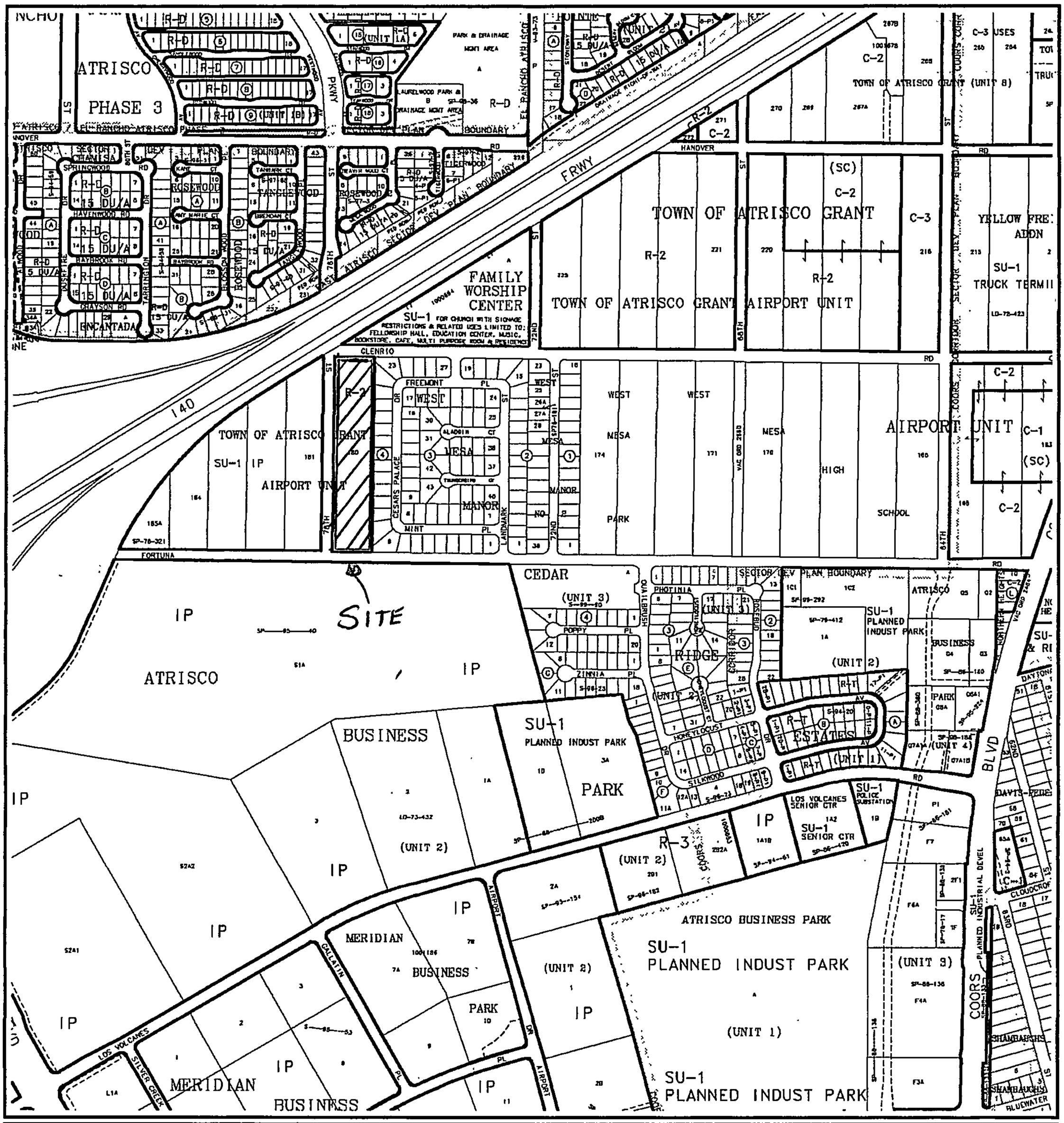
PURPOSE

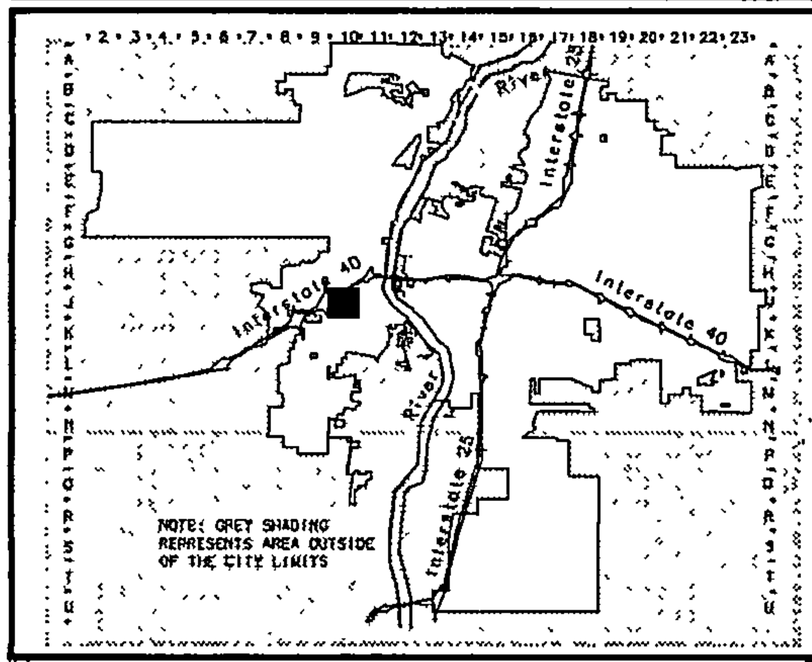
The purpose of this report is to provide the Drainage Management Plan for the development of the Mesa Del Rio Subdivision. This plan will be utilized for the development of the subject property as a 60-lot single family residential subdivision. This plan was prepared in accordance with the City of Albuquerque's Development Process Manual. This report will demonstrate that the proposed improvements do not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a 5.0 acre parcel of land located on the east side of 76th street between Fortuna Road and Glen Rio Road. The site is located in the near northwest Mesa area of Albuquerque. The legal description of this site is Tract 180 of the Airport addition of the lands of Atrisco Grant. As shown on FIRM map 35001C0326E, the site is located entirely within Flood Zone X. The site is currently undeveloped.

The site is located within the West Mesa Diversion Master Drainage Plan boundaries. The drainage analysis for the diversion project was done by Smith Engineering. The development of this property will be in conformance to the Master Drainage Plan. The upstream diversion for the flows passing under I-40 has been constructed and is in the final stages of completion. The majority of the down stream conveyance has been completed. Due to cost overruns a reach of storm drainage pipe has been designed but not constructed. Currently this basin drains to the Cedar Ridge pond located approximately 800 feet east of this site. This pond was designed to retain the 100-year 10-day volume for the entire developed basin including the flow that has been diverted north of I-40. Based upon the West Mesa Diversion analysis and the status of the downstream improvements, this site must retain its flow onsite and can pass upland flows. The storm drainage system along this sites Fortuna frontage must be constructed.





GRAPHIC SCALE IN FEET

250 0 750 1000

Zone Atlas Page

J-10-Z

Map Amended through February 03, 2004

Albuquerque Geographic Information System
PLANNING DEPARTMENT

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Exhibit A
Vicinity Map

EXISTING CONDITIONS

The site is currently undeveloped. The site is covered with native grasses; there are no signs of previous impact from human activities. The site slopes from the northwest to southeast at a typical 1% slope. As shown in Appendix A, this site is located within Basin C4-D. Based upon the assumed developed conditions parameters within the Master Plan, this site is allowed to discharge 18.74 cfs at full development. The existing upland flow drains to an earthen drainage swale located on the south side of Fortuna. The upland flow that enters this site has been reduced due to the recent AMAFCA construction of the West I-25 channel. The majority of the upland flows are concentrated at the south west corner.

PROPOSED CONDITIONS

The proposed improvements consist of a 60-lot single family residential lot subdivision with approximately 1600 lineal feet of 24' wide public roads. The 76th street roadway will be graded only with the permanent infrastructure deferred. The onsite lot grading shall consist of a building pad and rear and side yard swales with typical grades of 1%. Each lot will drain directly to the adjacent roadway. The proposed roadway will consist of a 2% crowned roadway section with mountable and standard curb and gutters. As shown in Appendix B the site contains 5.0 acres. The developed storm water discharge rates were calculated using the simplified procedure for 40 acre and smaller basins as shown in chapter 22 part A of the Development Process Manual. As shown in Appendix B, the total developed flow generated by this site is predicted to be 18.74 cfs. The streets storm water conveyance capacity was calculated using the Manning's Equation and an Excel spreadsheet. As shown in appendix A, the 100-year peak discharge rate will stay within the roadway, and the energy grade line will be contained within the right of way. As shown on the grading plan the mountable curb transitions to standard prior to the capacity of the mountable curb being exceeded. Since the down stream conveyance has been designed but not

completed, this site will temporarily retain the entire developed flow generated by this site. As shown in Appendix B, the site will generate 1.12 Acre feet during a 100-year, 10-day storm event. The combined volumes of the onsite retention ponds are 1.323 acre feet. A Public drainage easement will encumber these temporary ponds until the downstream improvements are in place.

The storm drainage system along the frontage of Fortuna will be constructed in accordance with the design drawing for the entire Fortuna Storm drain. A copy of the designed storm drain is located in appendix C. The offsite upland flow path will not be altered and will continue to drain to the Cedar Ridge Pond. Since this site is designed to discharge what is predicted within the West Mesa Diversion Project and will be retained until the downstream system is completed, we feel the development of this site as designed is in accordance with City policy and the downstream conveyance system will not be adversely impacted.

SUMMARY AND RECOMMENDATIONS

This site is an undeveloped portion of land located within the boundaries of the West Mesa Diversion Master Drainage Plan. As regulated by this plan the site is allowed to discharge 18.74 cfs to a proposed storm drain to be located within the Fortuna right-of-way.. The onsite developed storm water discharge will be conveyed via surface flow by each individual lot to the adjacent Roadway. The public street has capacity to convey the predicted flow. This flow will be captured by two temporary rundowns and retained onsite until the downstream improvements are constructed.

The proposed site development does not adversely affect the upstream or downstream facilities. The site was designed in conformance to City of Albuquerque Drainage Policy. Therefore, we request approval of the site-grading plan. Since public improvements will be constructed a work order and Subdivision Improvement Agreement will be required. Since this site encompasses more than 1 acre, a NPDES permit will be required prior to any construction.

APPENDIX B

SITE HYDROLOGY

Weighted E Method

Existing Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (ac-ft)	100-Year Volume (ac-ft)	100-Year Flow cfs
ONSITE	217800.00	5.000	74%	3.7	15%	0.750	6%	0.3	5%	0.250	0.584	0.243	8.25
Total	217800.00	5.000		3.7		0.750		0.3		0.250		0.243	8.25

Proposed Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-hr. Weighted E (ac-ft)	100-Year, 6-hr. Volume (ac-ft)	100-Year, 6-hr. Flow cfs	10-day Volume (ac-ft)
ONSITE	217800.00	5.000	0%	0	17%	0.850	15%	0.75	68%	3.400	1.602	0.668	18.74	1.121
Total	217800.00	5.000	0%	0	17%	0.850	15%	0.75	68%	3.400	1.602	0.668	18.74	1.121

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.44	Qa= 1.29
Eb= 0.67	Qb= 2.03
Ec= 0.99	Qc= 2.87
Ed= 1.97	Qd= 4.37

APPENDIX A

HYDRAULIC CALCULATIONS

Street Capacity Calculations

MESA DEL RIO STREET

26' F-F Street Section with 4" curb

Slope= 0.005

Q=18.74*.47=8.81 CFS

For water depths less than 0.0625 feet

Y= Water depth
Area = 16*Y^2
P= SQRT(1025*Y^2) + Y
n= 0.017

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.01	0.0016	0.33	0.00	0.00	0.00	0.18	0.00	0.31	0.00167
0.02	0.0064	0.66	0.01	0.00	0.00	0.28	0.01	0.35	0.00407
0.025	0.01	0.83	0.01	0.00	0.01	0.33	0.01	0.36	0.00543
0.035	0.0196	1.16	0.02	0.01	0.02	0.41	0.01	0.38	0.00835
0.045	0.0324	1.49	0.02	0.02	0.03	0.48	0.02	0.40	0.01151
0.052	0.043264	1.72	0.03	0.02	0.05	0.53	0.03	0.41	0.01385
0.06	0.0576	1.98	0.03	0.03	0.07	0.58	0.04	0.42	0.01662
0.0625	0.0625	2.06	0.03	0.04	0.08	0.60	0.04	0.42	0.0175

For water depths greater than 0.0625 ft but less than 0.3025 ft

Y1= Y-0.0625
A2= A1 + 2*Y1 + 25*Y1^2
P2= P1 + SQRT(2501*Y1^2)+Y1

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.063	0.063506	2.09	0.03	0.04	0.08	0.60	0.04	0.42	0.0176
0.1	0.172656	3.98	0.04	0.13	0.26	0.76	0.08	0.43	0.02824
0.13	0.311406	5.51	0.06	0.28	0.57	0.91	0.12	0.45	0.0395
0.16	0.495156	7.04	0.07	0.52	1.04	1.05	0.17	0.46	0.05202
0.2	0.810156	9.08	0.09	1.00	2.00	1.23	0.25	0.49	0.07009
0.207	0.873506	9.43	0.09	1.10	2.21	1.26	0.26	0.49	0.07338
0.2612	1.446942	12.20	0.12	2.16	4.32	1.49	0.39	0.51	0.1
0.3025	1.9825	14.31	0.14	3.28	6.56	1.66	0.50	0.53	0.12143

For water depths greater than 0.3025 ft but less than 0.333 ft

Y2= Y - 0.3025
A3= A2 + Y2*14
P3= P2 + Y2

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.303	1.9895	14.31	0.14	3.30	6.60	1.66	0.50	0.53	0.12191
0.3039	2.0021	14.31	0.14	3.34	6.67	1.67	0.51	0.53	0.12279
0.3062	2.0343	14.31	0.14	3.43	6.85	1.68	0.52	0.54	0.12502
0.31	2.0875	14.31	0.15	3.57	7.15	1.71	0.53	0.54	0.12872
0.3125	2.1225	14.32	0.15	3.67	7.35	1.73	0.54	0.55	0.13116
0.32	2.2275	14.32	0.16	3.98	7.96	1.79	0.57	0.56	0.1385
0.3317	**2.3913**	**14.34**	**0.17**	**4.48**	**8.96**	**1.87**	**0.62**	**0.57**	**0.15004**
0.333	2.4095	14.34	0.17	4.54	9.07	1.88	0.63	0.57	0.15132

For water depths greater than 0.333 ft but less than 0.513 ft

Y3= Y - 0.333
A4= A3 + 14 * Y3 + 25 * Y3^2
P4= P3 + SQRT(2501 * Y3^2)

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.335	2.4376	14.44	0.17	4.60	9.21	1.89	0.63	0.57	0.15226
0.3601	2.80726	15.69	0.18	5.51	11.02	1.96	0.71	0.58	0.16427
0.38	3.122725	16.69	0.19	6.31	12.63	2.02	0.77	0.58	0.17417
0.4196	3.809389	18.67	0.20	8.16	16.32	2.14	0.90	0.58	0.19472
0.4603	4.596832	20.70	0.22	10.42	20.84	2.27	1.04	0.59	0.21687
0.504	5.534525	22.89	0.24	13.28	26.55	2.40	1.21	0.60	0.24163
0.513	5.7395	23.34	0.25	13.93	27.85	2.43	1.24	0.60	0.24684

Street Capacity Calculations

MESA DEL RIO STREET

26' F-F Street Section with 8" curb

Slope= 0.005

For water depths less than 0.125 feet

Y= Water depth

Area = 8*Y^2

P= SQRT(257*Y^2) + Y

n= 0.017

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.01	0.00	0.17	0.00	0.00	0.00	0.17	0.00	0.31	0.0016081
0.02	0.00	0.34	0.01	0.00	0.00	0.28	0.01	0.34	0.0039311
0.04	0.01	0.68	0.02	0.01	0.01	0.44	0.02	0.38	0.0095654
0.06	0.03	1.02	0.03	0.02	0.03	0.57	0.03	0.41	0.0160557
0.08	0.05	1.36	0.04	0.04	0.07	0.69	0.06	0.43	0.0231616
0.1	0.08	1.70	0.05	0.06	0.13	0.80	0.08	0.45	0.030757
0.12	0.12	2.04	0.06	0.10	0.21	0.91	0.11	0.46	0.0387629
0.125	0.13	2.13	0.06	0.12	0.23	0.93	0.12	0.47	0.0408217

For water depths greater than 0.125 ft but less than 0.365 ft

Y1= Y-0.125

A2= A1 + 2*Y1 + 25*Y1^2

P2= P1 + SQRT(2501*Y1^2)+Y1

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.13	0.14	2.38	0.06	0.12	0.25	0.91	0.12	0.45	0.0397601
0.16	0.23	3.91	0.06	0.21	0.42	0.92	0.15	0.41	0.0418764
0.2	0.42	5.95	0.07	0.44	0.87	1.05	0.21	0.41	0.0537489
0.24	0.69	8.00	0.09	0.82	1.65	1.20	0.29	0.43	0.0695702
0.2846	1.08	10.27	0.11	1.49	2.98	1.38	0.39	0.46	0.0896739
0.32	1.47	12.08	0.12	2.22	4.44	1.52	0.48	0.47	0.1068876
0.3551	1.91	13.87	0.14	3.15	6.29	1.65	0.59	0.49	0.124804
0.365	2.05	14.37	0.14	3.45	6.89	1.68	0.61	0.49	0.12999

For water depths greater than 0.365 ft but less than 0.667 ft

Y2= Y - 0.365

A3= A2 + Y2*14

P3= P2 + Y2

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.37	2.12	14.38	0.15	3.64	7.29	1.72	0.64	0.50	0.1350191
0.4556	3.31	14.46	0.23	7.67	15.34	2.31	1.05	0.60	0.223263
0.4848	3.72	14.49	0.26	9.30	18.59	2.50	1.21	0.63	0.2541815
0.5	**3.94**	**14.51**	**0.27**	**10.19**	**20.38**	**2.59**	**1.30**	**0.65**	**0.2704223**
0.54	4.50	14.55	0.31	12.70	25.40	2.83	1.53	0.68	0.3136088
0.5584	4.75	14.56	0.33	13.92	27.85	2.93	1.64	0.69	0.3336809
0.63	5.76	14.64	0.39	19.09	38.18	3.32	2.09	0.74	0.4129151
0.667	6.27	14.67	0.43	22.00	44.01	3.51	2.34	0.76	0.4545048

For water depths greater than 0.667 ft but less than 0.847 ft

Y3= Y - 0.667

A4= A3 + 14 * Y3 + 25 * Y3^2

P4= P3 + SQRT(2501 * Y3^2)

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.7	6.76	16.32	0.41	23.23	46.45	3.43	2.40	0.72	0.4471541
0.72	7.09	17.32	0.41	24.13	48.26	3.41	2.45	0.71	0.4451558
0.74	7.43	18.32	0.41	25.15	50.30	3.39	2.51	0.69	0.4446941
0.76	7.79	19.32	0.40	26.28	52.56	3.37	2.56	0.68	0.4455653
0.78	8.17	20.32	0.40	27.53	55.06	3.37	2.63	0.67	0.4476018
0.8	8.58	21.32	0.40	28.89	57.78	3.37	2.69	0.66	0.4506645
0.847	9.60	23.68	0.41	32.52	65.05	3.39	2.87	0.65	0.4612712

APPENDIX C

WEST MESA STORM DRAIN PLANS

(included with previous drainage report)

CITY OF ALBUQUERQUE

THREE HUNDRED YEARS 1706 • 2006
ALBUQUERQUE
Making History

November 7, 2005

David Soule, P.E.
Rio Grande Engineering
1606 Central Ave SE Suite 201
Albuquerque, NM 87106

Re: Mesa Del Rio Subdivision, 76th St and Glen Rio
Grading and Drainage Plan
Engineer's Stamp dated 10-10-05 (J10-D12)

Dear Mr. Soule,

Based upon the information provided in your submittal received 10-14-05, the above referenced plan cannot be approved for Preliminary Plat, Site Development Plan for Subdivision and Building Permit and Grading Permit until the following comments are addressed:

1. A profile for 76th St. and Fortuna are needed.
2. What is the existing or developed runoff (Whichever is greater) entering 76th St.? Is any storm drain required?
3. Provide a design of the ultimate grading plan without ponds.
4. The W-I40 project has cutoff all upstream runoff from north I-40. Has the NMDOT built a detention pond in their right of way as shown in the West Mesa Diversion Report?

This project requires a National Pollutant Discharge Elimination System (NPDES) permit. If you have any questions regarding this permit please feel free to call the DMD Storm Drainage Design section at 768-3654 (Charles Caruso).

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: Charles Caruso, DMD Storm Drainage Design
CC: File

P.O. Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV. 01/28/2003rd)

PROJECT TITLE: *Mesa Del Rio Subdivision* ZONE MAP/DRG. FILE #: J-10 /D12

DRB #: EPC #: WORK ORDER #:

LEGAL DESCRIPTION: **Tract 180, Airport Addition, Lands of Atrisco Grant**

CITY ADDRESS: **76th street between Fortuna and Glen Rio**

ENGINEERING FIRM:	Rio Grande Engineering	CONTACT:	David Soule, PE
ADDRESS:	1606 Central SE, Suite 201	PHONE:	(505)321-9099
CITY, STATE:	ALBUQUERQUE, NM	ZIP CODE:	87106
OWNER:	*David and Jennifer Soule*	CONTACT:	David Soule
ADDRESS:	*9101 Wilshire NE*	PHONE:	321-9099
CITY, STATE:	*Albuquerque, NM*	ZIP CODE:	87122
ARCHITECT:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	
SURVEYOR:	GSI	CONTACT:	John Gallegos
ADDRESS:		PHONE:	505-975-4567
CITY, STATE:		ZIP CODE:	
CONTRACTOR:		CONTACT:	
ADDRESS:		PHONE:	
CITY, STATE:		ZIP CODE:	

CHECK TYPE OF SUBMITTAL:

- x DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL, ***REQUIRES TCL or equal***
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL GRADING & DRAINAGE PLAN
- x GRADING PLAN
- ___ EROSION CONTROL PLAN
- ___ ENGINEER'S CERTIFICATION (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEERS CERTIFICATION (TCL)
- ___ ENGINEERS CERTIFICATION (DRB APPR. SITE PLAN)
- ___ OTHER

CHECK TYPE OF APPROVAL SOUGHT:

- ___ SIA / FINANACIAL GUARANTEE RELEASE
- x PRELIMINARY PLAT APPROVAL
- ___ S. DEV. PLAN FOR SUB'D. APPROVAL
- ___ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM.)
- ___ CERTIFICATE OF OCCUPANCY (TEMP.)
- x GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ OTHER (SPECIFY)

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- x YES
- ___ NO
- ___ COPY PROVIDED

RECEIVED
OCT 14 2005
HYDROLOGY SECTION

DATE SUBMITTED: 10/22/2004 BY: David Soule

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

1. **Conceptual Grading and Drainage Plans**: 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 subdivisions containing more than ten (10) lots or constituting five (5) acres or more.

2/100

J-10/012
4-11-07
KS

Brad
774281

AGREEMENT AND COVENANT

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

1. Recital. The User is the owner of certain real property ("User's Property") located at Mesa del Rio Subdivision, in Albuquerque, New Mexico, and more particularly described as: (give legal description and filing information)

Lots B-P1 and Lot A-P1, Mesa de Rio Subdivision
filed 3/1/06 Bk 2006C Pg-65

The City is the owner of certain real property, easement or public right-of-way ("City's Property") in the vicinity of, contiguous to, abutting or within User's Property, and more particularly described as:

Public Drainage Easement for Retention Ponds
Tracts A+B

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

Retention Ponds on Tracts A+B

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

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

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

Maggie Toulouse Bern. Co. AGRE R 21.00
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Page: 1 of 7
04/10/2007 02:22P
Bk-A135 Pg-2380

3. User's Responsibility for Improvement. The User will be solely responsible for constructing, maintaining, repairing and, if required, removing the Improvement, all in accordance with standards required by the City as per the approved Grading and Drainage Plan 510-D12 on file at the City Engineer's office. The User will be solely responsible for paying all related costs. The User will be solely responsible for paying all related costs. The User will not permit the Improvement to constitute a hazard to the health or safety of the general public or to interfere with the City's use of the City's Property. The User will conform with all applicable laws, ordinances and regulations.

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

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

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

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

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

Maggie Toulouse Bern. Co. AGRE R 21.00
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9. Assessment. Nothing in this Agreement shall be construed to relieve the User, his heirs, assigns and successors from an assessment against User's Property for improvements to the City Property under a duly authorized and approved Special Assessment District. The parties specifically agree that the value of the improvement will not reduce the amount assessed by the City.

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

Enchantment Homes of NM
1606 Central SE, Suite 201
Alb. NM 87106

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

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

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

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

14. Entire Agreement. This Agreement contains the entire agreement of the parties and supersedes any and all other agreements or understandings, oral

Maggie Toulouse Bern. Co. AGRE R 21.00
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Bk-A135 Pg-2380

or written, whether previous to the execution hereof or contemporaneous herewith.

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

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

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

CITY OF ALBUQUERQUE: **USER:**

By: _____ By: _____
Title: City Engineer Title: Owner/member

Dated: 2-13-06 Dated: 1/1/06

2/13/06 01-31-06

CITY'S ACKNOWLEDGMENT

STATE OF NEW MEXICO)
) ss
COUNTY OF BERNALILLO)

This instrument was acknowledged before me on February 13, 2006 by Richard Dourte, City Engineer, Planning Department, for the City of Albuquerque, a New Mexico municipal corporation, on behalf of the corporation.

Gloria D. Saavedra
Notary Public

My Commission Expires:

11-25-2007

USER'S ACKNOWLEDGMENT

Maggie Toulouse Bern. Co. AGRE R 21.00
2007052484
6635431
Page: 4 of 7
04/10/2007 02:22P
Bk-A135 Pg-2380

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

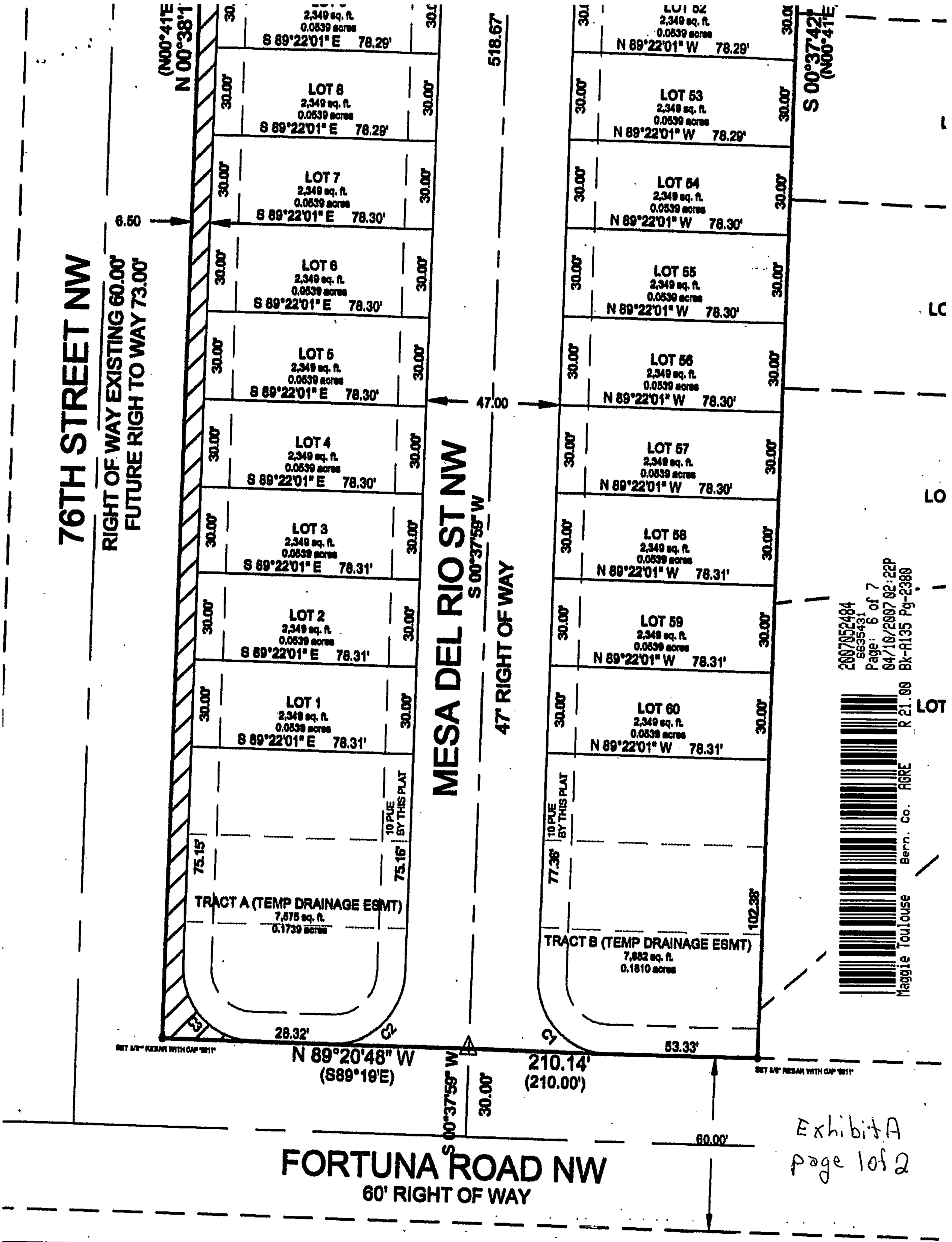
This instrument was acknowledged before me on January 1, 2006 by David Soule, member, on behalf of Enchantment Homes of NM LLC

Rene Ryan
Notary Public

My Commission Expires:
April 28, 2009

OFFICIAL SEAL
RENE L RYAN
Notary Public
State of New Mexico
My Commission Expires 4/28/09

rpd4\agmcov3.agm (Revised by Legal 1/00)


76TH STREET NW
RIGHT OF WAY EXISTING 60.00'
FUTURE RIGH TO WAY 73.00'
N 00°38'1
(N00°41'E
6.50
LOT 8
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.29'
LOT 7
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.30'
LOT 6
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.30'
LOT 5
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.30'
LOT 4
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.30'
LOT 3
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.31'
LOT 2
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.31'
LOT 1
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.31'
10 PUE BY THIS PLAT
75.15'
75.16'
TRACT A (TEMP DRAINAGE ESMT)
7,575 sq. ft.
0.1739 acres
28.32'
SET 5/8" REBAR WITH CAP "9911"
N 89°20'48" W
(S89°19'E)
518.67'
47.00
MESA DEL RIO ST NW
S 00°37'59" W
47' RIGHT OF WAY
S 00°37'59" W
30.00'
210.14'
(210.00')
LOT 52
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.29'
LOT 53
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.29'
LOT 54
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.30'
LOT 55
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.30'
LOT 56
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.30'
LOT 57
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.30'
LOT 58
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.31'
LOT 59
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.31'
LOT 60
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.31'
10 PUE BY THIS PLAT
77.36'
102.38'
TRACT B (TEMP DRAINAGE ESMT)
7,882 sq. ft.
0.1810 acres
53.33'
SET 5/8" REBAR WITH CAP "9911"
S 00°37'42"
(N00°41'E
60.00'
FORTUNA ROAD NW
60' RIGHT OF WAY
2007052484
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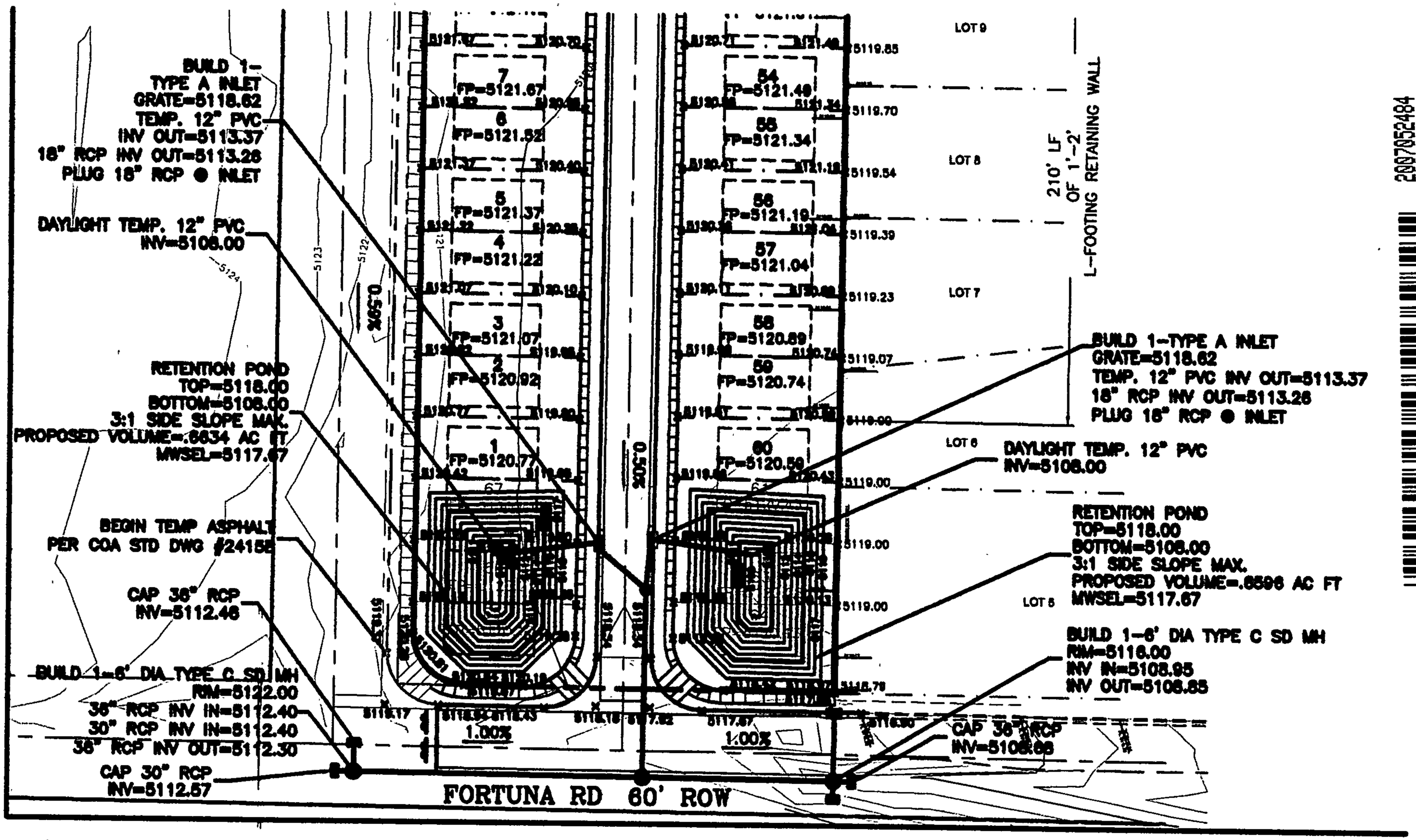
Maggie Toulouse Bern. Co. AGRE
LOT
Exhibit A
page 1 of 2

Exhibit A
page 2 of 2



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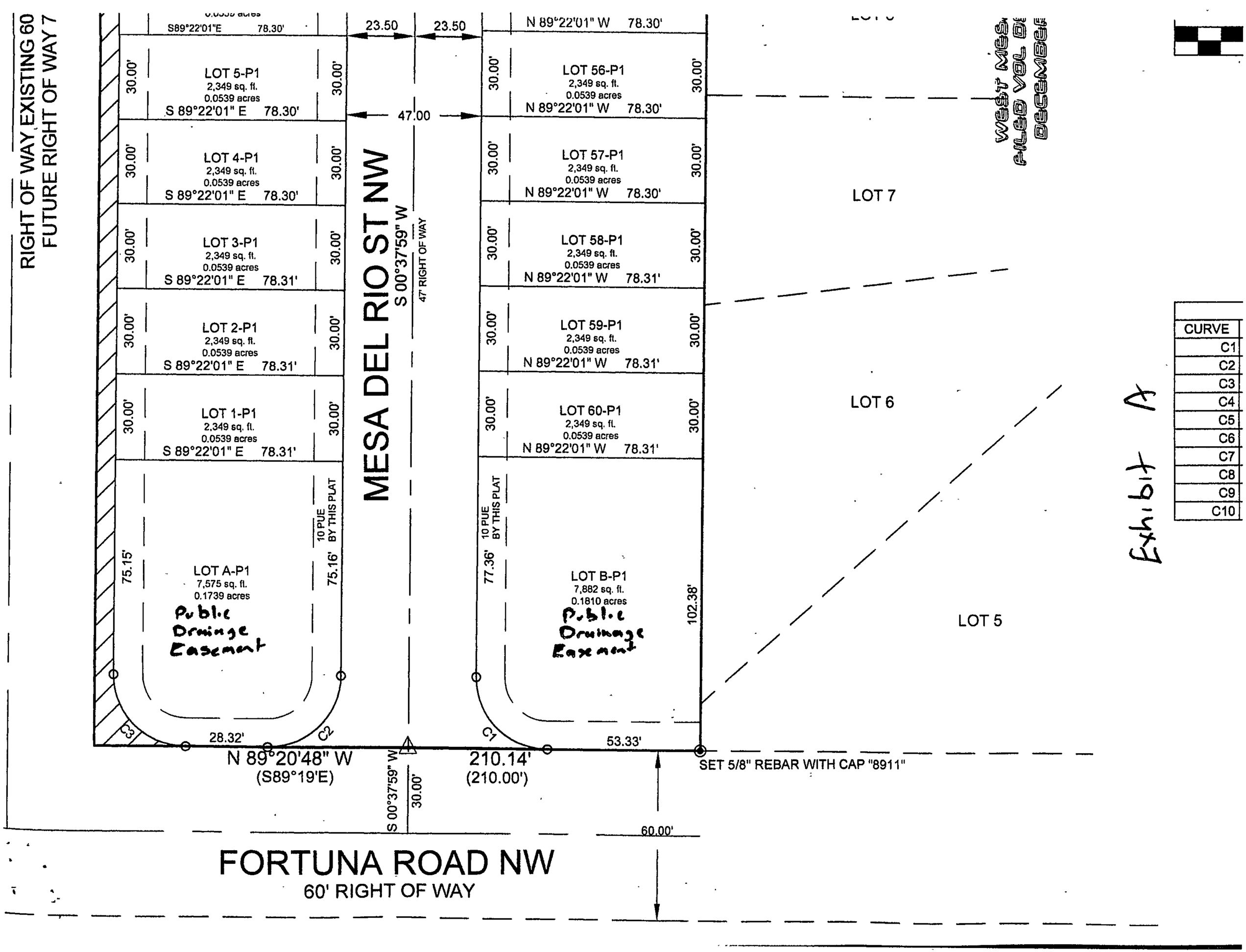
Maggie Toulouse Bern. Co. AGRE


RIGHT OF WAY EXISTING 60
FUTURE RIGHT OF WAY 7
S89°22'01"E 78.30'
23.50
23.50
N 89°22'01" W 78.30'
LOT 5-P1
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.30'
LOT 56-P1
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.30'
47.00
LOT 4-P1
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.30'
LOT 57-P1
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.30'
LOT 7
MESA DEL RIO ST NW
S 00°37'59" W
47' RIGHT OF WAY
LOT 3-P1
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.31'
LOT 58-P1
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.31'
LOT 2-P1
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.31'
LOT 59-P1
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.31'
LOT 6
LOT 1-P1
2,349 sq. ft.
0.0539 acres
S 89°22'01" E 78.31'
LOT 60-P1
2,349 sq. ft.
0.0539 acres
N 89°22'01" W 78.31'
10 PUE BY THIS PLAT
75.15'
75.16'
77.36'
102.38'
LOT A-P1
7,575 sq. ft.
0.1739 acres
Public Drainage Easement
LOT B-P1
7,882 sq. ft.
0.1810 acres
Public Drainage Easement
LOT 5
C3
28.32'
C2
C7
53.33'
N 89°20'48" W
(S89°19'E)
210.14'
(210.00')
SET 5/8" REBAR WITH CAP "8911"
S 00°37'59" W
30.00'
60.00'
FORTUNA ROAD NW
60' RIGHT OF WAY
CURVE
C1
C2
C3
C4
C5
C6
C7
C8
C9
C10
WEST MES
FILED VOL 0
DECEMBER
Exhibit A

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

This instrument was acknowledged before me on April 6, 2007 by David Soule, on behalf of Enchantment Homes of NM, LLC

Rene L Ryan
Notary Public

My Commission Expires:
April 28, 09

OFFICIAL SEAL
RENE L RYAN
Notary Public
State of New Mexico
My Commission Expires 4/28/09

DRAINAGE REPORT

For

MESA DEL RIO SUBDIVISION
Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
1606 Central SE
Albuquerque, New Mexico 87106

October 2005

DAVID SOULE
NEW MEXICO
14522
10/10/05
REGISTERED PROFESSIONAL ENGINEER

RECEIVED
OCT 14 2005
HYDROLOGY SECTION

David Soule P.E. No. 14522

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Purpose 3
Introduction 3
Vicinity Map 4
Existing Conditions 5
Proposed Conditions 5
Summary 6

Appendix

Onsite Hydraulic Calculations ..... A
Site Hydrology ..... B
West Mesa Stormdrain C

Map Pocket

Site Grading and Drainage Plan

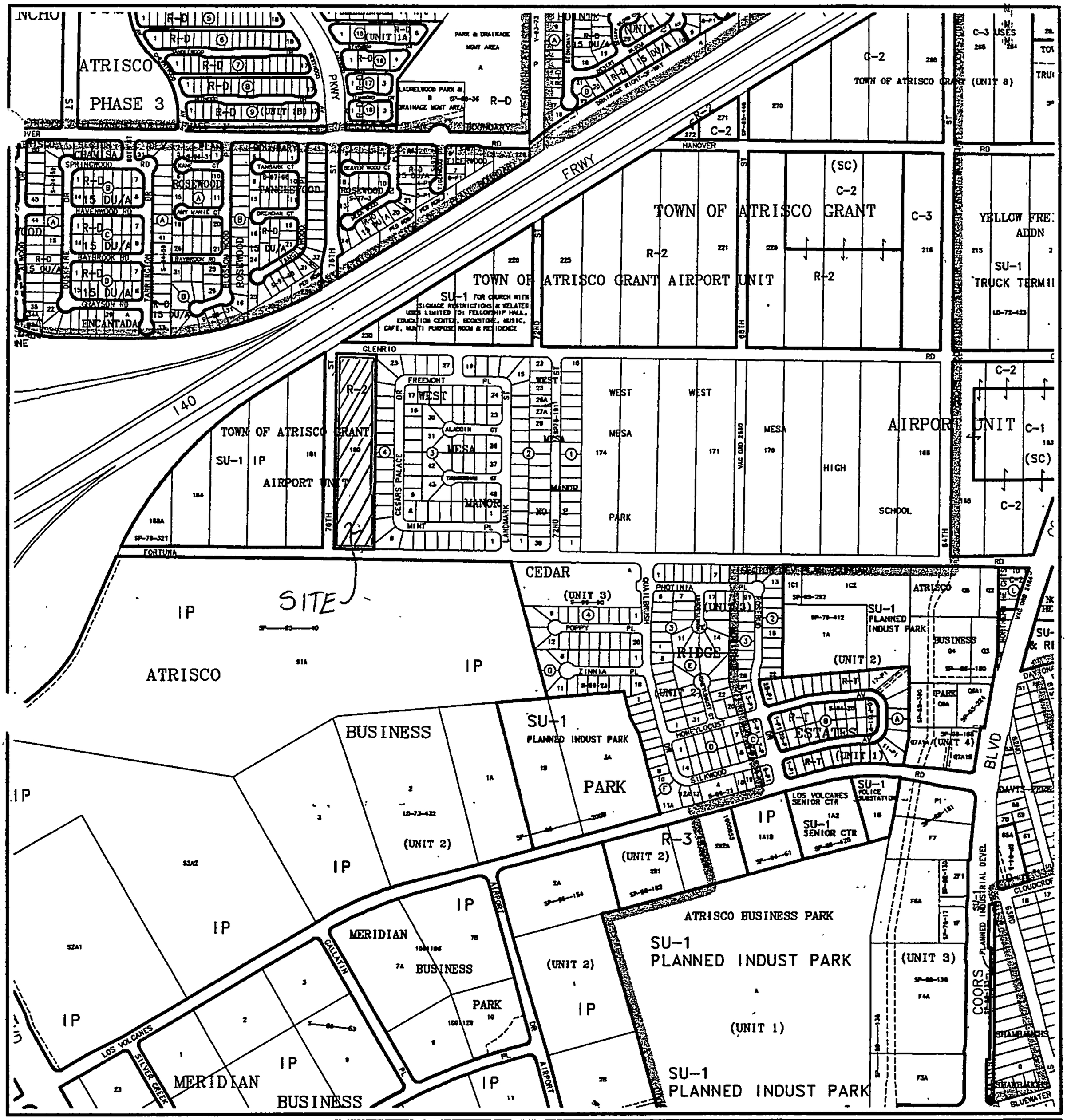
PURPOSE

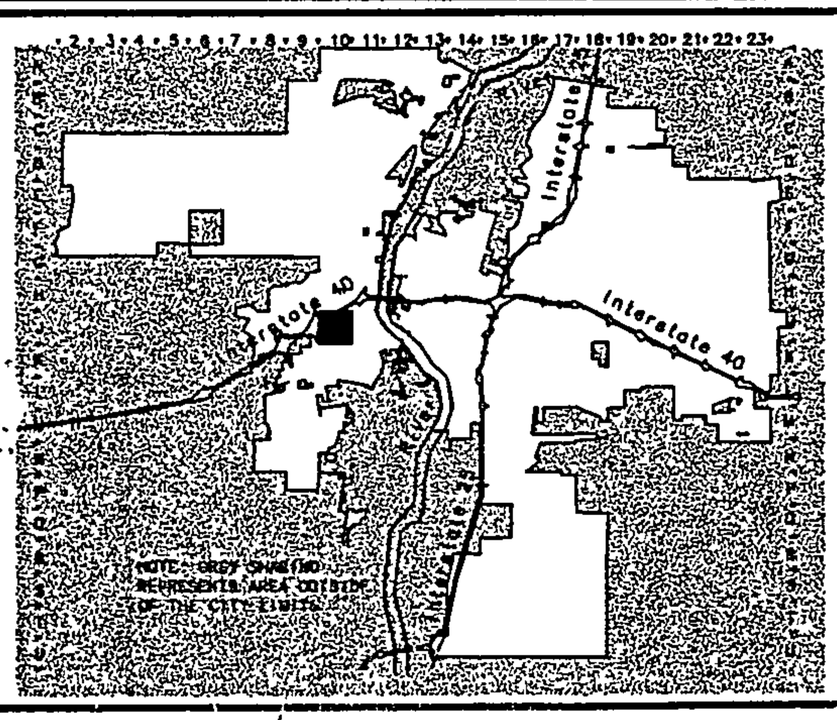
The purpose of this report is to provide the Drainage Management Plan for the development of the Mesa Del Rio Subdivision. This plan will be utilized for the development of the subject property as a 60-lot single family residential subdivision. This plan was prepared in accordance with the City of Albuquerque's Development Process Manual. This report will demonstrate that the proposed improvements do not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a 5.0-acre parcel of land located on the east side of 76th street between Fortuna Road and Glen Rio Road. The site is located in the near northwest Mesa area of Albuquerque. The legal description of this site is Tract 180 of the Airport addition of the lands of Atrisco Grant. As shown on FIRM map 35001C0326E, the site is located entirely within Flood Zone X. The site is currently undeveloped.

The site is located within the West Mesa Diversion Master Drainage Plan boundaries. The drainage analysis for the diversion project was done by Smith Engineering. The development of this property will be in conformance to the Master Drainage Plan. The upstream diversion for the flows passing under I-40 has been constructed and is in the final stages of completion. The majority of the down stream conveyance has been completed. Due to cost overruns a reach of storm drainage pipe has been designed but not constructed. Currently this basin drains to the Cedar Ridge pond located approximately 800 feet east of this site. This pond was designed to retain the 100-year 10-day volume for the entire developed basin including the flow that has been diverted north of I-40. Based upon the West Mesa Diversion analysis and the status of the downstream improvements, this site must retain its flow onsite and can pass upland flows. The storm drainage system along this sites frontage must be constructed.





CITY OF Albuquerque

Albuquerque Geographic Information System

PLANNING DEPARTMENT

© Copyright 2001

GRAPHIC SCALE IN FEET

250 0 750 1000

Zone Atlas Page

J-10-Z

Map Amended through July 19, 2001

EXISTING CONDITIONS

The site is currently undeveloped. The site is covered with native grasses; there are no signs of previous impact from human activities. The site slopes from the northwest to southeast at a typical 1% slope. As shown in Appendix A, this site is located within Basin C4-D. Based upon the assumed developed conditions parameters within the Master Plan, this site is allowed to discharge 18.74 cfs at full development. The existing upland flow drains to an earthen drainage swale located on the south side of Fortuna. The upland flow that enters this site is minor due to the recent AMAFCA construction of the West I-25 channel.

PROPOSED CONDITIONS

The proposed improvements consist of a 60-lot single family residential lot subdivision with approximately 1600 lineal feet of 24' wide public roads. The onsite lot grading shall consist of a building pad and rear and side yard swales with typical grades of 1%. Each lot will drain directly to the adjacent roadway. The proposed roadway will consist of a 2% crowned roadway section with mountable and standard curb and gutters. As shown in Appendix B the site contains 5.0 acres. The developed storm water discharge rates were calculated using the simplified procedure for 40 acre and smaller basins as shown in chapter ~~23~~ 22.2 part A of the Development Process Manual. As shown in Appendix B, the total developed flow generated by this site is predicted to be 18.74 cfs. The streets storm water conveyance capacity was calculated using the Manning's Equation and an Excel spreadsheet. As shown in appendix A, the 100-year ~~peach~~ peak discharge rate will stay within the roadway, and the energy grade line will be contained within the right of way. As shown on the grading plan the mountable curb transitions to standard prior to the capacity of the mountable curb being exceeded. Since the down stream conveyance has been designed but not completed, this site ~~with~~ will temporarily retain the entire developed flow generated by this site. As shown in Appendix B, the site will generate 1.12 Acre feet during a 100-year, 10-day storm event.

The combined volumes of the onsite retention ponds are 1.97 acre feet. A Public drainage easement will encumber these temporary ponds until the downstream improvements are in place.

The storm drainage system along the frontage of Fortuna will be constructed in accordance with the design drawing for the entire Fortuna Storm drain. A copy of the designed storm drain is located in appendix C. The offsite upland flow path will not be altered and will continue to drain to the Cedar Ridge Pond. Since this site is designed to discharge what is predicted within the West Mesa Diversion Project and will be retained until the downstream system is completed, we feel the development of this site as designed is in accordance with City policy and the downstream conveyance system will not be adversely impacted.

SUMMARY AND RECOMMENDATIONS

This site is an undeveloped portion of land located within the boundaries of the West Mesa Diversion Master Drainage Plan. As regulated by this plan the site is allowed to discharge 18.74 cfs to a proposed storm drain to be located within the Fortuna right-of-way. The onsite developed storm water discharge will be conveyed via surface flow by each individual lot to the adjacent Roadway. The public street has capacity to convey the predicted flow. This flow will be captured by two inlets and retained onsite until the downstream improvements are constructed.

The proposed site development does not adversely affect the upstream or downstream facilities. The site was designed in conformance to City of Albuquerque Drainage Policy. Therefore, we request approval of the site-grading plan. Since public improvements will be constructed a work order and Subdivision Improvement Agreement will be required. Since this site encompasses more than 1 acre, a NPDES permit will be required prior to any construction activity.

APPENDIX A

HYDRAULIC CALCULATIONS

JD 258

CITY OF ALBUQUERQUE, NEW MEXICO

WEST MESA DIVERSION PROJECT DRAINAGE ANALYSIS

ALBUQUERQUE
SEAL
NEW MEXICO
1706

DRAFT COPY

CITY OF Albuquerque

COA PROJECT NO. 5381-01
PUBLIC WORKS DEPARTMENT
HYDROLOGY DIVISION

Prepared by

Smith Engineering Company
A Full Service Engineering Company

DRAFT REPORT: MAY, 1997

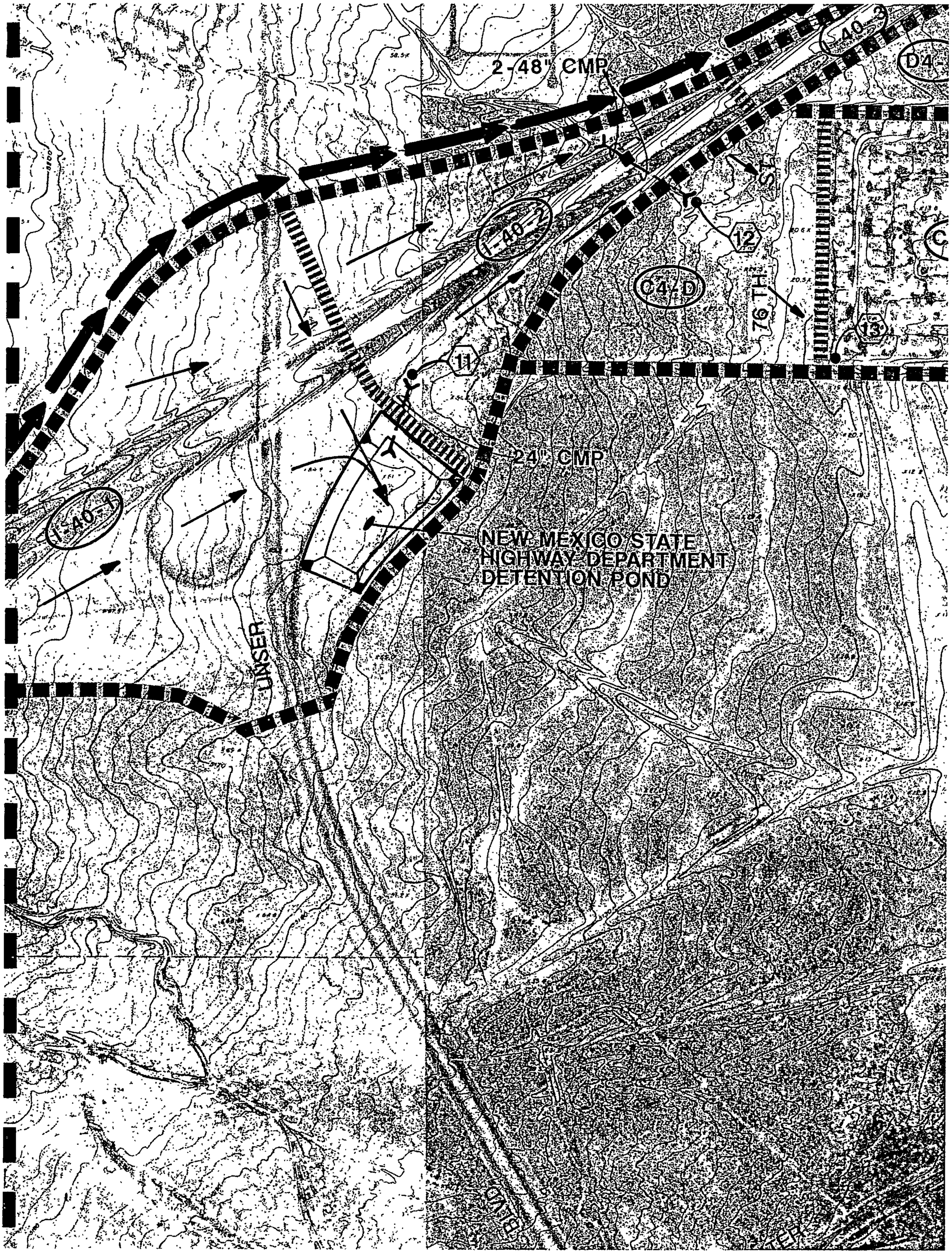
TABLE 1

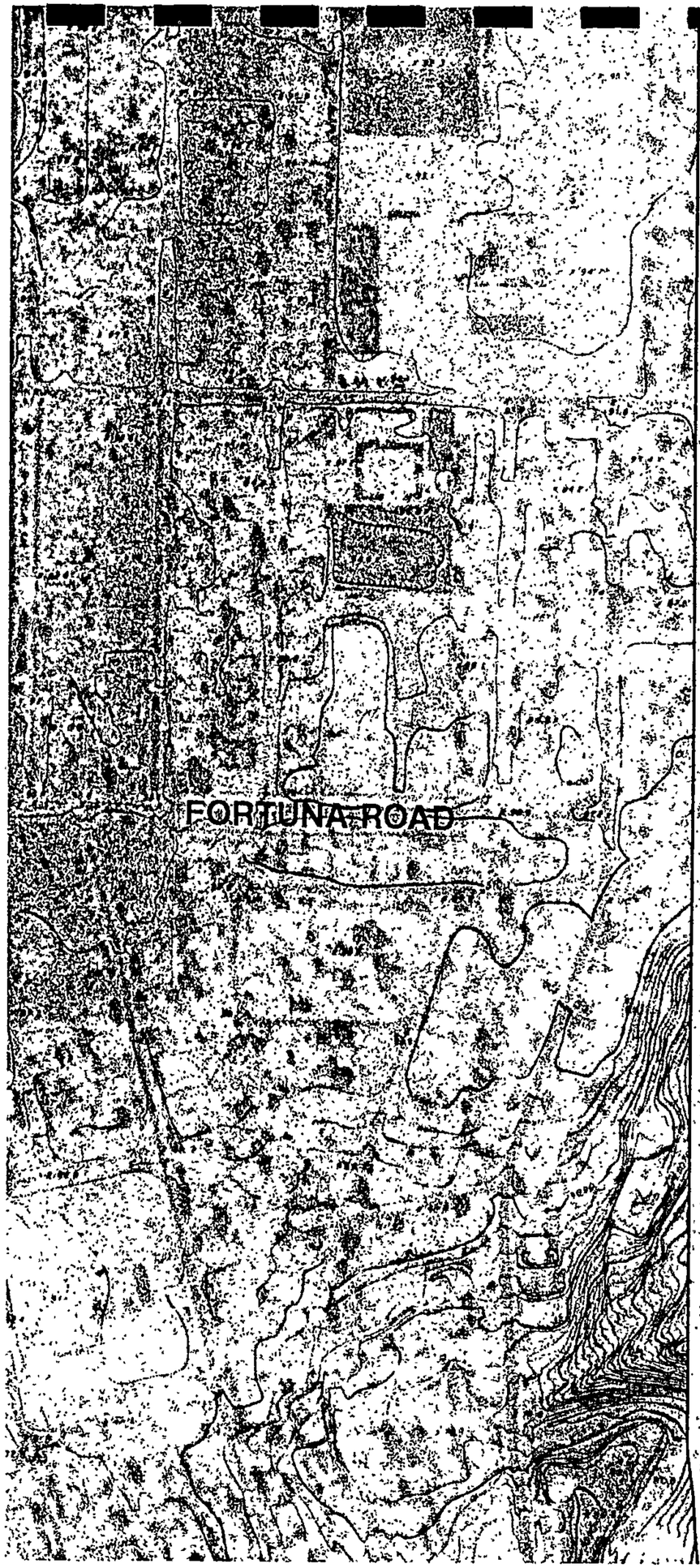
WEST MESA DIVERSION PROJECT
DRAINAGE ANALYSIS

LAND TREATMENTS

ZONE DESIGNATION	LAND TREATMENTS			
	"A"	"B"	"C"	"D"
RESIDENTIAL				
R-1		43		57
R-2		30		70
INDUSTRIAL				
IP		20		80
COMMERCIAL				
C-1		10		90
C-2		10		90
C-3		10		90
SCHOOLS				
WEST MESA HIGH SCHOOL		50		50
PARKS				
SUB-BASIN C6-D		93		7
NMSHTD RIGHT OF WAY SUB-BASINS				
I-40D-1 & I-40D-2	75			25
I-40D-3, I-40D-4, I-40D-5	36			64

Percent land treatment "D" taken from Table A-5, DPM Section 22.2

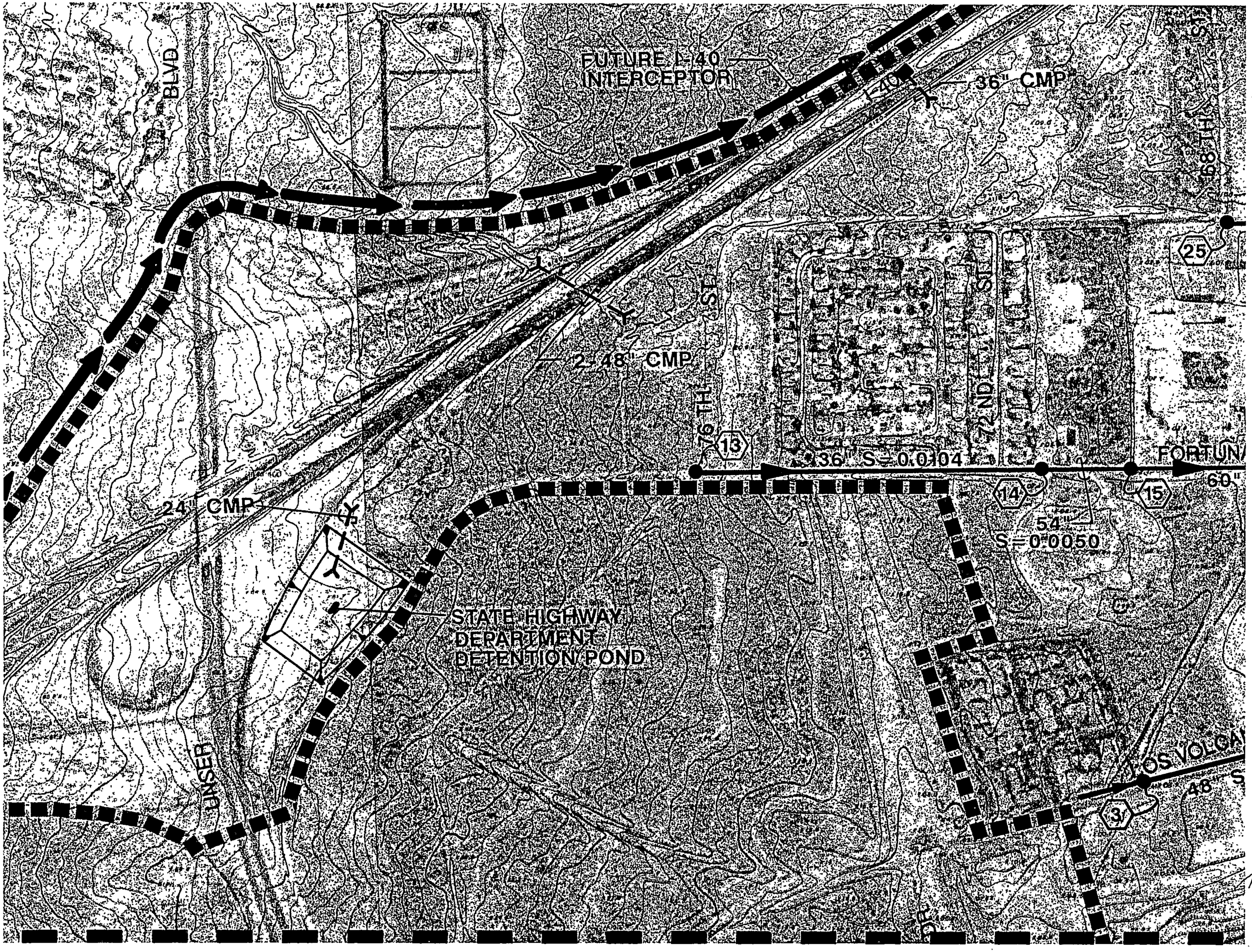

2-48" CMP
I-40-3
D4-
I-40-2
C4-D
12
13
76TH
11
24" CMP
I-40-1
NEW MEXICO STATE
HIGHWAY DEPARTMENT
DETENTION POND
UNSER
BLVD



(A[redacted]OWS[redacted]UDE [redacted] BUL[redacted]FAC[redacted]

ANALYSIS POINT	Q(10) (6hr.) (cfs)	V(10) (24hr.) (ac.ft.)	Q(100) (6hr.) (cfs)	V(100) (24hr.) (ac.ft.)
1	28	2.2	45	3.7
2	14	0.7	22	1.2
3	25	1.0	39	1.7
4	31	1.7	49	2.7
5	55	4.6	89	7.5
6	30	1.6	48	2.7
7	83	6.2	136	10.2
8	14	0.6	22	0.9
9	90	6.8	147	11.1
10	10	0.6	16	1.0
11	1	1.1	2	2.4
12	14	1.7	32	3.6
13	38	2.9	70	5.6
14	60	3.9	108	7.4
15	62	4.0	112	7.7
16	70	4.6	125	8.7
17	169	12.0	287	20.7
18	12	0.8	21	1.4
19	179	12.8	304	22.1
20	10	0.7	18	1.3
21	187	13.4	318	23.4
22	16	1.0	25	1.6
23	5	0.2	8	0.4
24	14	0.7	24	1.2
25	31	1.9	54	3.1
26	45	2.6	76	4.3
27	243	17.0	412	29.3
28	21	1.3	32	2.1
29	6	0.4	10	0.6
30	45	2.2	71	3.6
31	289	20.5	486	35.0
32	26	1.2	40	1.9
33	301	21.7	504	36.9
34	6	0.4	10	0.7
35	305	22.1	510	71.6

FOR LOCATION OF ANALYSIS POINTS NOT SHOWN, SEE MAP NO. 3


FUTURE I-40
INTERCEPTOR
I-40
36" CMP
68TH ST
25
2-48" CMP
76TH ST
72ND ST
13
36" S=0.0104
FORTUN
14
15
60"
24" CMP
5.4"
S=0.0050
STATE HIGHWAY
DEPARTMENT
DETENTION POND
LINSER
OS VOLCA
48" S
3

SUMMARY OF PEAK DISCHARGES AND PEAK VOLUMES

ALTERNATIVE 2A1

DEVELOPED CONDITIONS

(ALL FLOWS INCLUDE A 2.5% BULKING FACTOR)

ANALYSIS POINT	Q(10) (6hr.) (cfs)	V(10) (24hr.) (ac.ft.)	Q(100) (6hr.) (cfs)	V(100) (24hr.) (ac.ft.)
1	55	4.3	88	7.1
2	27	1.4	42	2.3
3	48	2.0	76	3.2
4	60	3.2	94	5.2
5	107	8.9	173	14.5
6	57	3.1	93	5.1
7	162	12.0	261	19.6
8	26	1.1	43	1.8
9	196	14.3	320	23.5
10	19	1.2	30	1.9
11	2	2.1	5	4.6
12	27	3.2	62	7.0
13	75	5.5	141	10.8
14	118	7.6	215	14.3
15	121	7.8	220	15.0
16	137	8.9	241	16.8
16A*	332	23.2	560	40.2
17	84	22.1	129	38.5
18	23	1.5	40	2.7
19	92	23.6	145	41.1
20	20	1.4	35	2.4
21	102	25.0	167	43.6
22	31	2.0	49	3.1
23	10	0.5	16	0.8
24	28	1.4	47	2.3
25	64	3.6	128	6.1
26	90	5.0	161	8.3
27	178	32.0	311	55.0
28	40	2.5	62	4.1
29	12	0.7	20	1.2
30	79	4.3	124	7.0
31	265	38.7	456	66.0
32	50	2.8	78	3.8
33	290	41.0	498	69.7
34	12	0.8	20	1.3
35	302	41.8	516	[illegible]

TOTAL FLOW INTO CEDAR RIDGE [illegible]

[illegible]

APPENDIX B

SITE HYDROLOGY

Weighted E Method

Existing Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year Weighted E (ac-ft)	100-Year Volume (ac-ft)	100-Year Flow cfs
ONSITE	217800.00	5.000	74%	3.7	15%	0.750	6%	0.3	5%	0.250	0.584	0.243	8.25
Total	217800.00	5.000		3.7		0.750		0.3		0.250		0.243	8.25

Proposed Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	Treatment A (acres)	Treatment B %	Treatment B (acres)	Treatment C %	Treatment C (acres)	Treatment D %	Treatment D (acres)	100-Year, 6-hr. Weighted E (ac-ft)	100-Year, 6-hr. Volume (ac-ft)	100-Year, 6-hr. Flow cfs	10-day Volume (ac-ft)
ONSITE	217800.00	5.000	0%	0	17%	0.850	15%	0.75	68%	3.400	1.602	0.668	18.74	1.121
Total	217800.00	5.000	0%	0	30%	0.850		0.75	70%	3.400	1.602	0.668	18.74	1.121

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)

Volume = Weighted D * Total Area

Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm

Ea= 0.44	Qa= 1.29
Eb= 0.67	Qb= 2.03
Ec= 0.99	Qc= 2.87
Ed= 1.97	Qd= 4.37

Street Capacity Calculations

24' F-F Street Section with 4" curb

Slope= 0.0077
Q=18.74/2=9.36 CFS

provide sketch that shows what all this means

For water depths less than 0.0625 feet

Y= Water depth
Area = 16*Y^2
P= SQRT(1025*Y^2) + Y
n= 0.017

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.01	0.0016	0.33	0.00	0.00	0.00	0.22	0.00	0.39	0.00241
0.02	0.0064	0.66	0.01	0.00	0.00	0.35	0.01	0.43	0.00584
0.025	0.01	0.83	0.01	0.00	0.01	0.40	0.01	0.45	0.00776
0.035	0.0196	1.16	0.02	0.01	0.02	0.51	0.02	0.48	0.01189
0.045	0.0324	1.49	0.02	0.02	0.04	0.60	0.03	0.50	0.01634
0.052	0.043264	1.72	0.03	0.03	0.06	0.66	0.03	0.51	0.01961
0.06	0.0576	1.98	0.03	0.04	0.08	0.73	0.04	0.52	0.02348
0.0625	0.0625	2.06	0.03	0.05	0.09	0.75	0.05	0.53	0.02472

For water depths greater than 0.0625 ft but less than 0.3025 ft

Y1= Y-0.0625
A2= A1 + 2*Y1 + 25*Y1^2
P2= P1 + SQRT(2501*Y1^2)+Y1

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.063	0.063506	2.09	0.03	0.05	0.09	0.75	0.05	0.52	0.02486
0.1	0.172656	3.98	0.04	0.16	0.33	0.95	0.09	0.53	0.03987
0.13	0.311406	5.51	0.06	0.35	0.70	1.13	0.15	0.55	0.05557
0.16	0.495156	7.04	0.07	0.65	1.29	1.31	0.21	0.58	0.07292
0.2	0.810156	9.08	0.09	1.24	2.48	1.53	0.31	0.60	0.09787
0.207	0.873506	9.43	0.09	1.37	2.74	1.57	0.32	0.61	0.1024
0.2612	1.446942	12.20	0.12	2.68	5.36	1.85	0.48	0.64	0.139
0.3025	1.9825	14.31	0.14	4.07	8.14	2.05	0.62	0.66	0.16836

For water depths greater than 0.3025 ft but less than 0.333 ft

Y2= Y - 0.3025
A3= A2 + Y2*14
P3= P2 + Y2

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.303	1.9895	14.31	0.14	4.10	8.19	2.06	0.62	0.66	0.16901
0.3039	2.0021	14.31	0.14	4.14	8.28	2.07	0.63	0.66	0.17018
0.3062	2.0343	14.31	0.14	4.25	8.50	2.09	0.64	0.67	0.17318
0.31	2.0875	14.31	0.15	4.44	8.87	2.13	0.66	0.67	0.17815
0.3125	2.1225	14.32	0.15	4.56	9.12	2.15	0.67	0.68	0.18143
0.32	**2.2275**	**14.32**	**0.16**	**4.94**	**9.88**	**2.22**	**0.71**	**0.69**	**0.19128**
0.3317	2.3913	14.34	0.17	5.56	11.12	2.32	0.77	0.71	0.20673
0.333	2.4095	14.34	0.17	5.63	11.26	2.34	0.78	0.71	0.20845

$\frac{2.2^2}{2g} =$

For water depths greater than 0.333 ft but less than 0.513 ft

Y3= Y - 0.333
A4= A3 + 14 * Y3 + 25 * Y3^2
P4= P3 + SQRT(2501 * Y3^2)

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.335	2.4376	14.44	0.17	5.71	11.42	2.34	0.78	0.71	0.20973
0.3601	2.80726	15.69	0.18	6.84	13.67	2.44	0.88	0.72	0.22624
0.38	3.122725	16.69	0.19	7.84	15.67	2.51	0.95	0.72	0.23981
0.4196	3.809389	18.67	0.20	10.13	20.26	2.66	1.12	0.72	0.26794
0.4603	4.596832	20.70	0.22	12.93	25.86	2.81	1.29	0.73	0.29818
0.504	5.534525	22.89	0.24	16.48	32.95	2.98	1.50	0.74	0.33192
0.513	5.7395	23.34	0.25	17.28	34.56	3.01	1.54	0.74	0.33901

Street Capacity Calculations

MESA DEL RIO STREET

24' F-F Street Section with 8" curb

Slope= 0.0077

For water depths less than 0.125 feet

Y= Water depth

Area = 8*Y^2

P= SQRT(257*Y^2) + Y

n= 0.017

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.01	0.00	0.17	0.00	0.00	0.00	0.22	0.00	0.38	0.0023313
0.02	0.00	0.34	0.01	0.00	0.00	0.34	0.01	0.43	0.0056486
0.04	0.01	0.68	0.02	0.01	0.01	0.54	0.02	0.48	0.0136175
0.06	0.03	1.02	0.03	0.02	0.04	0.71	0.04	0.51	0.0227309
0.08	0.05	1.36	0.04	0.04	0.09	0.86	0.07	0.54	0.0326612
0.1	0.08	1.70	0.05	0.08	0.16	1.00	0.10	0.56	0.0432385
0.12	0.12	2.04	0.06	0.13	0.26	1.13	0.14	0.57	0.0543562
0.125	0.13	2.13	0.06	0.14	0.29	1.16	0.14	0.58	0.057211

For water depths greater than 0.125 ft but less than 0.365 ft

Y1= Y-0.125

A2= A1 + 2*Y1 + 25*Y1^2

P2= P1 + SQRT(2501*Y1^2)+Y1

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.13	0.14	2.38	0.06	0.15	0.31	1.13	0.15	0.55	0.0559112
0.16	0.23	3.91	0.06	0.26	0.52	1.14	0.18	0.50	0.0593519
0.2	0.42	5.95	0.07	0.54	1.08	1.30	0.26	0.51	0.0760786
0.24	0.69	8.00	0.09	1.02	2.05	1.49	0.36	0.54	0.098098
0.2846	1.08	10.27	0.11	1.85	3.70	1.71	0.49	0.56	0.1259083
0.32	1.47	12.08	0.12	2.76	5.51	1.88	0.60	0.59	0.1496266
0.3551	1.91	13.87	0.14	3.90	7.81	2.04	0.73	0.60	0.1742463
0.365	2.05	14.37	0.14	4.28	8.55	2.09	0.76	0.61	0.1813621

For water depths greater than 0.365 ft but less than 0.667 ft

Y2= Y - 0.365

A3= A2 + Y2*14

P3= P2 + Y2

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.37	2.12	14.38	0.15	4.52	9.04	2.14	0.79	0.62	0.1881399
0.4556	**3.31**	**14.46**	**0.23**	**9.52**	**19.03**	**2.87**	**1.31**	**0.75**	**0.3063375**
0.4848	3.72	14.49	0.26	11.54	23.07	3.10	1.50	0.78	0.3475359
0.5	3.94	14.51	0.27	12.65	25.30	3.21	1.61	0.80	0.3691466
0.54	4.50	14.55	0.31	15.76	31.52	3.51	1.89	0.84	0.426532
0.5584	4.75	14.56	0.33	17.28	34.56	3.64	2.03	0.86	0.4531694
0.63	5.76	14.64	0.39	23.69	47.38	4.12	2.59	0.91	0.5581572
0.667	6.27	14.67	0.43	27.31	54.61	4.35	2.90	0.94	0.6131813

For water depths greater than 0.667 ft but less than 0.847 ft

Y3= Y - 0.667

A4= A3 + 14 * Y3 + 25 * Y3^2

P4= P3 + SQRT(2501 * Y3^2)

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.7	6.76	16.32	0.41	28.82	57.65	4.26	2.98	0.90	0.6052226
0.72	7.09	17.32	0.41	29.94	59.89	4.23	3.04	0.88	0.6035148
0.74	7.43	18.32	0.41	31.21	62.42	4.20	3.11	0.86	0.6037622
0.76	7.79	19.32	0.40	32.62	65.23	4.19	3.18	0.85	0.6057097
0.78	8.17	20.32	0.40	34.16	68.32	4.18	3.26	0.83	0.6091468
0.8	8.58	21.32	0.40	35.85	71.70	4.18	3.34	0.82	0.6138986
0.847	9.60	23.68	0.41	40.36	80.72	4.20	3.56	0.80	0.6294447

DROP INLET
HEAD CAPACITY

$$Q = CA\sqrt{2gH}$$

Orifice Equation:
Q = Flow (cfs)
C = 0.60
A = Area of drop inlet (ft^2)
g = 32.2
H = Height of water above drop inlet (ft)

$$H = \frac{\left(\frac{Q}{C*A}\right)^2}{2g}$$

$$H = \frac{\left(\frac{37.48}{0.6*11.24}\right)^2}{2*32.2}$$

H = 0.48 feet

Allowable depth = 0.847 feet
Required depth = 0.47 feet

0.48 feet < 0.847 feet

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
15	36	1.31	7.07	0.75	39.80	37.48	5.30

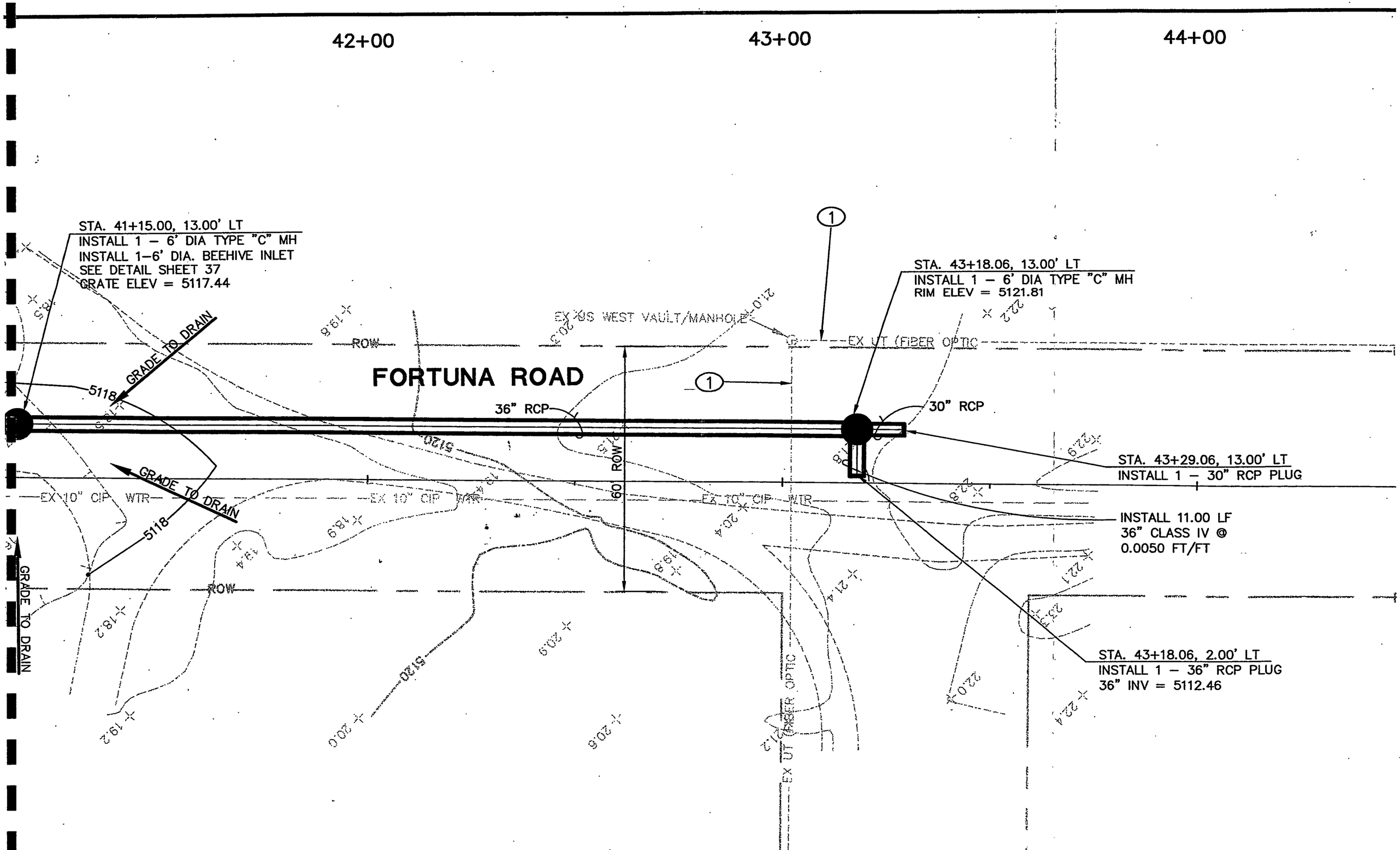
<u>Manning's Equation:</u>

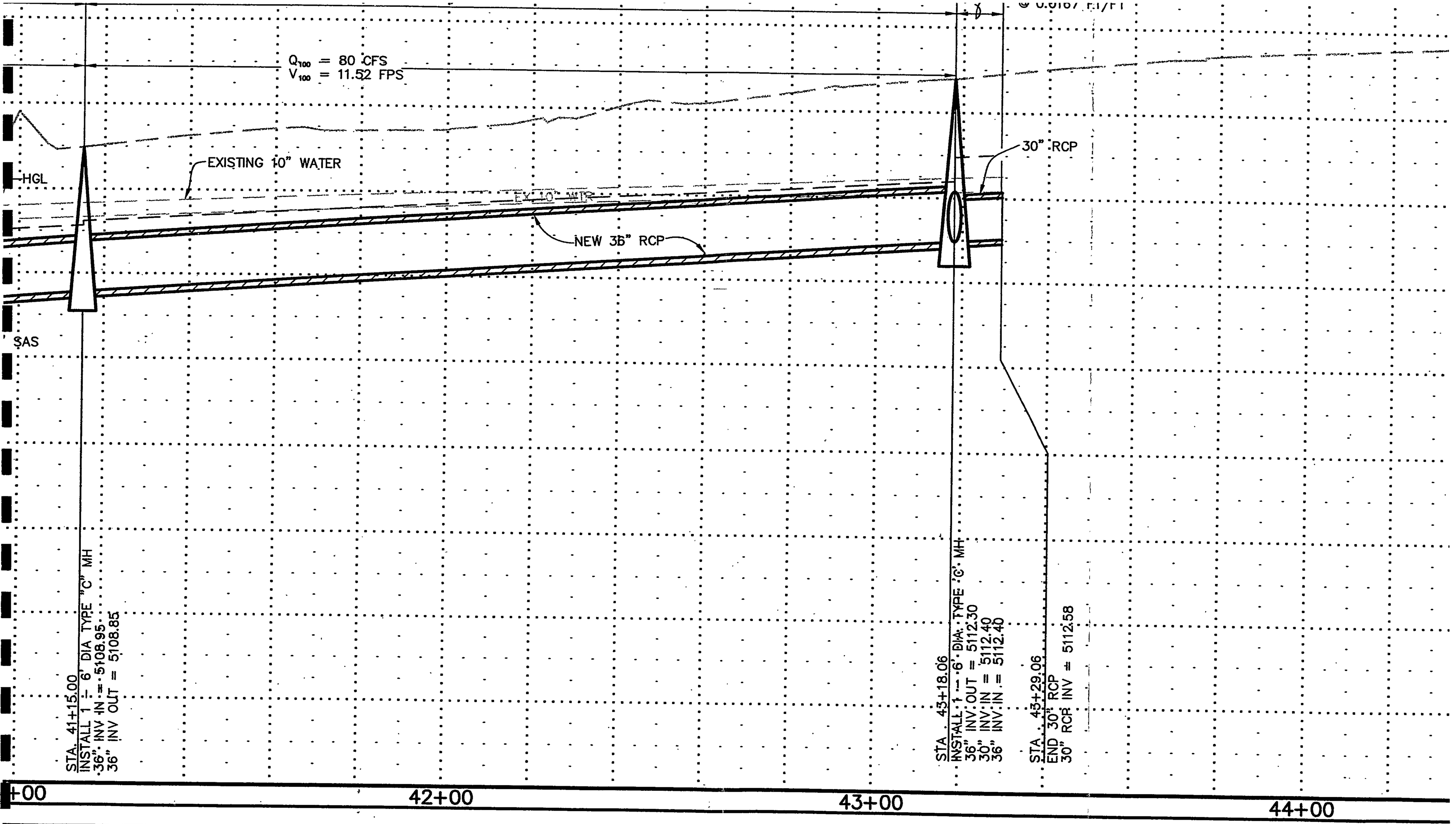
Q = 1.49/n * A * R^(2/3) * S^(1/2)

A = Area
R = D/4
S = Slope
n = 0.025

APPENDIX C

WEST MESA STORM DRAIN PLANS


42+00
43+00
44+00
STA. 41+15.00, 13.00' LT
INSTALL 1 – 6' DIA TYPE "C" MH
INSTALL 1–6' DIA. BEEHIVE INLET
SEE DETAIL SHEET 37
GRATE ELEV = 5117.44
STA. 43+18.06, 13.00' LT
INSTALL 1 – 6' DIA TYPE "C" MH
RIM ELEV = 5121.81
EX US WEST VAULT/MANHOLE
EX UT (FIBER OPTIC
ROW
FORTUNA ROAD
36" RCP
30" RCP
GRADE TO DRAIN
5118
5120
STA. 43+29.06, 13.00' LT
INSTALL 1 – 30" RCP PLUG
EX 10" CIP WTR
60' ROW
INSTALL 11.00 LF
36" CLASS IV @
0.0050 FT/FT
STA. 43+18.06, 2.00' LT
INSTALL 1 – 36" RCP PLUG
36" INV = 5112.46


@ 0.0167 FT/FT
Q_{100} = 80 CFS
V_{100} = 11.52 FPS
30" RCP
EXISTING 10" WATER
HGL
EX 10" WTR
NEW 36" RCP
SAS
STA. 41+15.00
INSTALL 1 - 6' DIA TYPE "C" MH
36" INV IN = 5108.95
36" INV OUT = 5108.85
STA. 43+18.06
INSTALL 1 - 6' DIA. TYPE 'C' MH
36" INV OUT = 5112.30
30" INV IN = 5112.40
36" INV IN = 5112.40
STA. 43+29.06
END 30" RCP
30" RCP INV = 5112.58
+00
42+00
43+00
44+00

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

November 20, 1986

Raul A. Rivera
Rivera Engineering
2624 Valencia Drive, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR FORTUNA APARTMENTS (J-10/D12)
RECEIVED OCTOBER 29, 1986

Dear Mr. Rivera:

The above referenced plan dated October 27, 1986 is approved for Building Permit.

Please attach a copy of the approved plan to both construction sets routed to Hydrology for sign-off.

If you have any questions, please call me at 768-2650.

Cordially,

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

RECEIVED
OCT 29 1986
HYDROLOGY SECTION

RIVERA ENGINEERING
2624 Valencia Dr. N.E.
Albuquerque, NM 87110
October 27, 1986

City of Albuquerque
Design Hydrology Section
4th Floor Old City Hall Building
Albuquerque, NM 87102

RE: DRAINAGE PLAN - FORTUNA APARTMENTS (J-10/D12)

Dear Mr. Carlos Montoya:

The following are in answer to questions raised by your letter dated October 15, 1986 regarding the above Drainage Plan;

1. The west side of the driveway asphalt "v" shaped swale was set at a steeper slope than originally planned, to match the proposed 76th Street elevations. The garden wall along this side will be 12" higher than the street flow line and the west edge of the parking area will be 15" lower than the top of the garden wall. Proposed elevations have been shown on the drawing to reflect top of curb, top of garden wall and parking area elevations.
2. Driveway entrances along 76th street will be left at present ground elevations until the street is improved. Present elevations will blend in with the planned driveway "V" shaped swale. Off site flows will continue to flow into the site until the street is paved. When 76th Street is paved, C & G ,and Sidewalks installed then driveway entrances at Proprrty Lines will be raised to the elevations shown on the drawing. All this is noted on the drawing.

If you need additional information please let me know.

Sincerely,

Raul A. Rivera

Raul A. Rivera

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Fortuna Apartments ZONE ATLAS/DRNG. FILE #: J-10-N/012

LEGAL DESCRIPTION: Tract 180, Town of Atrisco Grant

CITY ADDRESS: NE cor. of 76th & Fortuna N.W.

ENGINEERING FIRM: Rivera Engineering CONTACT: Raul A. Rivera

ADDRESS: 2624 Valencia Dr. N.E. 87110 PHONE: 881-3419

OWNER: Virgilio Gil CONTACT: Virgilio Gil

ADDRESS 3821 Avalon N.W. 87105 PHONE: 831-7106

ARCHITECT: Roberto Bilbao Arch. Design & Plan CONTACT: Roberto Bilbao

ADDRESS: 343 Monroe N.E. PHONE: 265-1363

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

RECEIVED OCT 29 1986 HYDROLOGY SECTION

PRE-DESIGN MEETING:

RECEIVED SEP 26 1986 HYDROLOGY SECTION

X YES

____ NO

DRB NO. _____

EPC NO. _____

PROJECT NO. _____

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAIN. 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

X BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

OTHER _____ (SPECIFY)

Resubmittal 10/27/86 ~~9/25/86~~

DATE SUBMITTED: _____

BY: Raul A. Rivera

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

October 15, 1986

Raul A. Rivera
Rivera Engineering
2624 Valencia Drive, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR FORTUNA APARTMENTS
(J-10/D12) RECEIVED SEPTEMBER 26, 1986

Dear Mr. Rivera:

I have reviewed the referenced plan and forward the following comments:

1. The grading on-site needs to be compatible with the proposed street grades on the 76th Street. There appears to be 1 to 3 feet difference from your site and the street grades.

2. Historic off-site flows need to be accepted on-site. The use of a garden wall concentrates the flows and may cause damage and added costs in the future.

If you have any questions regarding this project, please call me at 768-2650.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Fortuna Apartments ZONE ATLAS/DRNG. FILE #: J-10-N

LEGAL DESCRIPTION: Tract 180, Town of Atrisco Grant

CITY ADDRESS: NE cor. of 76th & Fortuna N.W.

ENGINEERING FIRM: Rivera Engineering CONTACT: Raul A. Rivera

ADDRESS: 2624 Valencia Dr. N.E. 87110 PHONE: 881-3419

OWNER: Virgilio Gil CONTACT: Virgilio Gil

ADDRESS 3821 Avalon N.W. 87105 PHONE: 831-7106

ARCHITECT: Roberto Bilbao Arch. Design & Plan. CONTACT: Roberto Bilbao

ADDRESS: 343 Monroe N.E. PHONE: 265-1363

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

____ NO

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED SEP 26 1986 HYDROLOGY SECTION

DRB NO. ____

EPC NO. ____

PROJECT NO. ____

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAIN. 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

X BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

OTHER ____ (SPECIFY)

Resubmittal 9/25/86

DATE SUBMITTED: ____

BY: Raul A. Rivera

Rev. 11/84

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Fortuna Apartments ZONE ATLAS/DRNG. FILE #: J-10-N D12

LEGAL DESCRIPTION: Tract 180, Town of Atrisco Grant

CITY ADDRESS: NE cor. of 76th & Fortuna N.W.

ENGINEERING FIRM: Rivera Engineering CONTACT: Raul A. Rivera

ADDRESS: 2624 Valencia Dr. N.E. 87110 PHONE: 881-3419

OWNER: Virgilio Gil CONTACT: Virgilio Gil

ADDRESS 3821 Avalon N.W. 87105 PHONE: 831-7106

ARCHITECT: Roberto Bilbao Arch. Design & Plan CONTACT: Roberto Bilbao

ADDRESS: 343 Monroe N.E. PHONE: 265-1363

SURVEYOR: CONTACT:

ADDRESS: PHONE:

CONTRACTOR: CONTACT:

ADDRESS: PHONE:

PRE-DESIGN MEETING:

X YES

___ NO

___ COPY OF CONFERENCE RECAP SHEET PROVIDED

RECEIVED AUG 28 1986 HYDROLOGY SECTION

DRB NO.

EPC NO.

PROJECT NO.

TYPE OF SUBMITTAL: - Resubmittal

___ DRAINAGE REPORT

X DRAINAGE PLAN

___ CONCEPTUAL GRADING & DRAIN. 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

X BUILDING PERMIT APPROVAL

___ FOUNDATION PERMIT APPROVAL

___ CERTIFICATE OF OCCUPANCY APPROVAL

___ ROUGH GRADING PERMIT APPROVAL

___ GRADING/PAVING PERMIT APPROVAL

OTHER _____ (SPECIFY)

Resubmittal 8-28-86

DATE SUBMITTED:

BY: Raul A. Rivera

Rev. 11/84

RIVERA ENGINEERING
2624 Valencia Dr. N.E.
Albuquerque, NM 87110
Aug. 28, 1986

RECEIVED
AUG 28 1986
HYDROLOGY SECTION

City of Albuquerque
Design Hydrology Section
123 Central N.W.
Albuquerque, NM 87102

RE: DRAINAGE PLAN - FORTUNA APARTMENTS

Dear Mr. Montoya;

The following comments are being made to address the questions in your letter dated July 9, 1986 regarding the above project.

1. Paved access to the site is addressed by Note No. 7, indicating that half of Fortuna and Glenrio will be paved. This has been included in the drawing. The Glenrio paved access will be used during the innitial construction.

2. Street grades have been requested from the City. They will be provided as soon as they are completed.

3. The 1' x 2' opening into Fortuna will not be needed. However hydraulic computations for the spillway at the southeast corner and inlet and outlet to the large pond have been added to the drawing.

4. Phase 1 will be constructed first with paved access from Glenrio. At that time the large pond, in the Phase 4 area, will also be constructed to the final planned dimensions. During this stage, the runoff from the west parking area of Phase 1 plus the remainder of the undeveloped area of this tract will flow naturally into the large pond. The remainder of Phase 1 area runoff will flow into the Phase 1 courtyard pond. When Phase 2 is constructed, runoff from the west parking areas and the remainder undeveloped land will flow into the large pond. The other Phase 2 runoff will flow into the Phase 2 courtyard pond. Runoff from the west parking areas will merge with offsite flows from the west. The combined runoff will flow naturally toward the large pond because the existing slope is in that direction.

   When Phase 3 is constructed, runoff from the west parking areas and from the Phase 4 area will be stored in the large pond. Again off-site runoff will merge with site runoff. At times total runoff will exceed the large pond storage capacity. When this happens, excess flows will spill toward the southeast corner. When Phase 4 is constructed, an an inlet system will be installed to intercept flood flows and divert them into the large pond. Total storage capacity of the 4 ponds exceeds the estimated 100 year flood flow volume from the total tract.

5. Each Phase cannot function independent because off-site flows cannot be separated from site flows. Runoff thru the downstream Phase areas will be taken into account by preparing drainage easements.

6. West and south side "V" shaped swales are sized to carry site and offsite flows.

7. The ponds are sized to retain 100% of the runoff from the site.

8. No ponding will take place closer than 15 feet from the structures.

Direction of roof drains and a note that elevation at property lines will be a minimum of 1 foot above street flow line have been included in drawing.

Sincerely,

Raul A. Rivera

Raul A. Rivera

RECEIVED
SEP 26 1986
HYDROLOGY SECTION

RIVERA ENGINEERING
2624 Valencia Dr. N.E.
Albuquerque,NM 87110
September 23, 1986

City of Albuquerque
Design Hydrology Section
123 Central N.W.
Albuquerque, NM 87102

RE: DRAINAGE PLAN - FORTUNA APARTMENTS (J-10/D12)

Dear Mr. Carlos Montoya:

The following comments address questions in your letter dated September 17,1986.

1. Slopes less than 0.5% in the parking-driveway areas are acceptable for this project.
2. These calculations were checked with the following orifice equation $Q = 2/3\ L \sqrt{2g} * h\ 3/2$. Calculations were added to drawing.
3. Garden walls will be constructed in phases. Off-site flows will continue to flow into the site , as they do at present, during phases 1, 2 and 3. When phase 4 is constructed most of the off-site runoff will flow along 76th Street, into Fortuna Road and to the southeast corner, where runoff presently flows.
4. Riprap data has been added to the plan.
5. Pipe invert elevations have been included in the plan.
6. Asphalt and soil areas have been indicated in the plan.
7. An outline of the temporary dike on the east and south side of large pond and a cross-section of pond, berm and dike were added to the drawing.
8. Retention (courtyard) ponds will be filled-in when they are no longer needed, after City drainage systems are in-place.
9. As we discussed, the 3" asphalt bump will be used only after Phase 4 is completed. It will help to divert low flows into large pond.
10. Glenrio Road will not extend west beyond this property, because I-40 R-O-W blocks any westerly extension. Additional run-off, due to paving Fortuna Road and Glenrio, are taken care by providing extra storage capacity at the courtyard and large ponds.

If you have any questions or need additional information please let me know.

Sincerely,

Raul A. Rivera

Raul A. Rivera

J10/D12

DRAINAGE INFORMATION SHEET

PROJECT TITLE: Fortuna Apartments **ZONE ATLAS/DRNG. FILE #:** J-10-N/D12

LEGAL DESCRIPTION: Tract 180, Town of Atrisco Grant

CITY ADDRESS: NE cor. of 76th & Fortuna N.W.

ENGINEERING FIRM: Rivera Engineering **CONTACT:** Raul A. Rivera

ADDRESS: 2624 Valencia Dr. N.E. 87110 **PHONE:** 881-3419

OWNER: Virgilio Gil **CONTACT:** Virgilio Gil

ADDRESS 3821 Avalon N.W. 87105 **PHONE:** 831-7106

ARCHITECT: Roberto Bilbao Arch. Design & Plan **CONTACT:** Roberto Bilbao

ADDRESS: 343 Monroe N.E. **PHONE:** 265-1363

SURVEYOR: **CONTACT:**

ADDRESS: **PHONE:**

CONTRACTOR: **CONTACT:**

ADDRESS: **PHONE:**

RECEIVED
JUL 02 1986
HYDROLOGY SECTION

PRE-DESIGN MEETING:

X YES

____ NO

DRB NO. 85-646 10/1/85

EPC NO.

PROJECT NO.

____ COPY OF CONFERENCE RECAP SHEET PROVIDED

TYPE OF SUBMITTAL:

____ DRAINAGE REPORT

X DRAINAGE PLAN

____ CONCEPTUAL GRADING & DRAIN. 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

X BUILDING PERMIT APPROVAL

____ FOUNDATION PERMIT APPROVAL

____ CERTIFICATE OF OCCUPANCY APPROVAL

____ ROUGH GRADING PERMIT APPROVAL

____ GRADING/PAVING PERMIT APPROVAL

OTHER _____ (SPECIFY)

DATE SUBMITTED: July 2, 1986

BY: Raul A. Rivera

Rev. 11/84

RIVERA ENGINEERING
2624 Valencia Dr, N.E.
Albuquerque, NM 87110
July 2, 1986

City of Albuquerque
Design Hydrology Section
123 Central N.W.
Albuquerque, NM 87102

RE: DRAINAGE PLAN- FORTUNA APARTMENTS

Dear Gentlemen;

The following are a few comments regarding the referenced drainge plan.

Street grades for Fortuna, Glenrio and 76th Street N.W. are not yet available. However this drainage-grading plan is based on the existing elevations in the improved portion of Fortuna Road N.W. at the southeast corner of this property. Outside runoff that may enter this property will flow within the planned improved driveway-parking area to the southeast corner and empty at the same location that it is discharging at present. New street grades will not really have any effect, except the design of drivepads along 76th Street.

When and if this tract is divided into smaller parcels, drainage easements will be provided to allow flows thru the downstream tracts.

Construction will be done in phases. This plan has a large pond in the phase 4 area to provide adequate storage capacity for the 100-year volume of runoff from all improvements within this tract. In the future, when city storm drain improvements are in-place, the large pond can be eliminated and normal runoff, other than storage at the courtyard ponds, will flow into Fortuna Road.

If you need additional information please call me at 881-3419 or call Mr. Virgilio Gil at 831-7106.

Sincerely,

Raul A. Rivera

Raul A. Rivera

FILE COPY

City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

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

September 17, 1986

Raul A. Rivera
Rivera Engineering
2624 Valencia Drive, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR FORTUNA APARTMENTS
(J-10/D12) RECEIVED AUGUST 28, 1986

Dear Mr. Rivera:

I have reviewed the referenced plan and forward the following comments:

1. Minimum slope for asphalt paving is 0.5%. Slopes which are flatter than 0.5% are impossible to construct and are contrary to DPM criteria.

2. The inlet and outlet capacities under the sidewalk should be calculated using orifice equation.

3. How will the off-site flows be accepted onto the site if a garden wall is being built on 76th Street property line?

4. Please give more information on the riprap size and thickness at the large pond.

5. The pipes to the ponds need invert elevations.

6. Please indicate asphalt and soil areas on the plan.

7. Please show where the dikes will be built around the large pond. Please indicate a section of the dike. An emergency spillway will be needed for the dikes around the large pond.

8. Please indicate how the retention ponds will be converted to positive discharge to be connected to future improvements.

9. Please address the purpose and calculation of the "3 inch asphalt bump" on the west access swale.

10. Please address the drainage impacts of the new half roads which are being constructed.

If you have any questions regarding my comments, call me at 766-7644.

Cordially,

Carlos A. Montoya

Carlos A. Montoya, P.E.
City/County Floodplain Administrator

CAM/bsj

FILE COPY

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

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

July 9, 1986

Raul A. Rivera
Rivera Engineering
2624 Valencia Drive, NE
Albuquerque, New Mexico 87110

RE: DRAINAGE PLAN FOR FORTUNA APARTMENTS (J-10/D12)
RECEIVED JULY 2, 1986

Dear Mr. Rivera:

A preliminary review of your submittal for building permit approval has shown that the following information is lacking for this section to begin the review process:

Information Needed:

1. Please indicate the one paved access route to the site.

2. Approved street grades before Building Permit.

3. Hydraulics for the 2' x 1' opening into Fortuna.

4. We recommend that you elaborate more on what will happen within Phase I. Your plan interphases with the other proposed phases and not what will happen on a phase to phase basis.

5. Each phase must be capable to function by itself drainage wise.

6. You will need to accept all the off-site flows through the site.

7. Need to retain 100% of the total runoff from the site.

8. Soils report required for ponding closer than 15' to a structure.

Plan Drawing:

1. Location and direction of roof drains.

2. Elevation at property line must be at least 1' above street flow line.

Please provide this information so that we may process your request as expediently as possible.

Cordially,

Bernie J Montoya

Bernie J. Montoya, C.E.
Engineering Assistant

BJM/bsj

CITY OF ALBUQUERQUE
MUNICIPAL DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION/DESIGN HYDROLOGY SECTION

CONFERENCE RECAP

DRAINAGE FILE/ZONE ATLAS PAGE NO.: J 10 DATE: 5/7/86

PLANNING DIVISION NOS: EPC: _____ DRB: _____

SUBJECT: Fortuna Apts

STREET ADDRESS (IF KNOWN): Fortuna & 76th St. (N.E. corner)

SUBDIVISION NAME: TRACT 180 Town of Atrisco Grant

APPROVAL REQUESTED:

____	PRELIMINARY PLAT	____	FINAL PLAT
____	SITE DEVELOPMENT PLAN	X	BUILDING PERMIT
____	OTHER	____	ROUGH GRADING

	WHO	REPRESENTING
ATTENDANCE:	Paul Rivera	
	Fred Aguirre	

FINDINGS:

1. An approved drainage plan required for subsequent permits
2. One proper access to the site per the Development Ordinance.
3. City approved street grades for Fortuna, 76th St + Glenrio St required as a condition of drainage plan approval
4. A Retention pond is acceptable this is programmed towards the future outfall, which is in this case the proposed channel along Coors Blvd.
5. 100% retention pond required on-site. Ponding depths greater than 18" requires fencing
6. Off-site flows must accepted and routed thru the site and discharged into a public R/W. In this case Fortuna St is the outfall.

The undersigned agrees that the above findings are summarized accurately and are only subject to change if further investigation reveals that they are not reasonable or that they are based on inaccurate information.

SIGNED:	Fred Aguirre	SIGNED:	Paul A. Rivera
TITLE:		TITLE:	Eng.
DATE:	5/7/86	DATE:	5/7/86

NOTE PLEASE PROVIDE A COPY OF THIS RECAP WITH THE DRAINAGE SUBMITTAL