City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 2 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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

1-9-17
VS

____ 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
X 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) _____

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 1/6/17 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

Current DRC

ORIGINAL

FIGURE 12

INFRASTRUCTURE LIST

Date Submitted: 2-3-16
Date Site Plan Approved:
Date Preliminary Plat Approved: 2-3-16
Date Preliminary Plat Expires: 2-3-17

DRB Application No.: 1008656

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

GLENDALE ESTATES- PHASE-2
PROPOSED NAME OF PLAT [redacted]

Lots A AND B ESTATES AT GLENDALE PHASE 1
EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

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 and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen 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 appurtenant 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 unforeseen 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.

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
			PHASE 1						
							/	/	/
		26' F-F	Residential Road with Curb and Gutter including 4' wide Sidewalk (bothsides)	Northstar lane	Glendale	southern terminous	/	/	/
		8"	Sewerline	Northstar lane	Glendale	southern terminous	/	/	/
		6"	waterline	Northstar lane	Glendale	southern terminous	/	/	/
		24"	Storm drain with inlets and appurtances with rundowns	northstar lane	existing 24" rcp	low point	/	/	/
		2'	channel	lot 5	east property line	northstar lane	/	/	/
		2'	sidewalk culvert	Glendale	lot 1	roadway	/	/	/
		2'	sidewalk culvert	Glendale	lot 8	roadway	/	/	/
		2-2'	sidewalk culvert	north star lane	channel	roadway	/	/	/

revised 07/01/01

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
							/	/	/

NOTES

1 ✓ Engineers Certification of Grading required prior to release of SIA and Financial Guarantee

2 ? Internal sidewalks to be temporarily deffered per approved exhibit

3

AGENT / OWNER	DEVELOPMENT REVIEW BOARD MEMBER APPROVALS	
David Soule NAME (print)	2-3-16 DRB CHAIR - date	Carol S. Dumont 2-3-16 PARKS & RECREATION DEPARTMENT - date
Rio Grande Engineering FIRM	2.3.16 TRANSPORTATION DEVELOPMENT - date	AMAFCA - date
DM 2/3/16 SIGNATURE - date	02/03/16 UTILITY DEVELOPMENT - date	_____ - date
MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: _____	2-3-16 CITY ENGINEER - date	_____ - date

DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT /OWNER

CITY OF ALBUQUERQUE

Richard J. Berry, Mayor

January 24, 2017

David Soule, P.E.
Rio Grande Engineering
PO Box 93924
Albuquerque, NM, 87199

RE: **Estates at Glendale Unit 2 Subdivision**
Release of Financial Guarantee
Grading Plan Certification Engineer's Stamp Date 1/6/2017, amended 1/24/2017
Hydrology File: B19D027

Dear Mr. Soule:

Based upon the information provided in the submittal received on 1/9/2017 and amended on 1/24/2017, the above-referenced plan is adequate and satisfies the Grading and Drainage Certification for Release of Financial Guaranty.

If you have any questions, please contact me at 924-3695 or dpeterson@cabq.gov.

Sincerely,

Dana Peterson, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

Orig: Drainage file

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

October 11, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2 - 7900 Glendale (File: B19D027)**
Pad Certification for plat lots 2, 3, and 4 (Lots 10, 11, and 12 per G&D)
Grading and Drainage Plan, Engineer's Stamp Date 4-29-16
Certification dated 9-29-2016

Dear Mr. Soule:

Based upon the information provided in your Certification received 10-3-2016, the above referenced Certification is acceptable for Building Pad Certification for Lots 2, 3, and 4 (10, 11, and 12 per G&D) with the following conditions:

- Prior to Final Plat, Private cross lot easements on Lots 1,2, 3 (9,10,11 per G&D) for the benefit of Lots 2,3, and 4 (10, 11, 12) – to be maintained by said lots.
- Provide erosion control in the temporary swale to the SW culvert on Glendale.
- Ensure that drainage cannot enter Unit 1 walkway thru gate until Retaining Wall is built. (Temp. Sand bags in place, but ensure this is maintained)
- Screen/garden walls between lots 2,3, and 4 (or 10,11,and 12 on G&D plan) must have an overturned block. G&D only notes an opening between Lots 9&10.
- Since cross-lot drainage was not a part of the approved Drainage Plan, provide gutters to direct roof drainage to the front of lots for Lots 3 and 4 (11,12).

Prior to Pad Certification for Lot 1 (Lot 9 per G&D) , the double retaining wall must be built with the opening in the wall to discharge to the SW Culvert per Section C-C of Grading Plan. Rip-rap to culvert must also be in place.

Prior to Pad Certification for Lot 13, 14,15,16 (Lot 5, 6, 7,8 per G&D) , the double retaining wall must be built.

The Bottom of wall elevations at the rear of Lots 6 and 7 (14, 15) were raised on the Glendale Unit 3 grading plan and approved per that plan. The Engineers Certified plan for these lots need to reflect the this change. Provide gutters to direct roof drainage to the front of these lots, since there is little to no slope across the rear yards.

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: ~~Miranda, Rachel; Cordova, Camille C.~~, Sandoval, Darlene M., ~~Blocker,~~ Lois

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 2 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

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Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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) $100.00
____ TRAFFIC IMPACT STUDY (TIS)
____ EROSION & SEDIMENT CONTROL PLAN (ESC)

____ OTHER (SPECIFY) _____

RECEIVED
SEP 29 2016
10-3
LAND DEVELOPMENT SECTION

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

X 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) _____

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 9/29/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ____

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

October 11, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 3 (File: B19D027)**
Drainage Report, Engineer's Stamp Date 8-12-16
Grading and Drainage Plan, Engineer's Stamp Date 9-22-16

Dear Mr. Soule:

Based upon the information provided in your submittal received 9-22-16, the above referenced submittal is approved for Preliminary Plat and ESC Permit (Grading Permit) with the following conditions:

- 6" mountable curb is shown in front of lots 18 and 23, and per our discussion should be standard curb in front of lot 18. 4" curb may be acceptable on the east side of the road, but provide calculations or rational at DRC to justify the lower curb height.
- It is not clear the limits of the Standard Curb and Gutter, and the 4" mountable curb noted in the general notes. Show limits on the Work Order Construction Set.
- Lot 17 has a double wall on the Northern Boundary. The more northern wall is a retaining wall and has ToW and Grade elevations shown. However, the more southern wall is a retaining on the western half. Show where the retaining wall stops and becomes a garden wall. Show ToW and BoW elevations on the as-built.
- <u>For DRB action</u>, the following easements need to be shown on the plat:
  - Lots 17, 18, and 19 will require a Cross-Lot Drainage Easement on the plat for the benefit of Lots 18,19, and 20. Also, ensure the drainage channel is on the I.L.
  - Lot 20 will need a Cross-Lot Drainage Easement for the Benefit of Lot 25.
  - A Private Drainage Easement is needed over the SW Culvert to the wall, for the Benefit of Lot 24 and 25. Ensure Drainage channel and SW culvert at end of cul-de sac is on the infrastructure list
  - Other items to be on the I.L. are the SW culvert on Glendale and the sump Double C inlet

Prior to Building Permit approval, Engineer Certification per the DPM checklist will be required.

% D= ~~1.67 Ac~~ 1.21 Ac
size = 1.735 Ac

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

UNIT 3

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 3 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
X 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

X PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
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____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

RECEIVED SEP 22 2016 LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 9/22/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

- Double Retaining Wall Between Unit 2 and Unit 3 Shown in Section A-A: The finished grade of the lower retaining wall was raised to limit the wall heights. However, the raised FG Elev. is now at FF Elev for lots 14 and 15. I realize the intention is to slope the grade from the wall to the rear of the house to an elevation lower than FF, but it is highly unlikely that homeowners will leave a low point there at the rear. They will likely level out the back yard for landscaping or slope back towards the wall. Therefore, the FG Elev at the bottom of the lower should not be changed from the approved plan for Unit 2. We have revised the grades so the bottom of wall is a the same elevation as the pad.
- Retaining Wall along Eastern Edge: Provide a cross section through this edge. EX. GR Elevation is shown, but needs to be defined on a section. Show the existing wall, with existing TOW and BOW elevations. Is the wall that is shown on the plan a new wall? What is the TOW elevations ? We have added cross section here and added tow and bow grades to the plan. The wall is very tall with screen wall on top . the lots are within a gated subdivision and access is not available.

EX. GR = TOW?

- Shouldn't the SW Culverts along Glendale be aligned with the concrete channel? We have shifted the culverts
- Section A-A cut in wrong direction. Put Channel on Infrastructure List we have corrected and the channel will be on the list
- Double Retaining wall on north side of Lot 17: Won't a single wall suffice? we want the rear yard planter to be consitently 4' therefore we request the double wall remain
- Add to concrete channel note between Lots 19 and 20 - state to provide clear opening in wall (typical). Begin concrete channel in Lot 20 (need only be extended a foot or two into lot 20) we have added note and extended wall
- 6" Mountable curb called out , but General Notes call out 8" Standard Curb Unless Noted Otherwise. Is all the curb to be 6" Mountable? If so the Gen. Note should be removed. we have revised lableing, we want mountable but standard near the inlets
- Revise elevations shown on Section C-C we have revised

Offsite flows from Lot 24:

- Label Lots 24 and 25 on South side. Add verbiage to the "Turn 2 Blks @ 5427.85" note stating that the opening is to be on the west side of the boundary between Lots 24 and 25. This is to ensure that they do not put the opening on the wrong side. we have added so flow is allowed to pass thru each lot
- Slide the SW Culvert and concrete Channel to the east to align with the above mentioned turned blocks. we have shifted and widened to accept from both lots
- SW Culvert note says 2 -2' culverts but channel is only 2' wide. Since only 2.68 cfs, won't a narrower channel and SW culvert suffice. we have revised to have only 1 -2' culvert

Easements:

- Lots 17, 18, and 19 will require a Cross-Lot Drainage Easement on the plat. Provide the Plat showing all easements. This is coming to drb in the coming weeks, we will have on plat. we have added into the notes section
- Lot 20 will need a Cross-Lot Drainage Easement for the Benefit of Lot 25. This is comming to drb in the comming weeks, we will have on plat. we have labeled
- A Private Drainage Easement is needed over the SW Culvert to the wall, for the Benefit of Lot 24. This is comming to drb in the comming weeks, we will have on plat. we have labeled

RECEIVED
SEP 2 2 2016
LAND DEVELOPMENT SECTION

DRAINAGE REPORT

For

THE ESTATES AT GLENDALE UNIT 3

Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

RECEIVED
AUG 17 2016
LAND DEVELOPMENT SECTION

August 16, 2016

DAVID SOULE
NEW MEXICO
14522
REGISTERED PROFESSIONAL ENGINEER

8/12/16

David Soule P.E. No. 14522

TABLE OF CONTENTS

Purpose 3
Introduction 3
Existing Conditions 3
Exhibit A-Vicinity Map 4
Proposed Conditions 5
Summary 5

Appendix

NAAMDP, Phase 1 asbuilt excerpts ..... A
Site Hydrology ..... B
Hydraulic calculations C

Map

Site Grading and Drainage Plan

PURPOSE

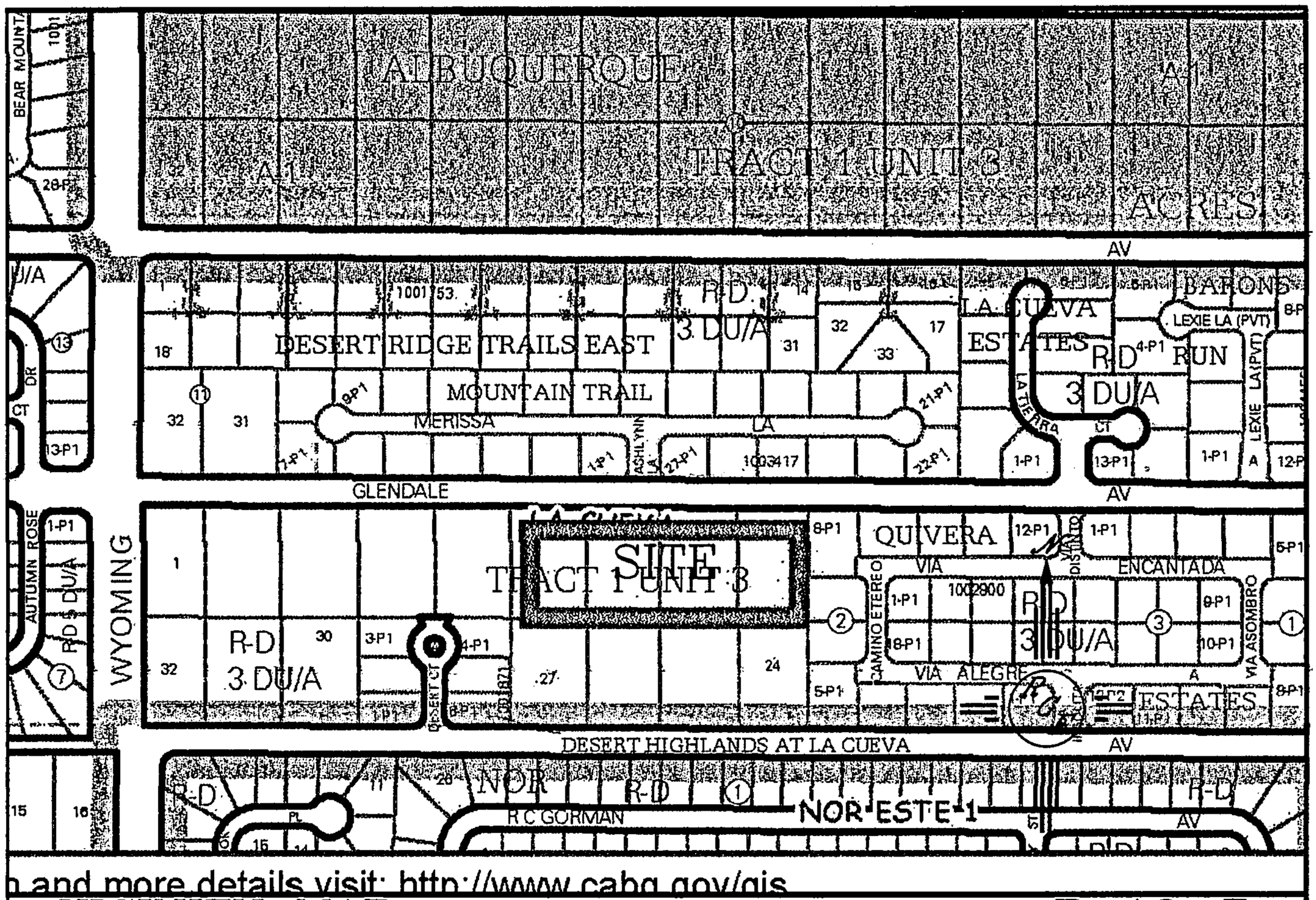
The purpose of this report is to provide the Drainage Management Plan for the development of a 7-lot subdivision located on Glendale Avenue between Wyoming Boulevard and Barstow Street NE. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the grading does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

INTRODUCTION

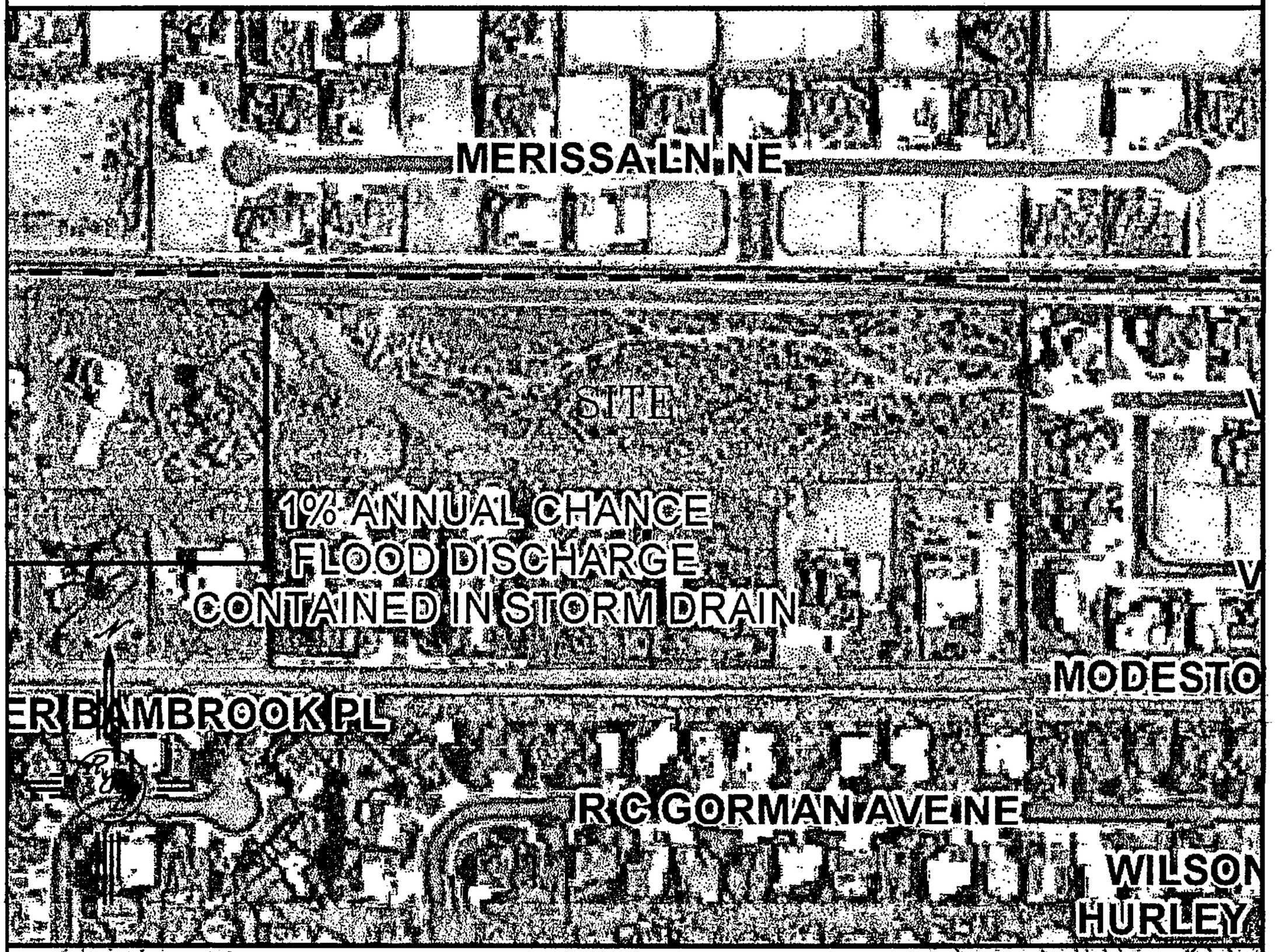
The subject of this report, as shown on the Exhibit A, is a 1.74-acre parcel of land located on the south side of Glendale Avenue between Wyoming Boulevard and Barstow Street NE. The legal description of this site is tract B the Estates at Glendale Subdivision. As shown on FIRM map35013C0133H, the entire site is located within Flood Zone X. The site has had grading activities upon it over the past several years. The site contains a retention pond constructed with phase two. Due to the upstream construction, the site is not affected by any upland flows from the north or east. The site is impacted by the adjacent lots to the south. The site currently free discharges to a large pond located at the northwest corner of the site. Phase 3 will be developed at this time, in addition to changes in the wall heights at the interface between phase 2 and 3.The site was analyzed and the discharge rates approved by the previously approved grading plan and report. Based upon conversation with the City Engineer, due to the site plan for subdivision and building permit being previously approved, the development of the site will be allowed to discharge at a rate equal to or less than the fully developed conditions assumed for this site within the approved grading plan. Due to lower development pattern that developed east of this site (basin 203.3), the overall El Camino basin shall not exceed the developed conditions assumptions of the governing North Albuquerque Acres Master Drainage Plan (NAAMDP), which relevant excerpts can be found in appendix A.

EXISTING CONDITIONS

The site currently does have ponds and stockpiles on it and has been impacted by human development over the years. The site is the third phase and final phase of the Estates at Glendale project. The site was initially designed by John Mackenzie by report found in city of Albuquerque drainage file. A copy of the overall grading plan is located in appendix A. The site is impacted by minor upland flows from the developed lots to the south. The site currently discharges all of its flow to the North West corner to a temporary retention pond. As shown in the approved grading plan and the flow rates for this stub, this site was anticipated to discharge 14.5 cfs. A copy of this as built design showing flow rates programmed to leave the site is located in appendix A. The site is located within basins 204.0 of the NAAMDP. The adjacent infrastructure improvements within Glendale were constructed with phase one of this development. A 24" storm drain pipe was stubbed into the property with the initial phase. All downstream improvements are in place and accepted by the city of Albuquerque.



VICINITY MAP: B-19-Z



FIRM MAP: 35001C0133H (1)

PROPOSED CONDITIONS

The proposed improvements consist of a new 7-lot subdivision serviced by private paved roadways. The lots shall free discharge to the roadway and be conveyed within the roadway to an inlets connected to the stub constructed with phase 1. As shown in appendix B, this site contains 2 onsite basins and one offsite basin. The offsite basin flows were obtained from the previous grading plan. Basin A contains the majority of the site and roadway. This basin generates 6.06 cfs which is collected by a new inlet. Basin B contains the rear yard of lots 17-19, this basin generates 1.54 cfs which is conveyed via a 2' concrete channel, which discharges to Glendale via a single sidewalk culvert. This basin drains to the rear due to the agreements the developer made to the phase two lots regarding new wall heights. Basin C is the rear portion the adjacent lot to the south. In the ultimate conditions this basin will generate2.86 cfs which will enter the site via three turned blocks, and a 2' sidewalk culvert. This basin combines with basin A, and is captured by the new inlet. As shown in appendix C, the block opening, channels, street and inlets have been sized to accommodate the flow. The first flush will be obtained by shallow yard ponds and the depression of the area between the sidewalk and the curb.

SUMMARY AND RECOMMENDATIONS

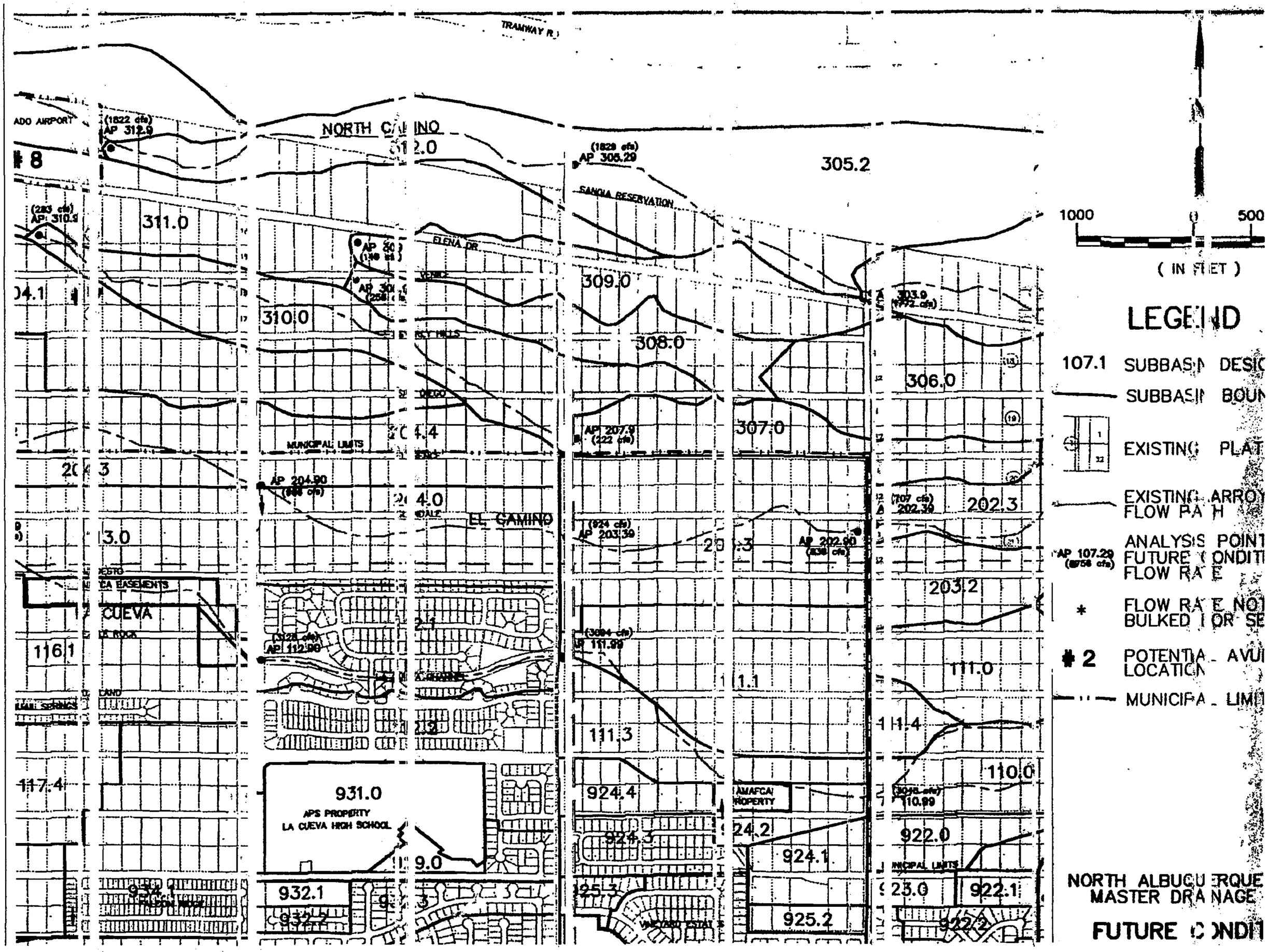
This project is a development of residential subdivision with the North Albuquerque Acres Master Drainage plan. The development is consistent with the land use assumptions and drainage concepts of the initial approved grading plan. The surrounding development diverted the majority of the upland flow. The minor flow from the developed lots to the south is allowed to pass thru the site. The discharge will enter the downstream storm drain where it was anticipated. The inlets, pipes and roadways have been shown to provide the required capacity. The site has been designed in accordance with City of Albuquerque Drainage ordinance. This drainage plan and report conforms to the governing drainage regulations of the City. Since the effected area site encompasses more than 1 acre, a NPDES permit will be required prior to any construction

APPENDIX A

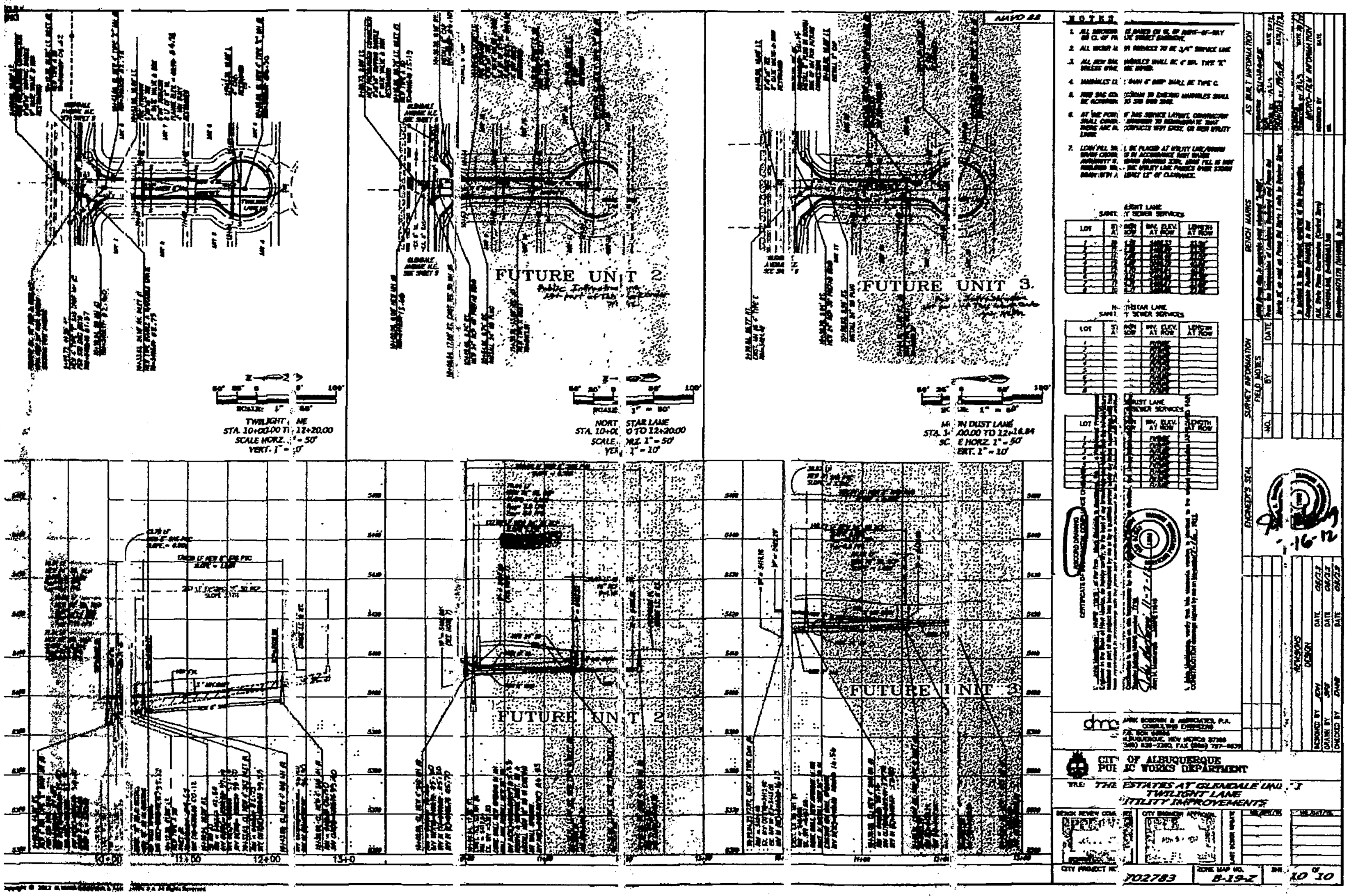
North Albuquerque Acres Master Drainage Plan

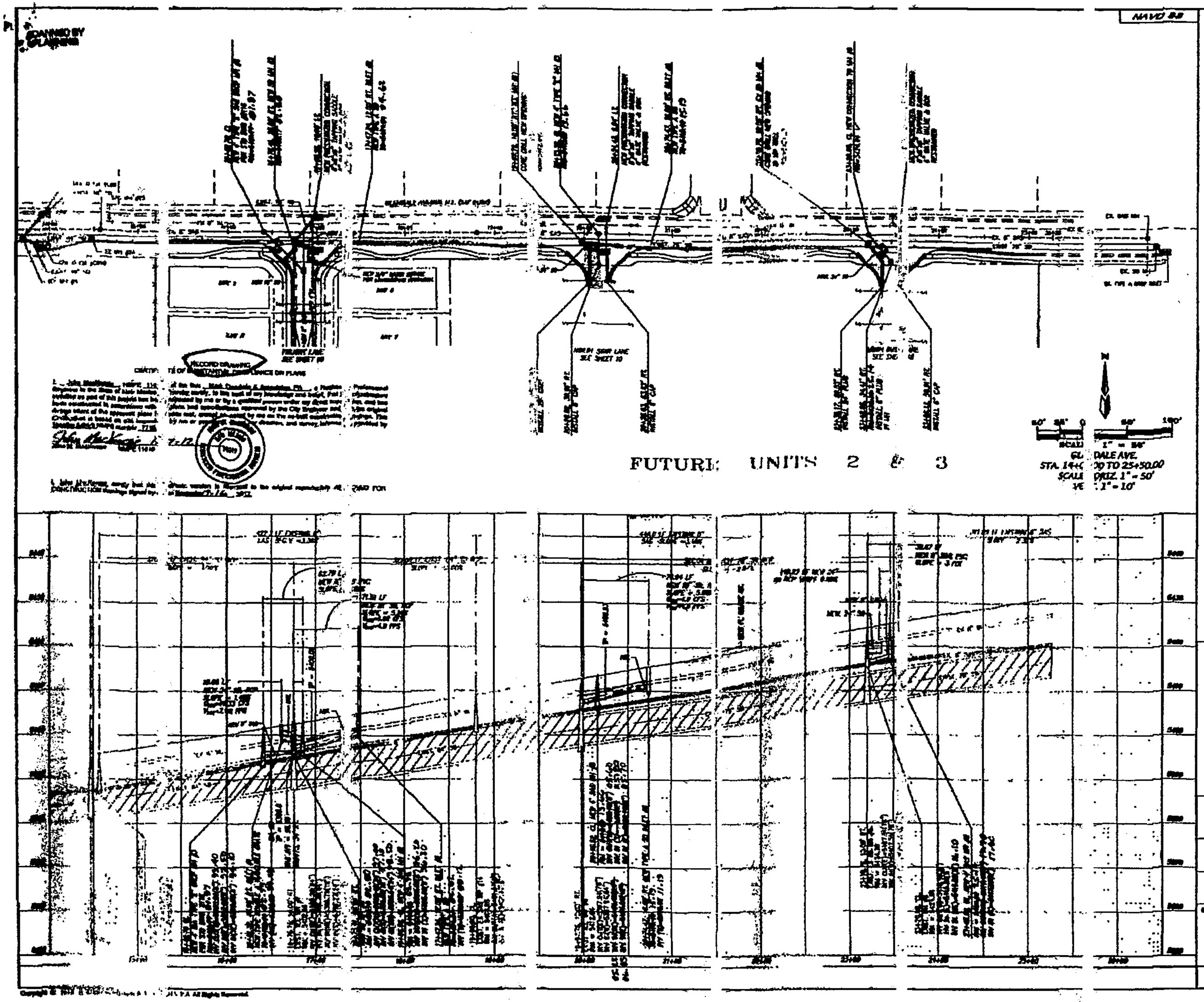
And

Excerpts of phase one as-builts


TRAMWAY R
ADO AIRPORT
NORTH C
(1822 cfs)
AP 312.9
(1828 cfs)
AP 305.29
305.2
SANDIA RESERVATION
(283 cfs)
311.0
ELENA DR
309.0
310.0
308.0
306.0
307.0
MUNICIPAL LIMITS
AP 207.9
(222 cfs)
AP 204.90
EL CAMINO
(924 cfs)
AP 203.39
202.3
AP 202.90
203.2
CUEVA
(3084 cfs)
111.0
111.3
110.0
924.4
AMAFCA PROPERTY
922.0
924.1
931.0
APS PROPERTY
LA CUEVA HIGH SCHOOL
932.1
925.2
922.1
1000
0
500
(IN FEET)
LEGEND
107.1 SUBBASIN DESIG
SUBBASIN BOUN
EXISTING PLAT
EXISTING ARROY FLOW PATH
AP 107.29 (956 cfs) ANALYSIS POINT FUTURE CONDITI FLOW RATE
* FLOW RATE NOT BULKED FOR SE
# 2 POTENTIAL AVUI LOCATION
MUNICIPAL LIMI
NORTH ALBUQUERQUE MASTER DRAINAGE
FUTURE CONDIT

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment %				TP (hrs)
			A	B	C	D	
201	Existing	.1339	95	0	0	5	.133
	Future	.1339	95	0	0	5	.133
200	Existing	.3030	65	20	15	0	.167
	Future	.3030	65	20	15	0	.167
202.1	Existing	.1031	84	0	8	8	.133
	Future	.1031	22	23	38	17	.133
202.2	Existing	.1099	70	5	15	10	.14
	Future	.1099	22	23	38	17	.14
202.3	Existing	.0684	60	10	15	15	.133
	Future	.0518	11	26	33	30	.133
203.1	Existing	.1258	80	0	10	10	.14
	Future	.1258	22	23	38	17	.14
203.2	Existing	.0485	80	0	10	10	.133
	Future	.0394	11	26	33	30	.133
203.3	Existing	.0558	80	0	10	10	.133
	Future	.1259	20	20	34	26	.133
204	Existing	.2119	80	0	10	10	.21
	Future	.2119	20	20	34	26	.155
204.2	Existing	.1333	80	0	10	10	.14
	Future	.0687	8	22	25	45	.14
204.1	Existing	.1484	80	0	10	10	.18
	Future	.1288	17	22	31	30	.18
204.3	Future	.0870	10	15	30	45	.133
204.4	Future	.0546	21	21	36	22	.133
205	Existing	.0459	10	0	20	70	.133
	Future	.0543	0	10	20	70	.133
206.1	Existing	.1221	75	5	10	10	.150
	Future	.1221	0	20	30	50	.150
206.2	Existing	.0561	75	5	10	10	.133
	Future	.0561	0	20	30	50	.133
206.3	Existing	.0480	0	7	7	86	.133
	Future	.0480	0	7	7	86	.133
206.4	Existing	.0327	40	25	5	30	.133
	Future	.0327	0	20	30	50	.133


FUTURE UNIT 2
FUTURE UNIT 3
TWILIGHT LANE
STA. 10+00.00 TO 12+20.00
SCALE HORZ. 1" = 50'
VERT. 1" = 10'
NORTHSTAR LANE
STA. 10+00.00 TO 12+20.00
SCALE HORZ. 1" = 50'
VERT. 1" = 10'
MOUNTAIN DUST LANE
STA. 3+00.00 TO 12+16.84
SCALE HORZ. 1" = 50'
VERT. 1" = 10'
NAVD 88
NOTES
SURVEY INFORMATION
FIELD NOTES
BENCH MARKS
AS BUILT INFORMATION
ENGINEER'S SEAL
CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT
THE ESTATES AT GLENDALE UNIT 1
TWILIGHT LANE
UTILITY IMPROVEMENTS
CITY PROJECT NO. 702783
ZONE MAP NO. B-19-Z
SHEET 10 OF 10



NAVD 88

NOTES

1. ALL [illegible] BASED ON CL OF [illegible]
2. ALL [illegible] SHALL BE 4" DIA. TYPE C [illegible]
3. [illegible] SHALL BE TYPE C.
4. [illegible] SHALL [illegible]
5. [illegible] PLACED AT UTILITY LINE CROSSING [illegible] ACCORDANCE WITH [illegible] AT LEAST 12" OF COVERAGE.
6. Type [illegible] are to be installed per City Std Dwg. 2201 and all [illegible] per City Std Dwg 2220.

AS BUILT INFORMATION

CONTRACTOR SIGNATURE DATE

INSPECTOR SIGNATURE DATE

BENCH MARKS

SURVEY INFORMATION

NO	BY	DATE	FIELD NOTES

ENGINEER'S SEAL

CERTIFICATE OF SUBSTANTIAL COMPLIANCE

REVISIONS	DATE	BY
DESIGN	05/12	JCM
	05/12	DPW
	05/12	DMM

DESIGNED BY JCM
DRAWN BY DPW
CHECKED BY DMM

dmc

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: THE ESTATES AT GLENDALE UNITS 2 & 3
GLENDALE AVENUE N.E.
UTILITY IMPROVEMENTS

CITY PROJECT NO. 702783 | ZONE MAP NO. B-19-Z | SHEET 9 OF 10

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APPENDIX B

SITE HYDROLOGY

Weig ıted E Method

GLEND ıLE ESTATES

Existing Developed Basins

Basin	Area (sf)	Area (acres)	Treatment A %	(acres)	Treatment B %	(acres)	Treatment C %	(acres)	Treatment D %	(acres)	100-Year, 6-hr. Weighted E (ac-ft)	Volum (ac-ft)	Flow cfs	10-day Volum (ac-ft)
ONSITE A	5966	1.370	0%	0	18.0%	0.247	0%	0.13696	72%	988	1.994	0. 8	6.06	0.3
ONSITE B	1591	0.365	0%	0	27.0%	0.099	0%	0.03654	63%	230	1.864	0. 7	1.54	0.0
OFFSITE C	2731	0.627	0%	0	17.0%	0.107	0%	0.0627	73%	458	2.008	0. 5	2.79	0.1
TOTAL		~~2.35 Ac~~												

Equatic ıs!

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

Volume = Weighted D * Total Area %

UPLAN FLOW BASED UPON NAAM DP

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

Where r 100-year, 6-hour storm (zon 3)

Qa= 0.66	Qa= 1.87
Qb= 0.92	Qb= 2.6
Qc= 1.29	Qc= 3.45
Qd= 2.36	Qd= 5.02

% D = ~~1.67~~ Ac 1.21 Ac

FIRST FLUSH REQURIED
151 ,182 CUBIC FEET

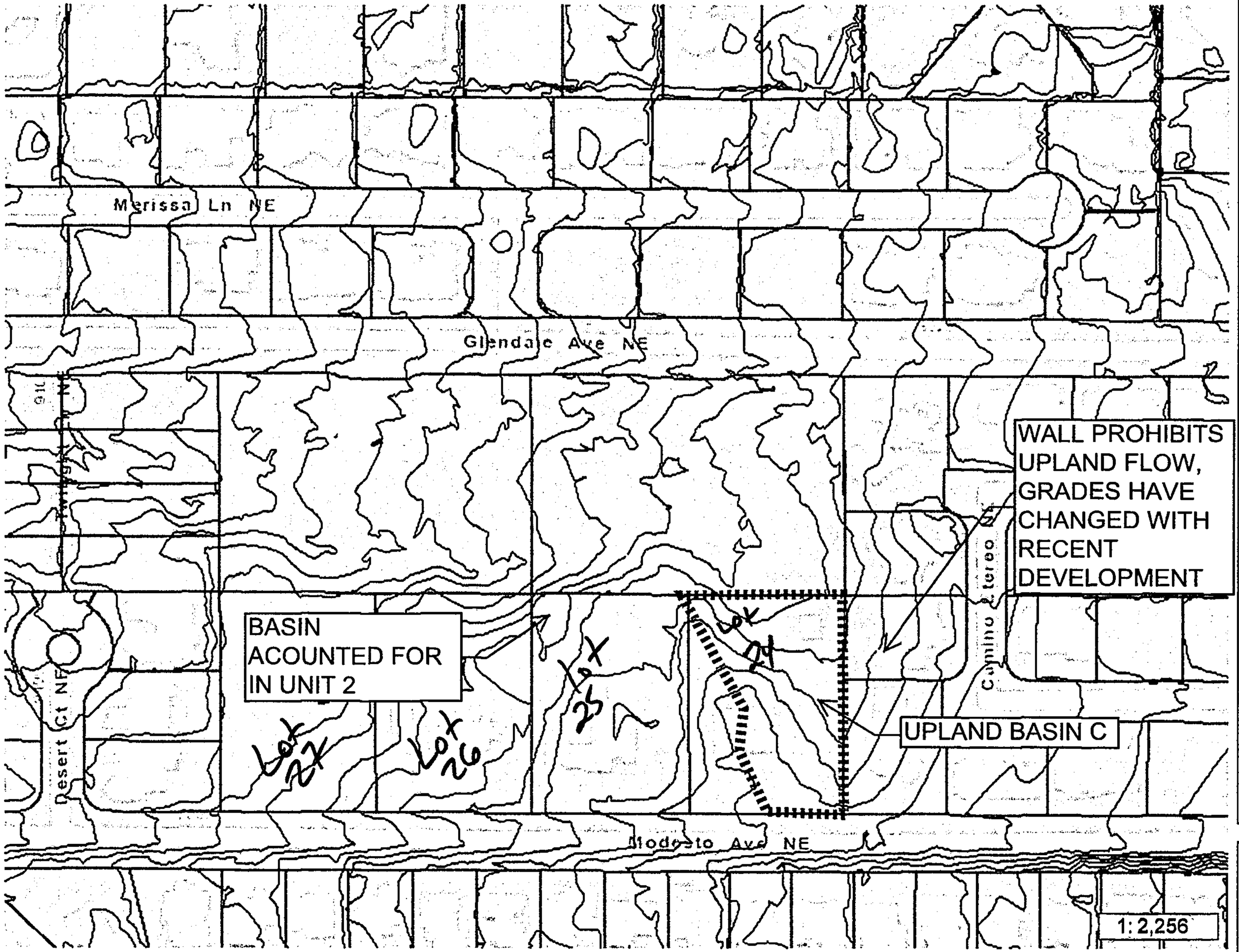
8.

7.54 OK

FLOW : UMMARY

UPLAN TO SW CULVERT	79 CFS	UPLAND
ONSITE TO INLET	.86 CFS	UPLAND AN ONSITE A
ONSITE TO 2' CHANNEL	.54 CFS	REAR LOTS 17-19

City of Albuquerque



Legend

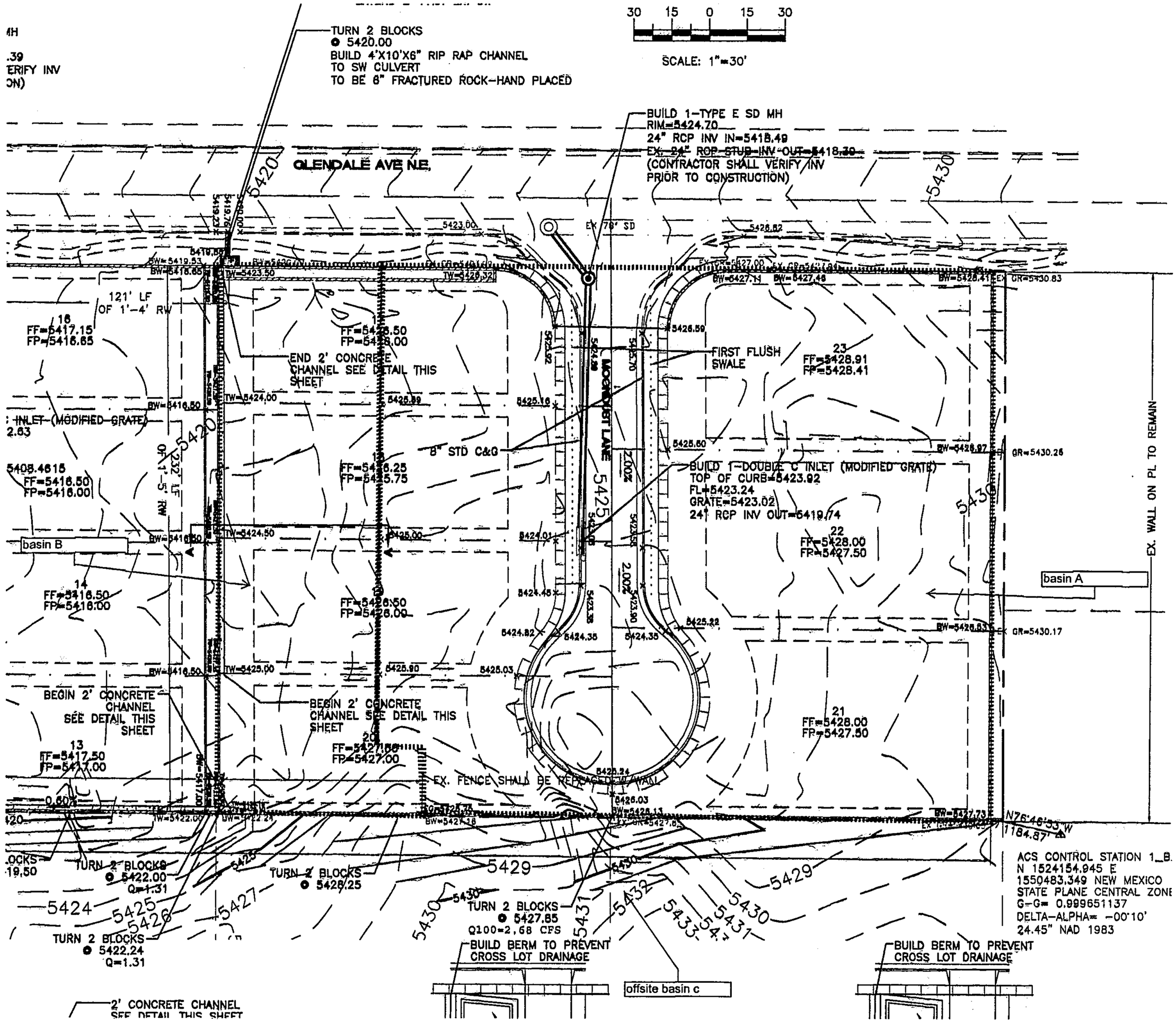
- City Parcels
- Municipal Limits
  - Corrales
  - Edgewood
  - Los Ranchos
  - Rio Rancho
  - Tijeras
  - UNINCORPORATED
- World Street Map

Notes

0.0 0 0.02 0.0 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
8/15/2016 © City of Albuquerque

This map is a user generated static output from www.cabq.gov/gis and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR LEGAL PURPOSES


30 15 0 15 30
SCALE: 1"=30'
TURN 2 BLOCKS
5420.00
BUILD 4'X10'X6" RIP RAP CHANNEL
TO SW CULVERT
TO BE 6" FRACTURED ROCK-HAND PLACED
BUILD 1-TYPE E SD MH
RIM=5424.70
24" RCP INV IN=5418.49
EX. 24" RCP STUB INV OUT=5418.30
(CONTRACTOR SHALL VERIFY INV
PRIOR TO CONSTRUCTION)
GLENDALE AVE N.E.
EX 78" SD
121' LF
OF 1'-4' RW
FF=5417.15
FP=5416.65
END 2' CONCRETE
CHANNEL SEE DETAIL THIS
SHEET
FIRST FLUSH
SWALE
FF=5428.91
FP=5428.41
8" STD C&G
BUILD 1-DOUBLE C INLET (MODIFIED GRATE)
TOP OF CURB=5423.92
FL=5423.24
GRATE=5423.02
24" RCP INV OUT=5419.74
FF=5428.00
FP=5427.50
basin B
basin A
EX. WALL ON PL TO REMAIN
BEGIN 2' CONCRETE
CHANNEL
SEE DETAIL THIS
SHEET
BEGIN 2' CONCRETE
CHANNEL SEE DETAIL THIS
SHEET
FF=5417.50
FP=5417.00
FF=5428.00
FP=5427.50
EX. FENCE SHALL BE REPLACED W/ WALL
TURN 2 BLOCKS
5422.00
Q=1.31
TURN 2 BLOCKS
5428.25
TURN 2 BLOCKS
5427.85
Q100=2.68 CFS
TURN 2 BLOCKS
5422.24
Q=1.31
BUILD BERM TO PREVENT
CROSS LOT DRAINAGE
offsite basin c
BUILD BERM TO PREVENT
CROSS LOT DRAINAGE
2' CONCRETE CHANNEL
SEE DETAIL THIS SHEET
ACS CONTROL STATION 1_B.
N 1524154.945 E
1550483.349 NEW MEXICO
STATE PLANE CENTRAL ZONE
G-G= 0.999651137
DELTA-ALPHA= -00°10'
24.45" NAD 1983

APPENDIX C

HYDRAULIC CALCULATIONS

Street Capacity Calculations

28' F-F Street Section with 8" curb with Superelevated Cross-section

Slope= 0.02

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)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.01	0.0008	0.17	0.00	0.000	0.35	0.00	0.61	0.004983
0.025	0.005	0.43	0.01	0.003	0.64	0.02	0.71	0.0156
0.04	0.0128	0.68	0.02	0.011	0.87	0.03	0.77	0.027921
0.055	0.0242	0.94	0.03	0.026	1.08	0.06	0.81	0.041371
0.07	0.0392	1.19	0.03	0.050	1.27	0.09	0.85	0.055686
0.085	0.0578	1.45	0.04	0.083	1.44	0.12	0.87	0.070708
0.1	0.08	1.70	0.05	0.129	1.61	0.16	0.90	0.086333
0.125	0.125	2.13	0.06	0.233	1.87	0.23	0.93	0.113519

For water depths greater than 0.125 ft but less than 0.605 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)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.126	0.127	2.18	0.06	0.24	1.86	0.23	0.92	0.11303
0.2	0.416	5.95	0.07	0.87	2.10	0.42	0.83	0.154077
0.27	0.941	9.53	0.10	2.48	2.64	0.71	0.90	0.232694
0.34	1.711	13.10	0.13	5.44	3.18	1.08	0.96	0.32273
0.41	**2.726**	**16.67**	**0.16**	**10.08**	**3.70**	**1.52**	**1.02**	**0.419542**
0.4605	3.610	19.24	0.19	14.62	4.05	1.87	1.05	0.492546
0.5198	4.811	22.27	0.22	21.42	4.45	2.31	1.09	0.581067
0.605	6.845	26.61	0.26	34.22	5.00	3.02	1.13	0.712771

For water depths greater than 0.605 ft but less than 0.667 ft

Y3= Y - 0.605

A4= A3 + 26.0 * Y3 + 8 * Y3^2

P4= P3 + Y3 + SQRT(257 * Y3^2)

Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.606	6.871	26.63	0.26	34.42	5.01	3.04	1.13	0.715133
0.62	7.237	26.87	0.27	37.31	5.16	3.20	1.15	0.748153
0.635	7.632	27.12	0.28	40.51	5.31	3.37	1.17	0.783458
0.65	8.031	27.38	0.29	43.83	5.46	3.55	1.19	0.818692
0.667	8.488	27.67	0.31	47.72	5.62	3.75	1.21	0.858546

SIDEWALK CULVERTS

Weir Equation:

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

Q= 2.92 cfs
C = 2.95
H = 0.67 ft
L = Length of weir

$$Q = 2.95 * 2 * ((0.67)^{\wedge}(3/2))$$

Each culvert has capacity of 3.23 cfs
therefore use 1 culverts

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
18rcp	24	1	3.14	0.5	19.66	8.86	2.82

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

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

A = Area
R = D/4
S = Slope
n = 0.015

DROP INLET CALCULATIONS

Inlet	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
culdesac	DOUBLE	8.86	17.72	0.1725	0.67

ORIFICE EQUATION

Q = CA sqrt(2gH) H=(Q/CA)^2)/2G

C = 0.6

g = 32.2

INLET GRATE=40"X25"

CALCULATE FOR BARS

40-(11*.5) 34.5"

25-(13*.5) 18.5"

OPENING IS 4.43 SF PER GRATE

USING DOUBLE FLOW DUE TO SUMP

100-YEAR, 6-HOUR STORM DISCHARGE IS 8.86 CFS

City of Albuquerque

UNIT 3

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 3 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
X GRADING PLAN
____ DRAINAGE MASTER PLAN
X 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

X PRELIMINARY PLAT APPROVAL 7
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
X GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

RECEIVED AUG 17 2016 LAND DEVELOPMENT SECTION

Paid $205.00

IS THIS A RESUBMITTAL?: ____ Yes X No

DATE SUBMITTED: 8/15/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

Free
%D=1.67. tz

Harmon Rita T.

From: Harmon Rita T.
Sent: Thursday, September 01, 2016 3:32 PM
To: 'david@riograndeengineering.com'
Subject: B19D027 -Glendale Estates Unit 3 - (Stamp Date: 8-12-16)

David,

This email is being sent in lieu of an attached comment letter in order to expedite the response for initial reviews. Responses to comments should continue to be included in the re-submittal. A reply to this email with responses to comments will not be considered a re-submittal.

Based upon the information provided in your submittal received 8-17-2016, the above referenced plan cannot be approved for Building Permit or Grading Permit until the following comments are addressed:

- Double Retaining Wall Between Unit 2 and Unit 3 Shown in Section A-A: The finished grade of the lower retaining wall was raised to limit the wall heights. However, the raised FG Elev. is now at FF Elev for lots 14 and 15. I realize the intention is to slope the grade from the wall to the rear of the house to an elevation lower than FF, but it is highly unlikely that homeowners will leave a low point there at the rear. They will likely level out the back yard for landscaping or slope back towards the wall. Therefore, the FG Elev at the bottom of the lower should not be changed from the approved plan for Unit 2.
- Retaining Wall along Eastern Edge: Provide a cross section through this edge. EX. GR Elevation is shown, but needs to be defined on a section. Show the existing wall, with existing TOW and BOW elevations. Is the wall that is shown on the plan a new wall? What is the TOW elevations ?
- Shouldn't the SW Culverts along Glendale be aligned with the concrete channel?
- Section A-A cut in wrong direction. Put Channel on Infrastructure List
- Double Retaining wall on north side of Lot 17: Won't a single wall suffice?
- Add to concrete channel note between Lots 19 and 20 - state to provide clear opening in wall (typical). Begin concrete channel in Lot 20 (need only be extended a foot or two into lot 20)
- 6" Mountable curb called out , but General Notes call out 8" Standard Curb Unless Noted Otherwise. Is all the curb to be 6" Mountable? If so the Gen. Note should be removed.
- Revise elevations shown on Section C-C

Offsite flows from Lot 24:

- Label Lots 24 and 25 on South side. Add verbiage to the "Turn 2 Blks @ 5427.85" note stating that the opening is to be on the west side of the boundary between Lots 24 and 25. This is to ensure that they do not put the opening on the wrong side.
- Slide the SW Culvert and concrete Channel to the east to align with the above mentioned turned blocks.
- SW Culvert note says 2 -2' culverts but channel is only 2' wide. Since only 2.68 cfs, won't a narrower channel and SW culvert suffice.

Easements:

- Lots 17, 18, and 19 will require a Cross-Lot Drainage Easement on the plat. Provide the Plat showing all easements.
- Lot 20 will need a Cross-Lot Drainage Easement for the Benefit of Lot 25.

- A Private Drainage Easement is needed over the SW Culvert to the wall, for the Benefit of Lot 24.

If you have any question please do not hesitate to contact me.

Rita Harmon, P.E.
Senior Enginneer, Planning Department
Development Review Services
505-924-3695

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

May 11, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2 (File: B19D027)**
Drainage Report, Engineer's Stamp Date 12-28-15
Grading and Drainage Plan, Engineer's Stamp Date 4-29-16

Dear Mr. Soule:

Based upon the information provided in your submittal received 4-29-16, the above referenced submittal is approved for ESC Permit (Grading Permit). Prior to Building Permit approval, Engineer Certification per the DPM checklist will be required.

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

See pad cert letter for changes.
RPH

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 2 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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:

_____ ENGINEER/ ARCHITECT CERTIFICATION

_____ CONCEPTUAL G & D PLAN
X 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

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

_____ PRE-DESIGN MEETING
_____ OTHER (SPECIFY) _____

RECEIVED
APR 29 2016
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: X Yes _____ No

DATE SUBMITTED: 4/29/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

April 28, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 4-15-16 (File: B19D027)

RECEIVED
APR 29 2016
LAND DEVELOPMENT SECTION

Dear Mr. Soule:

Based upon the information provided in your submittal received 4-15-16, the above referenced submittal cannot be approved for ESC Permit (Grading Permit) until the following comments are addressed:

1. Lot 12 SW Corner: Elevation in the existing channel is barely readable. moved text
2. The SW Culvert at NW corner: Both Work Order and Grading Plan show FL. At Curb = 5408.03, but the spot elevation on plan shows 5408.28. The Invert El is 5408.23 but it is not clear if this is the Invert In or Out. Since the FL at curb is shown, I believe it is the Invert IN, please add "IN"(all SW culverts). It would need to be adjusted to be higher than the 5408.28 at the FL. corrected
3. Retaining wall and Wall opening at NE corner:
   a. How far past the property line is the Retaining wall to be built? What is the T.O.Wall elevation at the end? added
   b. The opening also calls for 4'x10' Rip-Rap pad, but it is not shown on the plan. Is future drainage (from the 5' Drainage Easement) supposed to discharge thru the SW culvert? If so then the SW should be in-line with the drainage easement. removed second call out, kept swale
   c. The Work Order calls for a 4'x10' Rip-rap pad where the Grading Plan calls for a 5'x10' pad. It is unclear where each pad lies, and the orientation of them as well. removed label, kept swale call out
   d. Work order is not defining the location of the SW Culverts, its showing a distance to the edge of the rip-rap. revised
   e. What is the elevation of the rip-rap for the emergency overflow at the SW culvert? There are 2 elevations shown, and they are partially covered by the rip-rap hatch. Please clarify. moved
   f. There is a callout for a 3' opening FL = 23.55, and Section A-A shows a private drainage easement. Is there supposed to be a drainage channel in the future development? If so, the bottom of the future swale/channel would be lower than the retaining wall this is going to be a future openining for a single lot similar to lot 9. we removed

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Albuquerque
New Mexico 87103
www.cabq.gov

B19D027_GP_Cmmt2.doc

g. The FG near the opening is 20.84, which implies that the top of the Retaining wall is about 20.84, and a future swale/channel would be to low to discharge out of the opening at 23. there is afuture second wall, we removed

h. The retaining wall along the eastern boundary needs T.O.Wall and B.O. Wall elevations along the wall. we changed fg to tw/bw

4. **Previous comment not addressed:** Fade back existing contours. faded as much as could

5. **This comment was not addressed:** Lot 13 South Wall: provide a series of evenly spaced block opening that would allow 4.49 cfs to flow through rather than 1 location of 5 overturned blocks. **New: is the 5 blocks supposed to be 2 blocks? Then there would be 3 locations of 2 overturned blocks and the 4.49cfs from Lot 25 should be divided by 3 and indicated at each location.** changed 5 to 3, rest spread

6. **This comment was not addressed:** The 1.31 cfs should enter thru overturned blocks on South wall, on undeveloped site. Move location of overturned blocks slightly east so that flows from that site can enter. **New: the opening in the new wall needs to be located on the east side of the lot line between Lots 25 and 26. A 2 ft. opening needs to be provided in the retaining wall along the East property line to allow the flows thru. Show the in** added spots, and additional 2' openings, we **retaining wall the channel will continue.** have openings on each side of the lot line

7. Show the channel slope, the FL Elev. at the East retaining wall and the FL Elev. where it turns 90 deg. Towards the SW Culvert. added

8. The SW culverts needed at end of cul-de-sac: The FL. Elev at Curb is 5415.06 on plan, but build notes show 5415.31. Fix build notes and call out the Invert In elev. fixed

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipien

REVISED
DRAINAGE REPORT

For

THE ESTATES AT GLENDALE UNIT 2

Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

DECMEBER 2015

RECEIVED
DEC 29 2015
LAND DEVELOPMENT SECTION

DAVID SOULE
NEW MEXICO
14522
REGISTERED PROFESSIONAL ENGINEER

12/28/15

Approved

David Soule P.E. No. 14522

TABLE OF CONTENTS

Purpose 3
Introduction 3
Existing Conditions 3
Exhibit A-Vicinity Map 4
Proposed Conditions 5
Summary 5

Appendix

NAAMDP, Phase 1 asbuilt excerpts ..... A
Site Hydrology ..... B
Hydraulic calculations C

Map

Site Grading and Drainage Plan

Plan shows 8 + future 7

PURPOSE

The purpose of this report is to provide the Drainage Management Plan for the development of a 7-lot subdivision located on Glendale Avenue between Wyoming Boulevard and Barstow Street NE. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the grading does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

needs ESC.

INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a 3.55-acre parcel of land located on the south side of Glendale Avenue between Wyoming Boulevard and Barstow Street NE. The legal description of this site is tracts A&B the Estates at Glendale Subdivision. As shown on FIRM map35013C0133H, the entire site is located within Flood Zone X. The site has had grading activities upon it over the past several years. The site contains a ~~desiltation~~ Temp. Retention pond constructed with phase one and multiple stock piles of material have been deposited thru ought the site. Due to the upstream construction, the site is not affected by any upland flows from the north or east. The site is impacted by the adjacent lots to the south. The site currently free discharges to a large Temp Ret. pond located at the northwest corner of the site. Phase 2 will be developed at this time. Phase 3 ultimate grading will be shown as will the interim grading .The site was analyzed and the discharge rates approved by the previously approved grading plan and report. Based upon conversation with the City Engineer, the development of the site will be allowed to discharge at a rate equal to or less than the fully developed conditions assumed for this site within the approved grading plan. ? what is meant, denser? Due to lower development pattern that developed east of this site (basin 203.3), the overall El Camino basin shall not exceed the developed conditions assumptions of the governing North Albuquerque Acres Master Drainage Plan (NAAMDP), which relevant excerpts can be found in appendix A.

EXISTING CONDITIONS

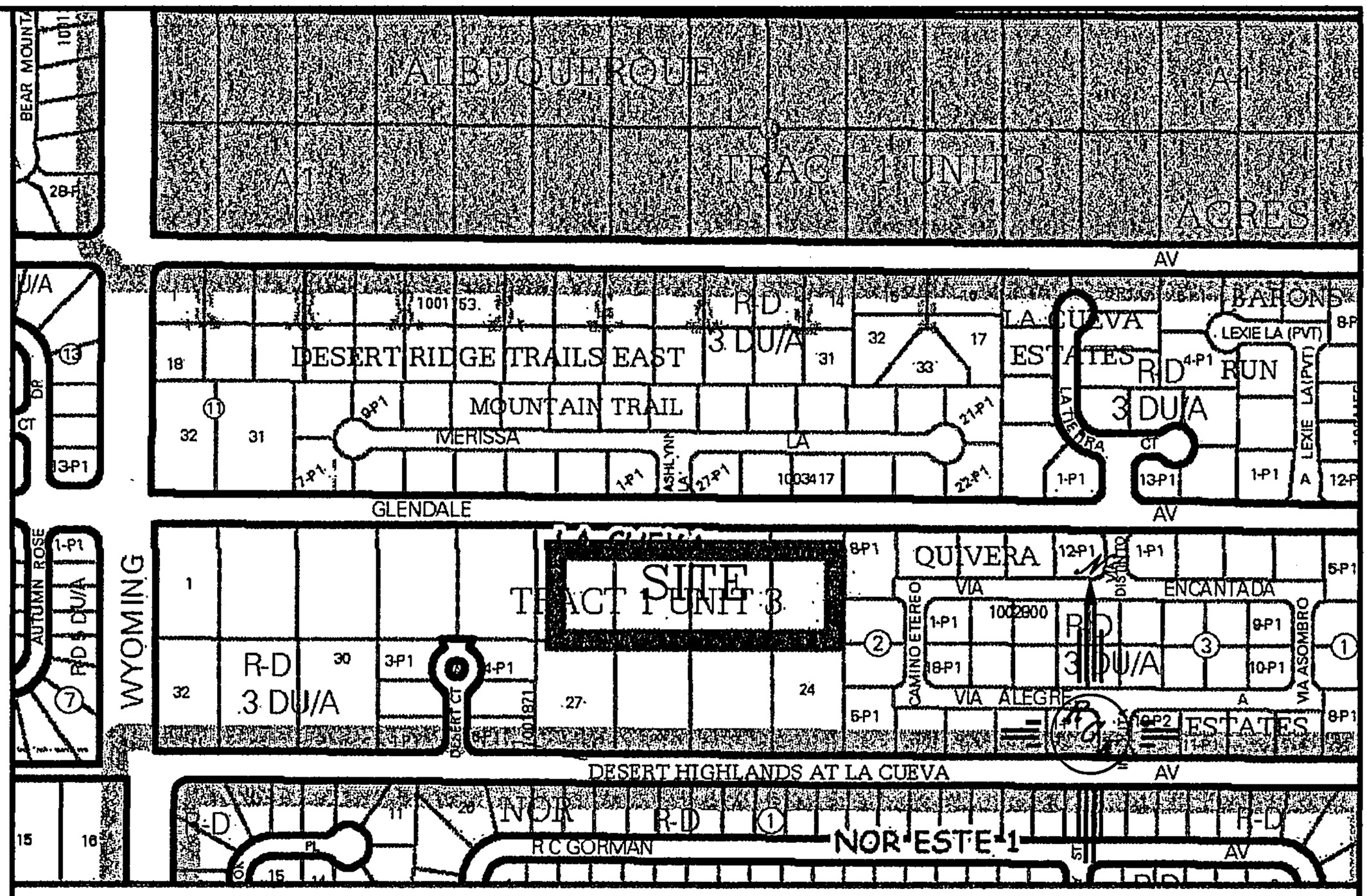
The site currently does have ponds and stockpiles on it and has been impacted by human development over the years. The site is the second phase of the Estates at Glendale project. The site was initially designed by John Mackenzie by report found in city of Albuquerque drainage file. A copy of the overall grading plan is located in appendix A. The site is impacted by minor upland flows from the 4 developed lots to the south. The site currently discharges all of its flow to the North West corner to a temporary retention pond. As shown in the approved grading plan and the flow rates for this stub, this site was anticipated to discharge 14.5 cfs. A copy of this as built design showing flow rates programmed to leave the site is located in appendix A. The site is located within basins 204.0 of the NAAMDP. The adjacent infrastructure improvements within Glendale were constructed with phase one of this development. Two 24" storm drain pipes were stubbed into the property with the initial phase. All downstream improvements are in place and accepted by the city of Albuquerque.

fr. W.O.

but Basins add to 13.48 cfs

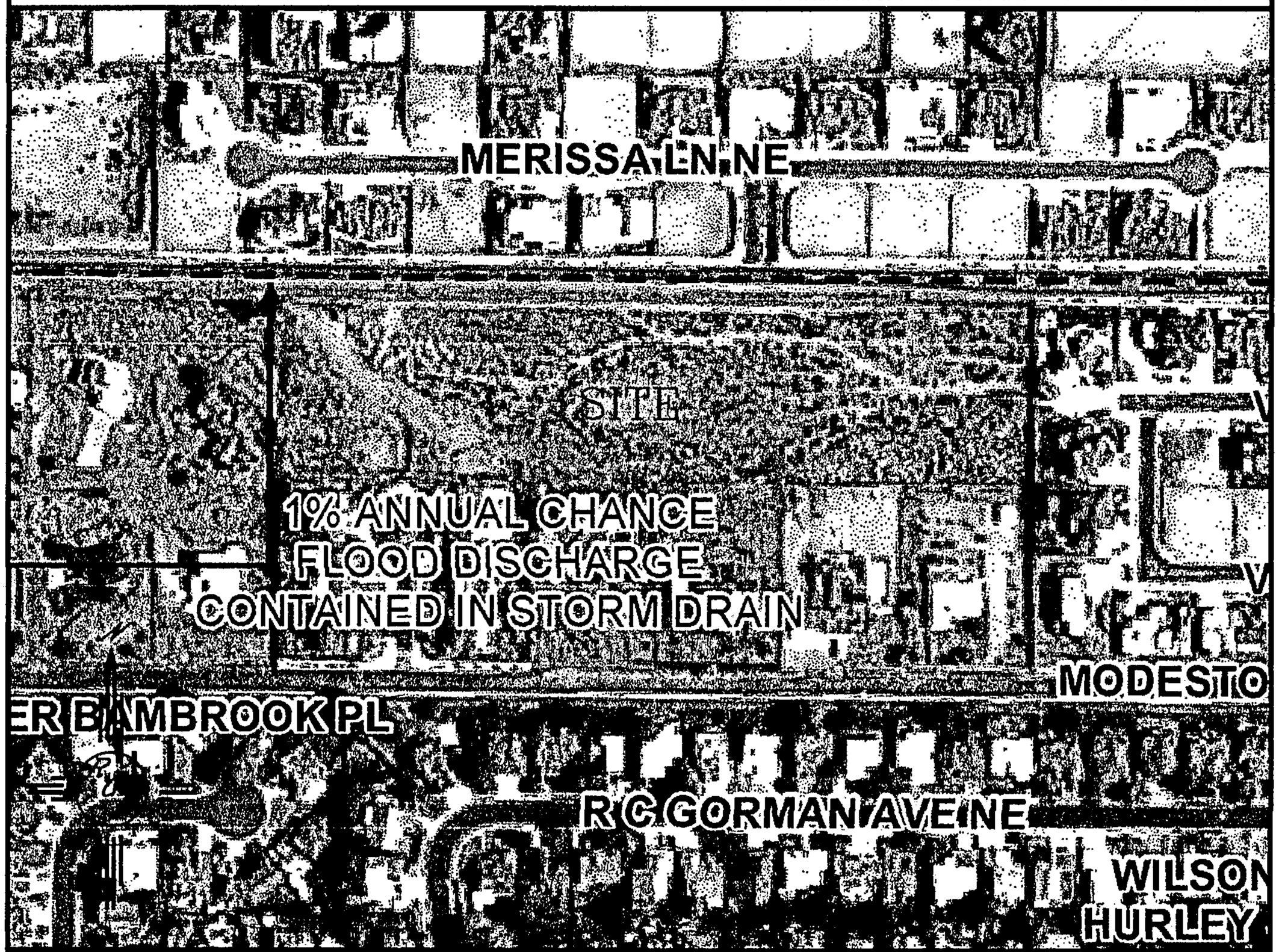
B109 = 4.49
B110 = 1.31
B108 = 3.84
B112 = 3.64
13.48

off site
on site



and more details visit: http://www.cabq.gov/gis

VICINITY MAP: B-19-Z



FIRM MAP: 35001C0133H (1)

addressed comments

PROPOSED CONDITIONS

The proposed improvements consist of a new 8-lot subdivision serviced by private paved roadways. The lots shall free discharge to the roadway and be conveyed within the roadway to an inlets connected to the stub constructed with phase 1. As shown in appendix B, this site contains 4 onsite basins. The offsite basin flows were obtained from the previous grading plan. Basin A contains the rear portion of the pad and the rear lot of 1. This basin discharge .51 cfs to Glendale via a sidewalk culvert. This basin drains to the rear due to the agreements the developer made to the phase one lots regarding new wall heights. Basin C is the rear portion of the pad and lot 12 that drains .25 cfs to an existing rundown into phase 1. Basins B and D are the remaining subdivision that drain 6.84 cfs to the street, upland basins contribute 5.80 cfs. As shown in appendix C, the block opening, channels, street and inlets have been sized to accommodate the flow. The first flush will be obtained by shallow rear yard ponds and the depression of the area between the sidewalk and the curb. Phase 3 will contain a large retention pond that will capture the onsite and upland flows. This pond is much larger than required and will be used as a borrow area to allow for balanced dirt work conditions. The ultimate grades have been shown for phase 3 to allow for continuity when the third phase is constructed.

what agreements.

expand on this

109+110 = 5.8 ✓

=7.6 VS. (2) 3.84 = 7.68

No Rear Yard Ponds

SUMMARY AND RECOMMENDATIONS

This project is a development of residential subdivision with the North Albuquerque Acres Master Drainage plan. The development is consistent with the land use assumptions and drainage concepts of the initial approved grading plan. The surrounding development diverted the majority of the upland flow. The minor flow from the developed lots to the south is allowed to pass thru the site. The discharge will enter the downstream storm drain where it was anticipated. The inlets, pipes and roadways have been shown to provide the required capacity. The site has been designed in accordance with City of Albuquerque Drainage ordinance. This drainage plan and report conforms to the governing drainage regulations of the City. Since the effected area site encompasses more than 1 acre, a NPDES permit will be required prior to any construction

APPENDIX A

North Albuquerque Acres Master Drainage Plan

And

Excerpts of phase one as-builts

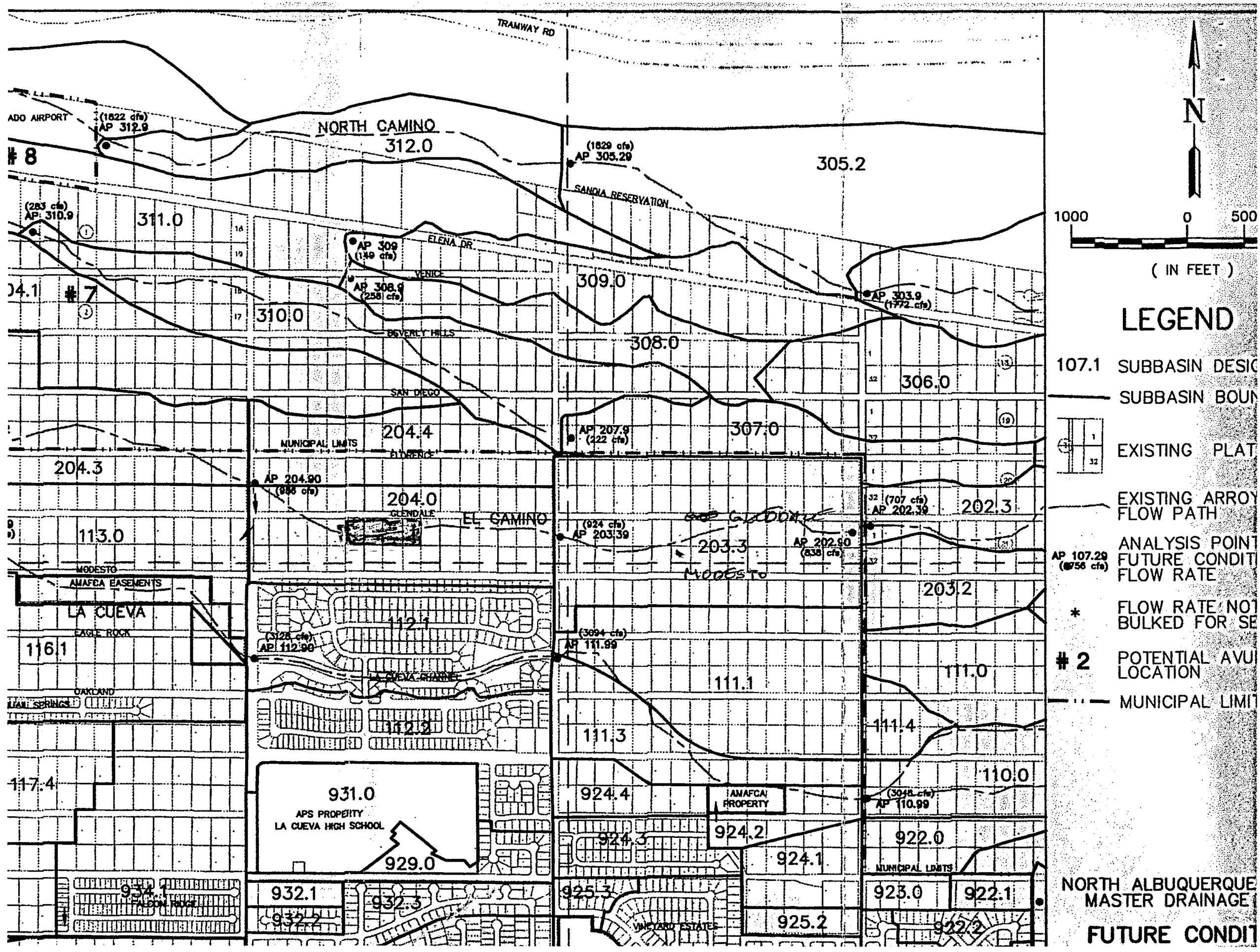

TRAMWAY RD
ADO AIRPORT
(1822 cfs)
AP 312.9
NORTH CAMINO
312.0
(1829 cfs)
AP 305.29
305.2
SANDIA RESERVATION
(283 cfs)
AP 310.9
311.0
ELENA DR
AP 309
(149 cfs)
VENICE
AP 308.9
(258 cfs)
309.0
AP 303.9
(1772 cfs)
310.0
BEVERLY HILLS
308.0
306.0
SAN DIEGO
204.4
AP 207.9
(222 cfs)
307.0
MUNICIPAL LIMITS
FLORENCE
204.3
AP 204.90
(886 cfs)
204.0
GLENDALE
EL CAMINO
(707 cfs)
AP 202.39
202.3
113.0
(924 cfs)
AP 203.39
203.3
AP 202.90
(838 cfs)
MODESTO
AMAFCA EASEMENTS
LA CUEVA
EAGLE ROCK
203.2
112.1
(3128 cfs)
AP 112.90
(3094 cfs)
AP 111.99
116.1
LA CUEVA CHANNEL
111.1
111.0
OAKLAND
112.2
111.3
111.4
117.4
931.0
APS PROPERTY
LA CUEVA HIGH SCHOOL
924.4
AMAFCA PROPERTY
(3046 cfs)
AP 110.99
110.0
924.3
924.2
922.0
929.0
924.1
MUNICIPAL LIMITS
934.1
FALCON RIDGE
932.1
932.3
925.3
923.0
922.1
932.2
VINEYARD ESTATES
925.2
922.2
N
1000
0
500
(IN FEET)
LEGEND
107.1 SUBBASIN DESIG
SUBBASIN BOUN
EXISTING PLAT
EXISTING ARROY FLOW PATH
AP 107.29 (756 cfs) ANALYSIS POINT FUTURE CONDIT FLOW RATE
* FLOW RATE NOT BULKED FOR SE
# 2 POTENTIAL AVU LOCATION
MUNICIPAL LIMIT
NORTH ALBUQUERQUE MASTER DRAINAGE
FUTURE CONDIT

TABLE A-4

EL CAMINO ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment %				TP (hrs)
			A	B	C	D	
201	Existing	.1339	95	0	0	5	.133
	Future	.1339	95	0	0	5	.133
200	Existing	.3030	65	20	15	0	.167
	Future	.3030	65	20	15	0	.167
202.1	Existing	.1031	84	0	8	8	.133
	Future	.1031	22	23	38	17	.133
202.2	Existing	.1099	70	5	15	10	.14
	Future	.1099	22	23	38	17	.14
202.3	Existing	.0684	60	10	15	15	.133
	Future	.0518	11	26	33	30	.133
203.1	Existing	.1258	80	0	10	10	.14
	Future	.1258	22	23	38	17	.14
203.2	Existing	.0485	80	0	10	10	.133
	Future	.0394	11	26	33	30	.133
203.3	Existing	.0558	80	0	10	10	.133
	Future	.1259	20	20	34	26	.133
204	Existing	.2119	80	0	10	10	.21
	Future	.0773	20	20	34	26	.133
204.2	Existing	.1333	80	0	10	10	.14
	Future	.0687	8	22	25	45	.14
204.1	Existing	.1484	80	0	10	10	.18
	Future	.1288	17	22	31	30	.18
204.3	Future	.0870	10	15	30	45	.133
204.4	Future	.0546	21	21	36	22	.133
205	Existing	.0459	10	0	20	70	.133
	Future	.0543	0	10	20	70	.133
206.1	Existing	.1221	75	5	10	10	.150
	Future	.1221	0	20	30	50	.150
206.2	Existing	.0561	75	5	10	10	.133
	Future	.0561	0	20	30	50	.133
206.3	Existing	.0480	0	7	7	86	.133
	Future	.0480	0	7	7	86	.133
206.4	Existing	.0327	40	25	5	30	.133
	Future	.0327	0	20	30	50	.133

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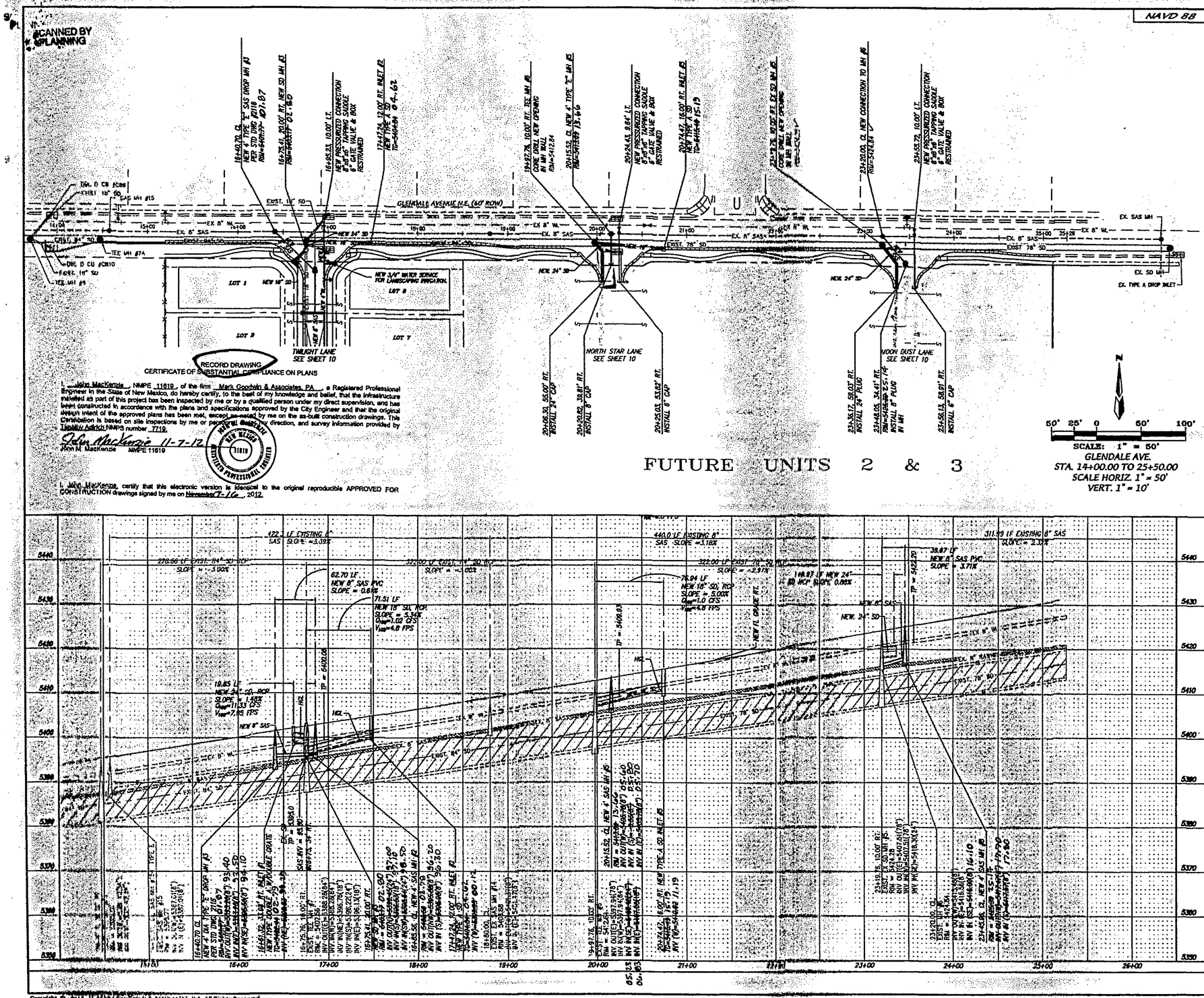
NAVD 88



RECORD DRAWING
CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON PLANS

I, John MacKenzie, NMPE 11619, of the firm Mark Goodwin & Associates, PA, a Registered Professional Engineer in the State of New Mexico, do hereby certify, to the best of my knowledge and belief, that the infrastructure installed as part of this project has been inspected by me or by a qualified person under my direct supervision, and has been constructed in accordance with the plans and specifications approved by the City Engineer and that the original design intent of the approved plans has been met, except as noted by me on the as-built construction drawings. This Certification is based on site inspections by me or personal observation by direction, and survey information provided by Timothy Aldrich NMPS number 7719.

John MacKenzie 11-7-12
John M. MacKenzie NMPE 11619

NEW MEXICO 11619 REGISTERED PROFESSIONAL ENGINEER

I, John MacKenzie, certify that this electronic version is identical to the original reproducible APPROVED FOR CONSTRUCTION drawings signed by me on November 7-16, 2012.

FUTURE UNITS 2 & 3

NOTES

1. ALL STATIONING IS BASED ON CL OF RIGHT-OF-WAY.
2. ALL NEW SAS MANHOLE SHALL BE 4' DIA. TYPE E UNLESS OTHERWISE NOTED.
3. MANHOLES LESS THAN 6' DEEP SHALL BE TYPE C.
4. NEW SAS CONNECTIONS TO EXISTING MANHOLES SHALL BE ACCORDING TO STD DWG 2102.
5. LEAN FILL SHALL BE PLACED AT UTILITY LINE/STORM DRAIN CROSSINGS IN ACCORDANCE WITH WATER AUTHORITY STANDARD DRAWING 2391. LEAN FILL IS NOT REQUIRED WHEN THE UTILITY LINE PASSES OVER STORM DRAIN WITH AT LEAST 12" OF CLEARANCE.
6. Type A inlets are to be installed per City Std. Dwg. 2201 and all grates per City Std. Dwg. 2220.

AS BUILT INFORMATION

CONTRACTOR SUNDANCE

WORK PERFORMED BY	A.L.S.	DATE 10/12
INSPECTOR'S FIELD NOTES BY	WGA	DATE 11/12
VERIFICATION BY	A.L.S.	DATE 10/12
CORRECTIONS BY	A.L.S.	DATE 10/12

MICRO-FILM INFORMATION

RECORDED BY DATE

NO.

BENCH MARKS

AGRS Brass Cap in concrete post stamped "1-B20".
From the intersection of Louisiana Boulevard and Paseo Del Norte NE go east on Paseo Del Norte 1 mile to Barstow Street. Then north on Barstow Street 1 mile to Modesto Avenue. The station is located in the northeast quadrant of the intersection.
Geographic Position (NAD83), in feet
N.M. State Plane Coordinates (Central Zone)
N=1524154.945, E=1550463.349
ELEVATION=5479.175 (NAVD88), in feet

SURVEY INFORMATION
FIELD NOTES

NO.	BY	DATE

ENGINEER'S SEAL

NEW MEXICO 11619 REGISTERED PROFESSIONAL ENGINEER
John MacKenzie 7-16-12

NO.	DATE	REMARKS	BY
		REVISIONS	
		DESIGN	
		DESIGNED BY JDH	DATE 05/12
		DRAWN BY SFS	DATE 05/12
		CHECKED BY DMG	DATE 05/12

RECEIVED
DEC 29 2015
LAND DEVELOPMENT SECTION

CERTIFICATE OF SUBSTANTIAL COMPLIANCE

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

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

TITLE: THE ESTATES AT GLENDALE UNIT 1
GLENDALE AVENUE N.E.
UTILITY IMPROVEMENTS

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	MO./DAY/YR.	MO./DAY/YR.
JUL 22 2012 DESIGN REVIEW COMMITTEE	AUG 01 2012 CITY ENGINEER			

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
702783	B-19-Z	9	10

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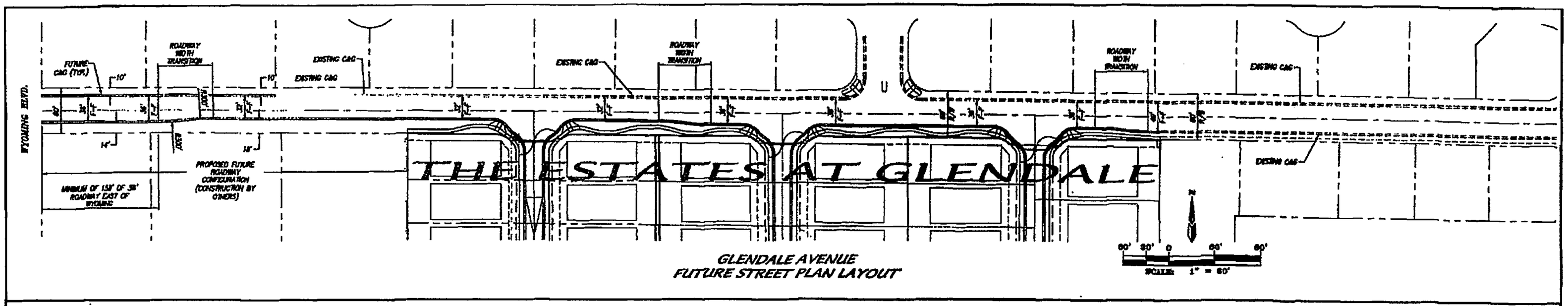
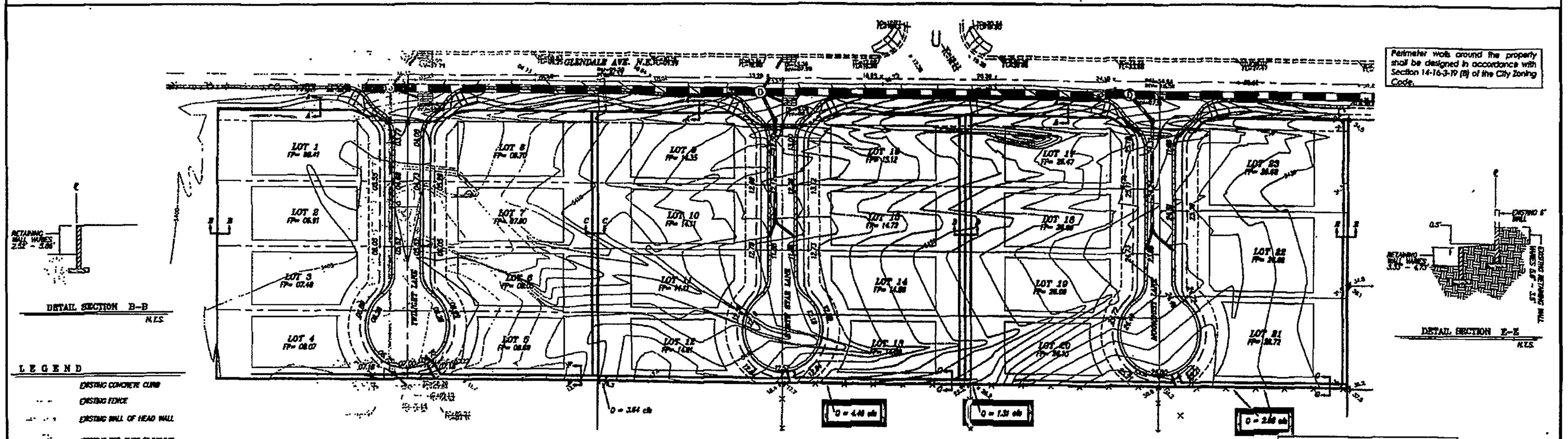


GLENDALE AVENUE
FUTURE STREET PLAN LAYOUT



Perimeter walls around the property shall be designed in accordance with Section 14-16-3-19 (B) of the City Zoning Code.

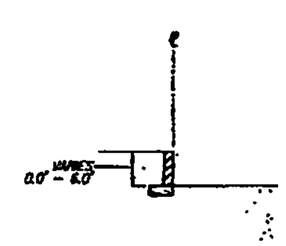
UPON COMPLETION OF ONSITE GRADING OPERATIONS ALL DISTURBED SURFACES ON THE SITE SHALL BE STABILIZED WITH NATIVE SEED AND IRRIGATED WITH A TEMPORARY IRRIGATION SYSTEM TO ESTABLISH THE NEW VEGETATION.

DETAIL SECTION B-B
N.T.S.

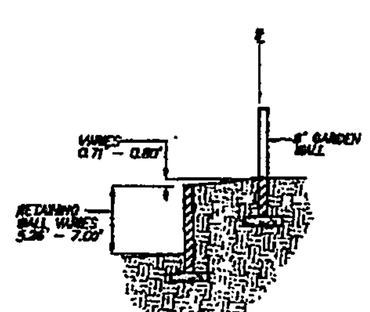
DETAIL SECTION E-E
N.T.S.

LEGEND

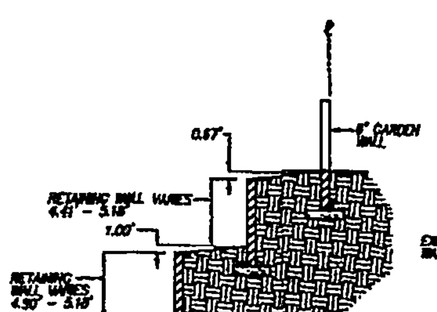
- EXISTING CONCRETE CURB
- EXISTING FENCE
- EXISTING WALL OF HEAD WALL
- EXISTING TOP CURB/FLOWLINE
- EXISTING SPOT ELEVATION
- EXISTING DROP INLET
- EXISTING FIRE HYDRANT
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM DRAIN MANHOLE
- EXISTING WATER VALVE
- 5415 EXISTING CONTOUR – MAJOR
- EXISTING CONTOUR – MINOR
- NEW LOT LINES
- NEW SIDEWALK
- NEW STANDARD CURB & GUTTER
- NEW MEDIAN CURB & GUTTER
- NEW RETAINING WALL
- NEW GARDEN WALL
- NEW STORMDRAIN
- NEW STORMDRAIN MANHOLE
- 12.32 NEW SPOT ELEVATION



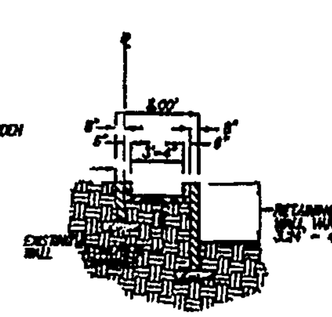
DETAIL SECTION A-A
N.T.S.



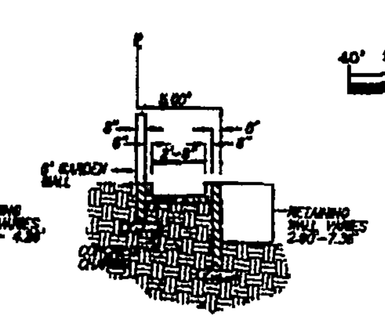
DETAIL SECTION C-C
N.T.S.



DETAIL SECTION D-D
N.T.S.



DETAIL SECTION F-F
N.T.S.



DETAIL SECTION G-G
N.T.S.

DRAINAGE MANAGEMENT PLAN

THIS SITE WILL ALLOW FOR RECHARGE TO THE EXISTING DRAINAGE ISSUES IN GLENDALE AVE. ONSITE DRAINAGE FROM PRIVATE PROPERTY LOCATED SOUTH OF THIS DEVELOPMENT WILL BE ALLOWED TO FLOW THROUGH THE PRIVATE LOTS IN THIS DEVELOPMENT IN CONCRETE-LINED SIDEYARD SWALES WITH PRIVATE DRAINAGE EASEMENTS THAT WILL CONVEY THE DRAINAGE TO THE NEW PRIVATE STREETS, WHICH WILL THEN DRAIN INTO THE EXISTING 84" RCP IN GLENDALE AVE. VIA 7 NEW INLETS BEING CONSTRUCTED AT VARIOUS LOCATIONS WITHIN THIS PROJECT. THERE IS 30 FEET OF GRADE CHANGE ACROSS THIS SITE IN AN EAST – WEST DIRECTION.

THE ESTATES AT GLENDALE

CONCEPTUAL GRADING & DRAINAGE PLAN

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

Designed: CJK	Drawn: ACH	Checked: DMG	
Scale: AS SHOWN	Date: 01-04-12	Job: A11004	Sheet 2 of 4

A11004 GLENDALE RES\GRADE & DRAIN\A11004 CONCEPTUAL-GRADING_R1\04-11-2012\ACH

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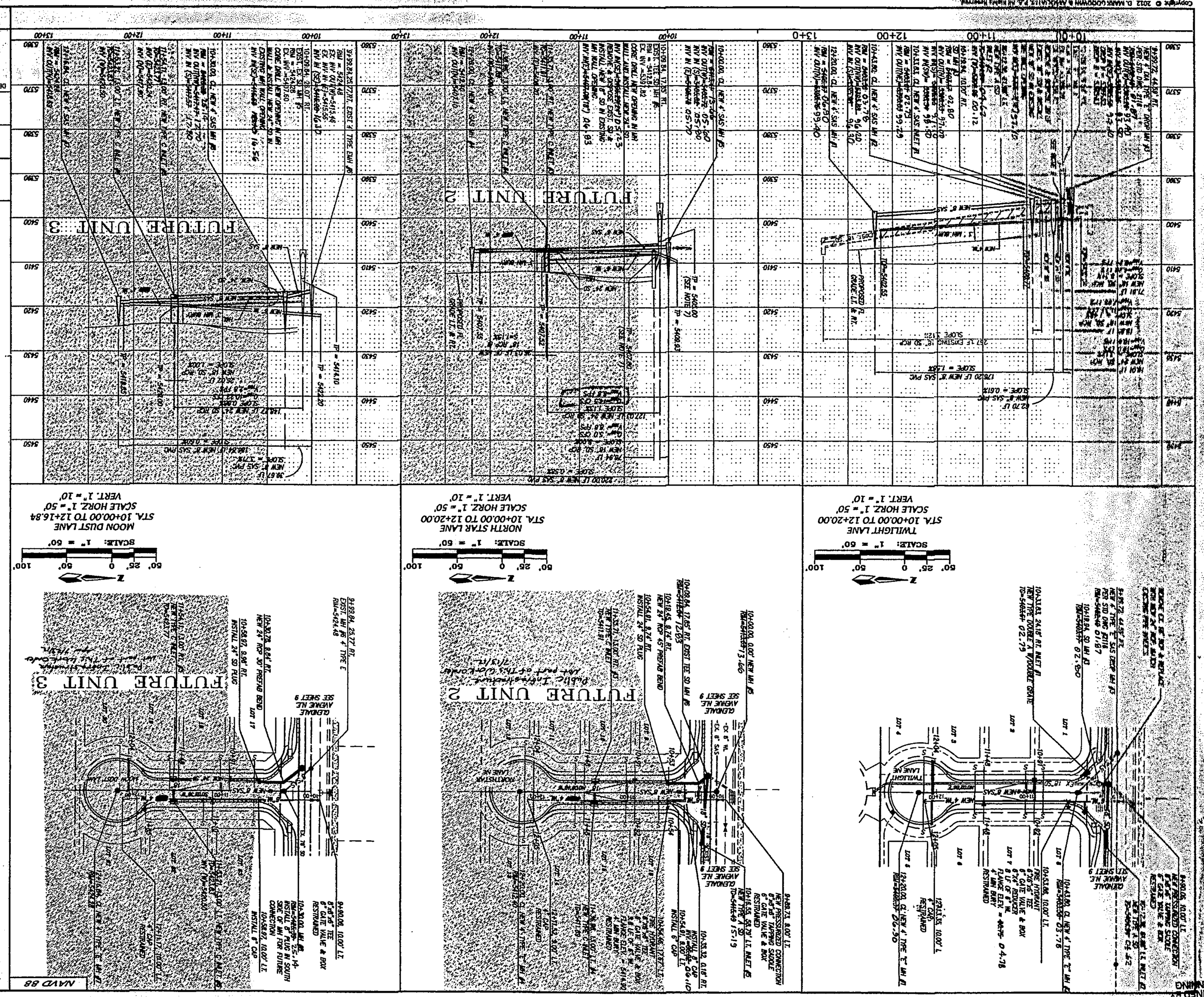


SCANNED BY PLANNING

CITY PROJECT NO. 702783 | ZONE MAP NO. B-19-Z | SHEET 10 OF 10

DESIGN REVIEW COMMITTEE — REVIEWED FOR COMPLIANCE — JUL 1 7 2012
CITY ENGINEER APPROVAL — APR 0 1 2012
LAST DESIGN UPDATE: MO./DAY/YR. | MO./DAY/YR. | MO./DAY/YR.

TITLE: THE ESTATES AT GLENDALE UNIT 1
TWILIGHT LANE
UTILITY IMPROVEMENTS

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

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

NO.	DATE	REMARKS	BY

REVISIONS

		DATE
DESIGN	DESIGNED BY	JDH
	DRAWN BY	SPS
	CHECKED BY	DMG

DATE: 05/12

ENGINEER'S SEAL

7-16-12

NOTES

1. ALL STATIONING IS BASED ON ℄ OF RIGHT-OF-WAY OR ℄ OF PRIVATE STREET EASEMENT.
2. ALL WATER METER SERVICES TO BE 3/4" SERVICE LINE UNLESS OTHERWISE NOTED.
3. ALL NEW GAS MANHOLES SHALL BE 4' DIA. TYPE "E"
4. MANHOLES LESS THAN 6' DEEP SHALL BE TYPE C.
5. NEW GAS CONNECTIONS TO EXISTING MANHOLES SHALL BE ACCORDING TO STD DWG 2102.
6. AT THE POINT OF GAS SERVICE LAYOUT, CONTRACTOR SHALL CONTACT ENGINEER TO DETERMINE THAT THERE ARE NO CONFLICTS WITH EXIST OR NEW UTILITY LINES.
7. LEAN FILL SHALL BE PLACED AT UTILITY LINE/STORM DRAIN CROSSINGS IN ACCORDANCE WITH WATER AUTHORITY STANDARD DRAWING 2381. LEAN FILL IS NOT REQUIRED WHEN THE UTILITY LINE PASSES OVER STORM DRAIN WITH AT LEAST 12" OF CLEARANCE.

MIDNIGHT LANE SANITARY SEWER SERVICES

LOT	STATION AT ROW	INV. ELEV. AT ROW	LENGTH AT ROW
1	10+08.29	5496.33	23.50'
2	11+01.29	5496.59	23.50'
3	11+57.80	5499.46	23.50'
4	12+16.07	5500.79	40.06'
5	12+16.70	5500.84	40.97'
6	11+56.21	5496.50	23.50'
7	11+01.71	5496.67	23.50'
8	10+08.71	5496.05	23.50'

NORTHSTAR LANE SANITARY SEWER SERVICES

LOT	STATION AT ROW	INV. ELEV. AT ROW	LENGTH AT ROW
1	FUTURE		
2	FUTURE		
3	FUTURE		
4	FUTURE		
5	FUTURE		
6	FUTURE		
7	FUTURE		
8	FUTURE		

MOON DUST LANE SANITARY SEWER SERVICES

LOT	STATION AT ROW	INV. ELEV. AT ROW	LENGTH AT ROW
1	FUTURE		
2	FUTURE		
3	FUTURE		
4	FUTURE		
5	FUTURE		
6	FUTURE		
7	FUTURE		
8	FUTURE		

BENCH MARKS

ABPS Brass Cap in concrete post stamped "1-B20". From the intersection of Louisiana Boulevard and Paseo Del Norte NE go east on Paseo Del Norte 1 mile to Benton Street. Here NE go east on Benton Street 1 mile to Modesto Avenue. The station is located in the northeast quadrant of the intersection.

Geographic Position (NAD83), in feet
N.M. State Plane Coordinates (Central Zone)
N=1529415.843, E=1550481.348
Elevation=5477.179 (NAVD88), in feet

SURVEY INFORMATION

FIELD NOTES

NO.	BY	DATE

AS BUILT INFORMATION

CONTRACTOR	SUNDANCE	DATE 9/12
WORK STAKED BY	ALS	DATE 9/12
ACCEPTANCE BY CITY ENGINEER		DATE 10/12
FIELD VERIFICATION BY	ALS	DATE 10/12
DRAWINGS REVISED BY	ALS	DATE 10/12
MAPPED IN AGIS		DATE
RECORDED BY		DATE
NM		

RECORD DRAWING
CERTIFICATE OF SUBSTANTIAL COMPLIANCE

I, John Mackenzie, NMPE 11818, of the firm Mark Goodwin & Associates, PA, a Registered Professional Engineer in the State of New Mexico, do hereby certify to the best of my knowledge, information and belief that the improvements shown hereon have been installed as part of this project has been inspected by me or by a qualified person under my direct supervision and that such improvements have been constructed in accordance with the plans and specifications approved by the City Engineer and that the record information shown hereon is an accurate representation of the improvements as-built. Certification is based on site inspections by me on 05/08/12.

Timothy Aaron Mackenzie, NMPE number 11818
John Mackenzie 11-7-12
John M. Mackenzie NMPE 11818

I, John Mackenzie, certify that this electronic version is identical to the original manuscript signature on the CONSTRUCTION drawings signed by me on November 7th, 2012.

1	FUTURE	
2	FUTURE	
3	FUTURE	
4	FUTURE	
5	FUTURE	
6	FUTURE	
7	FUTURE	
8	FUTURE	

APPENDIX B

SITE HYDROLOGY

Show offsite variances or Refer to mas as-built include as-built.

Tell

EROSION CONTROL NOTES:

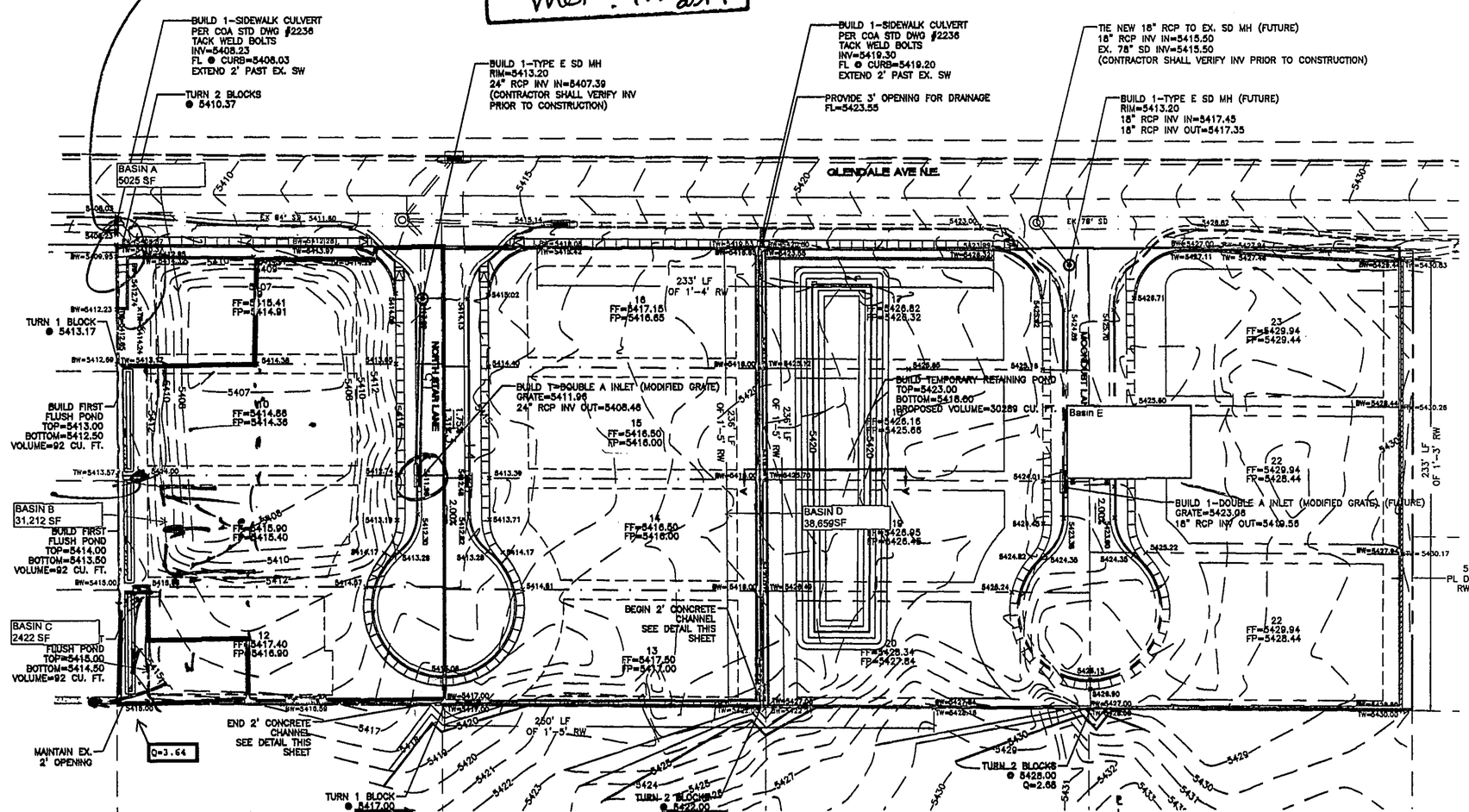
1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.

2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.

3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.

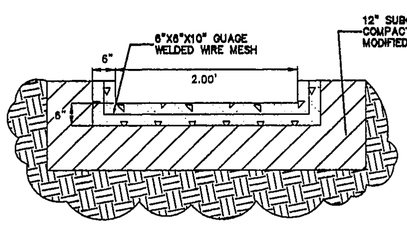
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.

5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.



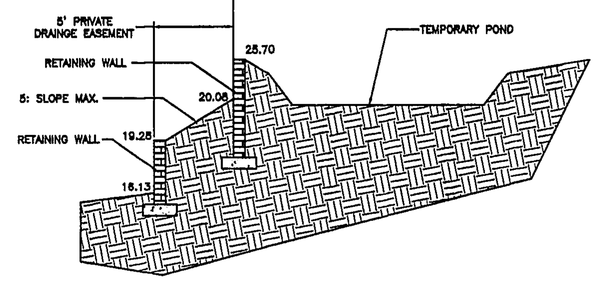
per MGS. As built

per MGS. as'



CONCRETE CHANNEL DETAIL

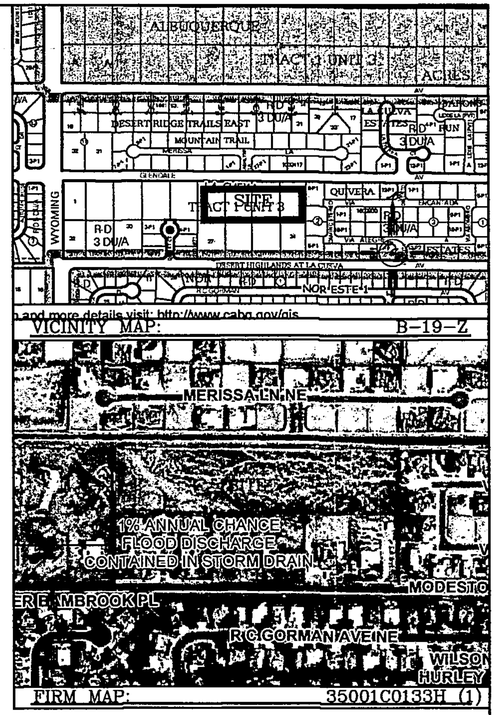
NTS



SECTION A-A

NTS

SCALE: 1"=30'



VICINITY MAP: B-19-Z

FIRM MAP: 35001C0133H (1)

LEGAL DESCRIPTION:

TR. A AND B, THE ESTATES AT GLENDALE

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
3. ALL CURB AND GUTTER SHALL BE 8" STANDARD UNLESS OTHERWISE NOTED.

LEGEND

- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED DRAINAGE EASEMENT
- PROPOSED CURB AND GUTTER
- EXISTING CURB AND GUTTER
- PROPOSED SCREEN WALL (18" MAX RETAINAGE)
- PROPOSED RETAINING WALL (HEIGHT VARIES-DESIGN BY OTHERS)
- EXISITNG SCREEN WALL

RECEIVED DEC 29 2015 LAND DEVELOPMENT SECTION

CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

ENGINEER'S SEAL	ESTATES AT GLENDALE UNIT 2 AND UNIT 3	DRAWN BY WCWJ
		DATE 10-19-15
	GRADING AND DRAINAGE PLAN	21425-LAYOUT-12-18-14
	Rio Grande Engineering, 1806 CENTRAL AVENUE SE, SUITE 201, ALBUQUERQUE, NM 87106, (505) 872-0999	SHEET # —
DAVID SOULE P.E. #14522		JOB # 21425

Weighted E Method

GLENDALE ESTATES

21 21 58

Existing 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 A	5025	0.115	0%	0	18.0%	0.021	10.0%	0.01154	72%	0.083	1.994	0.019	0.51	0.030
ONSITE B	31212	0.717	0%	0	27.0%	0.193	10.0%	0.07165	63%	0.451	1.864	0.111	3.02	0.172
ONSITE C	2422	0.056	0%	0	17.0%	0.009	10.0%	0.00556	73%	0.041	2.008	0.009	0.25	0.015
ONSITE D	38659	0.887	0%	0	21.0%	0.186	13.0%	0.11537	66%	0.586	1.919	0.142	3.82	0.220
TOTAL ONSITE PROPOSED	77318	1.775	0%	0	23.1%	0.410	11.5%	0.204	65%	1.161	1.904	0.282	7.60	0.436
TOTAL ONSITE ALLOWED	77318												14.50	
FUTURE E	77318	1.775	0%	0	100.0%	1.775	0.0%	0	0%	0.000	0.920	0.136	4.61	0.136
TOTAL														

Equations:

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

Volume = Weighted D * Total Area
UPLAND FLOW BASED UPON NAAMDP
Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

FIRST FLUSH REQURIED
1432.663 CUBIC FEET

Where for 100-year, 6-hour storm (zone 3)

Ea= 0.66 Qa= 1.87
Eb= 0.92 Qb= 2.6
Ec= 1.29 Qc= 3.45
Ed= 2.36 Qd= 5.02

TEMP POND VOLUME= 5927.713

FLOW SUMMARY

UPLAND	TOTAL	
AFFECTED LOT TO INLET	12.64 CFS	6.84 cfs onsite(basins b+d) and 5.8 cfs upland
TO EX. SW CHANNEL	3.89 CFS	upland
TO NEW SW CULVERT	0.51 CFS	rear yard lots 1 and 2

20, 20, 34, 26

APPENDIX C

HYDRAULIC CALCULATIONS

Street Capacity Calculations

NORTHSTAR PLACE

26' F-F Street Section with 4" curb

Slope= 0.02

Q=12.64 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	0.35	0.00	0.62	0.00514
0.02	0.0064	0.66	0.01	0.00	0.01	0.56	0.01	0.70	0.01219
0.025	0.01	0.83	0.01	0.01	0.01	0.65	0.02	0.73	0.01608
0.035	0.0196	1.16	0.02	0.02	0.03	0.82	0.03	0.77	0.02438
0.045	0.0324	1.49	0.02	0.03	0.06	0.96	0.04	0.80	0.03326
0.052	0.043264	1.72	0.03	0.05	0.09	1.06	0.06	0.82	0.03975
0.06	0.0576	1.98	0.03	0.07	0.13	1.17	0.07	0.84	0.04741
0.0625	0.0625	2.06	0.03	0.08	0.15	1.20	0.08	0.85	0.04985

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	0.08	0.15	1.20	0.08	0.85	0.05014
0.1	0.172656	3.98	0.04	0.26	0.53	1.53	0.15	0.85	0.08033
0.13	0.311406	5.51	0.06	0.57	1.13	1.82	0.24	0.89	0.11109
0.16	0.495156	7.04	0.07	1.04	2.09	2.11	0.34	0.93	0.14476
0.2	0.810156	9.08	0.09	2.00	4.00	2.47	0.49	0.97	0.19277
0.207	0.873506	9.43	0.09	2.21	4.42	2.53	0.52	0.98	0.20147
0.2612	1.446942	12.20	0.12	4.32	8.64	2.98	0.78	1.03	0.27132
0.3025	**1.9825**	**14.31**	**0.14**	**6.56**	**13.13**	**3.31**	**1.00**	**1.06**	**0.32706**

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

Y2= Y - 0.3025

A3= A2 + Y2*13

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	6.60	13.20	3.32	1.01	1.06	0.32825
0.3039	2.0021	14.31	0.14	6.67	13.34	3.33	1.01	1.07	0.33039
0.3062	2.0343	14.31	0.14	6.85	13.70	3.37	1.03	1.07	0.33586
0.31	2.0875	14.31	0.15	7.15	14.30	3.43	1.06	1.08	0.34491
0.3125	2.1225	14.32	0.15	7.35	14.70	3.46	1.08	1.09	0.35087
0.32	2.2275	14.32	0.16	7.96	15.93	3.57	1.14	1.11	0.36879
0.3317	2.3913	14.34	0.17	8.96	17.92	3.75	1.24	1.15	0.39684
0.333	2.4095	14.34	0.17	9.07	18.14	3.76	1.25	1.15	0.39996

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

Y3= Y - 0.333

A4= A3 + 13 * 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	9.21	18.41	3.78	1.27	1.15	0.40242
0.3601	2.80726	15.69	0.18	11.02	22.04	3.92	1.41	1.15	0.43393
0.38	3.122725	16.69	0.19	12.63	25.26	4.04	1.54	1.16	0.45975
0.4196	3.809389	18.67	0.20	16.32	32.65	4.28	1.80	1.17	0.51305
0.4603	4.596832	20.70	0.22	20.84	41.67	4.53	2.09	1.18	0.5701
0.504	5.534525	22.89	0.24	26.55	53.11	4.80	2.42	1.19	0.63354
0.513	5.7395	23.34	0.25	27.85	55.70	4.85	2.49	1.19	0.64685

NOTE : 2Q is flow for both half of the street, Q is half street flow

DROP INLET CALCULATIONS

Inlet	TYPE OF INLET	AREA (SF)	Q (CFS)	H (FT)	H ALLOW (FT)
culdesac	DOULE	8.86	25.28	0.3512	0.67

ORIFICE EQUATION

Q = CA sqrt(2gH) H=(Q/CA)^2)/2G

C = 0.6

g = 32.2

INLET GRATE=40"X25"

CALCULATE FOR BARS

40-(11*.5) 34.5"

25-(13*.5) 18.5"

OPENING IS 4.43 SF PER GRATE

USING DOUBLE FLOW DUE TO SUMP

100-YEAR, 6-HOUR STORM DISCHARGE IS 12.64 CFS

(6.52

TURNED BLOCKS

Weir Equation:

$Q=CLH^{3/2}$

West drainage swale thru walls

Q= 2.92 cfs ?
C = 2.95
H = 0.5 ft
L = Length of weir

$$Q = 2.95 * .5 * ((0.5)\wedge(3/2))$$

Each opening is 6"x6"
Each block has two openings
Each opening has .52 cfs capacity

For phase 3 lots
Therefore 2.86 cfs requires 6 openings and 3 turned blocks

For west opening at cul-de-sac
Therefore 4.49 cfs requires 8.6 openings and 5 turned blocks

For middle opening at phase 2/phase 3 interface
Therefore 1.31 cfs requires 2.5 openings and 2 turned blocks

SIDEWALK CULVERTS

Weir Equation:

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

Q= 2.92 cfs ? ~~4.49~~ 5.8 cfs
C = 2.95
H = 0.67 ft
L = Length of weir

$$Q = 2.95 * 2 * ((0.67)^{\wedge}(3/2))$$

West drainage swale thru walls

4.49
1.31
5.80

Each culvert has capacity of 3.23 cfs
therefore use 2 culverts

CHANNEL CAPACITY

	Top Width	Bottom Width	Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
	(ft)	(ft)	(ft)	(ft^2)	(ft)		(%)	(cfs)	(cfs)	(ft/s)
Beginning	2	2	0.67	1.34	3.34	0.4011976	0.67	5.23	1.31	0.98
End	2	2	0.67	1.34	3.34	0.4011976	2	9.04	5.80	4.33

Manning's Equation:

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

A = Area

R = D/4

S = Slope

n = 0.017

all offsite Basins

from ~~[illegible]~~ where?

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
24" RCP	24	1.13	3.14	0.5	18.44	12.64	4.02
18" RCP	18	2	1.77	0.375	11.39	3.82	2.16

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

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

A = Area
R = D/4
S = Slope
n = 0.017

EROSION CONTROL NOTES:

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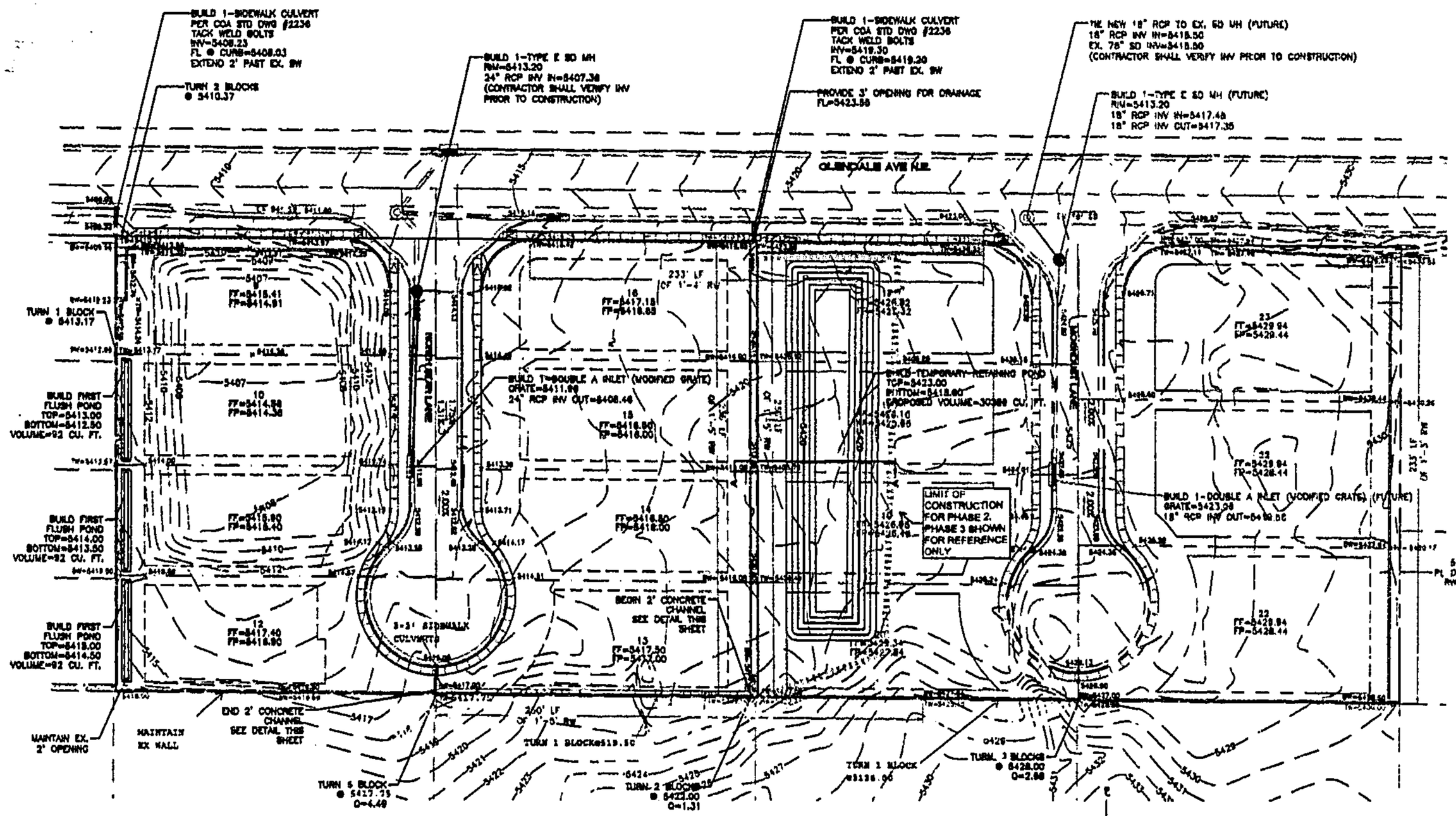
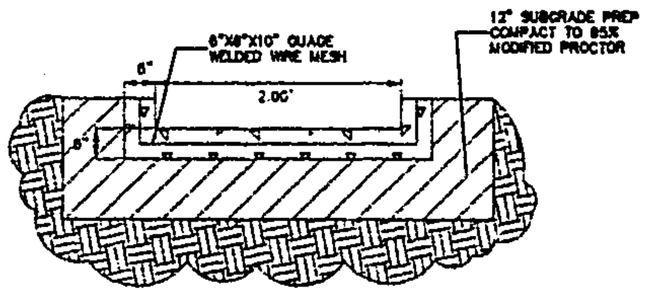
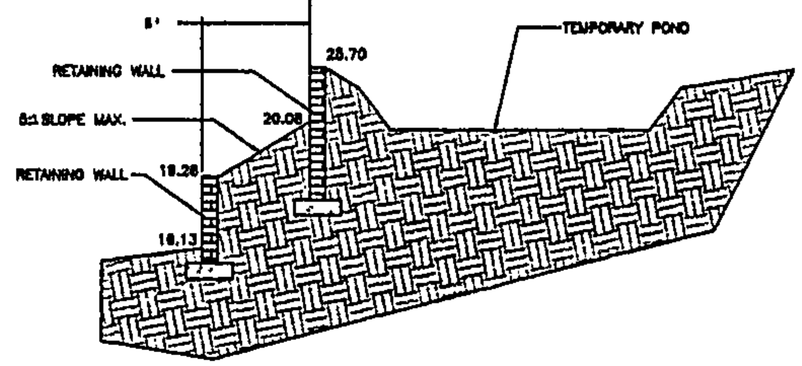
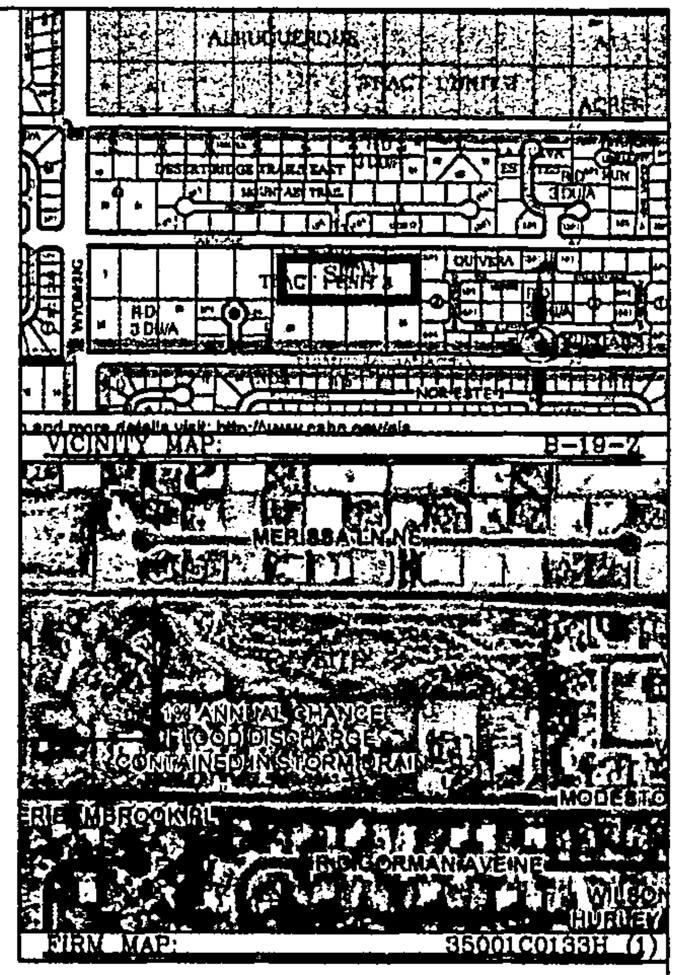




CONCRETE CHANNEL DETAIL
NTS



SECTION A-A
NTS



LEGAL DESCRIPTION:

TR. A AND B, THE ESTATES AT GLENDALE

NOTES:

1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
3. ALL CURB AND GUTTER SHALL BE 6" STANDARD UNLESS OTHERWISE NOTED.

LEGEND

- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED DRAINAGE EASEMENT
- PROPOSED CURB AND GUTTER
- EXISTING CURB AND GUTTER
- PROPOSED SCREEN WALL (18" MAX RETAINAGE)
- PROPOSED RETAINING WALL (HEIGHT VARIES-DESIGN BY OTHERS)
- EXISTING SCREEN WALL

SCALE: 1"=30'

CAUTION:

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ENGINEER'S SEAL

DAVID SOULE P.E. #14522

12/28/15

ESTATES AT GLENDALE UNIT 2

GRADING AND DRAINAGE PLAN

Rio Grande Engineering
1606 CENTRAL AVENUE SE SUITE 201
ALBUQUERQUE, NM 87106
(505) 272-0049

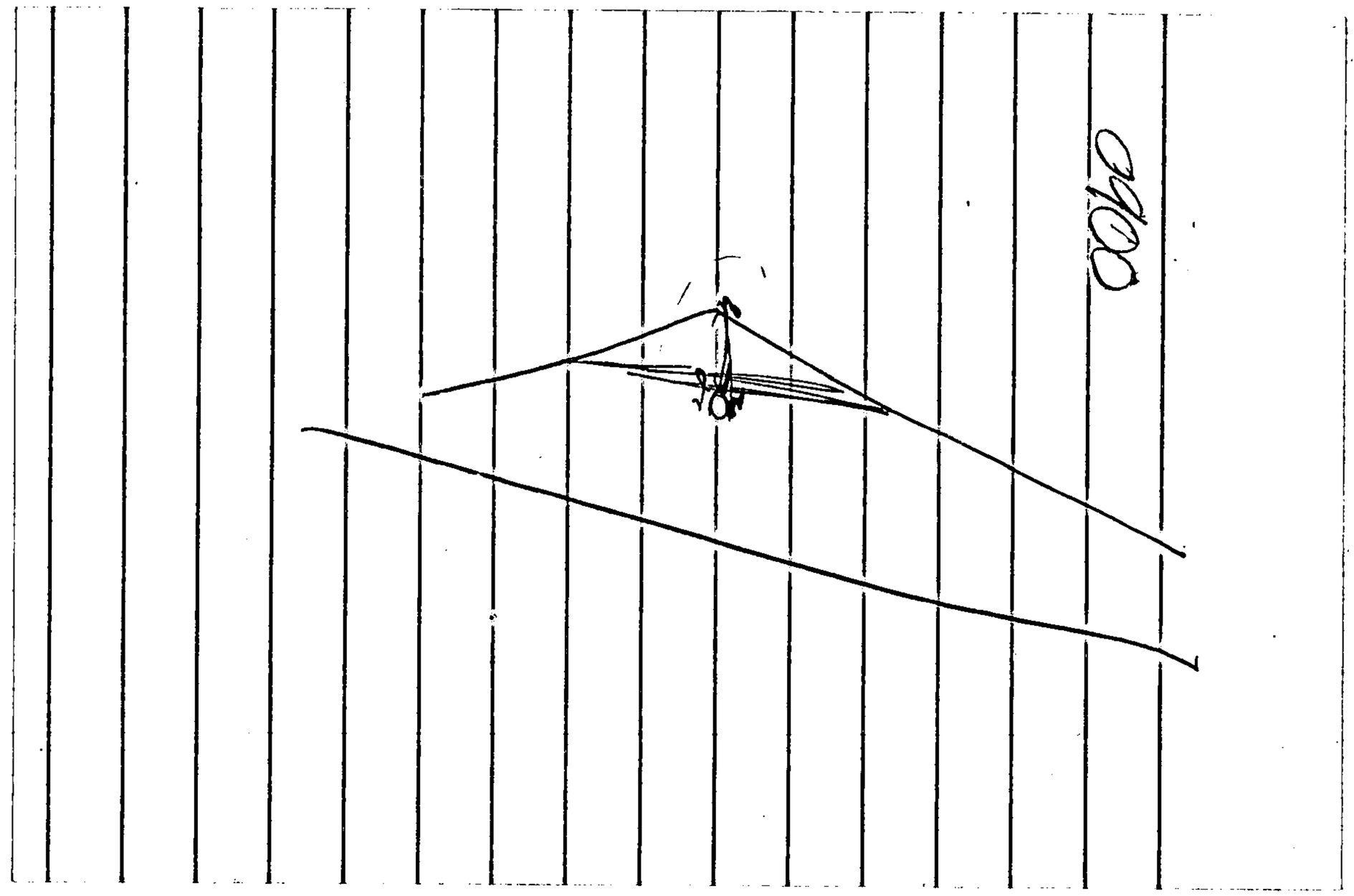
DRAWN BY WCWJ

DATE 10-16-15

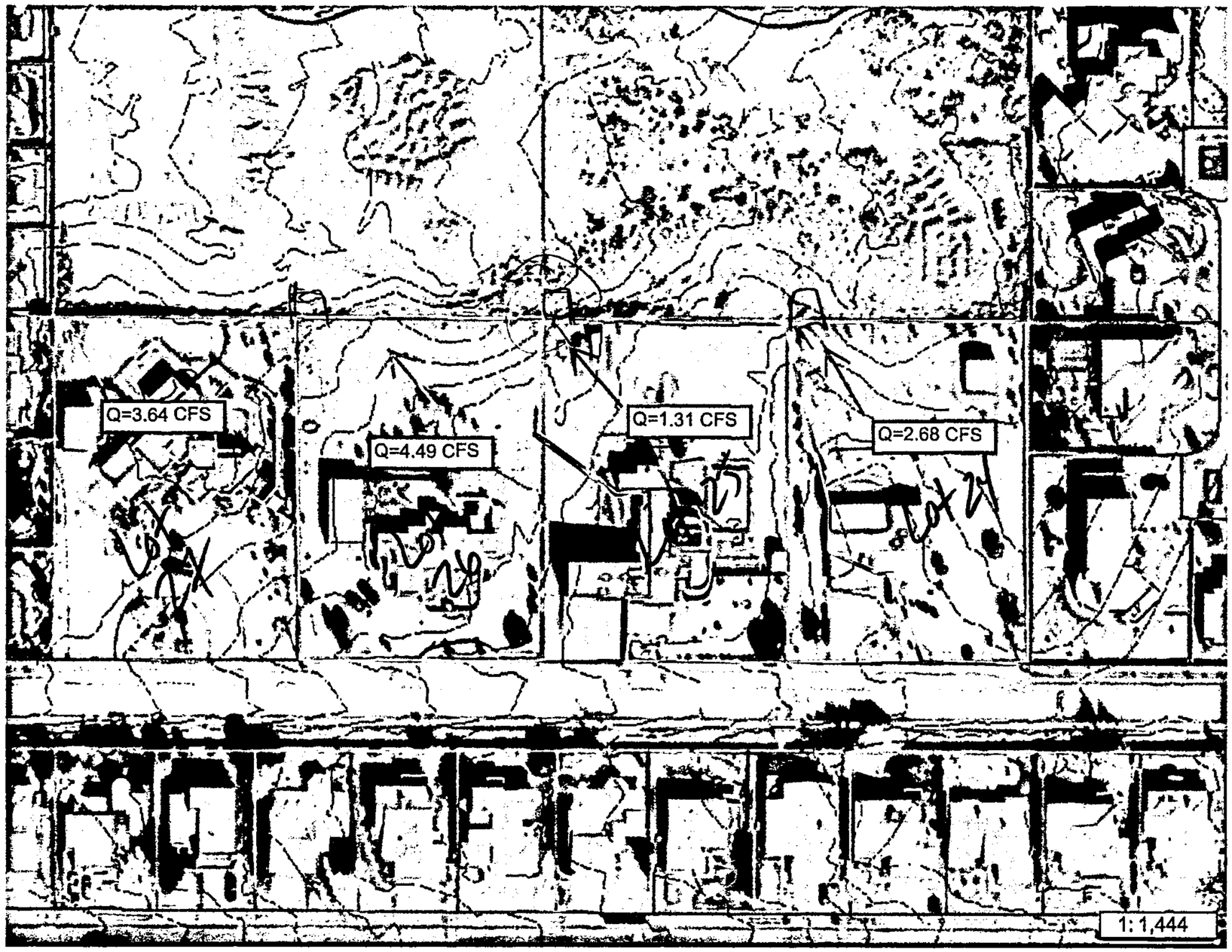
21425-LAYOUT-12-16-15

SHEET # —

JOB # 21425



UPLAND DRAINAGE BASIN MAP



Legend

- City Parcels
- Municipal Limits
  - Corrales
  - Edgewood
  - Los Ranchos
  - Rio Rancho
  - Tijeras
  - UNINCORPORATED
- World Street Map

Notes

0.0 0 0.02 0.0 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
3/23/2016 © City of Albuquerque

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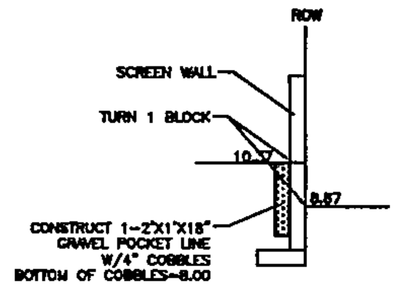
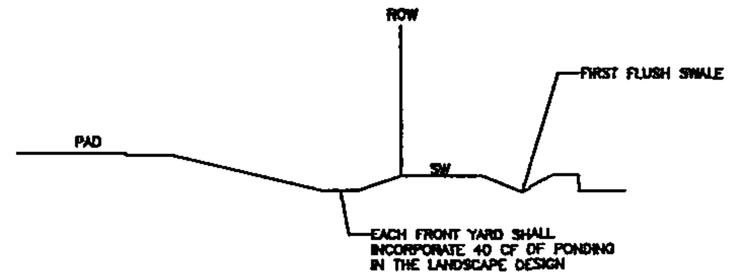
THIS MAP IS NOT TO BE USED FOR LEGAL PURPOSES

Received 3/24/16



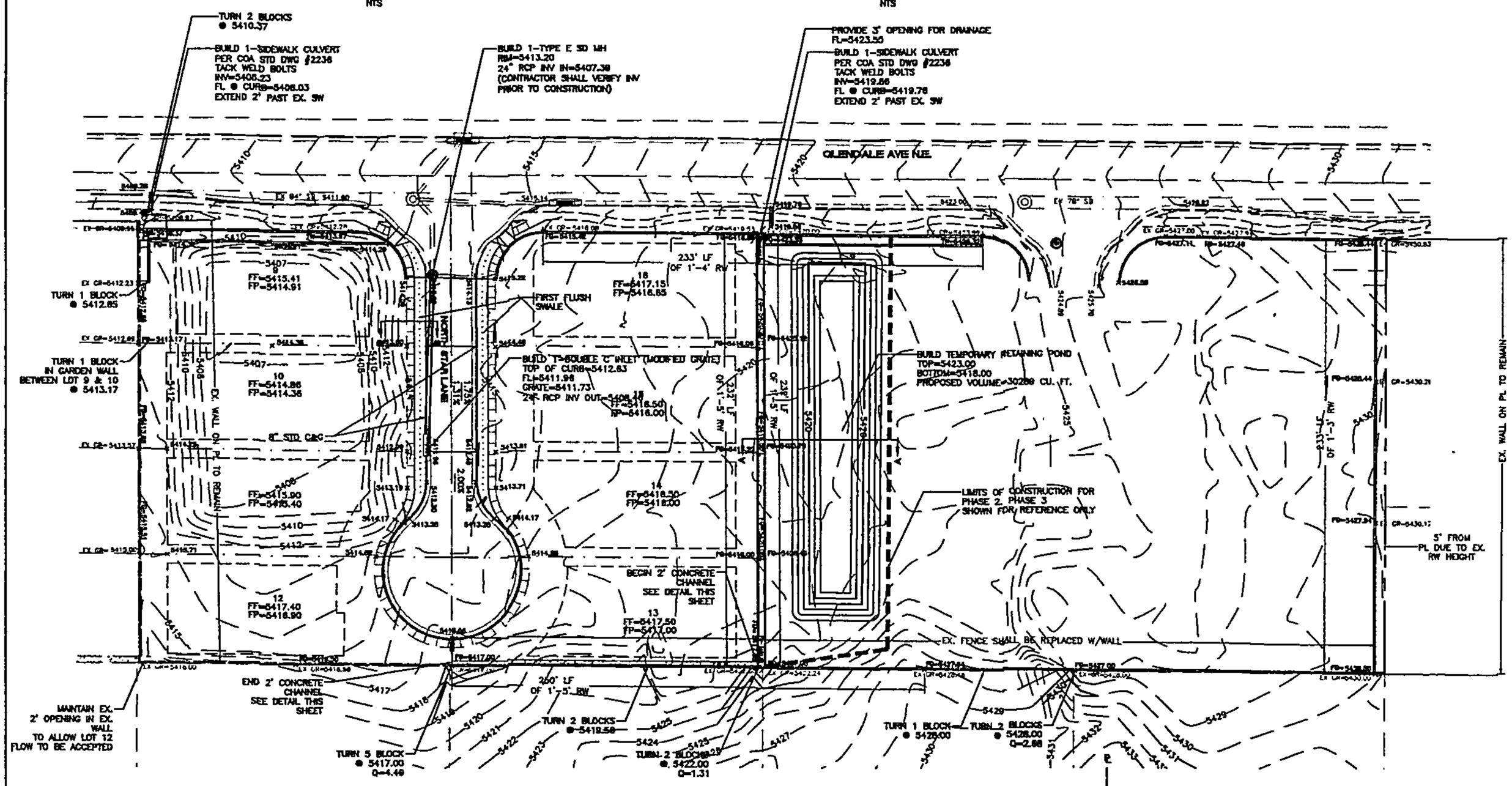
SECTION C-C
NTS

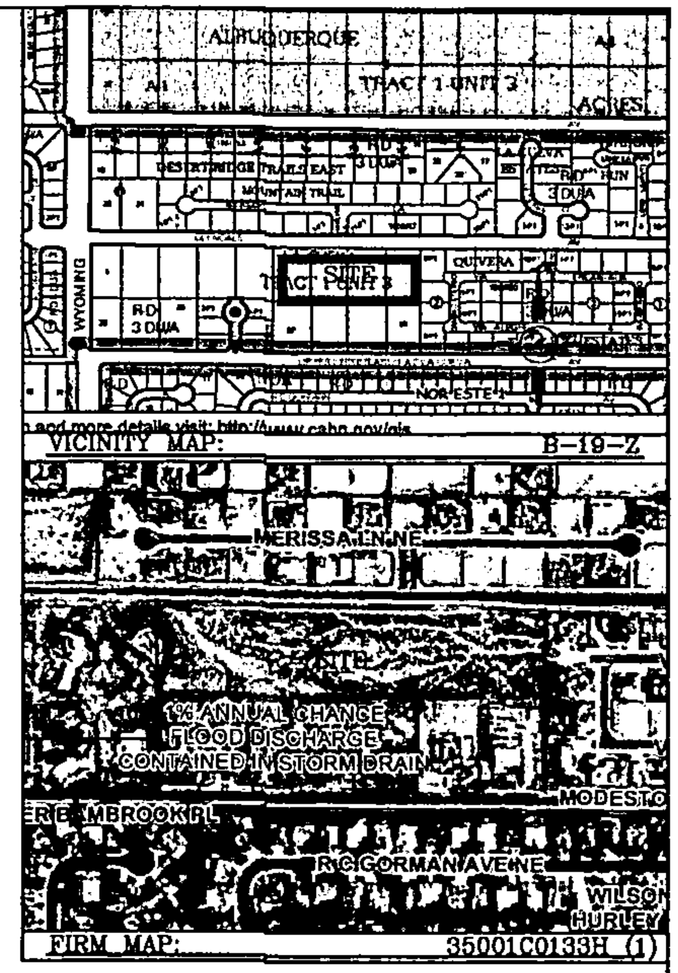


SECTION B-B
NTS

EROSION CONTROL NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING A TOPSOIL DISTURBANCE PERMIT PRIOR TO BEGINNING WORK.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING RUN-OFF ON SITE DURING CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING ALL SEDIMENT THAT GETS INTO EXISTING RIGHT-OF-WAY.
4. REPAIR OF DAMAGED FACILITIES AND CLEANUP OF SEDIMENT ACCUMULATIONS ON ADJACENT PROPERTIES AND IN PUBLIC FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR.
5. ALL EXPOSED EARTH SURFACES MUST BE PROTECTED FROM WIND AND WATER EROSION PRIOR TO FINAL ACCEPTANCE OF ANY PROJECT.





VICINITY MAP: B-19-Z

FIRM MAP: 35001C0133H (1)

LEGAL DESCRIPTION:

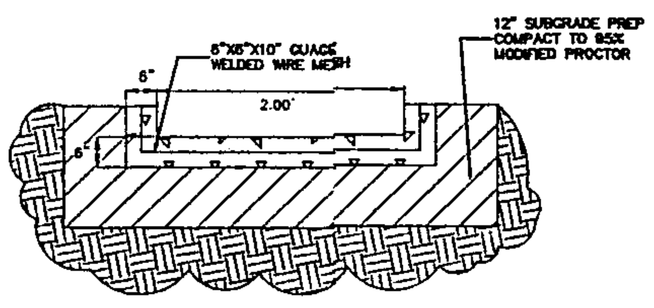
TR. A AND B, THE ESTATES AT GLENDALE

NOTES:

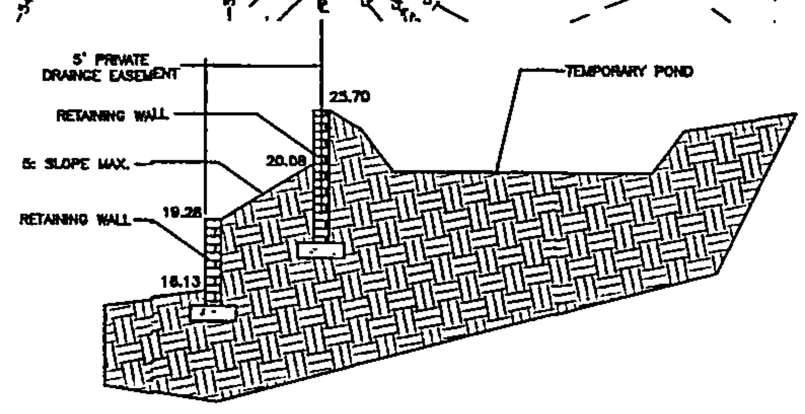
1. ALL SPOT ELEVATIONS REPRESENT FLOWLINE ELEVATION UNLESS OTHERWISE NOTED.
2. ALL RETAINING WALL DESIGN SHALL BE BY OTHERS.
3. ALL CURB AND GUTTER SHALL BE 6" STANDARD UNLESS OTHERWISE NOTED.

LEGEND

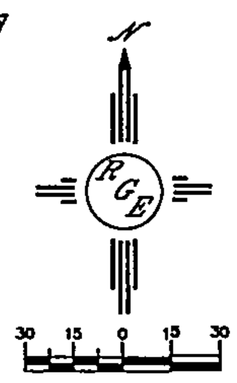
- EXISTING CONTOUR
- EXISTING INDEX CONTOUR
- PROPOSED CONTOUR
- PROPOSED INDEX CONTOUR
- SLOPE TIE
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- BOUNDARY
- CENTERLINE
- RIGHT-OF-WAY
- PROPOSED DRAINAGE EASEMENT
- PROPOSED CURB AND GUTTER
- EXISTING CURB AND GUTTER
- PROPOSED SCREEN WALL (18" MAX RETAINAGE)
- PROPOSED RETAINING WALL (HEIGHT VARIES-DESIGN BY OTHERS)
- EXISTING SCREEN WALL



CONCRETE CHANNEL DETAIL
NTS



SECTION A-A
NTS



CAUTION:

EXISTING UTILITIES ARE NOT SHOWN. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONDUCT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATION TO DETERMINE THE ACTUAL LOCATION OF UTILITIES & OTHER IMPROVEMENTS.

ENGINEER'S SEAL

DAVID SOULE NEW MEXICO 14522 PROFESSIONAL ENGINEER

3/23/16

DAVID SOULE P.E. #14522

ESTATES AT GLENDALE UNIT 2 AND UNIT 3

GRADING AND DRAINAGE PLAN

Rio Grande Engineering
1414 CENTRAL AVENUE SE SUITE 201 ALBUQUERQUE, NM 87106 (505) 872-9999

DRAWN BY WCKU

DATE 10-19-15

21425-LAYOUT-12-10-14

SHEET # —

JOB # 21425

THE ESTATES AT GLENDALE

CONCEPTUAL GRADING & DRAINAGE PLAN

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

Designed: GM	Drawn: ACH	Checked: DMG	Sheet 2 of 4
Scale: AS SHOWN	Date: 01-04-12	Job: A11004	

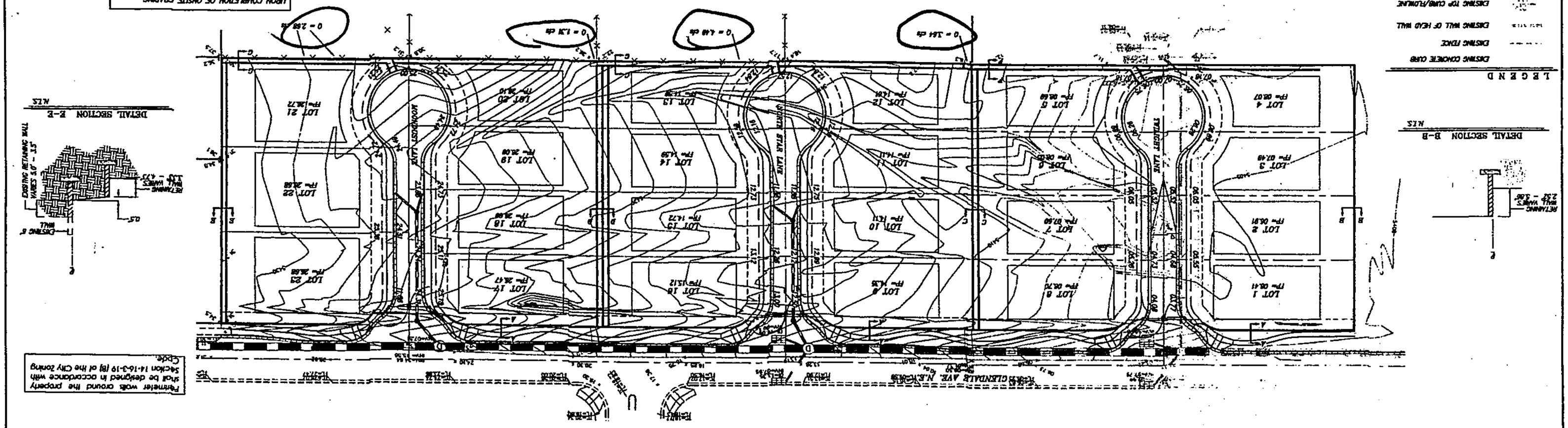
A11004 GLENDALE RES\GRADE & DRAIN\A11004 CONCEPTUAL-GRADING_R\04-11-2012\ACH

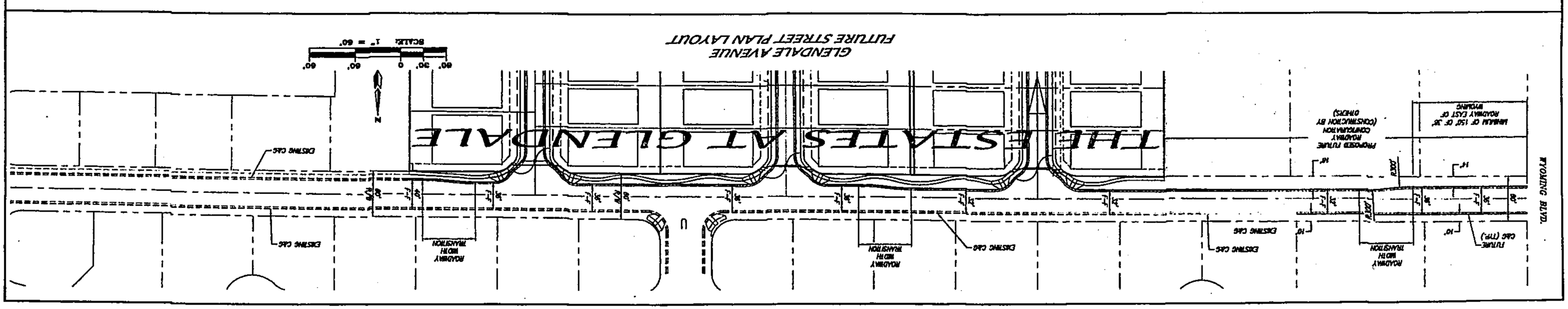
DRAINAGE MANAGEMENT PLAN

THIS SITE WILL ALLOW FREE DISCHARGE TO THE EXISTING DRAINAGE SYSTEM IN GLENDALE AVE. OFFSITE DRAINAGE FROM PRIVATE PROPERTY LOCATED SOUTH OF THIS DEVELOPMENT WILL BE ALLOWED TO FLOW THROUGH THE PRIVATE LOTS IN THIS DEVELOPMENT IN CONCRETE-LINED SCEVAGO SWALES WITH PRIVATE DRAINAGE EASEMENTS THAT WILL CONVEY THE DRAINAGE TO THE NEW PRIVATE STREETS, WHICH WILL THEN DRAIN INTO THE EXISTING 84" RCP IN GLENDALE AVE. VIA 7 NEW INLETS BEING CONSTRUCTED AT VARIOUS LOCATIONS WITHIN THIS PROJECT. THERE IS 30 FEET OF GRADE CHANGE ACROSS THIS SITE IN AN EAST - WEST DIRECTION.

UPON COMPLETION OF ONSITE GRADING OPERATIONS ALL DISTURBED SURFACES ON THE SITE SHALL BE STABILIZED WITH NATIVE SEED AND IRRIGATED WITH A TEMPORARY IRRIGATION SYSTEM TO ESTABLISH THE NEW VEGETATION.

SCALE: 1" = 40'





CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

April 28, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 4-15-16 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 4-15-16, the above referenced submittal cannot be approved for ESC Permit (Grading Permit) until the following comments are addressed:

1. Lot 12 SW Corner: Elevation in the existing channel is barely readable.
2. The SW Culvert at NW corner: Both Work Order and Grading Plan show FL. At Curb = 5408.03, but the spot elevation on plan shows 5408.28. The Invert El is 5408.23 but it is not clear if this is the Invert In or Out. Since the FL at curb is shown, I believe it is the Invert IN, please add "IN"(all SW culverts). It would need to be adjusted to be higher than the 5408.28 at the FL.
3. Retaining wall and Wall opening at NE corner:
   a. How far past the property line is the Retaining wall to be built? What is the T.O.Wall elevation at the end?
   b. The opening also calls for 4'x10' Rip-Rap pad, but it is not shown on the plan. Is future drainage (from the 5' Drainage Easement) supposed to discharge thru the SW culvert? If so then the SW should be in-line with the drainage easement.
   c. The Work Order calls for a 4'x10' Rip-rap pad where the Grading Plan calls for a 5'x10' pad. It is unclear where each pad lies, and the orientation of them as well.
   d. Work order is not defining the location of the SW Culverts, its showing a distance to the edge of the rip-rap.
   e. What is the elevation of the rip-rap for the emergency overflow at the SW culvert? There are 2 elevations shown, and they are partially covered by the rip-rap hatch. Please clarify.
   f. There is a callout for a 3' opening FL = 23.55, and Section A-A shows a private drainage easement. Is there supposed to be a drainage channel in the future development? If so, the bottom of the future swale/channel would be lower than the retaining wall.

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g. The FG near the opening is 20.84, which implies that the top of the Retaining wall is about 20.84, and a future swale/channel would be to low to discharge out of the opening at 23.55.
h. The retaining wall along the eastern boundary needs T.O.Wall and B.O. Wall elevations along the wall.

4. **Previous comment not addressed:** Fade back existing contours.
5. **This comment was not addressed:** Lot 13 South Wall: provide a series of evenly spaced block opening that would allow 4.49 cfs to flow through rather than 1 location of 5 overturned blocks. **New: is the 5 blocks supposed to be 2 blocks? Then there would be 3 locations of 2 overturned blocks and the 4.49cfs from Lot 25 should be divided by 3 and indicated at each location.**
6. **This comment was not addressed:** The 1.31 cfs should enter thru overturned blocks on South wall, on undeveloped site. Move location of overturned blocks slightly east so that flows from that site can enter. **New: the opening in the new wall needs to be located on the east side of the lot line between Lots 25 and 26. A 2 ft. opening needs to be provided in the retaining wall along the East property line to allow the flows thru. Show the invert at the wall. Detail how far past the retaining wall the channel will continue.**
7. Show the channel slope, the FL Elev. at the East retaining wall, and the FL Elev. where it turns 90 deg. Towards the SW Culvert.
8. The SW culverts needed at end of cul-de-sac: The FL. Elev at Curb is 5415.06 on plan, but build notes show 5415.31. Fix build notes and call out the Invert In elev.

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipien

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 2 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
X 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

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

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

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APR 15 2016
LAND DEVELOPMENT SECTION

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 4/15/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

April 1, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 3-23-16 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 3-24-16, the above referenced submittal cannot be approved for ESC Permit (Grading Permit) until the following comments are addressed:

1. An approved ESC plan is required for ESC Permit. submitted
2. Provide a Benchmark on the plan. added
3. Lot 12 SW Corner: Show the existing channel in the SW corner that was built by the previous development. Show ToChannel elevation, and the FG adjacent to the channel. (Show that flows can enter channel) added
4. Lot 12: SW corner: The Previous plans shows that the channel is 3.33' wide (the note says 2'), and so the opening in the West wall should be the same. The note leader needs to point to the opening in the WEST wall, stating that the opening is to remain, and should state that flows from both Lot 12 and from the Lot to the South are to be accepted. corrected
5. Lot 12 SW corner: The Previous plans show that a 3.33'x0.67' opening with a steel grate was provided in the existing wall for the Lot to the south to discharge through. Indicate that this opening is to remain. There needs to be a second note stating that the opening is to remain to accept flows from the Lot to the South. corrected
6. First Flush ponds are shown in Section B-B, however, show a depth. Also show in the plan view the approximate location and area of pond needed to capture 40cfs as stated in Section B-B. Show first flush calculation. added dimensions and typical
7. The SW Culvert at NW corner of site shifted East, but elevations remained unchanged. Verify elevations on the Work Order. corrected
8. Lot 9: Overlapping text of TW elevations with existing contour label. Fade back existing contours. corrected
9. Show how overflow from pond will discharge to the SW Culvert. added
10. Lot 13 South Wall: provide a series of evenly spaced block opening that would allow 4.49 cfs to flow through rather than 1 location of 5 overturned blocks. added

still have 5" Blocks @ 1 spot

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from move to lot 26

12. The 1.31 cfs should enter thru overturned blocks on South wall, on undeveloped site. Move location of overturned blocks slightly east so that flows from that site can enter. moved

13. Detail and dimension channel that will allow the 1.31 cfs from offsite flows along with the 4.49 cfs to flow to the SW culvert at the end of the cul-de-sac. added

14. Call out and the number and width of SW culverts needed at end of cul-de-sac. added

15. No revised report submitted. provided

16. No pond volume calculations submitted. Please submit. provided

17. Add to the Legend the hatch pattern used for existing Retaining Walls. Is the existing south wall a screen wall? If so, it does not match the screen wall hatch pattern. modified legend and plan

18. If there is to be "recontouring" on the lots to the south, then show on the plan and add the following note: CONTRACTOR MUST COORDINATE GRADING ON OFFSITE LOTS WITH NEIGHBOR(S) TO THE SOUTH PRIOR TO BEGINNING WORK added

19. Note the type of Curb and Gutter on the plan, and the extents of the different types. Is it Standard Curb and Gutter. Note so in the Legend. added

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

need invert of channel along east wall

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

April 1, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date ~~3-23-16~~ (File: B19D027)
~~4-4-16~~

Dear Mr. Soule:

Based upon the information provided in your submittal received 3-24-16, the above referenced submittal cannot be approved for ESC Permit (Grading Permit) until the following comments are addressed:

1. An approved ESC plan is required for ESC Permit.
2. Provide a Benchmark on the plan.
3. Lot 12 SW Corner: Show the existing channel in the SW corner that was built by the previous development. Show ToChannel elevation, and the FG adjacent to the channel. (Show that flows can enter channel)
4. Lot 12: SW corner: The Previous plans shows that the channel is 3.33' wide (the note says 2'), and so the opening in the West wall should be the same. The note leader needs to point to the opening in the WEST wall, stating that the opening is to remain, and should state that flows from both Lot 12 and from the Lot to the South are to be accepted.
5. Lot 12 SW corner: The Previous plans show that a 3.33'x0.67' opening with a steel grate was provided in the existing wall for the Lot to the south to discharge through. Indicate that this opening is to remain. There needs to be a second note stating that the opening is to remain to accept flows from the Lot to the South.
6. First Flush ponds are shown in Section B-B, however, show a depth. Also show in the plan view the approximate location and area of pond needed to capture 40cfs as stated in Section B-B. Show first flush calculation.
7. The SW Culvert at NW corner of site shifted East, but elevations remained unchanged. Verify elevations on the Work Order.
8. Lot 9: Overlapping text of TW elevations with existing contour label.
9. Fade back existing contours.
10. Show how overflow from pond will discharge to the SW Culvert.
11. Lot 13 South Wall: provide a series of evenly spaced block opening that would allow 4.49 cfs to flow through rather than 1 location of 5 overturned blocks.

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12. The 1.31 cfs should enter thru overturned blocks on South wall, on undeveloped site. Move location of overturned blocks slightly east so that flows from that site can enter.
13. Detail and dimension channel that will allow the 1.31 cfs from offsite flows along with the 4.49 cfs to flow to the SW culvert at the end of the cul-de-sac.
14. Call out and the number and width of SW culverts needed at end of cul-de-sac.
15. No revised report submitted.
16. No pond volume calculations submitted. Please submit.
17. Add to the Legend the hatch pattern used for existing Retaining Walls. Is the existing south wall a screen wall? If so, it does not match the screen wall hatch pattern.
18. If there is to be "recontouring" on the lots to the south, then show on the plan and add the following note: CONTRACTOR MUST COORDINATE GRADING ON OFFSITE LOTS WITH NEIGHBOR(S) TO THE SOUTH PRIOR TO BEGINNING WORK
19. Note the type of Curb and Gutter on the plan, and the extents of the different types. Is it Standard Curb and Gutter. Note so in the Legend.

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

February 5, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 12-28-15 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 12-29-15, the above referenced submittal is approved for action by the DRB on the Preliminary Plat.

The Grading and Drainage Plans cannot be approved for Grading Permit until the following comments are addressed:

appr?

1. Submit an ESC plan to Curtis Cherne for approval. we have submitted
2. Provide a Benchmark. we have added bench
3. Section A-A, show Property Line at Center of wall. we have centered wall
4. Back yard ponding is not allowed as homeowners can eventually fill in. First flush ponds should be in the front. Revise report to state this. we have removed ponds
5. Lot 10 discharges to Lot 9 via a turned block in side wall. Correct leader to point to sidewall. we have corrected
6. Call out a curb cut on existing channel, so that rear of lot 12 can discharge to channel. we have added note
7. Shift the SW culverts on Glendale to the west so that Lot 9 and pond will drain to them. We have moved and added wall drain section.
8. The wall elevations along the western boundary are marked as either TW or BW, but per our conversation, those elevations are FG (finished grade) elevations on the eastern side of the existing retaining wall, which has a garden wall on top. Therefore,
   a. Call out existing retaining wall supporting an existing garden wall added
   b. Change the abbreviations to FG for the elevations on the western side of wall. modified
9. Show the offsite basins on an offsite basins map. They should match those shown on the Mark Goodwin & Associates (MG&A) plan (stamped 7/13/12) that show the offsite boundaries and flows. ADDED MGA MAP AND MATCHING FLOWS
10. Since offsite basin (109 from MG&A) to drain thru 5 overturned blocks in wall. However, 5 adjacent blocks cannot be overturned to discharge into SW culvert. There must be some length of wall between overturned blocks (about 6'). Provide a series of overturned blocks, and provide a means to direct the flows to the cul-de-sac. WE HAVE SPREAD BLOCKS OUT, THEY WILL DISCHARGE TO THE CHANNEL THAT CONVEYS FLOWS

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11. Similarly, 2 overturned blocks from Offsite basin 110 from MG&A should be spaced further apart, or some sort of header installed in wall. adjusted spacing
12. In Report , Pg 3, Par. 1 – change 7 lot subdivision to 8 corrected
13. In report, Pg. 3, Par. 2 – change "desiltation" pond to "Temporary Retaining" pond correcte
14. Add pond volume calcultions. attached calculations
15. Note on the Grading plan the existing walls adjacent to the property. It is unclear where the existing walls are, particularly along the west and south edge. There also appears to be an existing wall along the east edge. added text to clarify
16. If there is to be "recontouring" on the lots to the south, then show on the plan and add the following note: CONTRACTOR MUST COORDINATE GRADING ON OFFSITE LOTS WITH NEIGHBOR(S) TO THE SOUTH PRIOR TO BEGINNING WORK added note to state
17. Note the type of Curb and Gutter on the plan, and the extents of the different types. added note to state

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

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City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 2 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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:

____ ENGINEER/ ARCHITECT CERTIFICATION

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

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

____ OTHER (SPECIFY) _____

RECEIVED
MAR 24 2016
LAND DEVELOPMENT SECTION

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

____ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY

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

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 3/23/16 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

February 5, 2016

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 12-28-15 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 12-29-15, the above referenced submittal is approved for action by the DRB on the Preliminary Plat.

The Grading and Drainage Plans cannot be approved for Grading Permit until the following comments are addressed:

1. Submit an ESC plan to Curtis Cherne for approval.
2. Provide a Benchmark.
3. Section A-A, show Property Line at Center of wall.
4. Back yard ponding is not allowed as homeowners can eventually fill in. First flush ponds should be in the front. Revise report to state this.
5. Lot 10 discharges to Lot 9 via a turned block in side wall. Correct leader to point to sidewall.
6. Call out a curb cut on existing channel, so that rear of lot 12 can discharge to channel.
7. Shift the SW culverts on Glendale to the west so that Lot 9 and pond will drain to them. SHOW SECTION SHOWING drain or channel.
8. The wall elevations along the western boundary are marked as either TW or BW, but per our conversation, those elevations are FG (finished grade) elevations on the eastern side of the existing retaining wall, which has a garden wall on top. Therefore,
   a. Call out existing retaining wall supporting an existing garden wall
   b. Change the abbreviations to FG for the elevations on the western side of wall.
9. Show the offsite basins on an offsite basins map. They should match those shown on the Mark Goodwin & Associates (MG&A) plan (stamped 7/13/12) that show the offsite boundaries and flows.
10. Since offsite basin (109 from MG&A) to drain thru 5 overturned blocks in wall. However, 5 adjacent blocks cannot be overturned to discharge into SW culvert. There must be some length of wall between overturned blocks (about 6'). Provide a series of overturned blocks, and provide a means to direct the flows to the cul-de-sac.

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

11. Similarly, 2 overturned blocks from Offsite basin 110 from MG&A should be spaced further apart, or some sort of header installed in wall.
12. In Report , Pg 3, Par. 1 – change 7 lot subdivision to 8
13. In report, Pg. 3, Par. 2 – change "desiltation" pond to "Temporary Retaining" pond
14. Add pond volume calcultions.
15. Note on the Grading plan the existing walls adjacent to the property. It is unclear where the existing walls are, particularly along the west and south edge. There also appears to be an existing wall along the east edge.
16. If there is to be "recontouring" on the lots to the south, then show on the plan and add the following note: CONTRACTOR MUST COORDINATE GRADING ON OFFSITE LOTS WITH NEIGHBOR(S) TO THE SOUTH PRIOR TO BEGINNING WORK
17. Note the type of Curb and Gutter on the plan, and the extents of the different types.

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

also, per email- DRC set shows 18" SD & G&D shows 24".

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: THE ESTATES AT GLENDALE UNIT 2 SUBDIVISION Building Permit #: _____ City Drainage #: B19D027

DRB#: 1008656 EPC#: _____ Work Order#: _____

Legal Description: TRACTS A AND B GLENDALE ESTATES

City Address: UNADDRESSED LOT ON GLENDALE BETWEEN WYOMING AND BARSTOW

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: ASHTON HOMES, LLC Contact: _____

Address: 3519 CAMPBELL FARM LANE ALB, NM 87401

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

Architect: none 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:

____ ENGINEER/ ARCHITECT CERTIFICATION

____ CONCEPTUAL G & D PLAN
X 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

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

RECEIVED
DEC 29 2015
LAND DEVELOPMENT SECTION

____ PRE-DESIGN MEETING
____ OTHER (SPECIFY) _____

IS THIS A RESUBMITTAL?: X Yes ____ No

DATE SUBMITTED: 12/28/15 By: _____

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: ___

CITY OF ALBUQUERQUE

January 17, 2013

John M. MacKenzie, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

Re: Estates @ Glendale
Grading Plan Certification—Accepted
Engineer's Stamp date 07-13-12 (B19/D027)
Certification date 10-09-12

Dear Mr. MacKenzie,

Based upon the information provided in your submittal received 1-11-13, the above referenced Certification is accepted for release of SIA/Financial Guarantee and Building Permit approval.

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

Sincerely,

Shahab Biazar, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: e-mail

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

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

PROJECT TITLE: Estates @ Glendale ZONE MAP/DRG. FILE # B-19 D027.
DRB#: 1008656 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Estates @ Glendale
CITY ADDRESS: 9123 Twilight Lane, Albuquerque, NM

ENGINEERING FIRM: Mark Goodwin & Associates, PA CONTACT: John MacKenzie
ADDRESS: PO BOX 90606 PHONE: 828-2200
CITY, STATE: Albuquerque, NM ZIP CODE: 87199

OWNER: Ashton Homes LLC CONTACT: Randy Schmille
ADDRESS: 3519 Campbell Farm Lanes PHONE: 315-0312
CITY, STATE: Albuquerque, NM ZIP CODE: 87104

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

SURVEYOR: ALS, Inc. CONTACT: Tim Aldrich
ADDRESS: PO BOX 30701 PHONE: 328-3988
CITY, STATE: Albuquerque, NM ZIP CODE: 87190

CONTRACTOR: Sundance Mechanical CONTACT: Carlos Spiess
ADDRESS: 4400 Alameda PHONE: 345-2694
CITY, STATE: Albuquerque, NM ZIP CODE: 87113

TYPE OF SUBMITTAL:
- ___ DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL
- ___ DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL G & D PLAN
- ___ GRADING PLAN
- ___ EROSION CONTROL PLAN
- X ENGINEER'S CERT (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT
- ___ ENGINEER/ARCHITECT CERT (TCL)
- ___ ENGINEER/ARCHITECT (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 (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
JAN 11 2013

SUBMITTED BY: John MacKenzie DATE: 01-10-13

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

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

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

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

~~17.15~~ 15 incorrect

use one on about

HYDROLOGY SUMMARY TABLE

HYDROLOGY									Street flows					Inlet Calcs		
BASIN ID	AREA (Ac)	AREA (Sq mi)	Ground Cover (%) A	B	C	D	Peak 100-YR Flow Q_{100} (cfs) Incrumental	Cumulative	Location	Slope (%)	Depth (ft)	Velocity (fps)	Energy (ft)	Inlet ID #	Intercepted (cfs)	By-pass (cfs)
122	2.1	0.00328	13	13	26	48	8.16	8.16	Barstow St.	0.61	0.46	2.3	0.54			
123	0.8	0.00125			15	85	3.83	11.99	Glendale Ave S. 1/2	3.18	0.40	4.5	0.71	7A	6.20	5.79
114	0.7	0.00108	20	20	34	26	2.33	2.33	PDE for lot 24	n/a						
113	0.1	0.00016	20	20	34	26	0.35	2.68	PDE for lot 25	n/a						
115	0.9	0.00144	0	21	21	58	3.84	+.59 = 7.12	Moondust E. 1/2	Sump	0.38			7	7.12	Sump
124	0.9	0.00144	0	21	21	58	3.84	9.63	Moondust W. 1/2	Sump	0.38			6	9.63	Sump
110	0.4	0.00061	20	20	34	26	1.31	1.31	PDE for lot 26	n/a						
112	0.9	0.00144		21	21	58	3.84	5.15	North Star Ct E. 1/2	Sump	0.43			4	5.15	Sump
109	1.3	0.00208	20	20	34	26	4.49	4.49	PDE for lot 27	n/a						
108	0.9	0.00144		21	21	58	3.84	? 9.35	North Star Ct W. 1/2	Sump	0.43			3	9.35	Sump
125	0.1	0.00020		0	33	67	0.59	0.59	Glendale Ave S. 1/2	n/a						
107	0.2	0.00036		0	33	67	1.02	1.02	Glendale Ave S. 1/2	3.15	0.09	1.9	0.15	5	1.02	0.00
104	1.1	0.00169	20	20	34	26	3.64	3.64	PDE for lot 27	n/a						
106	0.9	0.00144		21	21	58	3.84	7.48	Twilight Ct E. 1/2	0.86	0.33	2.4	0.42			
101	0.9	0.00144		21	21	58	3.84	11.33	Twilight Ct W. 1/2	2.15	0.38	3.7	0.59	1	7.47	3.86
100	1.8	0.00290		21	21	58	7.84	19.10	Ex. Desert Highlands	2.50				1A	7.48	Sump
116	0.4	0.00065		0	33	67	1.88	5.73	Glendale Ave S. 1/2	3.15	0.28	3.3	0.45	2 & 11	5.73	Sump
121	4.2	0.00656	9	9	42	40	16.21	16.21	Glendale Ave N. 1/2	3.18	0.44	4.9	0.81			
120	2.9	0.00453		25	27	48	11.57	27.78	Glendale Ave N. 1/2	3.18	0.51	5.9	1.05			
119	0.3	0.00047			10	90	1.46	29.24	Glendale Ave N. 1/2	3.15	0.52	6.0	1.08	8	15.22	14.02
118	0.2	0.00031			10	90	14.02 + 0.97	14.99	Glendale Ave N. 1/2	3.15	0.38	3.7	0.59	9	10.05	4.94
117	0.2	0.00031			10	90	4.94 + 0.97	5.92	Glendale Ave N. 1/2	3.15	0.32	3.8	0.54	10	5.08	0.84

31.22 cfs

7.4 cfs bus more capacity

Bypass to

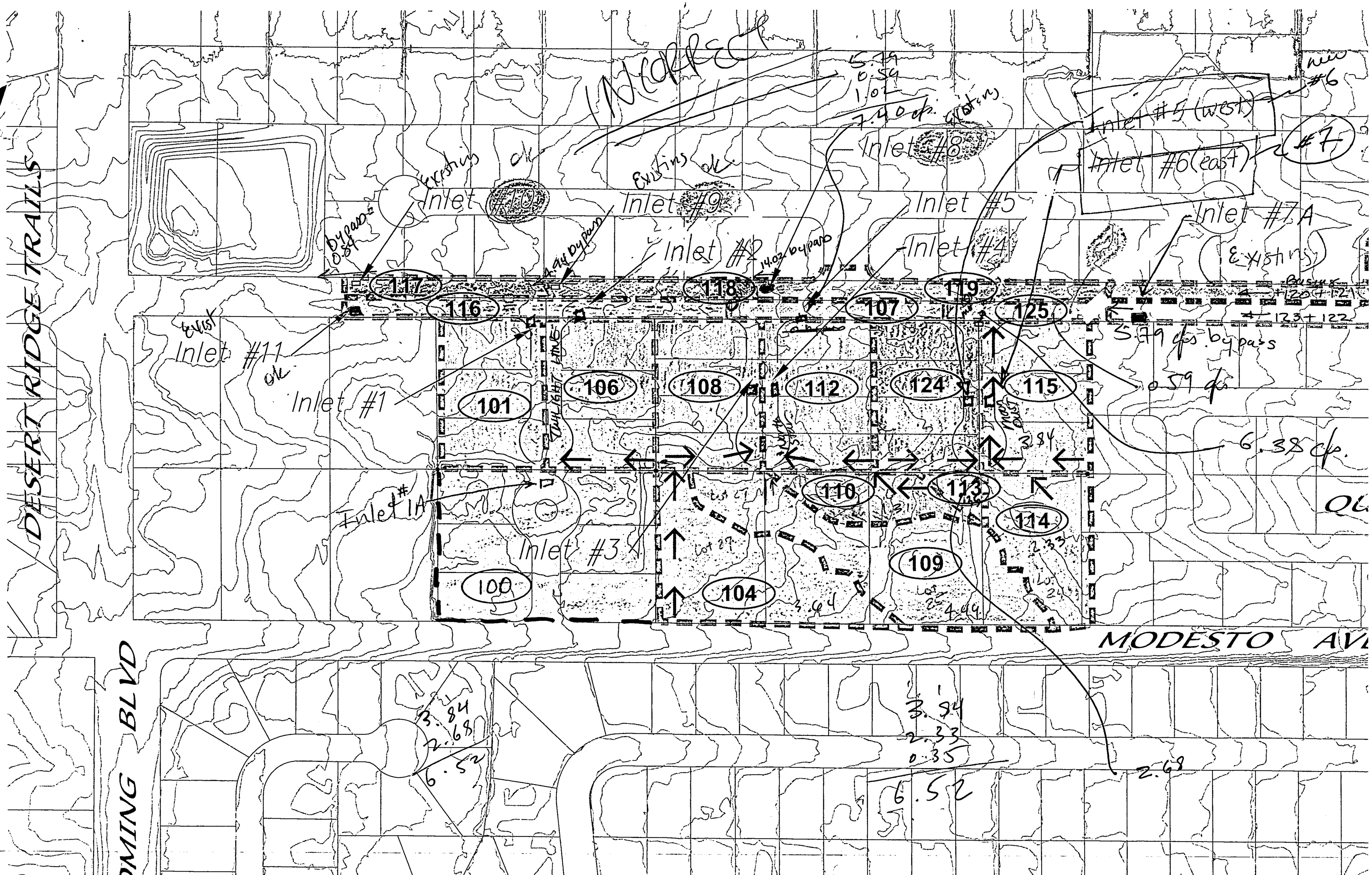
By pass

104 - ~~3.64~~ Thru wall
4.49 - 109
1.31 - 110
.35 - 113
2.33 - 114
12.12 = 8.48
off site

108 = 3.84
109 = 4.49
110 = 1.31
112 = 3.84
113 .35
114 2.33
115 3.84
121 3.84
23.84 cfs

3.84
x 4
15.36 onsite
+ 8.48 off
23.84

31.22 cfs
= sum of inlets


DESERT RIDGE TRAILS
MODESTO AVE
OMING BLVD
Inlet #1
Inlet #1A
Inlet #3
Inlet #4
Inlet #5
Inlet #6 (east)
Inlet #5 (west)
Inlet #7A
Inlet #8
Inlet #9
Inlet #11
Existing
ok
bypass 0.87
4.44 bypass
14.02 bypass
5.79 cfs bypass
0.59 cfs
6.38 cfs
100
101
104
106
107
108
109
110
112
113
114
115
116
117
118
119
124
125
+120 + 121
+123 + 122
3.84
2.68
6.52
2.33
0.35
4.44
3.64
1.02
7.40 cfs existing
#6
#7

CITY OF ALBUQUERQUE

March 27, 2012

Gregory J. Krenik, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale Unit 1
Grading and Drainage Plan
Engineer's Stamp dated 3-13-12 (B19/D027)

Dear Mr. Krenik,

Based upon the information provided in your submittal received 03/02/12, the above referenced plan can not be approved for Preliminary Plat action by the DRB until the following comments are addressed.

- The SD pipe in Glendale Ave. and in Twilight Place is too close to the gutter, which would cause extraordinary hardship to the city, if the pipe needed repair or replacement. Please adjust accordingly.
- The original plan displayed two walls to the west of phase 1. This seems to be the proper design for this location. The height of a single wall goes above the allowable height.
- The channel to the south of the sub-division does not work well with the sidewalk and the placement of a sidewalk culvert. The channel is too steep at this location and would not match the 2% slope of a sidewalk. In this same location a slope of 1:1 is shown along with the channel. It may be better to lower the elevation at the east end of the channel to meet the slope at the west end where the sidewalk culvert will be placed.
- What are the grades at the top of pond? How and in which direction is the spillway allowing emergency overflows to exit?
- Is a man hole located at the south end of Twilight Place? Will the man hole be moved so that it is not in the sidewalk?

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

If you have any questions, you can contact me at 924-3986 or Rudy Rael at 924-3977

Sincerely,

Curtis Cherne, P.E.,CFM
Principal Engineer, Planning Dept.
Development and Building Services

C: RER/CAC
File

Rael, Rudy E.

From: Gregory Krenik [Greg@goodwinengineers.com]
Sent: Tuesday, March 27, 2012 1:08 PM
To: Rael, Rudy E.; Cherne, Curtis
Subject: RE: The Estates at Glendale Unit 1

Rudy, Curtis,
Just a quick response to your comments:
1) The storm drain you are talking about is existing, nothing I can do about it being under the curb...curb location has already been agreed upon through numerous discussions and EPC.
2) We will be going back to the two wall version.
3) I will back up the channel but for constructability next to the existing walls and fences I have to keep the channel high...I will keep 2% from curb to R/W then ramp up to the high grade.
4) Grade at the top of the pond will be what the existing grade ends up being when you go 3:1 from the pond bottom of 07.03. The pond bottom is what sets the pond. The spillway is at elevation 10.00 and spills into Glendale over the curb.
5) There is no manhole at the south end of Twilight Place...that is an existing 18" 45 bend that was constructed with COA Project # 702782.
Thanks, Greg

-----Original Message-----
From: Rael, Rudy E. [mailto:RRael@cabq.gov]
Sent: Tuesday, March 27, 2012 11:00 AM
To: Gregory Krenik
Subject: The Estates at Glendale Unit 1

Hello Greg, here is the comment letter for The Estates at Glendale Unit 1.

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

PROJECT TITLE: THE ESTATES AT GLENDALE-UNIT 1 ZONE MAP/DRG. FILE # B-19 / D027
DRB#: 1008656 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: LOTS 4-9, BLK 12, TRACT 1, UNIT 3, NAA
CITY ADDRESS: _____

ENGINEERING FIRM: MARK GOODWIN & ASSOC. CONTACT: GREGORY J. KRENK
ADDRESS: PO BOX 90606 PHONE: 828-2200
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87199

OWNER: GLENDALE, LLC CONTACT: RANDY SCHMILLE
ADDRESS: 3519 CAMPBELL FARM LANE NW PHONE: 315-0312
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87104

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

SURVEYOR: ALDRICH LAND SURVEYING CONTACT: TIM ALDRICH
ADDRESS: _____ PHONE: 328-3988
CITY, STATE: _____ ZIP CODE: _____

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

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

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

MOVED WALL ALONG GLENDALE SOUTH 5' AND ELIMINATED CHANNEL ALONG WEST SIDE OF PROPERTY.

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

RECEIVED
MAR 14 2012
HYDROLOGY SECTION

SUBMITTED BY: GREGORY J. KRENIK DATE: 3/13/12

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

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

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

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

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

PROJECT TITLE: THE ESTATES AT GLENDALE-UNIT 1 ZONE MAP/DRG. FILE # B-19/D027
DRB#: 1008656 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: LOTS 4-9, BLK 12, TRACT 1, UNIT 3, NAA
CITY ADDRESS: _____

ENGINEERING FIRM: MARK GOODWIN & ASSOC. CONTACT: GREGORY J. KRENK
ADDRESS: PO BOX 90606 PHONE: 828-2200
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87199

OWNER: GLENDALE, LLC CONTACT: RANDY SCHMILLE
ADDRESS: 3519 CAMPBELL FARM LANE NW PHONE: 315-0312
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87104

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

SURVEYOR: ALDRICH LAND SURVEYING CONTACT: TIM ALDRICH
ADDRESS: _____ PHONE: 328-3988
CITY, STATE: _____ ZIP CODE: _____

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

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

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

10 lots $250.00

RECEIVED
MAR 02 2012
HYDROLOGY SECTION

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

SUBMITTED BY: _____ DATE: 3-2-12
GREGORY J. KRENK

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

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

RECEIVED
MAR 0 2 2012
HYDROLOGY
SECTION

MARK GOODWIN
& ASSOCIATES
CONSULTING ENGINEERS

DRAINAGE REPORT

for

ESTATES AT GLENDALE – UNIT 1

Prepared for

GENDALE, LLC
3519 Campbell Farm Lane NW
Albuquerque, NM 87104
505-315-0312

Prepared by

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

RECEIVED
MAR 0 2 2012
HYDROLOGY SECTION

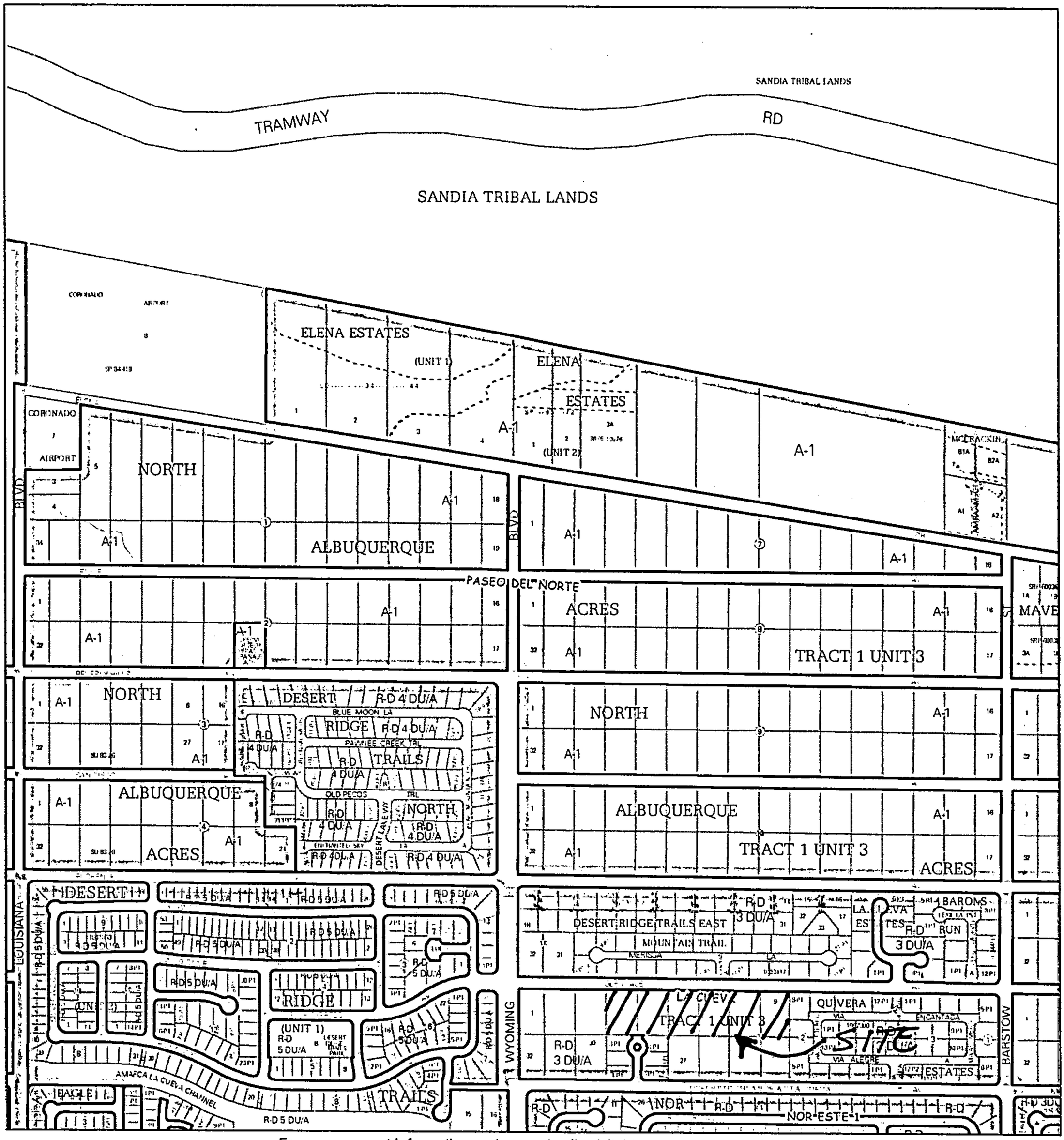
11926
3-2-12

March 2012

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

PROJECT THE ESTATES AT GLENDALE
SUBJECT DRAINAGE CALCS
BY GJK DATE 2-29-12
CHECKED _____ DATE _____
SHEET 1 OF ____

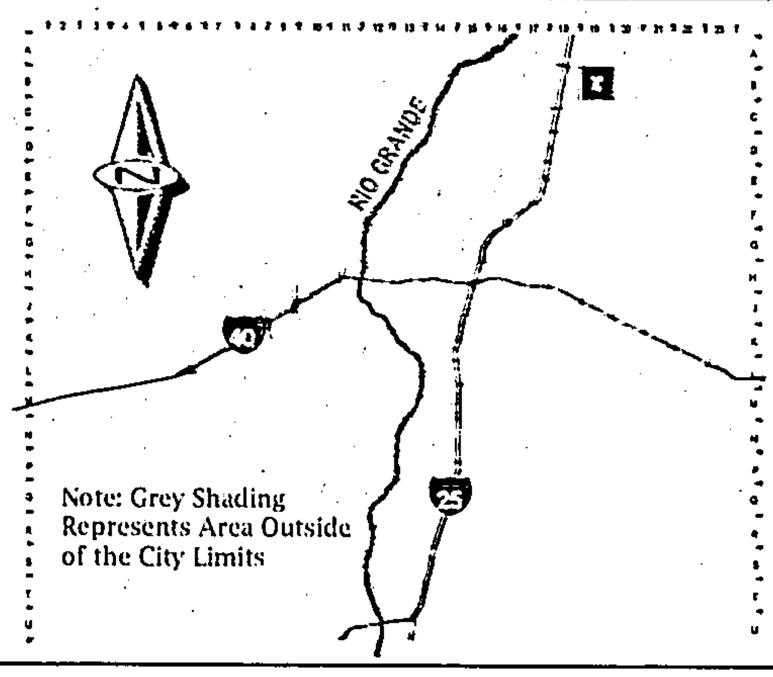
- PROJECT CONSISTS OF 5.9930 AC ON THE SOUTHSIDE OF GLENDALE AVE NE BETWEEN WYOMING & BARSTOW. IT IS JUST TO THE WEST OF THE QUIVERA ESTATES SUBDIVISION. SEE ATTACHED ZONE MAP
- SITE DOES NOT LIE IN A 100YEAR FLOOD PLAIN - SEE ATTACHED FIRMETTE 35001C133G
- PROJECT WILL BE DESIGNED AS FULLY DEVELOPED AND ALSO BY PHASES. UNIT 1 WILL DEVELOP TWILIGHT PLACE, THIS WILL REQUIRE A TEMPORARY RETENTION POND ON TRACT A TO THE EAST. WHEN UNIT 2 DEVELOPS A TEMPORARY RETENTION POND WILL BE REQUIRED ON TRACT B TO THE EAST.
- OFFSITE FLOWS ENTER THE SITE FROM THE SOUTH. THESE FLOWS WILL BE ROUTED THROUGH OUR SITE VIA CONCRETE CHANNELS TO OUR INTERIOR STREETS.
- THERE IS AN EXISTING 20' PUBLIC DRAINAGE EASEMENT THAT RUNS FROM DESERT CT NE THROUGH OUR SITE TO GLENDALE AVE. WE WILL LEAVE THIS EASEMENT IN PLACE.
- THIS PROJECT WILL CONSIST OF A TOTAL OF 23 RESIDENTIAL LOTS. UNIT 1 WILL HAVE 8 LOTS, UNIT 2 WILL HAVE 8 LOTS AND UNIT 3 WILL HAVE 7 LOTS.
- UNIT 1 OF THIS PROJECT WILL COMPLETE ALL IMPROVEMENTS TO GLENDALE AVE. THESE INCLUDE FINISHING THE F-F PAVING AND ANY STORMDRAIN AND UTILITY STUBS SO UNITS 2 & 3 CAN BE CONSTRUCTED WITHOUT DISRUPTION TO GLENDALE.
- THE NORTH ALBUQUERQUE ACRES MASTER DRAINAGE REPORT (APPENDIX A) WILL BE REFERENCED IN THIS REPORT.



For more current information and more details visit: http://www.cabq.gov/gis

Albuquerque Geographic Information System

Map amended through: 2/4/2010



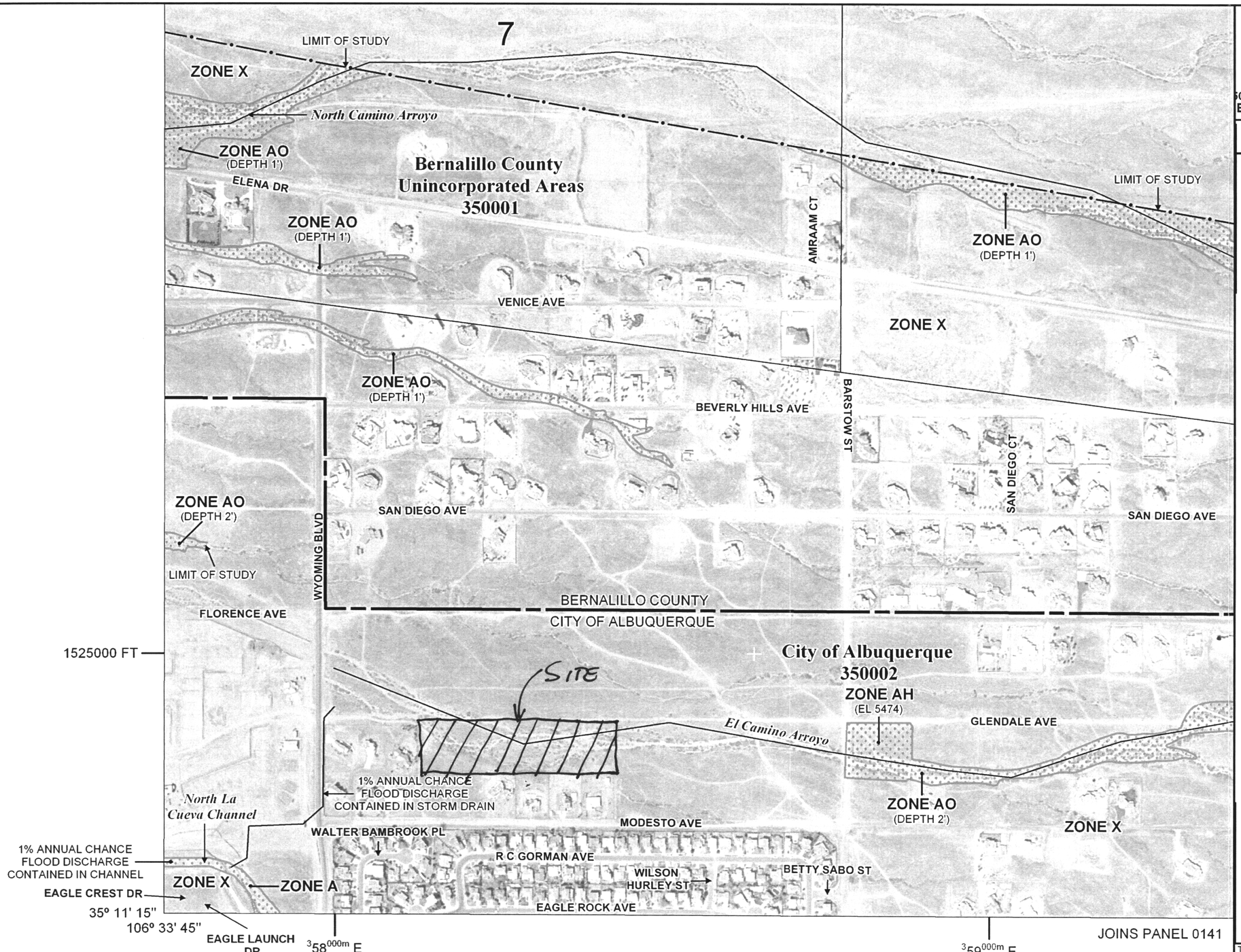
Zone Atlas Page:

B-19-Z

Selected Symbols

- SECTOR PLANS
- Design Overlay Zones
- City Historic Zones
- H-1 Buffer Zone
- Petroglyph Mon.
- Escarpment
- 2 Mile Airport Zone
- Airport Noise Contours
- Wall Overlay Zone

0 750 1,500 Feet



MAP SCALE 1" = 500'

50 0 500 1000 FEET

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0133G

FIRM

FLOOD INSURANCE RATE MAP

BERNALILLO COUNTY, NEW MEXICO

AND INCORPORATED AREAS

PANEL 133 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0133	G
BERNALILLO COUNTY UNINCORPORATED AREAS	350001	0133	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
35001C0133G

MAP REVISED
SEPTEMBER 26, 2008

Federal Emergency Management Agency

3

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

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

PROJECT THE ESTATES AT GLENDALE
SUBJECT DRAINAGE CALCS
BY GJK DATE 2-29-12
CHECKED _____ DATE _____
SHEET 4 OF ____

- THIS PROJECT AS TOTAL BUILDOUT WILL BE DIVIDED INTO NINE BASINS, SIX FOR THE SITE AND THREE FOR THE GLENDALE FRONTAGE.

SITE BASINS	GLENDALE BASINS
101	107
106	116
108	125
112	
115	
124	

THERE WILL BE 12 OFFSITE BASINS THAT ARE PART OF THIS DRAINAGE REPORT. 5 BASINS ARE TO THE SOUTH WHICH WILL BE ALLOWED TO FLOW THROUGH OUR SITE. THE LAST SEVEN ARE BASINS THAT DRAIN TO GLENDALE AVE.

SOUTH BASINS	GLENDALE BASINS
104	117 } Road
109	118 } Road
110	119 } Road
113	120 (upstream Road to East)
114	121 (upstream Road to East)
	122 (upstream Road to East)
	123 (upstream Road to East)

$P_1 = 2.15$ in
$P_6 = 2.55$ in
$P_{24} = 2.90$ in

SEE SHEET 5 FOR THE HYDROLOGY SUMMARY TABLE FOR ALL OF THE BASINS AND INLETS.

- OUR SITE PER THE NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN FALLS INTO THE LOW DENSITY RESIDENTIAL ZONE AND IS IN BASIN 204.

LAND TREATMENTS

A = 20%
B = 20%
C = 34%
D = 26%

HYDROLOGY SUMMARY TABLE

HYDROLOGY									Street flows					Inlet Calcs		
BASIN ID	AREA		Ground Cover (%)				Peak 100-YR Flow Q_{100} (cfs)		Location	Slope	Depth	Velocity	Energy	Inlet ID	Intercepted	By-pass
	(Ac)	(Sq mi)	A	B	C	D	Incrumental	Cumulative		(%)	(ft)	(fps)	(ft)	#	(cfs)	(cfs)
122	2.1	0.00328	13	13	26	48	8.16	8.16	Barstow St.	0.61	0.46	2.3	0.54			
123	0.8	0.00125			15	85	3.83	11.99	Glendale Ave S. 1/2	3.18	0.40	4.5	0.71	7	6.20	5.79
114	0.7	0.00108	20	20	34	26	2.33	2.33	PDE for lot 24	n/a						
113	0.1	0.00016	20	20	34	26	0.35	2.68	PDE for lot 25	n/a						
115	0.9	0.00144	0	21	21	58	3.84	7.12	Moondust E. 1/2	Sump	0.38			6	7.12	Sump
124	0.9	0.00144	0	21	21	58	3.84	9.63	Moondust W. 1/2	Sump	0.38			5	9.63	Sump
110	0.4	0.00061	20	20	34	26	1.31	1.31	PDE for lot 26	n/a						
112	0.9	0.00144		21	21	58	3.84	5.15	North Star Ct E. 1/2	Sump	0.43			4	5.15	Sump
109	1.3	0.00208	20	20	34	26	4.49	4.49	PDE for lot 27	n/a						
108	0.9	0.00144		21	21	58	3.84	9.35	North Star Ct W. 1/2	Sump	0.43			3	9.35	Sump
125	0.1	0.00020		0	33	67	0.59	0.59	Glendale Ave S. 1/2	n/a						
107	0.2	0.00036		0	33	67	1.02	1.02	Glendale Ave S. 1/2	3.15	0.09	1.9	0.15	2	1.02	0.00
104	1.1	0.00169	20	20	34	26	3.64	3.64	PDE for lot 27	n/a						
106	0.9	0.00144		21	21	58	3.84	7.48	Twilight Ct E. 1/2	0.86	0.33	2.4	0.42			
101	0.9	0.00144		21	21	58	3.84	11.33	Twilight Ct W. 1/2	2.15	0.38	3.7	0.59	1	7.47	3.86
116	0.4	0.00065		0	33	67	1.88	5.73	Glendale Ave S. 1/2	3.15	0.28	3.3	0.45	11	5.73	Sump
121	4.2	0.00656	9	9	42	40	16.21	16.21	Glendale Ave N. 1/2	3.18	0.44	4.9	0.81			
120	2.9	0.00453		25	27	48	11.57	27.78	Glendale Ave N. 1/2	3.18	0.51	5.9	1.05			
119	0.3	0.00047			10	90	1.46	29.24	Glendale Ave N. 1/2	3.15	0.52	6.0	1.08	8	15.22	14.02
118	0.2	0.00031			10	90	0.97	14.99	Glendale Ave N. 1/2	3.15	0.38	3.7	0.59	9	10.05	4.94
117	0.2	0.00031			10	90	0.97	5.92	Glendale Ave N. 1/2	3.15	0.32	3.8	0.54	10	5.08	0.84

OBSOLETE !
RTH

See certified plan
w/ 10-09-12 date

dmg D. Mark Goodwin & Associates, P.A.
Consulting Engineers
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(505) 828-2200 FAX 797-9539

PROJECT THE ESTATES AT GLENDALE
SUBJECT DRAINAGE CALCS
BY GJK DATE 2-29-12
CHECKED _____ DATE _____
SHEET 6 OF ____

THERE WAS AN AMMENDMENT AND THIS AREA SHOULD HAVE BEEN IN THE RESIDENTIAL ZONE WITH LAND TREATMENTS OF A=0 B=34 C=16 D=50. High Density

THE RUNOFF PER THE NAA VALUES ARE
Q= 3.07 CFS FOR BASINS 101, 106, 108, 112, 115 + 124

THE RUNOFF PER OUR ACTUAL VALUES OF
A=0 B=21.37 C=21.37 D=57.26 ARE
Q= 3.84 CFS FOR ~~BASINS 101, 106, 108,~~ 112, 115 + 125

- OUR PROJECT IS GENERATING 0.77 CFS MORE PER BASIN. THIS PROJECT IS ALMOST AT THE WEST END OF THE EL CAMINO WHERE IT TIES INTO THE LA CUEVA. OUR PROJECT'S PEAK WILL BE GONE BEFORE THE ENTIRE EL CAMINO PEAK GOES BY OUR SITE. THE TOTAL 4.62 CFS THAT WE GENERATE OVER THE NAAMDP WILL NOT OVERLOAD THE EXISTING 84" STORM DRAIN IN GLENDALE.

SEE ~~AHYMO SHEETS~~ 7-11

- FOR UNIT 1 TO DEVELOP, A RETENTION POND WILL BE REQUIRED TO POND RUNOFF FROM THE BASINS TO THE SOUTH OF OUR PROJECT.

TOTAL AREA OF BASINS 104, 109, 110, 113 + 114
= 3.5968 AC 26% D = 0.9352 AC

FROM AHYMO SHEETS 7-11
V_{100} = 0.3951 AC-FT
= 17,211 CF

VOLUME REQUIRED FOR 10day VOLUME

$$V_{10} = V_{100} + \frac{A_D}{12}(P_{10d} - P_2)$$

$$= 0.3951 + \frac{0.9352}{12}(4.90 - 2.55)$$

= 0.5782 AC-FT
= 25,188 CF

POND TO BE 75' x 135' x 3' DEEP
VOLUME = 30,375 CF

WATER SURFACE 2.49' FROM BOTTOM.

glensum

AHYMO PROGRAM SUMMARY TABLE (AHYMO_97) - - VERSION: 1997.02d RUN DATE (MON/DAY/YR) =03/01/2012
INPUT FILE = glen.dat USER NO.= AHYMO-I-9702dGoodwinM-AH

PAGE = 1

COMMAND	HYDROGRAPH IDENTIFICATION	FROM ID NO.	TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	NOTATION
START										TIME= .00
RAINFALL TYPE= 1										RAIN6= 2.550
COMPUTE NM HYD	LOT	-	1	.00144	3.84	.137	1.78428	1.500	4.177	PER IMP= 57.26
COMPUTE NM HYD	ROW	-	2	.00036	1.04	.037	1.97051	1.500	4.593	PER IMP= 67.00
COMPUTE NM HYD	ROAD	-	3	.00065	1.90	.068	1.97051	1.500	4.556	PER IMP= 67.00
COMPUTE NM HYD	STREET	-	4	.00020	.61	.021	1.97051	1.500	4.660	PER IMP= 67.00
COMPUTE NM HYD	NAA	-	5	.00144	3.07	.101	1.31824	1.500	3.340	PER IMP= 26.00
COMPUTE NM HYD	RET	-	6	.00562	11.96	.395	1.31824	1.500	3.324	PER IMP= 26.00
FINISH										

```
START                TIME=0.0
***** HYDROGRAPH FOR ESTATES AT GLENDALE
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.15 IN RAIN SIX=2.55 IN
                     RAIN DAY=2.90 IN DT=0.03333 HR
***** BASINS 115, 124, 112, 108, 106 & 101
COMPUTE NM HYD       ID=1 HYD NO=LOT AREA=0.001435 SQ MI
                     PER A=0 B=21.37 C=21.37 D=57.26
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=1 CODE=1
***** BASIN 107
COMPUTE NM HYD       ID=2 HYD NO=ROW AREA=0.000355 SQ MI
                     PER A=0 B=0 C=33 D=67
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=2 CODE=1
***** BASIN 116
COMPUTE NM HYD       ID=3 HYD NO=ROAD AREA=0.000651 SQ MI
                     PER A=0 B=0 C=33 D=67
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=3 CODE=1
***** BASIN 125
COMPUTE NM HYD       ID=4 HYD NO=STREET AREA=0.000204 SQ MI
                     PER A=0 B=0 C=33 D=67
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=4 CODE=1
***** BASINS 115, 124, 112, 108, 106 & 101 per NAA MASTER PLAN
COMPUTE NM HYD       ID=5 HYD NO=NAA MP=0.001435 SQ MI
                     PER A=20 B=20C=34 D=26
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=5 CODE=1
***** BASINS 104, 109, 110, 113 & 114 combined for retention pond for Unit 1
COMPUTE NM HYD       ID=6 HYD NO=RET POND=0.005620 SQ MI
                     PER A=20 B=20C=34 D=26
                     TP=0.1333 HR MASS RAINFALL=-1
PRINT HYD            ID=6 CODE=1
FINISH
```

```
AHYMO PROGRAM (AHYMO_97) -                          - Version:  1997.02d
     RUN DATE (MON/DAY/YR) = 03/01/2012
     START TIME (HR:MIN:SEC) = 15:18:27     USER NO.= AHYMO-I-9702dGoodwinM-AH
     INPUT FILE = glen.dat


START                TIME=0.0
***** HYDROGRAPH FOR ESTATES AT GLENDALE
RAINFALL             TYPE=1 RAIN QUARTER=0.0 IN
                     RAIN ONE=2.15 IN RAIN SIX=2.55 IN
                     RAIN DAY=2.90 IN DT=0.03333 HR

                COMPUTED 6-HOUR RAINFALL DISTRIBUTION BASED ON NOAA ATLAS 2 - PEAK AT 1.40 HR.
                DT =     .033330 HOURS       END TIME =     5.999400 HOURS
                   .0000   .0021   .0042   .0064   .0086   .0108   .0131
                   .0155   .0179   .0204   .0229   .0256   .0282   .0310
                   .0338   .0367   .0398   .0429   .0461   .0494   .0528
                   .0564   .0601   .0639   .0679   .0721   .0765   .0811
                   .0859   .0910   .0964   .1023   .1087   .1155   .1300
                   .1626   .2128   .2849   .3834   .5127   .6777   .8831
                  1.1337  1.3664  1.4636  1.5456  1.6186  1.6849  1.7461
                  1.8028  1.8558  1.9055  1.9523  1.9964  2.0381  2.0775
                  2.1149  2.1504  2.1840  2.2159  2.2462  2.2535  2.2602
                  2.2667  2.2728  2.2786  2.2842  2.2896  2.2948  2.2999
                  2.3047  2.3094  2.3139  2.3183  2.3226  2.3268  2.3309
                  2.3348  2.3387  2.3425  2.3462  2.3498  2.3533  2.3568
                  2.3601  2.3635  2.3667  2.3699  2.3730  2.3761  2.3792
                  2.3821  2.3851  2.3879  2.3908  2.3936  2.3963  2.3990
                  2.4017  2.4043  2.4069  2.4095  2.4120  2.4145  2.4170
                  2.4194  2.4218  2.4242  2.4265  2.4288  2.4311  2.4334
                  2.4356  2.4378  2.4400  2.4422  2.4443  2.4464  2.4485
                  2.4506  2.4526  2.4547  2.4567  2.4587  2.4606  2.4626
                  2.4645  2.4665  2.4684  2.4703  2.4721  2.4740  2.4758
                  2.4776  2.4794  2.4812  2.4830  2.4848  2.4865  2.4883
                  2.4900  2.4917  2.4934  2.4951  2.4967  2.4984  2.5000
                  2.5017  2.5033  2.5049  2.5065  2.5081  2.5097  2.5112
                  2.5128  2.5143  2.5159  2.5174  2.5189  2.5204  2.5219
                  2.5234  2.5249  2.5263  2.5278  2.5292  2.5307  2.5321
                  2.5335  2.5349  2.5364  2.5377  2.5391  2.5405  2.5419
                  2.5433  2.5446  2.5460  2.5473  2.5486  2.5500

***** BASINS 115, 124, 112, 108, 106 & 101
COMPUTE NM HYD       ID=1 HYD NO=LOT AREA=0.001435 SQ MI
                     PER A=0 B=21.37 C=21.37 D=57.26
                     TP=0.1333 HR MASS RAINFALL=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   3.2440    CFS   UNIT VOLUME =    .9961       B =   526.28      P60 = 2.1500
     AREA =       .000822 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


     K =    .121401HR    TP =    .133300HR    K/TP RATIO =    .910734     SHAPE CONSTANT, N =  3.888663
     UNIT PEAK =   1.5997    CFS   UNIT VOLUME =    .9922       B =   347.68      P60 = 2.1500
     AREA =       .000613 SQ MI    IA =    .42500 INCHES    INF =   1.04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD            ID=1 CODE=1

                                   HYDROGRAPH FROM AREA LOT

     RUNOFF VOLUME =     1.78428 INCHES     =        .1366 ACRE-FEET
     PEAK DISCHARGE RATE =       3.84 CFS  AT   1.500 HOURS   BASIN AREA =   .0014 SQ. MI.


***** BASIN 107
COMPUTE NM HYD       ID=2 HYD NO=ROW AREA=0.000355 SQ MI
                     PER A=0 B=0 C=33 D=67
                     TP=0.1333 HR MASS RAINFALL=-1

     K =    .072649HR    TP =    .133300HR    K/TP RATIO =    .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =    .93904    CFS   UNIT VOLUME =    .9881       B =   526.28      P60 = 2.1500
     AREA =       .000238 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


     K =    .109025HR    TP =    .133300HR    K/TP RATIO =    .817893     SHAPE CONSTANT, N =  4.368941
     UNIT PEAK =    .33314    CFS   UNIT VOLUME =    .9599       B =   379.06      P60 = 2.1500
     AREA =       .000117 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
```

10

```
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=2 CODE=1

                                        HYDROGRAPH FROM AREA ROW

    RUNOFF VOLUME =     1.97051 INCHES     =        .0373 ACRE-FEET
    PEAK DISCHARGE RATE =       1.04 CFS  AT   1.500 HOURS   BASIN AREA =   .0004 SQ. MI.


***** BASIN 116
COMPUTE NM HYD      ID=3 HYD NO=ROAD AREA=0.000651 SQ MI
                    PER A=0 B=0 C=33 D=67
                    TP=0.1333 HR MASS RAINFALL=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.7220    CFS   UNIT VOLUME =    .9922       B =   526.28      P60 = 2.1500
     AREA =      .000436 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


     K =   .109025HR    TP =   .133300HR    K/TP RATIO =   .817893     SHAPE CONSTANT, N =  4.368941
     UNIT PEAK =   .61091    CFS   UNIT VOLUME =    .9784       B =   379.06      P60 = 2.1500
     AREA =      .000215 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=3 CODE=1

                                        HYDROGRAPH FROM AREA ROAD

    RUNOFF VOLUME =     1.97051 INCHES     =        .0684 ACRE-FEET
    PEAK DISCHARGE RATE =       1.90 CFS  AT   1.500 HOURS   BASIN AREA =   .0007 SQ. MI.


***** BASIN 125
COMPUTE NM HYD      ID=4 HYD NO=STREET AREA=0.000204 SQ MI
                    PER A=0 B=0 C=33 D=67
                    TP=0.1333 HR MASS RAINFALL=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   .53962    CFS   UNIT VOLUME =    .9786       B =   526.28      P60 = 2.1500
     AREA =      .000137 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


     K =   .109025HR    TP =   .133300HR    K/TP RATIO =   .817893     SHAPE CONSTANT, N =  4.368941
     UNIT PEAK =   .19144    CFS   UNIT VOLUME =    .9329       B =   379.06      P60 = 2.1500
     AREA =      .000067 SQ MI    IA =    .35000 INCHES    INF =    .83000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=4 CODE=1

                                        HYDROGRAPH FROM AREA STREET

    RUNOFF VOLUME =     1.97051 INCHES     =        .0214 ACRE-FEET
    PEAK DISCHARGE RATE =        .61 CFS  AT   1.500 HOURS   BASIN AREA =   .0002 SQ. MI.


***** BASINS 115, 124, 112, 108, 106 & 101 per NAA MASTER PLAN
COMPUTE NM HYD      ID=5 HYD NO=NAA MP=0.001435 SQ MI
                    PER A=20 B=20C=34 D=26
                    TP=0.1333 HR MASS RAINFALL=-1

     K =   .072649HR    TP =   .133300HR    K/TP RATIO =   .545000     SHAPE CONSTANT, N =  7.106420
     UNIT PEAK =   1.4730    CFS   UNIT VOLUME =    .9911       B =   526.28      P60 = 2.1500
     AREA =      .000373 SQ MI    IA =    .10000 INCHES    INF =    .04000 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330


     K =   .129094HR    TP =   .133300HR    K/TP RATIO =   .968446     SHAPE CONSTANT, N =  3.647516
     UNIT PEAK =   2.6364    CFS   UNIT VOLUME =    .9951       B =   330.94      P60 = 2.1500
     AREA =      .001062 SQ MI    IA =    .47162 INCHES    INF =   1.17054 INCHES PER HOUR
     RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT =   .033330

PRINT HYD           ID=5 CODE=1
```

11

glenout
HYDROGRAPH FROM AREA NAA

RUNOFF VOLUME = 1.31824 INCHES = .1009 ACRE-FEET
PEAK DISCHARGE RATE = 3.07 CFS AT 1.500 HOURS BASIN AREA = .0014 SQ. MI.

***** BASINS 104, 109, 110, 113 & 114 combined for retention pond for Unit 1
COMPUTE NM HYD ID=6 HYD NO=RET POND=0.005620 SQ MI
PER A=20 B=20C=34 D=26
TP=0.1333 HR MASS RAINFALL=-1

K = .072649HR TP = .133300HR K/TP RATIO = .545000 SHAPE CONSTANT, N = 7.106420
UNIT PEAK = 5.7689 CFS UNIT VOLUME = .9973 B = 526.28 P60 = 2.1500
AREA = .001461 SQ MI IA = .10000 INCHES INF = .04000 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

K = .129094HR TP = .133300HR K/TP RATIO = .968446 SHAPE CONSTANT, N = 3.647516
UNIT PEAK = 10.325 CFS UNIT VOLUME = .9990 B = 330.94 P60 = 2.1500
AREA = .004159 SQ MI IA = .47162 INCHES INF = 1.17054 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = .033330

PRINT HYD ID=6 CODE=1

HYDROGRAPH FROM AREA RET

RUNOFF VOLUME = 1.31824 INCHES = .3951 ACRE-FEET
PEAK DISCHARGE RATE = 11.96 CFS AT 1.500 HOURS BASIN AREA = .0056 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 15:18:27

APPENDIX A

FINAL
NORTH ALBUQUERQUE ACRES
MASTER DRAINAGE PLAN

Prepared For:

City of Albuquerque

Prepared By:

Resource Technology, Inc.

ENGINEERS AND ENVIRONMENTAL SCIENTISTS

1720-B Randolph Road SE, Albuquerque, NM 87106

Telephone (505) 243-7300

Fax (505) 243-7400

rti@nmia.com

October 1998

DONALD S. DIXON
NEW MEXICO
11043
REGISTERED PROFESSIONAL ENGINEER

10/28/98

TABLE 1 BULKING FACTORS FOR SEDIMENT AS A FUNCTION OF FLOW RATE*	
Clean Water Flow Rate, Q (cfs)	Bulking Factor (%)
0 - 500	4
501 - 1000	5
1001 - 1600	6
1601 - 2100	7
2101 - 2600	8
2601 - 3200	9
3201 - 3700	10
3701 - 4200	11
*Valid for NAA and Sandia Heights natural channels west of USFS Boundary only, D_{50} 1.5 mm - 3.0 mm	

3. Land Use

Existing condition land uses and sub-basin boundaries were taken from aerial photography flown for AMAFCA and/or Bernalillo County in 1991, 1994 and 1995 and by extensive field investigation. Subdivisions that had proceeded to the rough grading phase by October, 1997 were considered as existing.

Future conditions land treatments are consistent with land uses being considered by the **La Cueva Sector Plan** (as of February, 1998) and are shown on Figures 2A and 2B. They are based on the following assumptions concerning future development in specific areas.

- Sandia Heights/Tramway Boulevard (SH/TB): This area would be built out in patterns reflecting existing development.
- North Albuquerque Acres (NAA): The area between Ventura Street and Tennyson Street as well as the area east of Coronado Airport and north of Florence Avenue would continue to develop along the lines of the existing one acre lot platting.
- Residential (R): Most existing subdivisions and areas identified in the **Sector Development Plan** as developing up to 5 DU's per acre.
- Low Density Residential (LR): The area north of Modesto and east of Wyoming is being identified as a transition area in the **Sector Development Plan** with densities ranging from 1 to 3 DU's per acre.
- High Density Residential (HR): The areas immediately north of Paseo del Norte and between Wyoming and Louisiana are being identified in the **Sector Development Plan** as developing at up to 7 DU's per acre.

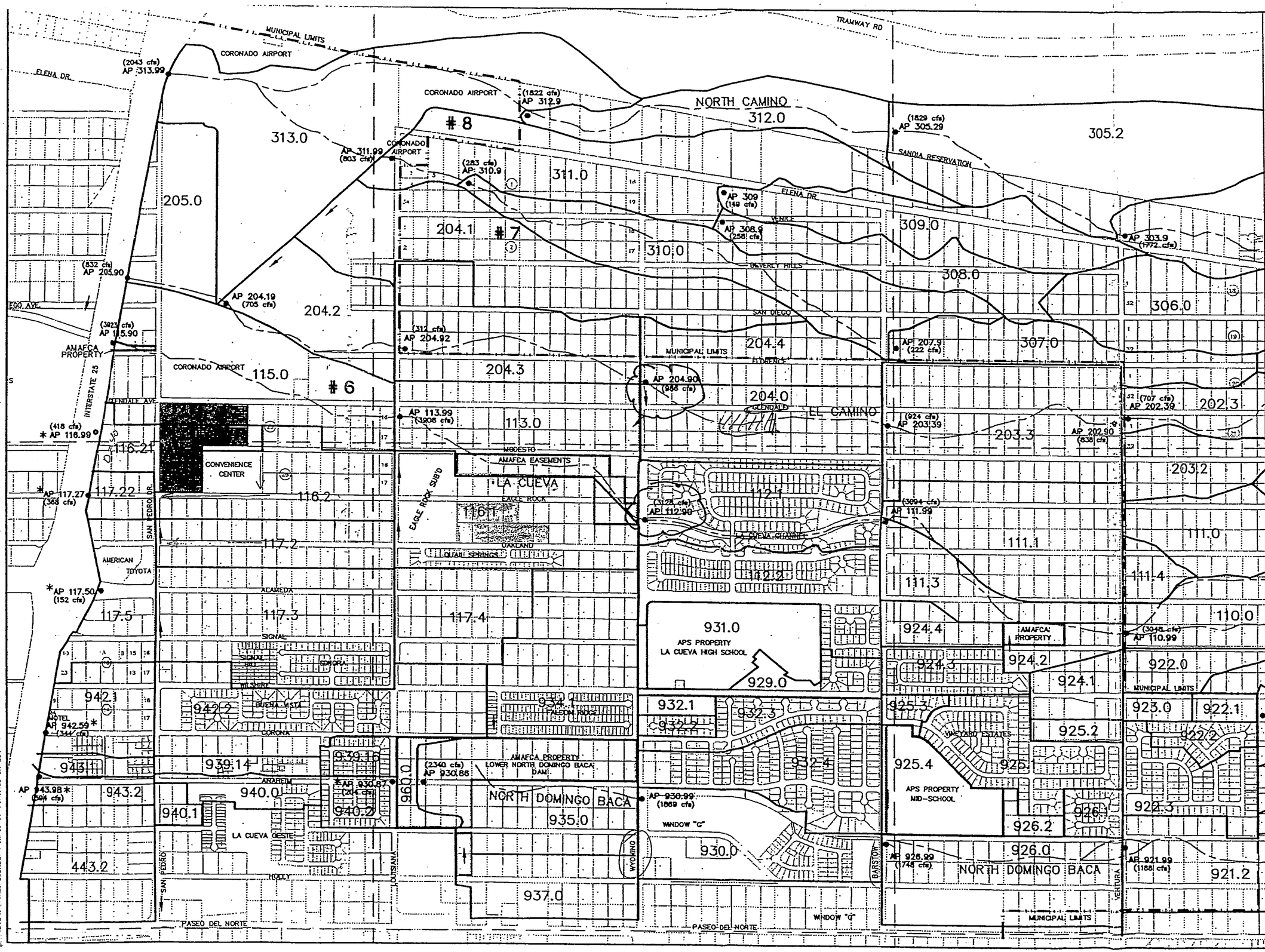
- Commercial/Industrial (C/I): The area west of Louisiana Boulevard, north of Modesto Avenue and east of I-25 would develop as high density commercial and industrial. Also used for Paseo del Norte Corridor.
- Medium Density Industrial (MI): Campus type commercial/office facilities and APS schools sites.
- Sandia Tribal Lands (ST): Sandia tribal lands south of Tramway Road and north of the Sandia Pueblo Grant Boundary were allocated land treatments consistent with moderate levels of development even though there are no current plans to develop this area.

The relative weight of each type of Land Treatment is shown in Table 2.

TABLE 2

FUTURE FULL DEVELOPMENT HYDROLOGIC CONDITION ASSUMPTIONS

	Land Treatments (%)			
	A	B	C	D
Sandia Heights/Tramway (SH/TB)	20	40	5	35
North Albuquerque Acres (NAA)	22	23	38	17
Low Density Residential (LR)	20	20	34	26
Residential (R)	0	34	16	50
High Density Residential (HR)	0	25	15	60
Commercial/Industrial (C/I)	0	20	10	70
Medium Density Industrial (MI)	0	20	30	50
Sandia Tribal Lands (ST)	20	20	40	20
Primrose Pointe (PP)	0	40	20	40



N

1000 0 500 1000

(IN FEET)

LEGEND

107.1 SUBBASIN DESIGNATION

SUBBASIN BOUNDARY

EXISTING PLATTING

EXISTING ARROYO FLOW PATH

AP 107.29 (756 cfs) ANALYSIS POINT AND FUTURE CONDITION FLOW RATE

* FLOW RATE NOT BULKED FOR SEDIMENT

2 POTENTIAL AVULSION LOCATION

MUNICIPAL LIMITS

NORTH ALBUQUERQUE ACRES
MASTER DRAINAGE PLAN

FUTURE CONDITION

FIGURE 4A

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

city of Albuquerque

Resource Technology, Inc.
Civil Engineering
Environmental Sciences
Water Resources
Landscape Architecture
Planning
1720 - B Randolph Road SE
Albuquerque, New Mexico 87106
E-mail: rti@nm.com
Telephone: (505) 243-7300
Facsimile: (505) 243-7400

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

January 30, 2015

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 1-5-15 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 1-06-14, the above referenced submittal cannot be approved for action by the DRB on the Site Plan for Building Permit or the Preliminary Plat; or for Grading Permit until the following comments are addressed.

1. Existing concrete channel in SW corner is about 8' long (along existing wall) and about 5' wide (when scaled off the as-builts, but should be field verified). Show as a drainage easement on plat and note the channel dimensions on the Grading plan. Indicate with a flow arrow that it collects offsite flows from Lots to the South.
2. Note on the Grading plan any existing walls adjacent to the property. Note also any new walls to be constructed with this project. It is unclear where the existing walls are, particularly along the west and south edge. There also appears to be an existing wall along the east edge.
3. In report note that Lot 27 has an existing wall adjacent to this property with no openings, and some of Lot 26 will discharge to Lot 27 through the chain link fence. (Which is basis for Basin I discharging into existing channel)
4. Basin B has 100% D in the spreadsheet for flow calculations. Error?
5. If there is to be "recontouring" on the lots to the south, then show on the plan and add the following note: CONTRACTOR MUST COORDINATE GRADING ON OFFSITE LOTS WITH NEIGHBOR(S) TO THE SOUTH PRIOR TO BEGINNING WORK
6. Provide a quick calculation showing the capacity of an overturned block.
7. For Lots 6 thru 10: Side lot drainage easements to be 10' wide. The 5' drainage easement along the wall is sufficient.
8. Existing contours are now too bold, can you fade back some as it is difficult to determine the proposed construction.
9. Revise the First flush calculations based on 4000 SF impervious area for each lot. Compare to the volume of the "bio-swale" in front of each lot, based on a 6" depth. As we discussed, berms will need to be shown between lots. The private road will not need to be accounted in the first flush, similar to public roads.
10. Wall along western boundary is noting overturned blocks but appears to be pointing to the existing wall. Move arrowheads to point to property lines between lots.

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New Mexico 87103
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overflows wall

11. ~~Provide overturned blocks in Retaining wall in back yard of Lot 14.~~
12. Show flow arrows at back of lots 11 thru 14.
13. Show TW and BW elevations at ends of retaining wall at back side of Lot 14, where wall is along Lot 13 property line. Can lot 13 drain into this area?
14. Show a spot elevation in that low area behind the retaining wall in Lot 14, particularly near the wall adjacent to the ROW to ensure it drains to an overturned block in that wall. Show other spot elevations between the retaining walls running east/west.
15. Show how the above mentioned discharge thru the overturned block will get to the SW culvert in the ROW. Provide a detail on the plan. Will a concrete channel work. *The plat must have a note stating that the ~~owner of Lot 14 will~~ be responsible for maintain the channel.* HOA
16. Show the existing wall along western boundary and note that it is an existing garden wall (per the Glendale Phase I as-builts). Since it is not retaining, change the TW = XX.XX to FG = XX.XX, and remove the BW=XX.XX elevations.
17. After using about 4000 SF of impervious for each lot, I get about 51% D Land Treatment for the entire site. Adjust your Onsite land treatments to reflect this rather than subtract 14% from 58% = 44%. The ***Total Onsite Proposed*** should be the summation of the onsite basins.
18. ~~In determining the ***Total Onsite Allowed*** discharge, you should reference excepts from the Mark Goowin DR for Phase 1 where it is stated that the was an amendment to the NAADP in this area allowing for~~ land treatments A,B,C,and D of 0,34,16, and ~~50%~~, respectively. (Or provide excertps from the amendment)
19. Provide documentation showing that this project is almost at the west end of the El Camino where it ties into the La Cueva, that the Peak will be gone before the entire El Camino Peak goes by this site, and that the 84" SD in Glendale will not be overloaded. I cannot read the Work Order As-built in the report and not sure what info it provides. HGL?
20. The inlet calculation sheet does not provide enough information. Shown how you are determining the orifice area of the inlet. It seems to be high and should not be accounting for the throat area. In case this sump inlet gets clogged it should have emergency overflow to Glendale. Therefore the Elevations at the end of North Star lane should be higher than at the waterblock.
21. Note the type of Curb and Gutter on the plan, and the extents of the different types.
22. Once the higher land treatments are used per comment 17, the total peak discharge to the sump will increase and the 24" pipe may need to be upsized.
23. Regarding street capacity: Basin A and offsite basins generate 14.96 cfs (but will increase due to a 51% land treatment per comment 17) So based on about 15.5 cfs at end of NORTHSTAR PLACE, the water depth is about 0.38 ft and too high to use 4" curb. 8" curb should be used on west end of Northstar Place.
24. Street capacity calcs on North Star Lane uses Q=3.64cfs. How is this determined?
25. Show TW/BW elevations at end of retaining wall, at east side of Lot 14.
26. Turn off layer showing vacated ROW along Lot 14.

CITY OF ALBUQUERQUE

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

PO Box 1293

Albuquerque

New Mexico 87103

www.cabq.gov

Orig: Drainage file
c.pdf: via Email: Recipient

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: ESTATES AT GLENDALE UNIT 2 Building Permit #: _____ City Drainage #: B19D027

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

Legal Description: TRACTS A&B THE ESTATES AT GLENDALE

City Address: GLENDALE BETWEEN WYOMING AND BARSTWO

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: RANDY SCHMILLE Contact: _____

Address: _____

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

Architect: NA Contact: _____

Address: _____

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

Surveyor: CONSTRUCTION SURVEY TECHNOLOGIES Contact: JOHN GALLEGOS

Address: _____

Phone#: 917.8921 Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____

Address: _____

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

TYPE OF SUBMITTAL:

- x DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL
- x DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL G & D PLAN
- X GRADING PLAN
- ___ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ___ ENGINEER'S CERT (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERT (TCL)
- ___ ENGINEER'S CERT (DRB SITE PLAN)
- ___ ENGINEER'S CERT (ESC)
- ___ SO-19
- ___ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ___ SIA/FINANCIAL GUARANTEE RELEASE
- X PRELIMINARY PLAT APPROVAL
- X S. DEV. PLAN FOR SUB'D APPROVAL
- ___ S. DEV. FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM)
- ___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- x GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ GRADING CERTIFICATION
- ___ SO-19 APPROVAL
- ___ ESC PERMIT APPROVAL
- ___ ESC CERT. ACCEPTANCE
- ___ OTHER (SPECIFY)

RECEIVED JAN 06 2015 LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes X No ___ Copy Provided

DATE SUBMITTED: 10/7/14 By: _____

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, an 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 followin

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
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

January 5, 2015

Ms. Rita Harmon
Hydrology Department
Public Works Department
City of Albuquerque

RE: Revised Grading Plan (B-19D027)
Glendale Estates
Albuquerque, New Mexico

Dear Ms. Harmon:

The purpose of this letter is to accompany the enclosed revised grading plan for the estates at Glendale unit 2. The grading plan for this site has been revised to address your written comments dated 11/3/14. The following is a summary of your comment and the narrative as to how we addressed

1. Concrete channel at sw corner needs to be shown and PDE on plat

✓ **We have corrected and added the PDE.** — can be Reduced to a 4'x8'

2. Existing contours not legible

✓ **We have corrected the line weights**

3. correct land treatment of upland basin

✓ **We have corrected**

? — 4. Approval from owners required prior to providing openings in wall

The wall does not exist. The recontouring of some of the lots will be performed with written permission from the affected lot owner. A copy of this letter will be provided.

✓ 5. Amount of offsite flow needs to be shown for each lot.

We have quantified the flows.

✓ 6. offset basin 104 drains to concrete channel — ?

We have correctly shown.

✓ 7. drainage easement on lot 11 required

We have added to the grading plan and plat.

8. how is first flush handled, expand on storm tech

We have shown the placement of all systems. We have included detail sheet for ease of construction. The details address the inlets, clean out/inspection port and depth of system. The minimum rock treatments and filter fabrics are shown on the detail sheet.

Changes

RECEIVED
JAN 06 2015
LAND DEVELOPMENT SECTION

9. Verify land treatment D

   We have verified the land treatment and match the 23.84 cfs total flow approved in previous reports. The introduction of the infiltrator systems removed an equivalent of 1600 square feet of impervious area. This removal reduces the peak flow leaving the site. Rather than remove this flow from the equation, we modified the impervious area to account for a reduction in type D land treatment by 14%. Since we converted the 14% to land treatment C, we feel this is a conservative estimation of the peak flow. This is less than allowed in the NAAMDP and the previous grading plan

10. Lots on west should drain to east road

    We have revised the plan to direct the flows to the interior street. The design intent is to maintain the existing wall therefore the front portion of the lot drains to the street, the back yards and a portion of the roof is designed to be captured by the infiltrator systems in the rear of the lots, emergency over flows have been provided

11. Street capacity and pipes calculations need to be updated

    We have updated the calculations. Due to changes in plan a revised report is enclosed.

12. prove capacity of down stream inlets for the bypass flow

    We have modified the grading plan; all flow is captured by inlets onsite.

13. lot 14 does not have enough frontage for inlet placement

    We have revised location of inlet to provide adequate frontage for driveways

Should you have any questions regarding this matter, please do not hesitate to call me.

Sincerely,

David Soule, PE
RIO GRANDE ENGINEERING
PO Box 93924
ALBUQUERQUE, NM 87199
321-9099

Enclosures

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

November 3, 2014

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 10-13-14 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 10-13-14, the above referenced submittal cannot be approved for action by the DRB on the Site Plan for Building Permit or the Preliminary Plat; or for Grading Permit until the following comments are addressed.

1. Concrete channel in SW corner needs to be shown on plan and PDE on plat. ✓
2. Existing contours are barely visible ✓
3. Land treatments of offsite basins use 43% Treatment A, which is for undisturbed by human activity. Aerial views show that these lots are graded and landscaped and I believe should be more along the lines of treatments used in the NAADR, or 20% A, 20%B, 34% C, and 26%D, resulting in a total runoff similar to that in the Drainage Report by Mark Goodwin and Assoc. ✓
4. Approvals from owners are required prior to providing openings in existing block walls. ✓
5. The amount of offsite flows from the south thru each lot needs to be quantified, the location of each opening, and flow arrows indicating how the drainage passes thru each lot.
6. Offsite basin 104 from the Mark Goodwin Drainage Report drains thru a concrete channel in SW corner. ✓
7. A drainage easement on east side of Lot 11 should allow offsite flows from Basin G to drain to North Star lane.
8. How is first flush handled? Drainage report indicates Storm Tech SC-740 Chambers, but are not shown on plan. First flush is captured by the "Isolator Row", which requires a woven fabric and inlet structure (manhole or Nyloplast drain basin) for clean out. Since this is a relatively new method of handling the First Flush, we should think about whether an inlet structure needs to be there and where it would be located on the site plan.
9. Scaling of areas shows land treatment D is about 58%, rather than 38% of total area for onsite basins.
10. Lots along west boundary should drain east to road, per the Mark Goodwin Drainage plan.

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Albuquerque
New Mexico 87103
www.cabq.gov

11. Street capacity and pipe calculations should be revised per the above comment and also to reflect greater flows from the revised land treatments.
12. The total runoff from this site and the offsite flows from the Mark Goowin report is 23.84 cfs. If the two inlets pick up 16.5 cfs, there is 7.3 cfs bypassing. Show street capacity calculations of Glendale to handle this additional flow. Show that downstream inlets have capacity.
13. Lot 14 does not have enough frontage for a drivepad on south side of inlet.

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

Strata - 25987.

10.75 of Site is Impervious RK

25 %

2776 SF.

43%

3142 Allow Impervious

500 tp

5000

each Lot Allow 2776 SF

typical Lot 5000 SF.

∴ 430 CF

365 ft³

180 first flush

Current DRC

FIGURE 12

Date Submitted:_____
Date Site Plan Approved:_____
Date Preliminary Plat Approved:_____
Date Preliminary Plat Expires:_____

DRB Application No.: 1008656

INFRASTRUCTURE LIST

EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST

GLENDALE ESTATES- PHASE-2
PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN

Lots A AND B ESTATES AT GLENDALE PHASE 1
EXISTING LEGAL DESCRIPTION PRIOR TO PLATTING ACTION

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 and/or in the review of the construction drawings, if the DRC Chair determines that appurtenant items and/or unforeseen 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 appurtenant 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 unforeseen 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.

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
			PHASE 1						
		26' F-F	Residential Road with Curb and Gutter including 4' wide Sidewalk (both sides)	Northstar lane	Glendale	North star place	/	/	/
		24' F-E	Residential Road with Curb and Gutter including 4' wide Sidewalk (southside)	Northstar lane	Northstar Place	southern terminous	/	/	/
		8"	Sewerline	Northstar lane	Glendale	southern terminous	/	/	/
		8"	waterline	Northstar lane	Glendale	southern terminous	/	/	/
		na	24" or 30" to connect to Storm drain inlets ~~to lateral~~	northstar lane	existing 24" rcp	low point	/	/	/
		26' F-F	Residential Road with Curb and Gutter including 4' wide Sidewalk (bothsides)	Northstar Place	Northstar lane	terminous	/	/	/
		8"	Waterline	Northstar Place	Northstar lane	terminous	/	/	/
		8"	Sewerline	Northstar Place	Northstar lane	terminous	/	/	/
		NA	remove existing improvements replace to match existing crossection	Glendale	existing	property line	/	/	/

revised 07/01/01

SIA Sequence #	COA DRC Project #	Size	Type of Improvement	Location	From	To	Private Inspector	City Inspector	City Cnst Engineer
							/	/	/

NOTES

1 Engineers Certification of Grading required prior to release of SIA and Financial Guarantee

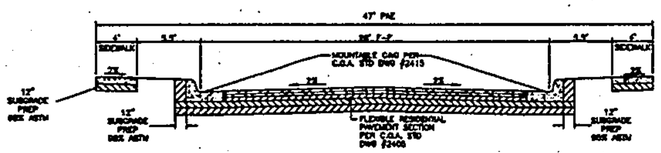
2 Internal sidewalks to be temporarily deffered per approved exhibit

3

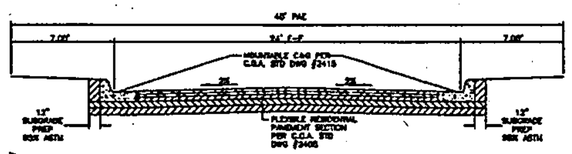
AGENT / OWNER	DEVELOPMENT REVIEW BOARD MEMBER APPROVALS	
NAME (print)	DRB CHAIR - date	PARKS & RECREATION DEPARTMENT - date
FIRM	TRANSPORTATION DEVELOPMENT - date	AMAFCA - date
SIGNATURE - date	UTILITY DEVELOPMENT - date	_____ - date
MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: _____	CITY ENGINEER - date	_____ - date

DESIGN REVIEW COMMITTEE REVISIONS

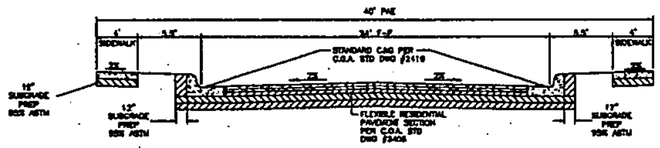
REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT /OWNER



SECTION A-A



SECTION B-B



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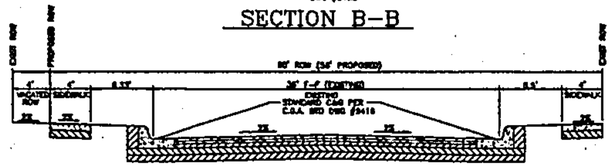
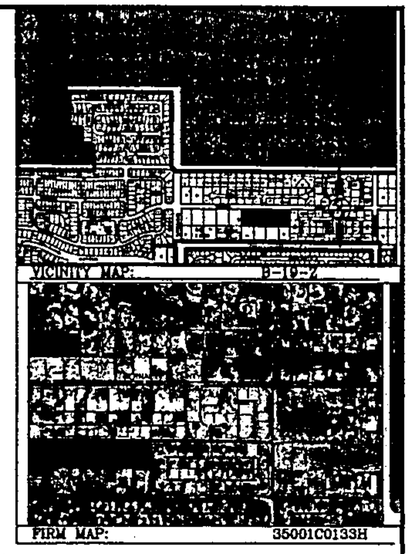


SECTION D-D



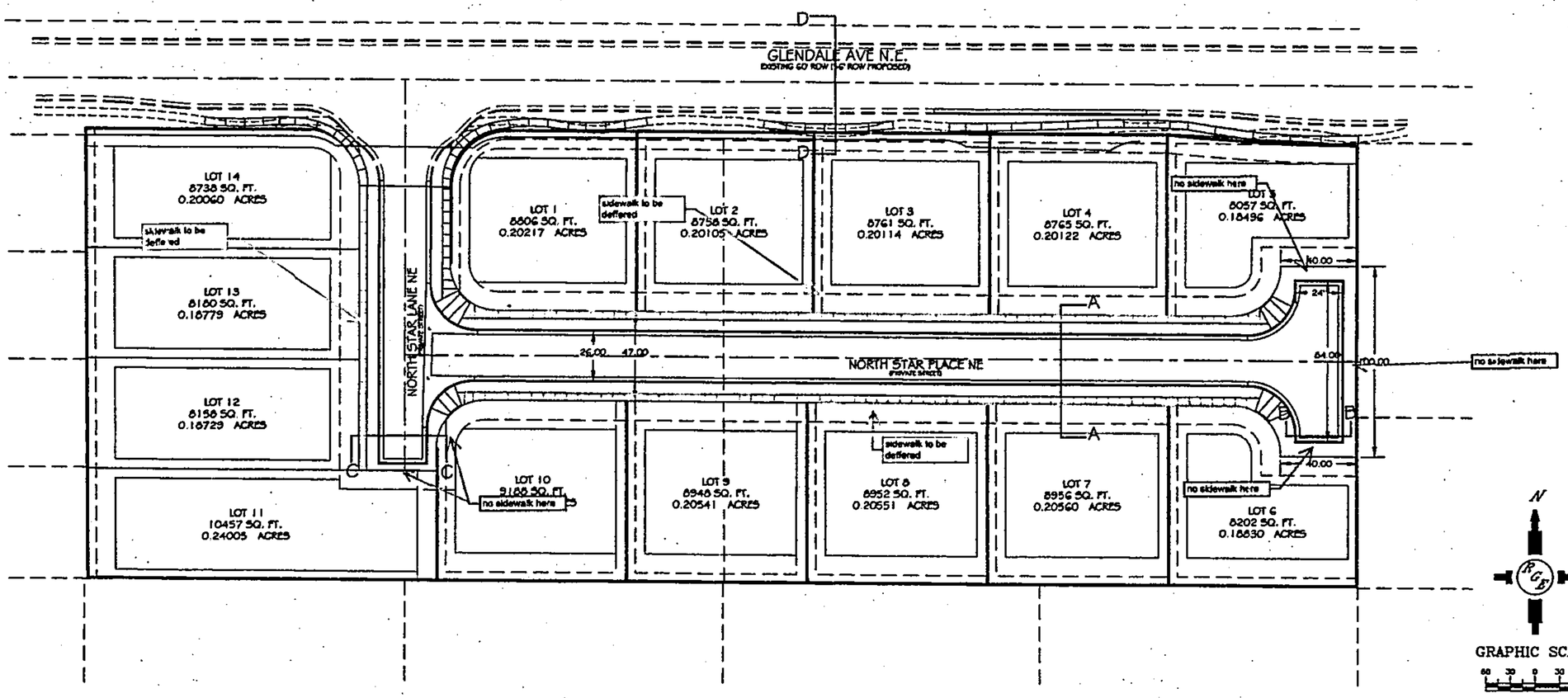


EXHIBIT FOR SIDEWALK WAIVER AND VARIANCE

Rio Grande Engineering

PROJECT TITLE: ESTATES AT GLENDALE UNIT 2

DRAWING TITLE: MASTER PAVING

SEAL

09-05-2014 JDG

PROJECT NO.

DRAWING NO.

DRB 4.0

land treatments - ~~A = 43%~~

= 43% B

Allowed onsite land treatments (8, 22, 25, 45)

Pond match NAADP

(20, 20, 34, 26)

.20 D

.~~40~~35 C

.~~40~~35 B

.10 A

MGR (pg 6) 3.84 cfs/Basin

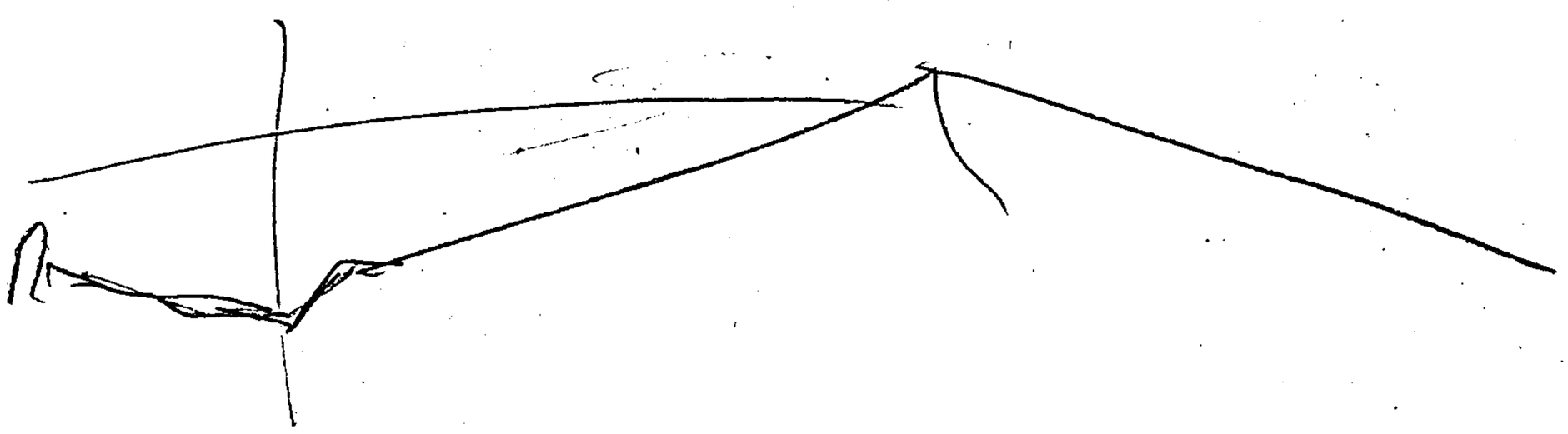
× 4

15.36 cfs total

vs. 13.65 this OK

adhere to 12

JIA0038



BMD027

Estates @ Glendale

3.55 Ac $\frac{14 \text{ lots}}{3.55}$ = 3.94 DU/Acre

desilt pond

LR was 1 to 3 pre Ave

? phase 1
pond @ NW corner

NAA MDP
Basin 204
24" Ø

- existing contours - can't see
- @ SW corner ; swale/channel random not shown
- free disch.
- why so many offsite basins?
- historic flows cross each lot
- Imp of Basins?

→ Land treatment of offsite basins don't match MGA Report (20, 20, 34, 26). for this (43, 20, 20, 17). TOTAL Q (MGA) = 12.12 cfs

vs. This Report = 8.16 cfs

Area ~~East~~ west of Basin I not accounted for.

3.96 diff

CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

November 3, 2014

David Soule, P.E.
Rio Grande Engineering
P.O. Box 93924
Albuquerque, NM 87199

RE: **Estates at Glendale Unit 2**
Drainage Report and Grading and Drainage Plan
Engineer's Stamp Date 10-13-14 (File: B19D027)

Dear Mr. Soule:

Based upon the information provided in your submittal received 10-13-14, the above referenced submittal cannot be approved for action by the DRB on the Site Plan for Building Permit or the Preliminary Plat; or for Grading Permit until the following comments are addressed.

1. Concrete channel in SW corner needs to be shown on plan and PDE on plat.
2. Existing contours are barely visible
3. Land treatments of offsite basins use 43% Treatment A, which is for undisturbed by human activity. Aerial views show that these lots are graded and landscaped and I believe should be more along the lines of treatments used in the NAADR, or 20% A, 20%B, 34% C, and 26%D, resulting in a total runoff similar to that in the Drainage Report by Mark Goodwin and Assoc.
4. Approvals from owners are required prior to providing openings in existing block walls.
5. The amount of offsite flows from the south thru each lot needs to be quantified, the location of each opening, and flow arrows indicating how the drainage passes thru each lot.
6. Offsite basin 104 from the Mark Goodwin Drainage Report drains thru a concrete channel in SW corner.
7. A drainage easement on east side of Lot 11 should allow offsite flows from Basin G to drain to North Star lane.
8. How is first flush handled? Drainage report indicates Storm Tech SC-740 Chambers, but are not shown on plan. First flush is captured by the "Isolator Row", which requires a woven fabric and inlet structure (manhole or Nyloplast drain basin) for clean out. Since this is a relatively new method of handling the First Flush, we should think about whether an inlet structure needs to be there and where it would be located on the site plan.
9. Scaling of areas shows land treatment D is about 58%, rather than 38% of total area for onsite basins.
10. Lots along west boundary should drain east to road, per the Mark Goodwin Drainage plan.

PO Box 1293
Albuquerque
New Mexico 87103
www.cabq.gov

11. Street capacity and pipe calculations should be revised per the above comment and also to reflect greater flows from the revised land treatments.
12. The total runoff from this site and the offsite flows from the Mark Goowin report is 23.84 cfs. If the two inlets pick up 16.5 cfs, there is 7.3 cfs bypassing. Show street capacity calculations of Glendale to handle this additional flow. Show that downstream inlets have capacity.
13. Lot 14 does not have enough frontage for a drivepad on south side of inlet.

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

Sincerely,

Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

Orig: Drainage file
c.pdf: via Email: Recipient

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET

(REV 02/2013)

Project Title: ESTATES AT GLENDALE UNIT 2 Building Permit #: _____ City Drainage #: B19D027

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

Legal Description: TRACTS A&B THE ESTATES AT GLENDALE

City Address: GLENDALE BETWEEN WYOMING AND BARSTWO

Engineering Firm: RIO GRANDE ENGINEERING Contact: DAVID SOULE

Address: PO BOX 93924, ALBUQUERQUE, NM 87199

Phone#: 505.321.9099 Fax#: 505.872.0999 E-mail: DAVID@RIOGRANDEENGINEERING.COM

Owner: RANDY SCHMILLE Contact: _____

Address: _____

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

Architect: NA Contact: _____

Address: _____

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

Surveyor: CONSTRUCTION SURVEY TECHNOLOGIES Contact: JOHN GALLEGOS

Address: _____

Phone#: 917.8921 Fax#: _____ E-mail: _____

Contractor: _____ Contact: _____

Address: _____

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

TYPE OF SUBMITTAL:

- x DRAINAGE REPORT
- ___ DRAINAGE PLAN 1st SUBMITTAL
- x DRAINAGE PLAN RESUBMITTAL
- ___ CONCEPTUAL G & D PLAN
- X GRADING PLAN
- ___ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ___ ENGINEER'S CERT (HYDROLOGY)
- ___ CLOMR/LOMR
- ___ TRAFFIC CIRCULATION LAYOUT (TCL)
- ___ ENGINEER'S CERT (TCL)
- ___ ENGINEER'S CERT (DRB SITE PLAN)
- ___ ENGINEER'S CERT (ESC)
- ___ SO-19
- ___ OTHER (SPECIFY)

CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

- ___ SIA/FINANCIAL GUARANTEE RELEASE
- X PRELIMINARY PLAT APPROVAL
- X S. DEV. PLAN FOR SUB D APPROVAL
- ___ S. DEV. FOR BLDG. PERMIT APPROVAL
- ___ SECTOR PLAN APPROVAL
- ___ FINAL PLAT APPROVAL
- ___ CERTIFICATE OF OCCUPANCY (PERM)
- ___ CERTIFICATE OF OCCUPANCY (TCL TEMP)
- ___ FOUNDATION PERMIT APPROVAL
- ___ BUILDING PERMIT APPROVAL
- x GRADING PERMIT APPROVAL
- ___ PAVING PERMIT APPROVAL
- ___ WORK ORDER APPROVAL
- ___ GRADING CERTIFICATION
- ___ SO-19 APPROVAL
- ___ ESC PERMIT APPROVAL
- ___ ESC CERT. ACCEPTANCE
- ___ OTHER (SPECIFY)

RECEIVED
OCT 13 2014
LAND DEVELOPMENT SECTION

WAS A PRE-DESIGN CONFERENCE ATTENDED: ___ Yes X No ___ Copy Provided

DATE SUBMITTED: 10/7/14 By: _____

Requests for approvals of Site Development Plans and/or Subdivision Plats shall be accompanied by a drainage submittal. The particular nature, location, anc 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 followin

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
4. **Erosion and Sediment Control Plan:** Required for any new development and redevelopment site with 1-acre or more of land disturbing area, including project less than 1-acre than are part of a larger common plan of development

David Soule

From: David Soule [david@riograndeengineering.com]
Sent: Monday, October 13, 2014 7:30 AM
To: 'mortiz@cabq.gov'; 'rrael@cabq.gov'
Cc: 'aortiz@cabq.gov'
Subject: Glendale estates drainage submittale pdf's

Attachments: grading submittal.pdf

grading
submittal.pdf (4 MB)

RECEIVED
OCT 13 2014
LAND DEVELOPMENT SECTION

FINAL
NORTH ALBUQUERQUE ACRES
MASTER DRAINAGE PLAN

Prepared For:

City of Albuquerque

Prepared By:

Resource Technology, Inc.

ENGINEERS AND ENVIRONMENTAL SCIENTISTS
1720-B Randolph Road SE, Albuquerque, NM 87106
Telephone (505) 243-7300
Fax (505) 243-7400
rti@nmia.com

RECEIVED
DEC 21 1998
HYDROLOGY SECTION

October 1998

Street Capacity Calculations

Zone 3

NORTHSTAR PLACE

26' F-F Street Section with 4" curb

Slope= 0.03

Q=14.95 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	0.43	0.00	0.76	0.00691
0.02	0.0064	0.66	0.01	0.00	0.01	0.69	0.01	0.86	0.01624
0.025	0.01	0.83	0.01	0.01	0.02	0.80	0.02	0.89	0.02136
0.035	0.0196	1.16	0.02	0.02	0.04	1.00	0.03	0.94	0.03228
0.045	0.0324	1.49	0.02	0.04	0.08	1.18	0.05	0.98	0.04391
0.052	0.043264	1.72	0.03	0.06	0.11	1.30	0.07	1.01	0.0524
0.06	0.0576	1.98	0.03	0.08	0.16	1.43	0.09	1.03	0.0624
0.0625	0.0625	2.06	0.03	0.09	0.18	1.47	0.09	1.04	0.06559

45 ft

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	0.09	0.19	1.47	0.09	1.04	0.06598
0.1	0.172656	3.98	0.04	0.32	0.65	1.87	0.19	1.04	0.10566
0.13	0.311406	5.51	0.06	0.69	1.39	2.23	0.29	1.09	0.14572
0.16	0.495156	7.04	0.07	1.28	2.56	2.58	0.41	1.14	0.1894
0.2	0.810156	9.08	0.09	2.45	4.90	3.02	0.60	1.19	0.25153
0.207	0.873506	9.43	0.09	2.71	5.41	3.10	0.64	1.20	0.26277
0.2612	1.446942	12.20	0.12	5.29	10.58	3.65	0.95	1.26	0.35291
0.3025	**1.9825**	**14.31**	**0.14**	**8.04**	**16.08**	**4.05**	**1.23**	**1.30**	**0.42471**

12

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

Y2= Y - 0.3025

A3= A2 + Y2*13

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	8.09	16.17	4.06	1.23	1.30	0.42622
0.3039	2.0021	14.31	0.14	8.17	16.34	4.08	1.24	1.30	0.42894
0.3062	2.0343	14.31	0.14	8.39	16.78	4.12	1.26	1.31	0.43588
0.31	2.0875	14.31	0.15	8.76	17.51	4.19	1.30	1.33	0.44737
0.3125	2.1225	14.32	0.15	9.00	18.00	4.24	1.33	1.34	0.45494
0.32	2.2275	14.32	0.16	9.75	19.51	4.38	1.40	1.36	0.47767
0.3317	2.3913	14.34	0.17	10.97	21.94	4.59	1.52	1.40	0.51325
0.333	2.4095	14.34	0.17	11.11	22.22	4.61	1.54	1.41	0.51721

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

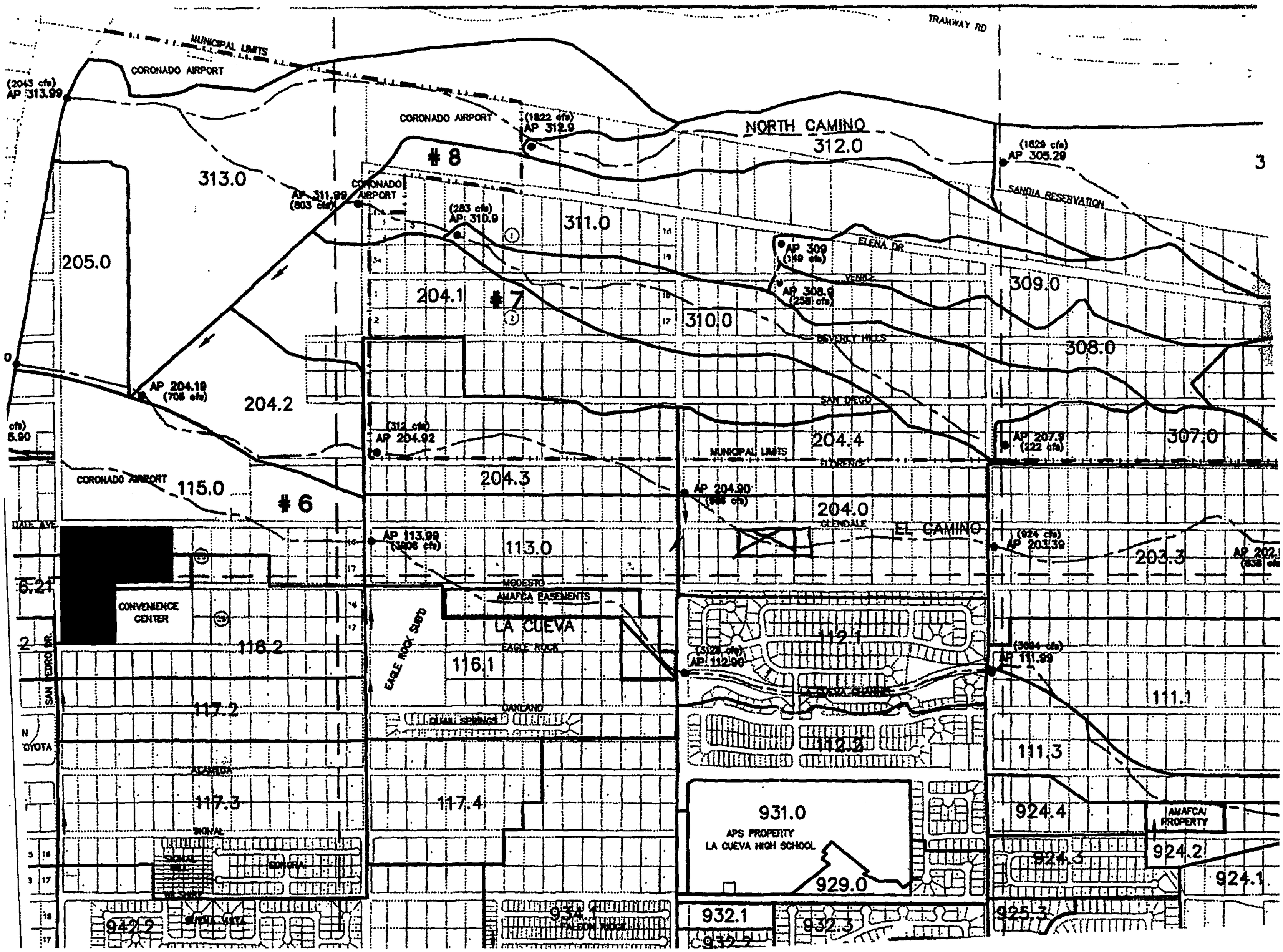
Y3= Y - 0.333

A4= A3 + 13 * Y3 + 25 * Y3^2

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

15.5 cfs

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	11.27	22.55	4.63	1.55	1.41	0.52038
0.3601	2.80726	15.69	0.18	13.49	26.99	4.81	1.73	1.41	0.56106
0.38	3.122725	16.69	0.19	15.47	30.94	4.95	1.88	1.42	0.59436
0.4196	3.809389	18.67	0.20	19.99	39.98	5.25	2.20	1.43	0.66299
0.4603	4.596832	20.70	0.22	25.52	51.04	5.55	2.56	1.44	0.73635
0.504	5.534525	22.89	0.24	32.52	65.05	5.88	2.96	1.46	0.81782
0.513	5.7395	23.34	0.25	34.11	68.22	5.94	3.05	1.46	0.8349


TRAMWAY RD
MUNICIPAL LIMITS
CORONADO AIRPORT
(2043 cfs)
AP 313.99
CORONADO AIRPORT
(1822 cfs)
AP 312.9
NORTH CAMINO
312.0
(1629 cfs)
AP 305.29
#8
313.0
CORONADO AIRPORT
AP 311.98
(803 cfs)
(283 cfs)
AP: 310.9
311.0
SANDIA RESERVATION
ELENA DR
AP 309
(169 cfs)
VENICE
AP 308.9
(258 cfs)
205.0
204.1
#7
310.0
309.0
BEVERLY HILLS
308.0
AP 204.19
(706 cfs)
204.2
SAN DIEGO
(312 cfs)
AP 204.92
204.4
AP 207.9
(222 cfs)
307.0
MUNICIPAL LIMITS
FLORENCE
204.3
CORONADO AIRPORT
115.0
#6
AP 204.90
204.0
GLENDALE
EL CAMINO
DALE AVE
AP 113.99
(3806 cfs)
113.0
(924 cfs)
AP 203.39
203.3
MODESTO
AMAFCA EASEMENTS
CONVENIENCE CENTER
LA CUEVA
EAGLE ROCK SUBD
EAGLE ROCK
116.2
116.1
112.1
(3126 cfs)
AP 112.90
(3094 cfs)
AP 111.99
LA CUEVA HIGH
SAN PEDRO DR.
117.2
OAKLAND
QUAIL SPRINGS
111.1
N. OTOTA
112.2
111.3
ALAMEDA
117.3
117.4
931.0
APS PROPERTY
LA CUEVA HIGH SCHOOL
929.0
924.4
AMAFCA/ PROPERTY
924.2
924.3
924.1
SIGNAL
SONORA
WILSHIRE
SANTA CLARA
942.2
934.1
EAGLE ROCK
932.1
932.3
932.2
925.3

Weighted E Method

EAGLE CREST

odd but ? OK since conservative

58% / 14%

0.16

Existing 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)	Volume (ac-ft)	Flow cfs
offsite Basins	BASIN A	24002	0.551	20%	0.1102	20.0%	0.110	34.0%	0.18734	26%	0.143	1.368	0.063	1.86
	BASIN B	1858	0.043	0%	0	0.0%	0.000	0.0%	0	100%	0.043	2.360	0.008	0.21
	BASIN C	10260	0.236	20%	0.04711	20.0%	0.047	34.0%	0.08008	26%	0.061	1.368	0.027	0.79
	BASIN D	897	0.021	20%	0.00412	20.0%	0.004	34.0%	0.007	26%	0.005	1.368	0.002	0.07
	BASIN E	4927	0.113	20%	0.02262	20.0%	0.023	34.0%	0.03846	26%	0.029	1.368	0.013	0.38
	BASIN F	25284	0.580	20%	0.11609	20.0%	0.116	34.0%	0.19735	26%	0.151	1.368	0.066	1.96
	BASIN G	31607	0.726	20%	0.14512	20.0%	0.145	34.0%	0.2467	26%	0.189	1.368	0.083	2.45
	BASIN H	5619	0.129	20%	0.0258	20.0%	0.026	34.0%	0.04386	26%	0.034	1.368	0.015	0.43
	BASIN I	19312	0.443	20%	0.08867	20.0%	0.089	34.0%	0.15074	26%	0.115	1.368	0.051	1.50
	ONSITE A	106556	2.446	0%	0	22.0%	0.538	34.0%	0.8317	44%	1.076	1.679	0.342	9.67
	ONSITE B	38854	0.892	0%	0	22.0%	0.196	34.0%	0.30327	44%	0.392	1.679	0.125	3.53
	ONSITE C	9890	0.227	0%	0	22.0%	0.050	34.0%	0.07719	44%	0.100	1.679	0.032	0.90
	~~INFILTRATOR CAPTURE~~	~~1600~~	~~0.037~~	~~0%~~	~~0~~	~~0.0%~~	~~0.000~~	~~0.0%~~	~~0~~	~~100%~~	~~0.037~~	~~2.360~~	~~0.007~~	~~0.18~~
	TOTAL ONSITE PROPOSED	155300	3.565	0%	0	25.0%	0.891	37.0%	1.31912	38%	1.355	1.604	0.477	13.67
	TOTAL ONSITE ALLOWED	155300	3.565	8%	0.28522	22.0%	0.784	25.0%	0.8913	45%	1.604	1.640	0.487	13.70
	TOTAL													

? 20 20 34 26

Revise to ~51%

9.65 cfs vs. 15 / 8.15

to concrete channel

I too Big
G to increase to property line
B - 100% D to

onsite proposed should match Land treatments for onsite Basins, or be sum

onsite allowed should be based on excerpts from Mark Goodwin Report stating amendment to NAADP is 0, 34, 16, + 50 (A B C D) OR 3.07 x 4 = 12.28

Equations:

Weighted E = Ea*Aa + Eb*Ab + Ec*Ac + Ed*Ad / (Total Area)
Impervious= 7*(((3.5*3.5)+(5*3.5))^.5) 38 %
Volume = Weighted D * Total Area
UPLAND FLOW BASED UPON NAAMDP
Flow = Qa * Aa + Qb * Ab + Qc * Ac + Qd * Ad

Where for 100-year, 6-hour storm (zone 3)

Ea= 0.66	Qa= 1.87
Eb= 0.92	Qb= 2.6
Ec= 1.29	Qc= 3.45
Ed= 2.36	Qd= 5.02

FLOW SUMMARY

UPLAND	9.65	TOTAL
AFFECTED LOT		
6	1.86 CFS	offsite BASIN A
7	0.28 CFS	B+D
8	1.18 CFS	E+C
9	1.96 CFS	
10	0.43 CFS	
11	2.45 CFS	
EX. CHANNEL ON LOT11	1.50 CFS	

ALLOWABLE DISCHARGE PER PREVIOUS REPORT 23.84 CFS(UPLAND AND ONSITE) 15.
ALLOWABLE DISCHARGE ONSITE 13.70 CFS ONSITE
~~EACH INFILTRATOR CAPTURES 314 CF, EQUAVALENT TO 1600 SF OF IMPERVIOUS AREA~~
~~TOTAL IMPERVIOUS AREA CAPTURED=22400 SF OR 14% OF TOTAL AREA~~
~~REAR YARD GENERATION 0.22 CFS 348.03 CF~~
~~FIRST FLUSH REQUIREMENT (CF)= 2552.0967 TOTAL 182.29 PER LOT~~ 113 cfs
STREET FLOW
NORTH STAR PLACE 14.95 CFS (ONSITEA+A+B+C+D+E+F)
NORTH STAR LANE 6.41 CFS (ONSITE B+G+H)
INLETS 21.35 CFS

C

$$\frac{\text{Food } \$ \; 22{,}250 + \text{Food } \$ \; 22{,}250}{78750} = 0\%$$

$$\% 0 = \frac{78{,}750}{3{,}559 \times 43500} = 50.8\%$$

REVISED
DRAINAGE REPORT

For

THE ESTATES AT GLENDALE

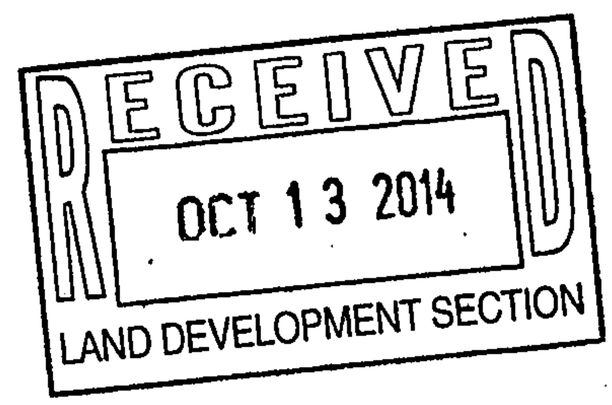
Albuquerque, New Mexico

Prepared by

Rio Grande Engineering
PO Box 93924
Albuquerque, New Mexico 87199

SEPTEMBER 2014

10/13/14



David Soule P.E. No. 14522

TABLE OF CONTENTS

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Introduction 3
Existing Conditions 3
Exhibit A-Vicinity Map 4
Proposed Conditions 5
Summary 5

Appendix

NAAMDP, Phase 1 asbuilt excerpts ..... A
Site Hydrology ..... B
Hydraulic calculations C

Map

Site Grading and Drainage Plan

PURPOSE

The purpose of this report is to provide the Drainage Management Plan for the development of a 14-lot subdivision located on Glendale Avenue between Wyoming Boulevard and Barstow Street NE. This plan was prepared in accordance with the City of Albuquerque design regulations, utilizing the City of Albuquerque's Development Process Manual drainage guidelines. This report will demonstrate that the grading does not adversely affect the surrounding properties, nor the upstream or downstream facilities.

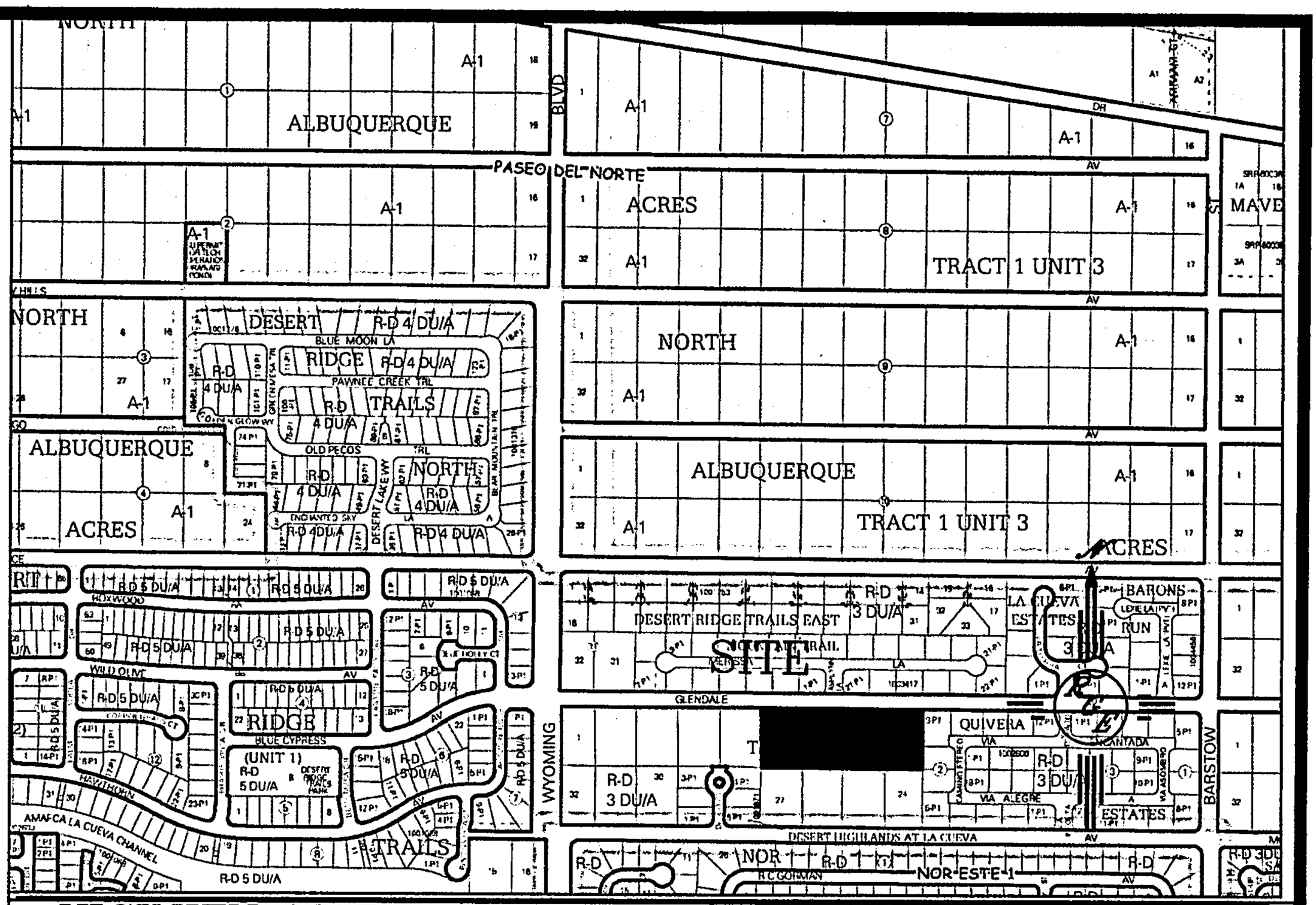
INTRODUCTION

The subject of this report, as shown on the Exhibit A, is a 3.55-acre parcel of land located on the south side of Glendale Avenue between Wyoming Boulevard and Barstow Street NE. The legal description of this site is tracts A&B the Estates at Glendale Subdivision. As shown on FIRM map35013C0133H, the entire site is located within Flood Zone X. The site has had grading activities upon it over the past several years. The site contains a desiltation pond constructed with phase one and multiple stock piles of material have been deposited thru ought the site. Due to the upstream construction, the site is not affected by any upland flows from the north or east. The site is impacted by the adjacent lots to the south. The site currently free discharges to a large pond located at the northwest corner of the site. The development of the site will require the site to discharge at a rate equal to or less than the fully developed conditions assumed for this site in the governing North Albuquerque Acres Master Drainage Plan (NAAMDP), which relevant excerpts can be found in appendix A.

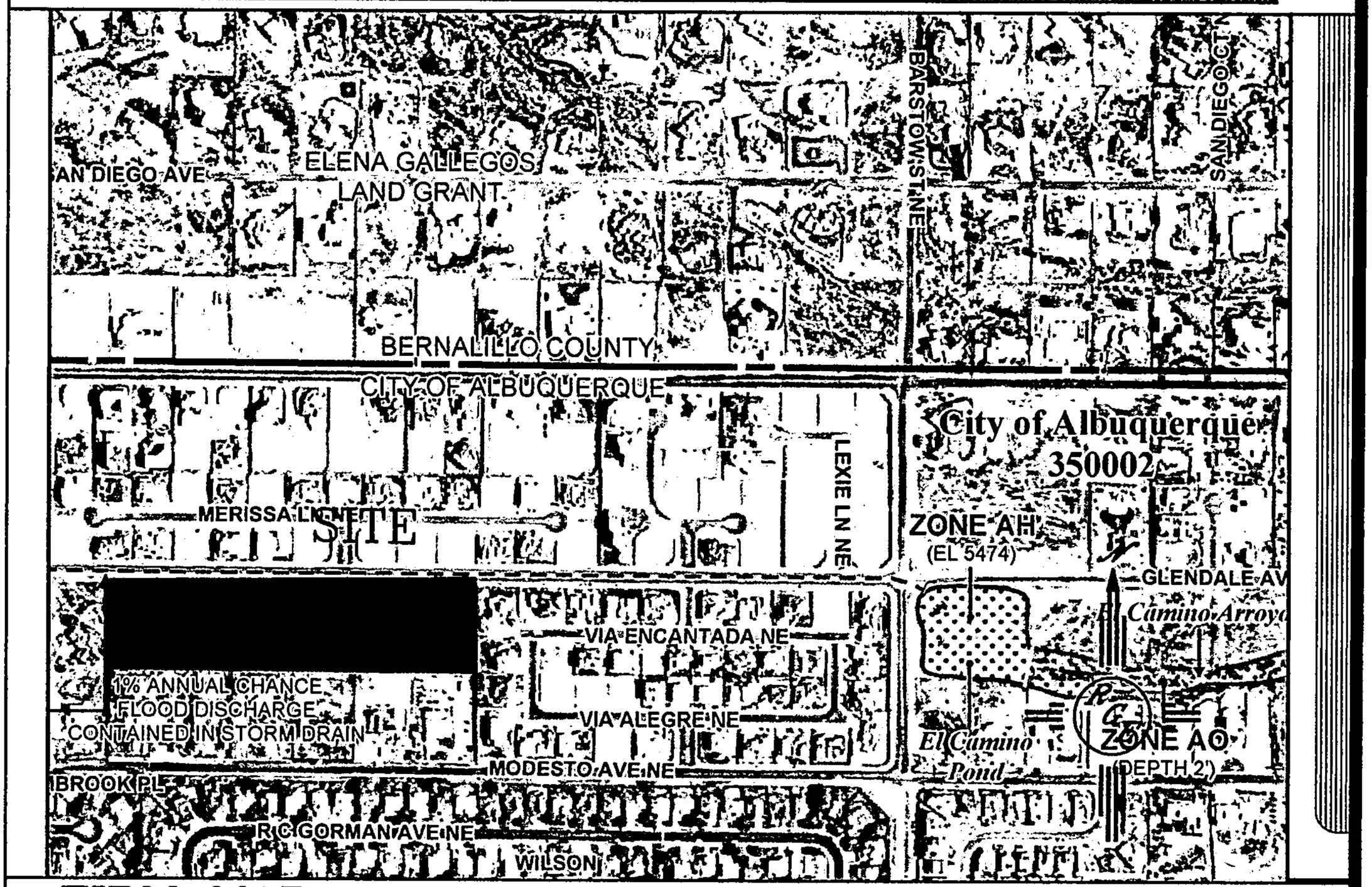
EXISTING CONDITIONS

The site currently does have ponds and stockpiles on it and has been impacted by human development over the years. The site is the second phase of the Estates at Glendale project. The site was initially designed by John Mackenzie by report found in city of Albuquerque drainage file.

hour The site is impacted by minor upland flows from the 4 developed lots to the south. The site currently discharges all of its flow to the North West corner to a temporary retention pond



VICINITY MAP: B-19-Z



FIRM MAP: 35001C0133H

The site is located within basins 204.0 of the NAAMDP. The adjacent infrastructure improvements within Glendale were constructed with phase one of this development. Two 24" storm drain pipes were stubbed into the property with the initial phase. All downstream improvements are in place and accepted by the city of Albuquerque..

PROPOSED CONDITIONS

The proposed improvements consist of a new 14-lot subdivision serviced by private paved roadway. The lots shall free discharge to the roadway and be conveyed within the roadway to the available downstream storm drain. Each lot will be required to retain the first .34" of rain or 255 cubic feet per lot. The slopes of the lots preclude front yard ponds so an alternative underground catchment basin- stormtech SC740 is required. Show on plan A copy of the product sheet is located in appendix B. The minimum length is shown on the grading plan. All the flow leaving the site will be conveyed via surface drainage to a set of single A inlets located at the entrance to the property. As shown on the drainage basin map and hydraulic spread sheet located in appendix B, the site is affected by 9 small basins from the adjacent property. The largest basing G generates 2.34 cfs, to allow for historical upland flow the south wall will have 3 turned blocks at each property corner and a turned block every 20'. As shown on the Turned block weir equation sheet, 3 turned blocks adequately passes the largest of the basins. The spacing of the turned blocks allows the flows to easily pass thru the wall. Each lot is graded to allow the flow to enter the site and flow to the street via surface flow.

The onsite drainage contains 3 basins. Basin A is the majority of the lots and North star Place. This basin combined with the upland flow generates 13.81 CFS. This corresponds to Analysis point 1 on the drainage basin map. A street capacity calculation spreadsheet located in appendix C shows this flow is safely conveyed within the roadway with mountable curbs. Basin B includes lots 1 and 10 along with North star lane and the front yards of lots 11-14. This basin combined with upland basins generates 18.89 cfs (AP2). A street capacity calculation

spreadsheet located in appendix C shows this flow is safely conveyed within the roadway with standard curbs. As shown in appendix C each single grated inlet captures 8.25 cfs, therefore 2.39 cfs by passes the inlets. As shown on the as built drawings located in appendix A, the HGL at the storm drain connection at main is 5405.50. The HGL's have not been calculated at this time, based upon manning's equation, each pipe will not flow full so the HGL slope will be less than the slope of the pipe therefore the HGL will be less than the top of pipe at each inlet. This flow enters the fully developed Glendale roadway at a rate less than historical, therefore has no affect and is captured by downstream inlets. Basin C contains the rear portion of lots 11-14. This basin combined with the upland basins discharge 2.92 cfs at the northwest wall. As shown in the Turned Blocks Wier calculation sheet, 3 turned blocks safely passes the flows. The flow exists via a 2'x4' gravel 'french-sump' drain against the wall and exists at existing grade. The flow is conveyed to the roadway via a 2' sidewalk culvert which as shown in appendix C has adequate capacity.. The proposed land treatment will conform to the residential density assumptions of the NAADMP. The site discharge is reduced to these master plan assumptions by the creation of water quality ponds in front yards. The impervious area is consistent with table A.5 of the DPM, utilizing 3.5 dwelling units per acre.

SUMMARY AND RECOMMENDATIONS

This project is a development of residential subdivision with the North Albuquerque Acres Master Drainage plan. The development is consistent with the land use assumptions of the plan. The surrounding development diverted the majority of the upland flow. The minor flow from the 4 developed lots to the south is allowed to pass thru the site. The discharge will enter the downstream storm drain where it was anticipated. The inlets, pipes and roadways have been shown to provide the required capacity. The site has been designed in accordance with City of Albuquerque Drainage ordinance. This drainage plan and report conforms to the governing drainage regulations of the City. Since the effected area site encompasses more than 1 acre, a NPDES permit will be required prior to any construction activity.

APPENDIX A

North Albuquerque Acres Master Drainage Plan

And

Excerpts of phase one as-builts

APPENDIX B

SITE HYDROLOGY

Weighted E Method

EAGLE CREST

Scaling shows 58 %

OIC

Existing 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)	Volume (ac-ft)	Flow cfs
BASIN A	24002	0.551	43%	0.23693	20.0%	0.110	20.0%	0.1102	17%	0.094	1.127	0.052	1.58
BASIN B	1931	0.044	43%	0.01906	20.0%	0.009	20.0%	0.00887	17%	0.008	1.127	0.004	0.13
BASIN C	10260	0.236	43%	0.10128	20.0%	0.047	20.0%	0.04711	17%	0.040	1.127	0.022	0.68
BASIN D	897	0.021	43%	0.00885	20.0%	0.004	20.0%	0.00412	17%	0.004	1.127	0.002	0.06
BASIN E	4927	0.113	43%	0.04864	20.0%	0.023	20.0%	0.02262	17%	0.019	1.127	0.011	0.32
BASIN F	25284	0.580	43%	0.24959	20.0%	0.116	20.0%	0.11609	17%	0.099	1.127	0.055	1.66
BASIN G	35490	0.815	43%	0.35034	20.0%	0.163	20.0%	0.16295	17%	0.139	1.127	0.077	2.34
BASIN H	1882	0.043	43%	0.01858	20.0%	0.009	20.0%	0.00864	17%	0.007	1.127	0.004	0.12
BASIN I	19312	0.443	43%	0.19064	20.0%	0.089	20.0%	0.08867	17%	0.075	1.127	0.042	1.27
ONSITE A	106556	2.446	0%	0	25.0%	0.612	37.0%	0.90509	38%	0.930	1.604	0.327	9.38
ONSITE B	29722	0.682	0%	0	25.0%	0.171	37.0%	0.25246	38%	0.259	1.604	0.091	2.62
ONSITE C	18770	0.431	0%	0	25.0%	0.108	37.0%	0.15943	38%	0.164	1.604	0.058	1.65
TOTAL ONSITE PROPOSED	155048	3.559	0%	0	25.0%	0.890	37.0%	1.31698	38%	1.353	1.604	0.476	13.65
TOTAL ONSITE ALLOWED	155048	3.559	8%	0.28475	22.0%	0.783	25.0%	0.88985	45%	1.602	1.640	0.486	13.68
TOTAL			20		20		34		26				
					21		21		58				

offsite

8.16 cfs

per MGA Report

Equations:

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

Impervious= 7*(((3.5*3.5)+(5*3.5))^.5) 38 %

Volume = Weighted D * Total Area

UPLAND FLOW BASED UPON NAAMDP

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

Where for 100-year, 6-hour storm (zone 3)

Ea= 0.66	Qa= 1.87
Eb= 0.92	Qb= 2.6
Ec= 1.29	Qc= 3.45
Ed= 2.36	Qd= 5.02

FLOW SUMMARY

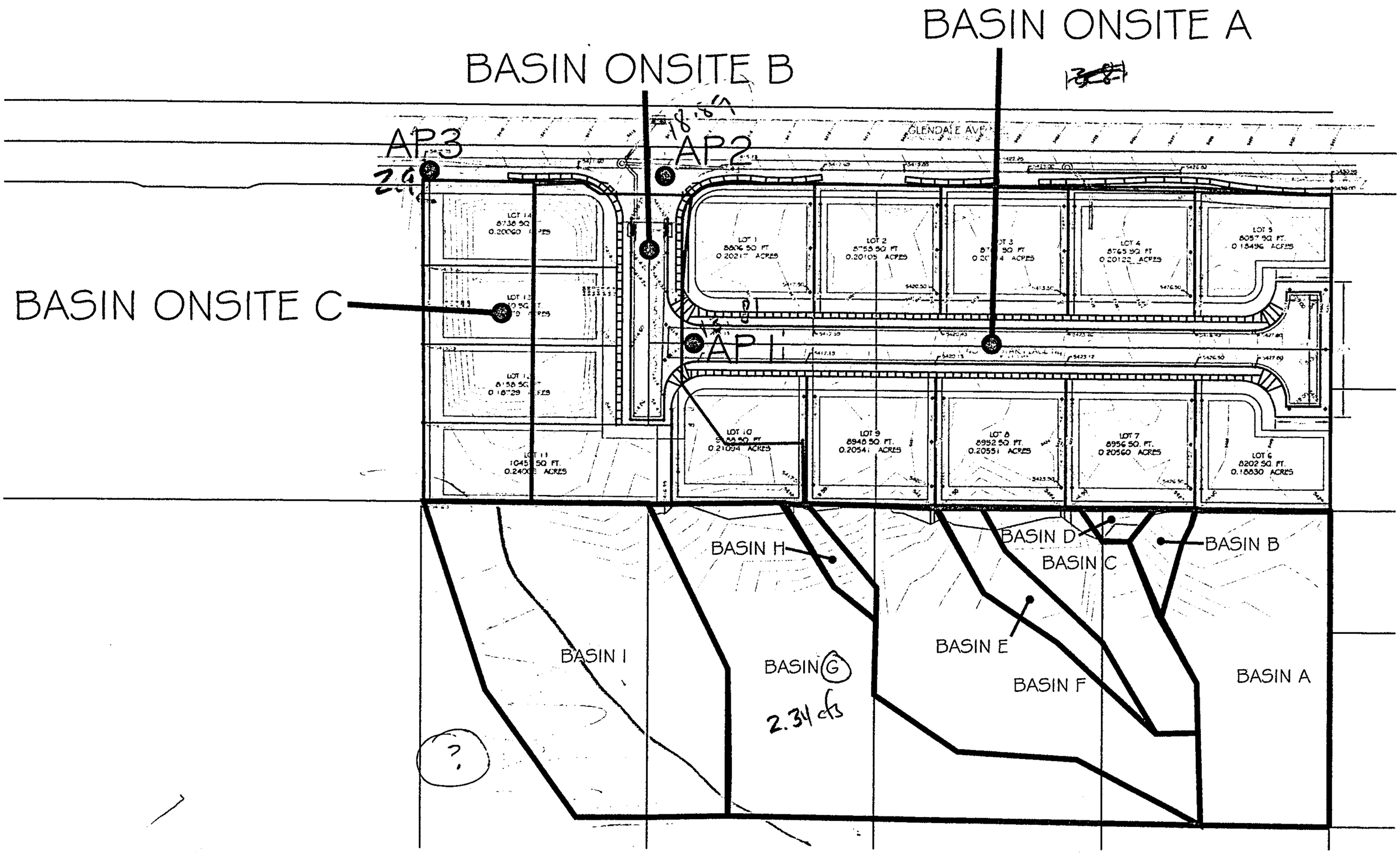
ANALYSIS POINT AP1	13.81 CFS
ANALYSIS POINT AP2	18.89 CFS
ANALYSIS POINT AP3	2.92 CFS
MAX FLOW AT TURNED BLOCK	2.34 CFS
ALLOWED DISCHARGE PER NAAMDP	13.68
ONSITE DISCHARGE	13.65

offsite basins adding 8.48 cfs

Onsite Basin H = 9.38

3.84
x 4
15.36

MGA calcs
12.12 cfs
- 3.64 (thru conc. channel)
8.48 cfs
+13.65
22.13 < 23.84


BASIN ONSITE A
BASIN ONSITE B
BASIN ONSITE C
AP3
AP2
AP1
GLENDALE AVE
LOT 1
8806 SQ. FT.
0.20217 ACRES
LOT 2
8755 SQ. FT.
0.20105 ACRES
LOT 4
8765 SQ. FT.
0.20122 ACRES
LOT 5
8057 SQ. FT.
0.18496 ACRES
LOT 10
0.21094 ACRES
LOT 9
8948 SQ. FT.
0.20541 ACRES
LOT 8
8952 SQ. FT.
0.20551 ACRES
LOT 7
8956 SQ. FT.
0.20560 ACRES
LOT 6
8202 SQ. FT.
0.18830 ACRES
BASIN H
BASIN D
BASIN C
BASIN B
BASIN E
BASIN F
BASIN A
BASIN I
BASIN G
2.34 cfs
?

FINAL
NORTH ALBUQUERQUE ACRES
MASTER DRAINAGE PLAN

Prepared For:

City of Albuquerque

Prepared By:

Resource Technology, Inc.

ENGINEERS AND ENVIRONMENTAL SCIENTISTS
1720-B Randolph Road SE, Albuquerque, NM 87106
Telephone (505) 243-7300
Fax (505) 243-7400
rti@nmia.com

RECEIVED
DEC 21 1998
HYDROLOGY SECTION

October 1998

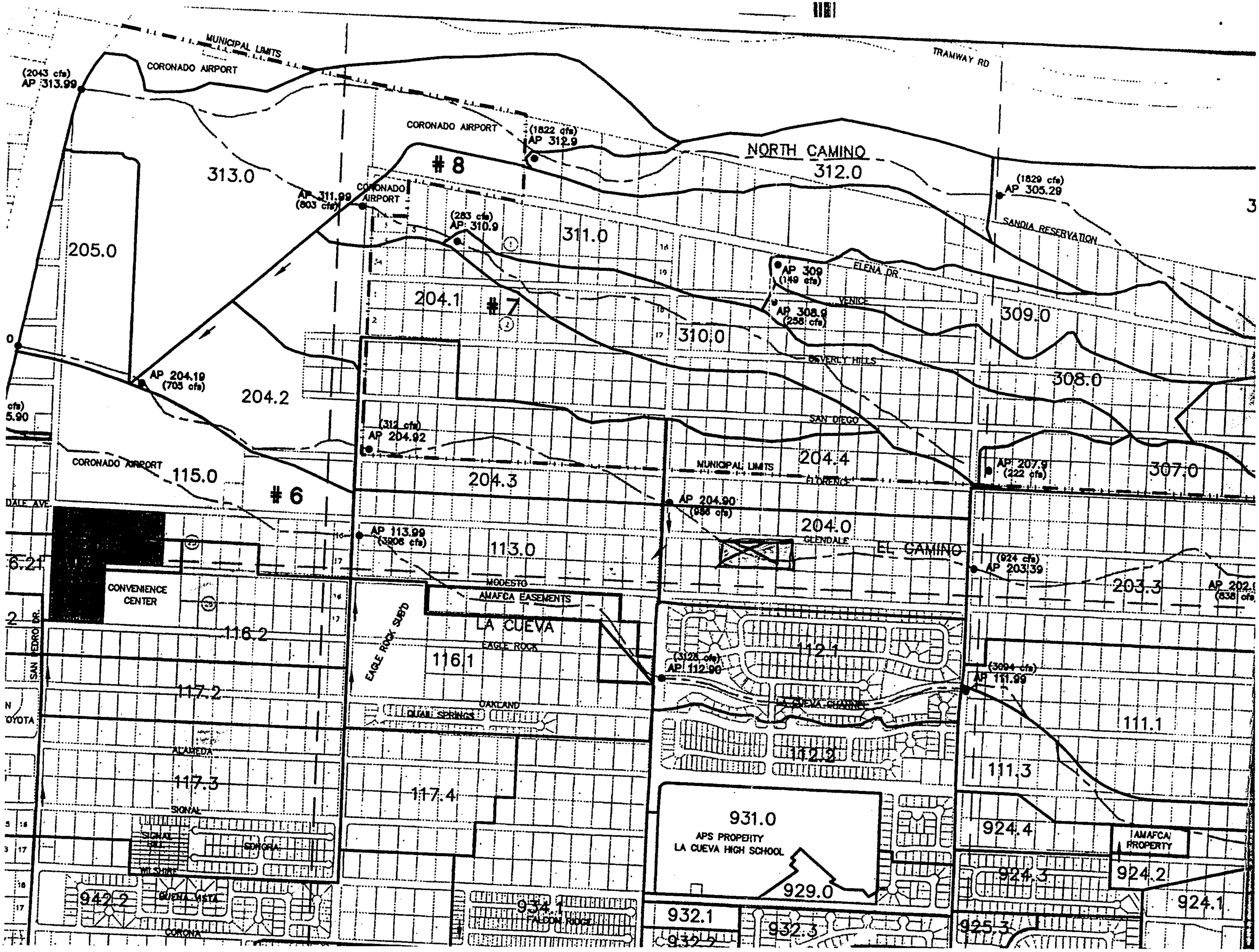
TABLE A-4

EL CAMINO ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi^2)	Land Treatment %				TP (hrs)
			A	B	C	D	
201	Existing	.1339	95	0	0	5	.133
	Future	.1339	95	0	0	5	.133
200	Existing	.3030	65	20	15	0	.167
	Future	.3030	65	20	15	0	.167
202.1	Existing	.1031	84	0	8	8	.133
	Future	.1031	22	23	38	17	.133
202.2	Existing	.1099	70	5	15	10	.14
	Future	.1099	22	23	38	17	.14
202.3	Existing	.0684	60	10	15	15	.133
	Future	.0518	11	26	33	30	.133
203.1	Existing	.1258	80	0	10	10	.14
	Future	.1258	22	23	38	17	.14
203.2	Existing	.0485	80	0	10	10	.133
	Future	.0394	11	26	33	30	.133
203.3	Existing	.0558	80	0	10	10	.133
	Future	.1259	20	20	34	26	.133
* 204	Existing	.2119	80	0	10	10	.21
	Future	.0773	20	20	34	26	.133
204.2	Existing	.1333	80	0	10	10	.14
	Future	.0687	8	22	25	45	.14
204.1	Existing	.1484	80	0	10	10	.18
	Future	.1288	17	22	31	30	.18
204.3	Future	.0870	10	15	30	45	.133
204.4	Future	.0546	21	21	36	22	.133
205	Existing	.0459	10	0	20	70	.133
	Future	.0543	0	10	20	70	.133
206.1	Existing	.1221	75	5	10	10	.150
	Future	.1221	0	20	30	50	.150
206.2	Existing	.0561	75	5	10	10	.133
	Future	.0561	0	20	30	50	.133
206.3	Existing	.0480	0	7	7	86	.133
	Future	.0480	0	7	7	86	.133
206.4	Existing	.0327	40	25	5	30	.133
	Future	.0327	0	20	30	50	.133

* Low Density

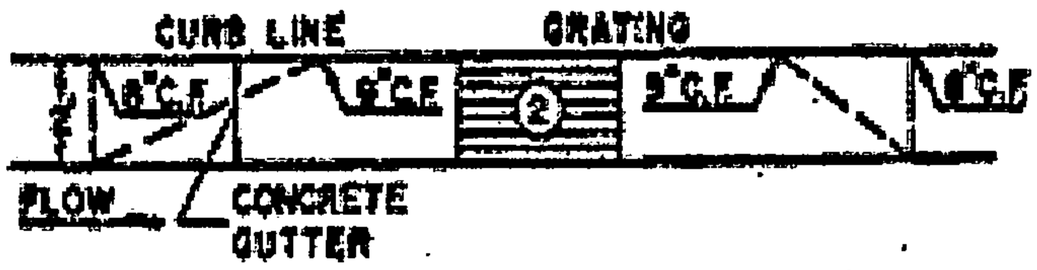
Residential = A=0, B=34, C=16, D=50


MUNICIPAL LIMITS
CORONADO AIRPORT
TRAMWAY RD
(2043 cfs)
AP 313.99
CORONADO AIRPORT
(1822 cfs)
AP 312.9
NORTH CAMINO
312.0
313.0
8
AP 311.99
(803 cfs)
CORONADO AIRPORT
(283 cfs)
AP 310.9
311.0
(1829 cfs)
AP 305.29
SANDIA RESERVATION
205.0
AP 309
(149 cfs)
ELENA DR
VENICE
AP 308.9
(258 cfs)
204.1
7
310.0
309.0
BEVERLY HILLS
AP 204.19
(705 cfs)
204.2
308.0
SAN DIEGO
(312 cfs)
AP 204.92
CORONADO AIRPORT
115.0
6
204.3
MUNICIPAL LIMITS
204.4
FLORENCE
AP 207.9
(222 cfs)
307.0
DALE AVE
AP 204.90
(886 cfs)
204.0
GLENDALE
EL CAMINO
AP 113.99
(3806 cfs)
113.0
(924 cfs)
AP 203.39
203.3
CONVENIENCE CENTER
MODESTO
AMAFCA EASEMENTS
LA CUEVA
EAGLE ROCK
EAGLE ROCK SUBD
116.2
116.1
112.1
(3128 cfs)
AP 112.90
(3094 cfs)
AP 111.99
LA CUEVA CHANNEL
SAN PEDRO DR
117.2
OAKLAND
DUAL SPRINGS
111.1
ALAMEDA
112.2
117.3
117.4
111.3
SIGNAL
931.0
APS PROPERTY
LA CUEVA HIGH SCHOOL
924.4
AMAFCA PROPERTY
SONORA
WILSHIRE
929.0
924.3
924.2
942.2
QUENA VISTA
934.1
FALDON RIDGE
924.1
932.1
932.3
925.3
CORONA

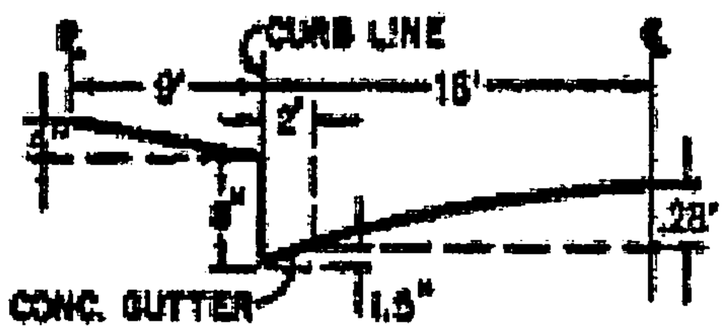
APPENDIX C

HYDRAULIC CALCULATIONS

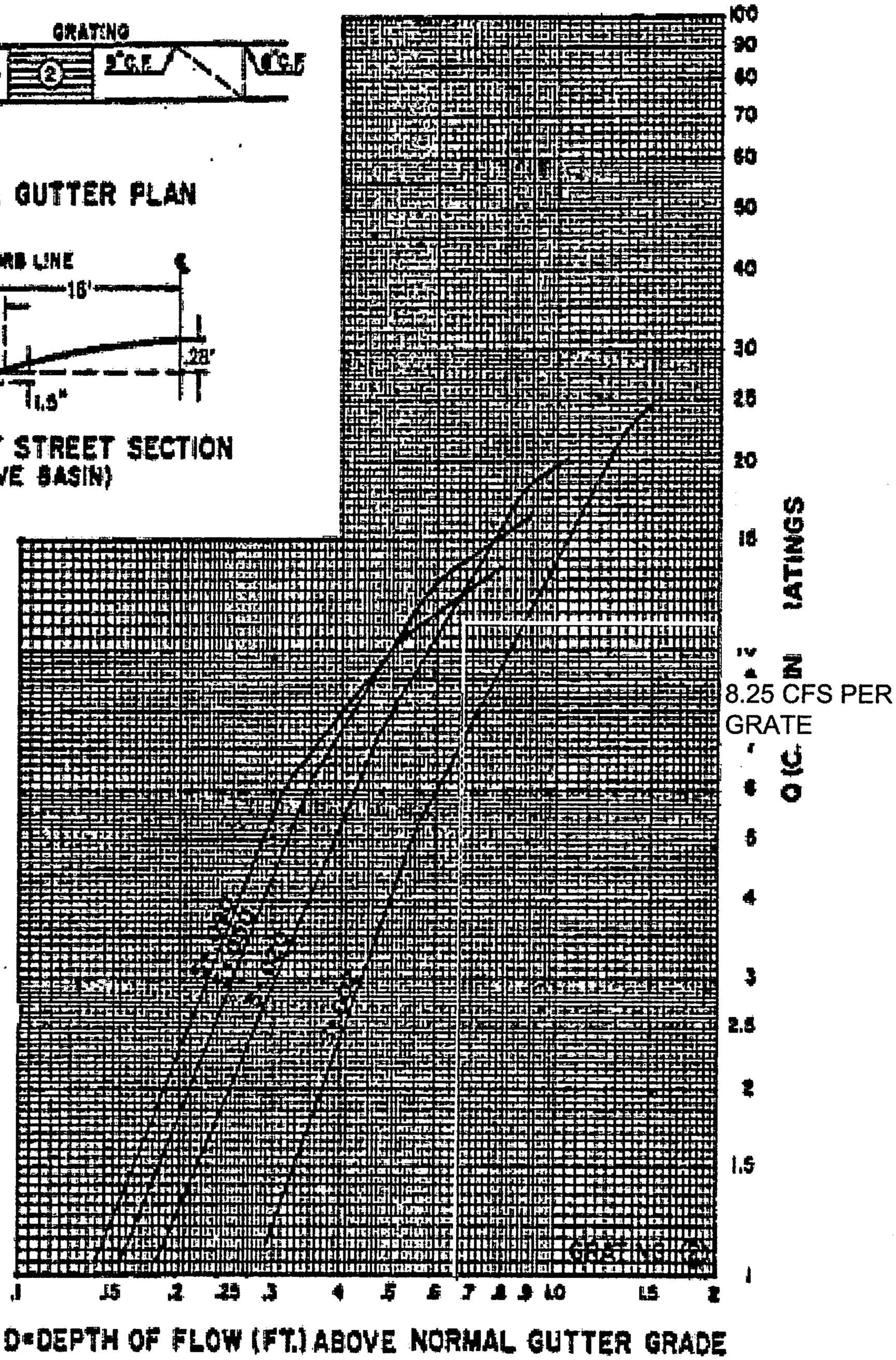
GRATING CAPACITIES FOR TYPE 'A' , 'C' and 'D'



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)



INLET CALCULATION

TWILIGHT LANE
STA. 10+00.00 TO 12+20.00
SCALE HORZ. 1" = 50'
VERT. 1" = 10'
NORTH STAR LANE
STA. 10+00.00 TO 12+20.00
SCALE HORZ. 1" = 50'
VERT. 1" = 10'
MOON DUST LANE
STA. 10+00.00 TO 12+16.84
SCALE HORZ. 1" = 50'
VERT. 1" = 10'
SCALE: 1" = 50'
FUTURE UNIT 2
FUTURE UNIT 3
Public Infrastructure not part of this Workorder 7/13/12
Public Infrastructure not part of this Work Order
RECORD DRAWING
CERTIFICATE OF SUBSTANTIAL COMPLIANCE ON FILE
CITY PROJECT
DESIGN REVIEW COMMITTEE
APPROVED
JUL 23 2012
CPN 702783
1008656

TURNED BLOCKS

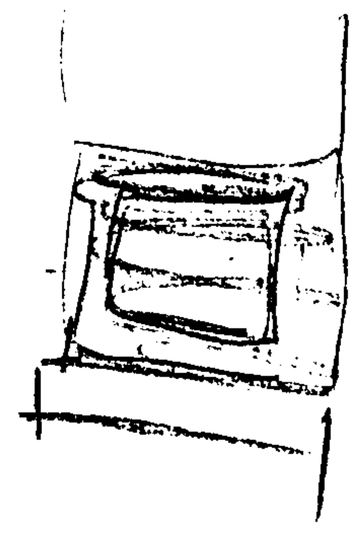
Weir Equation:

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

West drainage swale thru walls

Q= 2.92 cfs
C = 2.95 — 2.7
H = 0.5 ft
L = Length of weir

$$Q = 2.95 * .5 * ((0.5)\wedge(3/2))$$



Each opening is 6"x6"
Each block has two openings
Each opening has .52 cfs capacity

7

For west lots
Therefore 2.92 cfs requires ~~6~~ openings and 3 turned blocks

For south lots
Therefore 2.34 cfs requires 4.5 openings and 3 turned blocks

Pipe Capacity

Pipe	D	Slope	Area	R	Q Provided	Q Required	Velocity
	(in)	(%)	(ft^2)		(cfs)	(cfs)	(ft/s)
24" RCP	24	1.13	3.14	0.5	18.44	16.50	5.25
18" RCP	18	2	1.77	0.375	11.39	8.25	4.67

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

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

A = Area
R = D/4
S = Slope
n = 0.017

Street Capacity Calculations

NORTHSTAR PLACE AT AP1

26' F-F Street Section with 4" curb

Slope= 0.03

Q=13.81 CFS

Revise

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	0.43	0.00	0.76	0.00691
0.02	0.0064	0.66	0.01	0.00	0.01	0.69	0.01	0.86	0.01624
0.025	0.01	0.83	0.01	0.01	0.02	0.80	0.02	0.89	0.02136
0.035	0.0196	1.16	0.02	0.02	0.04	1.00	0.03	0.94	0.03228
0.045	0.0324	1.49	0.02	0.04	0.08	1.18	0.05	0.98	0.04391
0.052	0.043264	1.72	0.03	0.06	0.11	1.30	0.07	1.01	0.0524
0.06	0.0576	1.98	0.03	0.08	0.16	1.43	0.09	1.03	0.0624
0.0625	0.0625	2.06	0.03	0.09	0.18	1.47	0.09	1.04	0.06559

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	0.09	0.19	1.47	0.09	1.04	0.06598
0.1	0.172656	3.98	0.04	0.32	0.65	1.87	0.19	1.04	0.10566
0.13	0.311406	5.51	0.06	0.69	1.39	2.23	0.29	1.09	0.14572
0.16	0.495156	7.04	0.07	1.28	2.56	2.58	0.41	1.14	0.1894
0.2	0.810156	9.08	0.09	2.45	4.90	3.02	0.60	1.19	0.25153
0.207	0.873506	9.43	0.09	2.71	5.41	3.10	0.64	1.20	0.26277
0.2612	1.446942	12.20	0.12	5.29	10.58	3.65	0.95	1.26	0.35291
0.3025	**1.9825**	**14.31**	**0.14**	**8.04**	**16.08**	**4.05**	**1.23**	**1.30**	**0.42471**

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

Y2= Y - 0.3025

A3= A2 + Y2*13

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	8.09	16.17	4.06	1.23	1.30	0.42622
0.3039	2.0021	14.31	0.14	8.17	16.34	4.08	1.24	1.30	0.42894
0.3062	2.0343	14.31	0.14	8.39	16.78	4.12	1.26	1.31	0.43588
0.31	2.0875	14.31	0.15	8.76	17.51	4.19	1.30	1.33	0.44737
0.3125	2.1225	14.32	0.15	9.00	18.00	4.24	1.33	1.34	0.45494
0.32	2.2275	14.32	0.16	9.75	19.51	4.38	1.40	1.36	0.47767
0.3317	2.3913	14.34	0.17	10.97	21.94	4.59	1.52	1.40	0.51325
0.333	2.4095	14.34	0.17	11.11	22.22	4.61	1.54	1.41	0.51721

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

Y3= Y - 0.333

A4= A3 + 13 * 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	11.27	22.55	4.63	1.55	1.41	0.52038

Street Capacity Calculations

NORTH STAR LANE

26' F-F Street Section with 8" curb

Slope= 0.005

Q=18.89 CFS

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** XXX
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

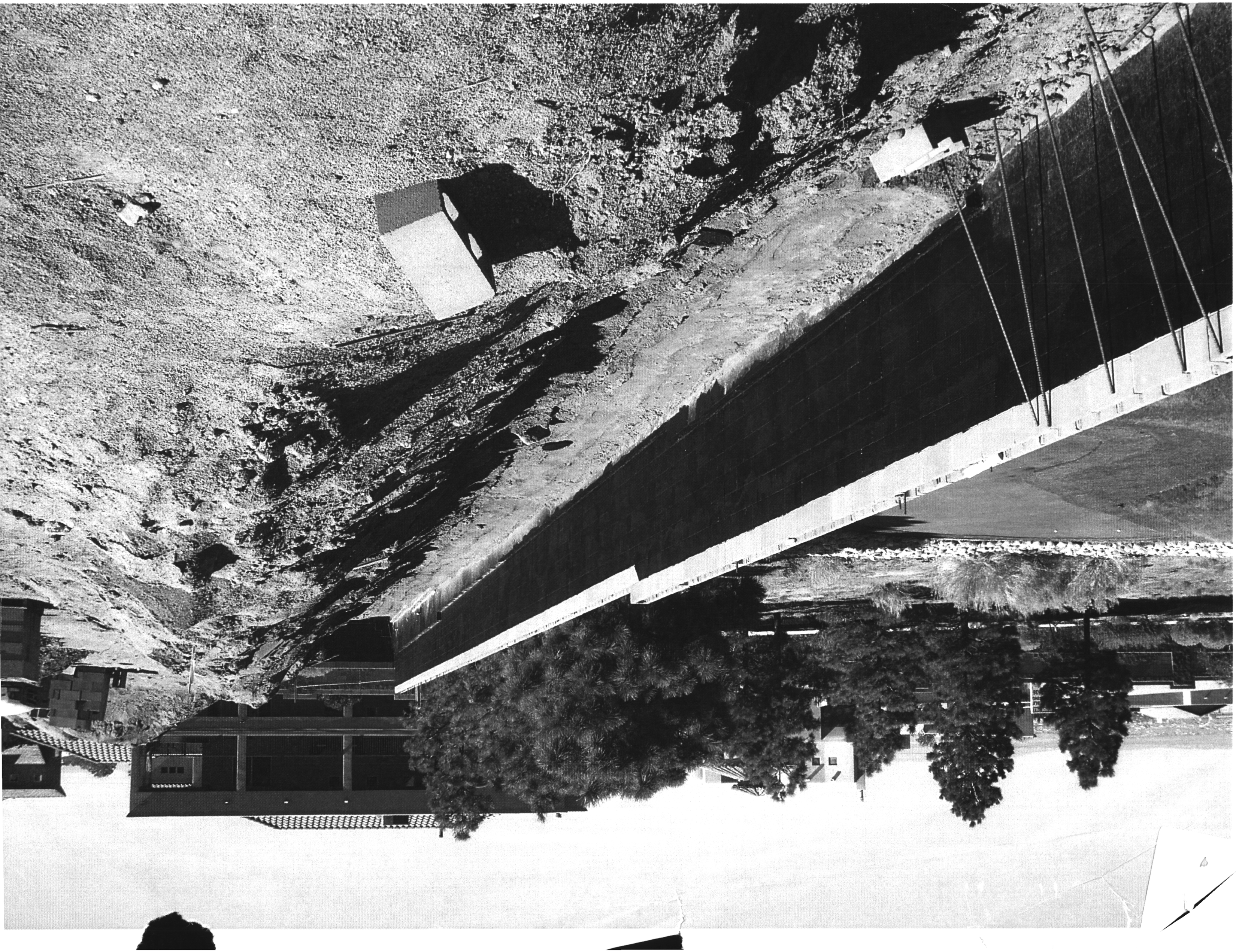
A4= A3 + 14 * Y3 + 25 * Y3^2

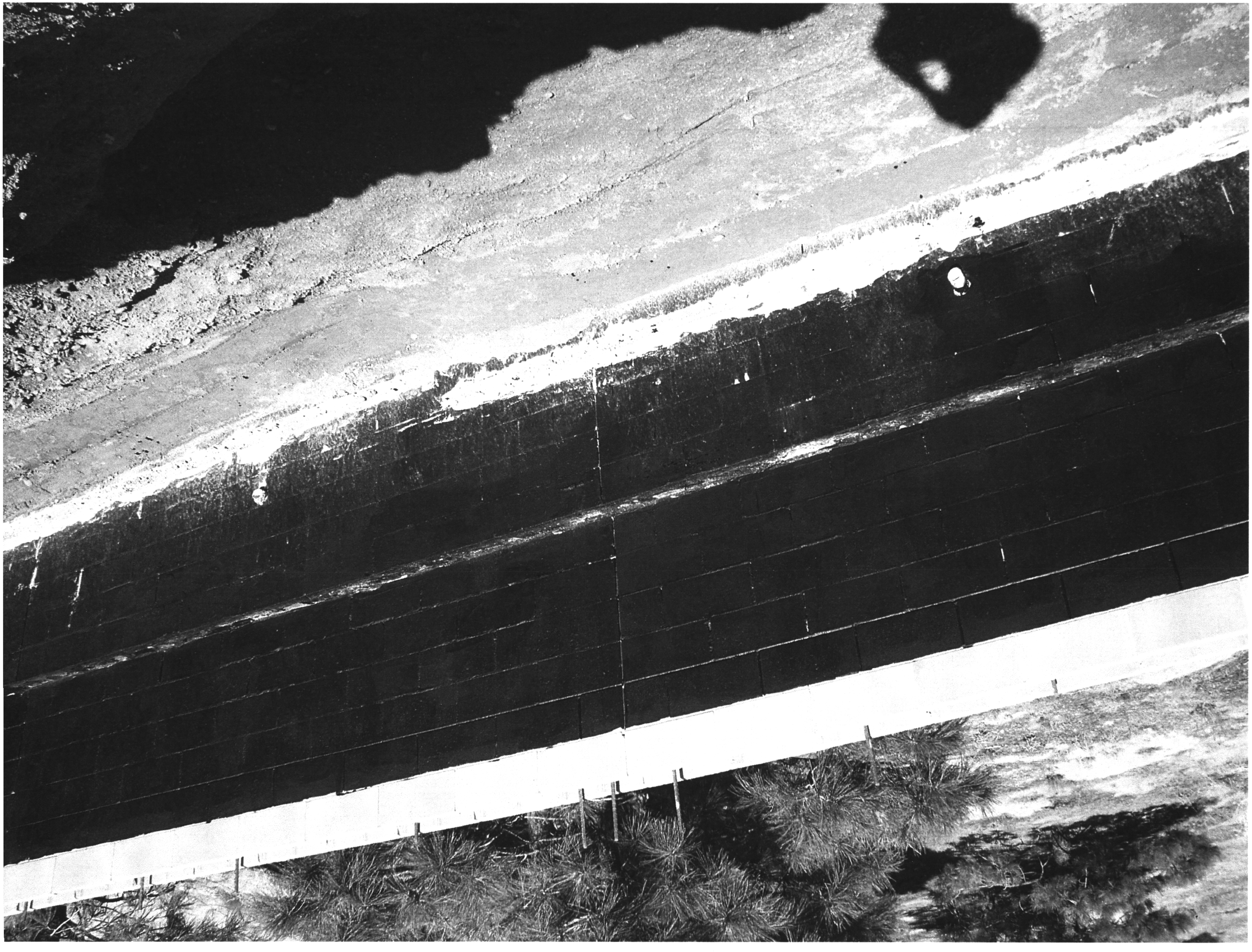
P4= P3 + SQRT(2501 * Y3^2)

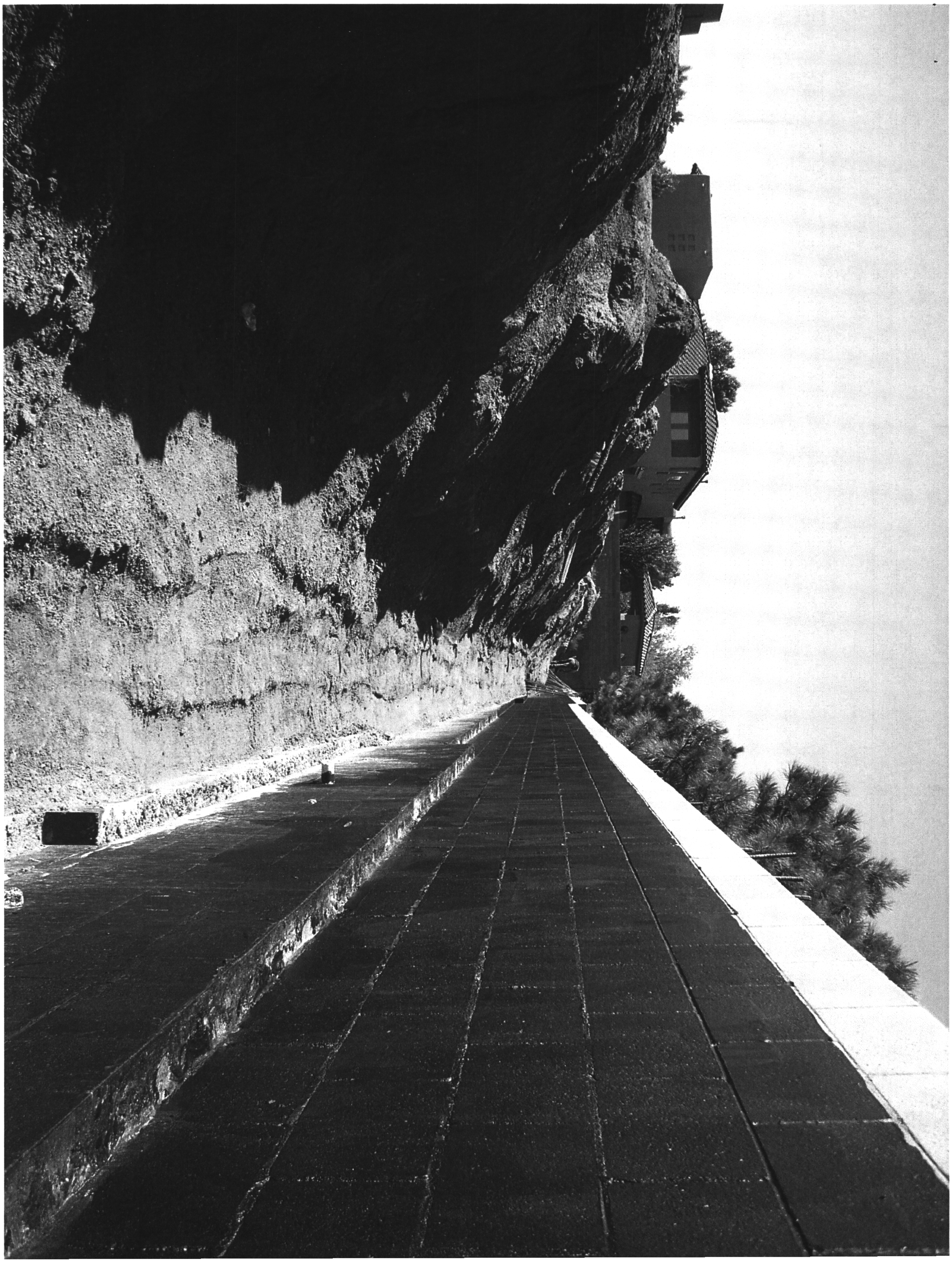
Depth (ft)	Area (ft^2)	P (ft)	R (A/P)	Q (cfs)	2Q (cfs)	Vel (ft/s)	D*V	Fr	D2 (ft)
0.7	6.76	16.32	0.41	23.23	46.45	3.43	2.40	0.72	0.4471541
0.72	7.09	17.32	0.41	24.13	48.26	3.41	2.45	0.71	0.4451558

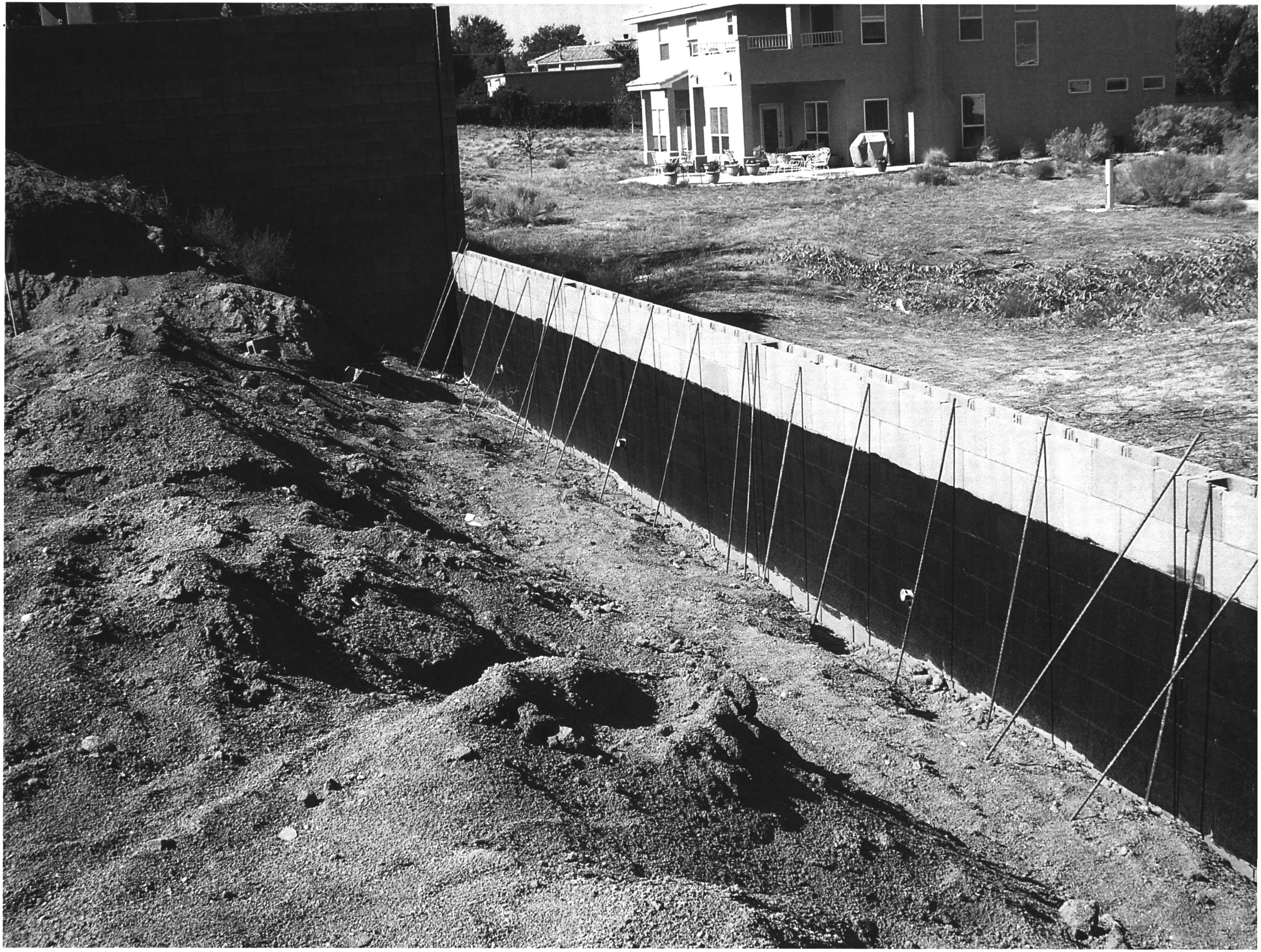
SIDEWALK CULVERT CAPACITY

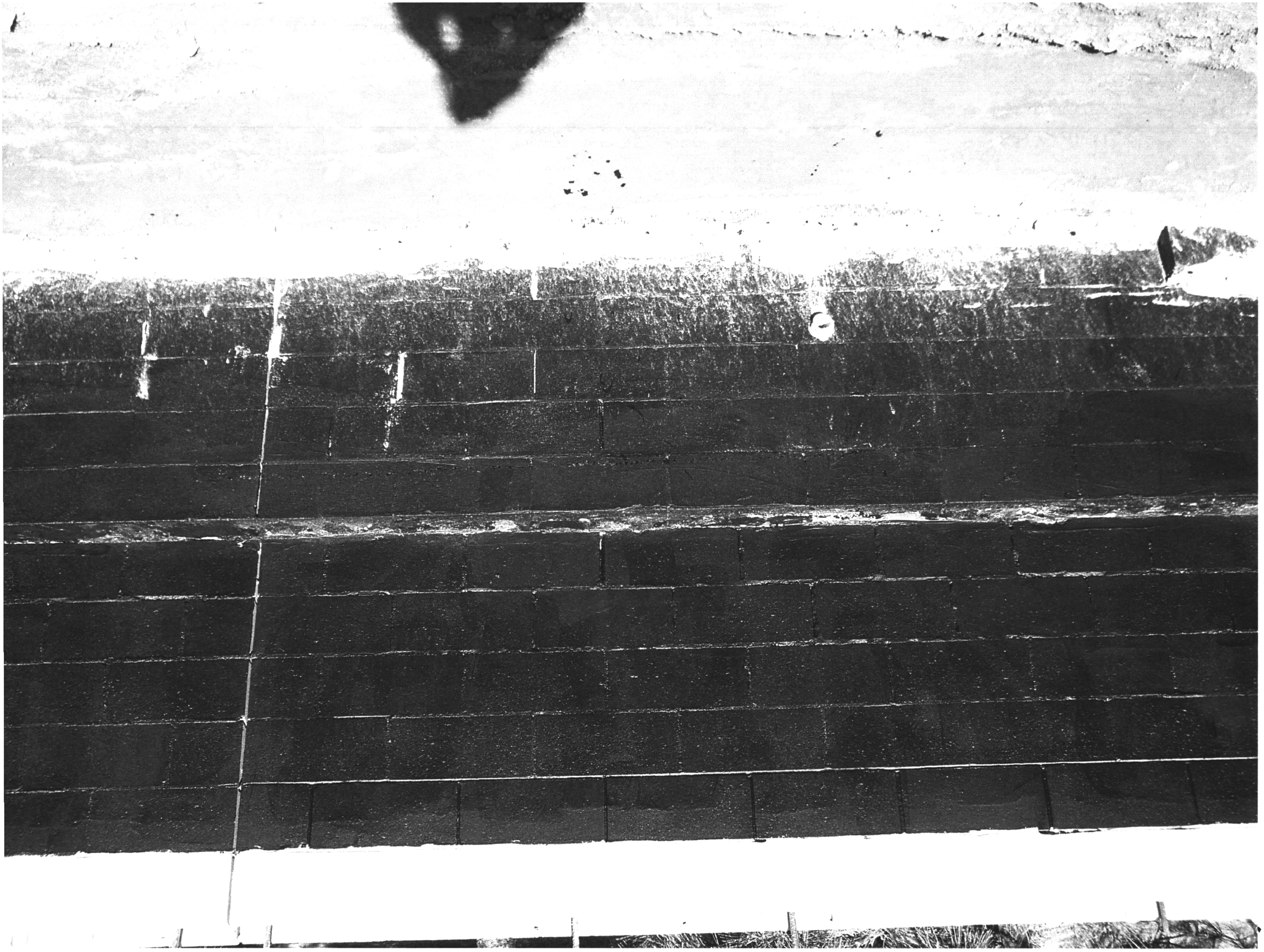
Depth	Area	WP	R	Slope	Q Provided	Q Required	Velocity
(ft)	(ft^2)	(ft)		(%)	(cfs)	(cfs)	(ft/s)
0.67	2.68	5.34	0.5018727	2	20.98	2.92	1.09
0.67	1.34	3.34	0.4011976	2	9.04	2.92	2.18











Scheer
8/19/99

Model A1532

35882105066624

CITY OF ALBUQUERQUE

October 10, 2012

John M. MacKenzie, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

Re: Estates @ Glendale, Lots 1 & 2,
Grading Plan for Pad Certification—Accepted
Engineer's Stamp date 07-13-12 (B19/D027)
Certification date 10-09-12

Dear Mr. MacKenzie,

Based upon the information provided in your submittal received 10-09-12, the above referenced Certification is accepted for Building Permits.

Please address the following comments prior to additional certifications for this subdivision.

1. The curb along the south side of Glendale, from the west property line to the inlet, will need completion.
2. Completion on the retaining wall at the south end of Twilight Lane requires completion.
3. Twilight will require asphalt pavement.
4. Please certify the pond volume.

If you have any questions, you can contact me at 924-3999.

Sincerely,

Richard Dourte, P.E.
City Engineer—Planning Dept.
Development and Building Services

Copy: e-mail
file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

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

PROJECT TITLE: Estates @ Glendale ZONE MAP/DRG. FILE # B-19 /D027
DRB#: 1008656 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Estates @ Glendale
CITY ADDRESS: 9123 Twilight Lane, Albuquerque, NM

ENGINEERING FIRM: Mark Goodwin & Associates, PA CONTACT: John MacKenzie
ADDRESS: PO BOX 90606 PHONE: 828-2200
CITY, STATE: Albuquerque, NM ZIP CODE: 87199

OWNER: Ashton Homes LLC CONTACT: Randy Schmille
ADDRESS: 3519 Campbell Farm Lanes PHONE: 315-0312
CITY, STATE: Albuquerque, NM ZIP CODE: 87104

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

SURVEYOR: ALS, Inc. CONTACT: Tim Aldrich
ADDRESS: PO BOX 30701 PHONE: 328-3988
CITY, STATE: Albuquerque, NM ZIP CODE: 87190

CONTRACTOR: Sundance Mechanical CONTACT: Carlos Spiess
ADDRESS: 4400 Alameda PHONE: 345-2694
CITY, STATE: Albuquerque, NM ZIP CODE: 87113

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

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

* john. goodwin engineers.com

RECEIVED
OCT 09 2012
LAND DEVELOPMENT SECTION

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

SUBMITTED BY: John MacKenzie DATE: 10-9-12

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

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

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

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

CITY OF ALBUQUERQUE

August 6, 2012

John MacKenzie, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale Unit 1
Grading and Drainage Plan
Engineer's Stamp dated 7-13-12 (B19/D027)

Dear Mr. MacKenzie,

Based upon the information provided in your submittal received 7-13-12, the grading and Drainage Plan is approved for Preliminary Plat, Grading Permit, and City Work Order.

This project requires a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge for disturbing one acre or more and a Topsoil Disturbance Permit for disturbing ¾ of an acre or more. Please attach a copy of this approved plan to the construction sets prior to sign-off by Hydrology. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

Albuquerque's MS4 Permit became effective March 1st, 2012. Grading and Drainage Plans and Drainage Reports will have to comply with the requirements of the new permit (http://www.cabq.gov/planning/landcoord/Hydrology.html).

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

Sincerely,

Shahab Biazar, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

C: e-mail

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

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

PROJECT TITLE: Estates at Glendale ZONE MAP/DRG. FILE # B 19 - D027
DRB#: 1008656 EPC#: WORK ORDER#: 702783

LEGAL DESCRIPTION: Lots 4-9, Blk 12, Tract 1, Unit 3, NAA
CITY ADDRESS:

ENGINEERING FIRM: Mark Goodwin & Assoc CONTACT: John MacKenzie
ADDRESS: PO Box 90606 PHONE: 828-2200
CITY, STATE: Albuq NM 87199 ZIP CODE: 87199

OWNER: Glendale, LLC CONTACT: Randy Schmille
ADDRESS: 3519 Campbell Farm Lane PHONE: 315-0312
CITY, STATE: Albuq NM ZIP CODE: 87104

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

SURVEYOR: Aldrich Land Surveying CONTACT: Tim Aldrich
ADDRESS: PHONE: 328-3988
CITY, STATE: ZIP CODE:

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

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

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

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

RECEIVED
JUL 13 2012

SUBMITTED BY: John MacKenzie DATE: 07-13-12

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

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

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

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

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

~ 2012 ACEC/NM Award Winner for Engineering Excellence ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence ~

July 13, 2012

Mr. Shahab Biazar, PE
City Hydrology Department
P.O. Box 1293
Albuquerque, NM 87103

Re: Revised Grading and Drainage Plan for Estates at Glendale (Engineer's Stamp dated 7/13/12) B19/D027

Dear Mr. Biazar:

In response to your comments, I have revised the Grading and Drainage Plan to provide water blocks at the entrances to North Star and Moon Dust Lanes. This change redirects flow into the gutter on the south side of Glendale Ave. from east to west.

Comment 1: Referring to sheets 1 and 2 of the attached plan, an elevation differential has been added at the two street entrances to demonstrate that Glendale Ave. flows will not enter the subdivision's two eastern cul-de-sacs. The Hydrology Summary Table on Sheet 2 of the plan has also been revised. Of the 11.99 cfs in Glendale Basin 123 approaching the site from the east, 5.79 cfs bypasses existing inlet 7A just east of the site. This 5.79 cfs of bypass combines with the 0.59 cfs generated within Basin 125 to total 6.38 cfs at the entrance to Moon Dust Lane. Continuing west this 6.38 cfs enters Glendale's Basin 107, which generates 1.02 cfs, for a total of 7.40 cfs. Of this flow, 5 cfs is captured by new Inlet 5, with 2.40 cfs bypassing into Basin 116 further to the east. Basin 116 generated 1.88 cfs resulting in a combined total of 4.28 cfs just east of the Twilight Lane intersection. New Inlet 2 on the south side of Glendale just east of Twilight Lane has the capability to collect all of this flow. A HEC-2 was run to determine flow capacity in the south half of Glendale with standard C & G and it shows a flow depth of 0.34 feet. The depth at the side-street's valley gutter would be less due to more cross-sectional capacity.

Comment 2: On the attached color exhibit, corrections have been made to accurately reflect the locations of Inlets 6 and 7 on Moon Dust Lane.

Comment 3: Proposed Contour 05 has been added to the Plan on Glendale Ave.

A supplemental analysis of flow capacity on the concrete channel along the south side of Lot 5 has also been provided, in response to a phone call we had.

If I can be of further assistance, please feel free to contact me.

Sincerely,
MARK GOODWIN & ASSOCIATES, PA
John M. MacKenzie, PE
Senior Engineer

JMM/kb

Attachments

F:\1-Projects\2011\A11004 - Estates at Glendale\Response to SB Comments.docx

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    11JUL12    TIME   10:58:32 *
 *****************************************
```

```
****************************************
*  U.S. ARMY CORPS OF ENGINEERS        *
*  HYDROLOGIC ENGINEERING CENTER       *
*  609 SECOND STREET, SUITE D          *
*  DAVIS, CALIFORNIA 95616-4687        *
*          (916) 756-1104              *
****************************************
```

Glendale Ave - South Half Flow Capacity

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

1

11JUL12 10:58:32

PAGE 1

Q = 7.4 cfs S = 3.5%

THIS RUN EXECUTED 11JUL12 10:58:32

```
************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************
```

T1 GLENDALE STREET CAPACITY CALCULATIONS
T2 36'FF STD 56' ROW (GLENDALE SUBDIVISION)
T3 HALF STREET SECTION

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	.035	0	0	0	0	0

J3 VARIABLE CODES FOR SUMMARY PRINTOUT

38	43	1	2	26	4	68	3

NC	.017	.017	.017	.1	.3					
QT	2	7.4	7.4							
X1	1	5	0	27	0	0	0	0	0	0

```
 GR      .87          0        .67        8.9          0          9       .125         11       .445         27
1
    11JUL12      10:58:32                                                                                  PAGE     2

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 1

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
 3720 CRITICAL DEPTH ASSUMED
      1.000       .43       .43       .43       .00       .52       .09       .00       .00       .87
        7.4        .0       7.4        .0        .0       3.1        .0        .0        .0       .44
        .00       .00      2.40       .00      .000      .017      .000      .000       .00      8.94
    .007743        0.        0.        0.         0        17         0       .00     17.35     26.28

1
    11JUL12      10:58:32                                                                                  PAGE     3

 T1 36' FF STD
 T2 HALF STREET SECTION
 T3

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         3         0         1      .035

 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

       2         0        -1         0         0         0         0         0         0         0

1
    11JUL12      10:58:32                                                                                  PAGE     4

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 2
```

```
CCHV=     .100 CEHV=     .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     1.000       .34       .34       .43       .00       .62       .28       .00       .00       .87
       7.4        .0       7.4        .0        .0       1.7        .0        .0        .0       .44
       .00       .00      4.23       .00      .000      .017      .000      .000       .00      8.95
   .034818        0.        0.        0.         0        17         8       .00     12.91     21.86
```



```
*************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
*************************************
```

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

HALF STREET SECTION

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
*	1.000	7.40	.43	.43	2.40	17.35	1.00	.52
	1.000	7.40	.34	.43	4.23	12.91	2.03	.62

d= 0.34'

1

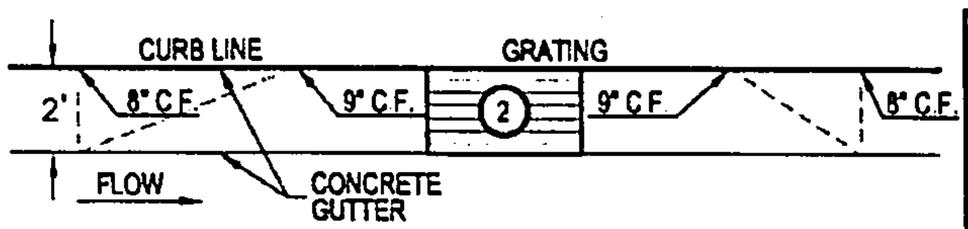
SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 1.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

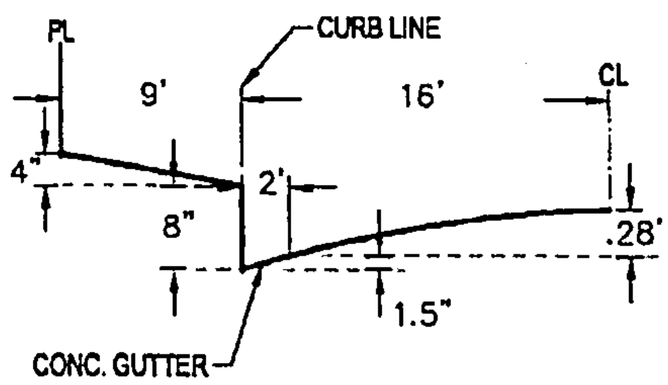
Estates at Glendale Subd.

Glendale Ave Inlets 2 and 5

GRATING CAPACITIES FOR TYPE "A", "C" AND "D"



GRATING & GUTTER PLAN



TYPICAL HALF STREET SECTION
(ABOVE BASIN)

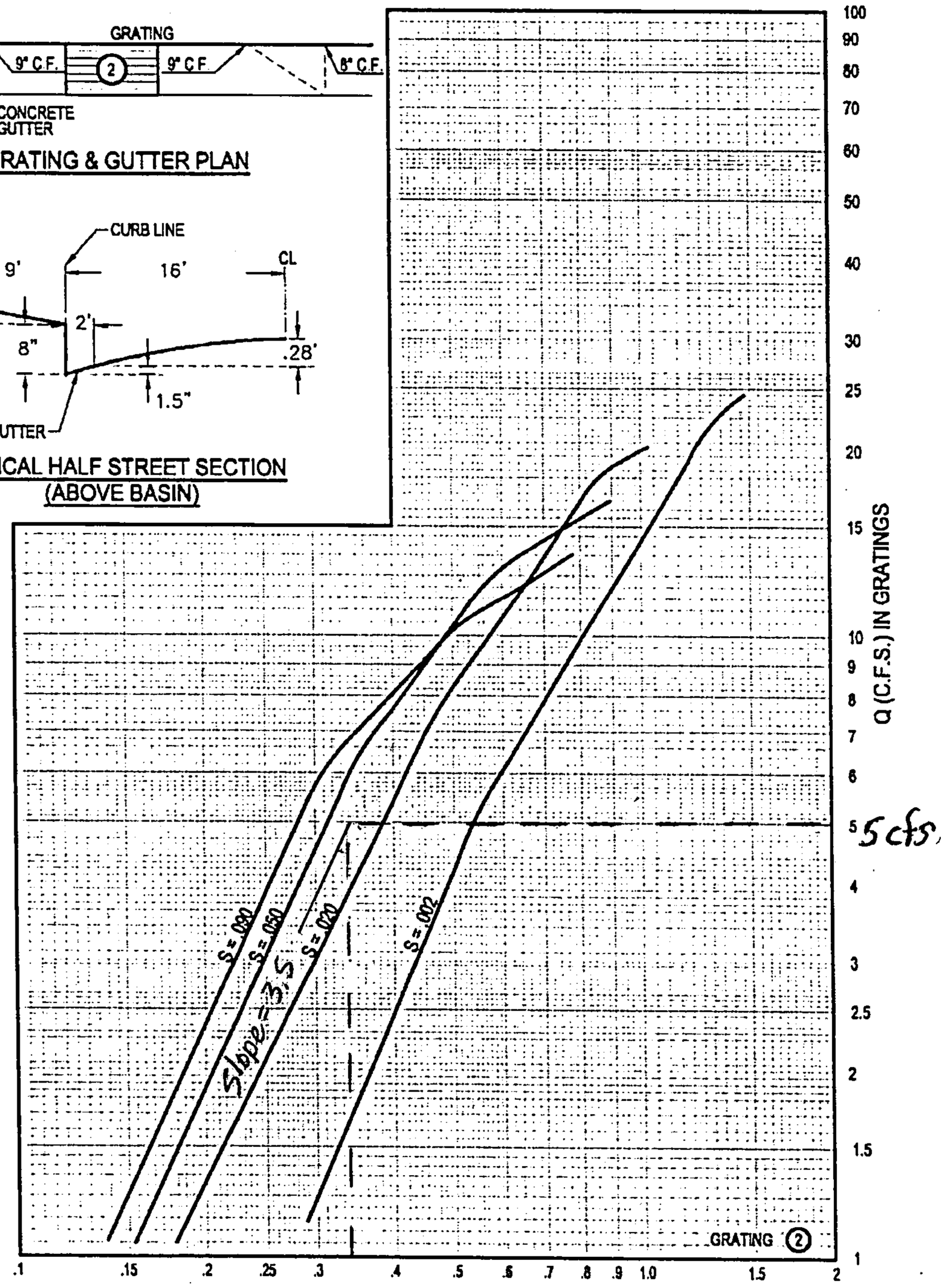


PLATE 22.3 D-5

0.34'

CITY OF ALBUQUERQUE

July 25, 2012

D. Mark Goodwin, P.E.
Mark Goodwin & Associates, P.A.
P.O. Box 90606
Albuquerque, NM 87199

mark@goodwinengineers.com

Re: The Estates at Glendale Unit 1, Lots 2,
Grading Certification—Not Accepted
Engineer's Stamp date 07-13-12 (B19/D027)
Certification date 07-23-12

Dear Mr. Goodwin,

Based upon the information provided in your submittal received 07-24-12, the above referenced Certification is unacceptable for Grading Certification for Building Permits.

1. Lot 2 appears to lack proper grades to adhere to the design intent.
2. The temporary retention pond requires certification with this certification

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

Sincerely,

Shahab Biazar, P.E.
Senior Engineer—Hydrology, Planning Dept.
Development and Building Services

Copy: e-mail
file

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

PROJECT TITLE: Estates @ Glendale Lot #2 ZONE MAP/DRG. FILE # B-19 / D027
DRB#: 1008656 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Estates @ Glendale
CITY ADDRESS: 9123 Twilight Lane, Albuquerque, NM

ENGINEERING FIRM: Mark Goodwin & Associates, PA
ADDRESS: PO BOX 90606
CITY, STATE: Albuquerque, NM
CONTACT: John MacKenzie
PHONE: 828-2200
ZIP CODE: 87199

OWNER: Ashton Homes LLC
ADDRESS: 3519 Campbell Farm Lanes
CITY, STATE: Albuquerque, NM
CONTACT: Randy Schmille
PHONE: 315-0312
ZIP CODE: 87104

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

SURVEYOR: ALS, Inc.
ADDRESS: PO BOX 30701
CITY, STATE: Albuquerque, NM
CONTACT: Tim Aldrich
PHONE: 328-3988
ZIP CODE: 87190

CONTRACTOR: Sundance Mechanical
ADDRESS: 4400 Alameda
CITY, STATE: Albuquerque, NM
CONTACT: Carlos Spiess
PHONE: 345-2694
ZIP CODE: 87113

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

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

RECEIVED
JUL 2 4 2012
HYDROLOGY SECTION

*Lot 2 at this time only.

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

SUBMITTED BY: DATE: 7/23/12

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

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

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

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

D. Mark Goodwin and Associates, P.A.
Consulting Engineers

P.O. Box 90606 Albuquerque, NM 87199
(505) 828-2200 (505) 797-9539 fax
e-mail: john@goodwinengineers.com

LETTER OF TRANSMITTAL

TO: Shahab Biazar, Hydrology
DRB - One Stop

Date: July 13, 2012

RE: Glendale Estates

We are sending:

HEC-2 Run on Private Twilight Lane Cul-de-sac Channel

____ For your Approval ___X__ For Review

____ As you requested _____ For a Statement

____ Request for Bid _____ Pre-Design Meeting

NOTES:

Project Engineer: John MacKenzie

Copy to:

7-17-12

```
1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    12JUL12    TIME   11:32:40 *
 *****************************************
```

```
*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX             XXXXXXX
```

```
THIS RUN EXECUTED 12JUL12    11:32:40
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************
 T1          GLENDALE SUBDIVISION
 T2          3'-4" WIDE CHANNEL
 T3
```

Twilight Lane Cul-de-Sac Channel

```
 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0       .11         0         0         0         0         0

 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

 NC     .015      .015      .015        .1        .3
 QT        2     3.64      3.64
 X1        1        4         0      3.43         0         0         0         0         0         0
 GR      0.5        0         0        .1         0      3.33       0.5      3.43

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 1

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
 3720 CRITICAL DEPTH ASSUMED
     1.000      .34       .34       .34       .00       .50       .17       .00       .00       .50
       3.6       .0       3.6        .0        .0       1.1        .0        .0        .0       .50
```

```
      .00       .00      3.28       .00      .000      .015      .000      .000       .00       .03
   .005872       0.        0.        0.         0        11         0       .00      3.36      3.40

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     0         3         0         1        .11

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    2         0        -1         0         0         0         0         0         0         0

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CCHV=     .100 CEHV=     .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     1.000       .14       .14       .34       .00      1.19      1.05       .00       .00       .50
       3.6        .0      3.6        .0        .0        .4        .0        .0        .0       .50
       .00       .00      8.24       .00      .000      .015      .000      .000       .00       .07
   .109693        0.        0.        0.         0        11         6       .00      3.28      3.36

                                                                                THIS RUN EXECUTED 12JUL12     11:32:40
*************************************
 HEC-2 WATER SURFACE PROFILES
 Version   4.6.2;  May 1991
*************************************
NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SUMMARY PRINTOUT
      SECNO       Q        CWSEL     CRIWS     VCH       TOPWID    FRCH      EG

*     1.000      3.64       .34       .34      3.28      3.36      1.00       .50
      1.000      3.64       .14       .34      8.24      3.28      3.96      1.19

 SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO=      1.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
```

Pg. 2

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    12JUL12    TIME   11:32:13 *
 *****************************************
```

```
*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
```

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                        X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

```
THIS RUN EXECUTED 12JUL12    11:32:13
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 T1          GLENDALE SUBDIVISION
 T2          4'WIDE CHANNEL
 T3

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0       .02         0         0         0         0         0

 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

      38        43         1         2        26         4        68         3

 NC     .015      .015      .015       .1        .3
 QT        2     3.64      3.64
 X1        1        4         0      4.1         0         0         0         0         0         0
 GR      .33        0         0       .1         0        4.      0.33       4.1

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

 *PROF 1

 CCHV=     .100 CEHV=     .300
 *SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
 3720 CRITICAL DEPTH ASSUMED
      1.000      .30       .30       .30       .00       .44       .15       .00       .00       .33
```

Pg. 3

```
      3.6        .0       3.6        .0        .0       1.2        .0        .0        .0       .33
      .00       .00      3.07       .00      .000      .015      .000      .000       .00       .01
  .005737        0.        0.        0.         0        14         0       .00      4.08      4.09

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     0         3         0         1        .02

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    2         0        -1         0         0         0         0         0         0         0

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CCHV=     .100 CEHV=     .300
*SECNO 1.000
 2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
     1.000       .20       .20       .30       .00       .52       .32       .00       .00       .33
       3.6        .0       3.6        .0        .0        .8        .0        .0        .0       .33
       .00       .00      4.54       .00      .000      .015      .000      .000       .00       .04
  .019874        0.        0.        0.         0        14         5       .00      4.02      4.06
THIS RUN EXECUTED 12JUL12    11:32:13
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
 ************************************

 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

 SUMMARY PRINTOUT

      SECNO       Q        CWSEL     CRIWS      VCH      TOPWID     FRCH       EG

*      1.000     3.64        .30       .30      3.07      4.08      1.00       .44
       1.000     3.64        .20       .30      4.54      4.02      1.79       .52

  SUMMARY OF ERRORS AND SPECIAL NOTES

 CAUTION SECNO=      1.000  PROFILE=  1  CRITICAL DEPTH ASSUMED
```

Pg. 4

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1*****************************************
 *  HEC-2 WATER SURFACE PROFILES          *
 *                                        *
 *  Version   4.6.2;  May 1991            *
 *                                        *
 *  RUN DATE    12JUL12    TIME   11:31:52 *
 *****************************************

                                          X     X  XXXXXXX   XXXXX              XXXXX
                                          X     X  X        X     X            X     X
                                          X     X  X        X                        X
                                          XXXXXXX  XXXX     X          XXXXX    XXXXX
                                          X     X  X        X                  X
                                          X     X  X        X     X            X
```

```
*************************************
*  U.S. ARMY CORPS OF ENGINEERS     *
*  HYDROLOGIC ENGINEERING CENTER    *
*  609 SECOND STREET, SUITE D       *
*  DAVIS, CALIFORNIA 95616-4687     *
*          (916) 756-1104           *
*************************************
```

```
THIS RUN EXECUTED 12JUL12    11:31:52
 ************************************
  HEC-2 WATER SURFACE PROFILES
  Version   4.6.2;  May 1991
************************************
 T1          GLENDALE SUBDIVISION
 T2          2' WIDE CHANNEL
 T3

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0     .0125         0         0         0         0         0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     38        43         1         2        26         4        68         3

NC     .015      .015      .015        .1        .3
QT        2     3.64      3.64
X1        1        4         0       2.1         0         0         0         0         0         0
GR      0.5        0         0        .1         0       2.0       0.5       2.1

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 1

CCHV=     .100 CEHV=     .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
3720 CRITICAL DEPTH ASSUMED
    1.000      .48       .48       .48       .00       .70       .23       .00       .00       .50
      3.6       .0       3.6        .0        .0        .9        .0        .0        .0       .50
      .00      .00      3.83       .00      .000      .015      .000      .000       .00       .00
```

Pg 5

```
   .006553        0.        0.        0.        0        14        0       .00      2.09      2.10

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     0         3         0         1       .0125

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    2         0        -1         0         0         0         0         0         0         0

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*PROF 2

CCHV=      .100 CEHV=      .300
*SECNO 1.000
2096 WSEL NOT GIVEN, AVG OF MAX, MIN USED
    1.000       .39       .39       .48       .00       .74       .35       .00       .00       .50
      3.6        .0       3.6        .0        .0        .8        .0        .0        .0       .50
      .00       .00      4.77       .00      .000      .015      .000      .000       .00       .02
  .012455        0.        0.        0.        0        14         5       .00      2.05      2.08
```

THIS RUN EXECUTED 12JUL12 11:31:52

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************************************
 HEC-2 WATER SURFACE PROFILES
 Version   4.6.2;  May 1991
************************************
NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST
```

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	CRIWS	VCH	TOPWID	FRCH	EG
*	1.000	3.64	.48	.48	3.83	2.09	1.00	.70
	1.000	3.64	.39	.48	4.77	2.05	1.38	.74

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 1.000 PROFILE= 1 CRITICAL DEPTH ASSUMED

Pg. 6

CITY OF ALBUQUERQUE

July 10, 2012

John MacKenzie, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale Unit 1
Grading and Drainage Plan
Engineer's Stamp dated 7-10-12 (B19/D027)

Dear Mr. MacKenzie,

Based upon the information provided in your submittal received 07/03/12, the above referenced plan can not be approved until the following comments are addressed.

- Water blocks should be placed at North Star Lane NE and Moon Dust Lane NE. Please revise proposed street flow and inlet calculations.
- Inlet number 5 (west) on Moon Dust Lane should be #6 and Inlet number 6 (east) should be #7 on the color exhibit.
- The proposed contour "05" is missing along Glendale Avenue NE.

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

Sincerely,

Shahab Biazar, P.E.
Senior Engineer, Planning Dept.
Development and Building Services

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

C: e-mail

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

~ 2012 ACEC/NM Award Winner for Engineering Excellence ~
~ 2008 ACEC/NM Award Winner for Engineering Excellence ~

July 3, 2012

Mr. Curtis Cherne
COA Hydrology
PO Box 1293
Albuquerque, NM 87103

Re: Estates @ Glendale (B19/D027)

Dear Mr. Cherne:

In response to the meeting in your office on June 21st, I have revised certain sections of the previously approved grading and drainage plan for this project, and I am now asking for it to be re-approved.

Along the west boundary of the site there was a narrow concrete channel proposed to drain runoff that would have fallen between two offset walls. We agreed at the meeting that this area could instead drain east thru each yard's rear privacy wall and into each rear yard, and then draining further east toward Twilight Lane. Instead of installing a concrete channel in this gap between the two walls, the developer wants to cover it with a weed barrier and gravel. The new area between the two walls can be uniformly maintained by the HOA. This new design along the west boundary also eliminates the need for a new sidewalk culvert at the project's NW corner.

The other change has to do with the 3'-4" wide concrete channel that was located along the south side of Lot 5. This channel is to convey 3.64 cfs from the NW corner of off-site Lot 27, which is directly southeast of this project's Unit 1. My request is to narrow the inside of the channel to 2' wide alongside the building pad for Lot 5. On the approved plan the inside of the channel is 3'-4" wide along its entire length with steep slopes on approach to the sidewalk culvert. Now, the channel's slope adjacent to the pad is 1.2%, and then it steepens before entering the sidewalk culvert at the Twilight Lane cul-de-sac.

I understand from our discussion that there was concern about a hydraulic jump at the entrance to the sidewalk culvert, thus resulting in the need to design a wider channel. The jump would occur at the flattening of the channel slope just before it enters the sidewalk culvert, thus the wider channel adjacent to the building pad is unnecessary. As result I am proposing that the channel be 3'-4" wide for 18 feet before (east of) the sidewalk culvert and then be an 18-foot transition to a 2-foot wide channel at the SW corner of the building pad, continuing east to the SE corner of Lot 5. Essentially, this modification does not change the channel's function from

what was previously approved since it's the same width approaching the culvert. In fact, the channel function should be improved from before because it now follows a horizontal arc and the channel's change in slope has been reduced due a longer horizontal run. Along the building pad the 2-foot wide channel as a capacity of 6.43 cfs, although only 3.64 cfs is being conveyed.

Secondly, I have re-evaluated the hydrology provided with the previously approved plan and determined that some minor modifications are in order. This is the result of discussions with Shahab Biazar of your office. The proposed changes essentially amount to mere clarification of where flows go and into which inlets. As shown on Sheet 2 of the revised Grading and Drainage Plan (color-coded exhibit of all basins has also been provided), the new inlets are follows:

- *Inlet 1 on Twilight Lane and Inlet 2 on south side of Glendale just east of Twilight Lane*
- *Inlets 3 and 4 on North Star Lane (Unit II)*
- *Inlet 5 just upstream of the North Star/Glendale intersection on south side of Glendale*
- *Inlets 6 and 7 on Mood Dust Lane (Unit II)*

Existing inlets are:

- *Inlet 1A located on Desert Court directly south of this site's Unit I*
- *Inlet 7A located about 130 feet east of the site on the south side of Glendale*
- *Inlets 8, 9 and 10, located on the north side of Glendale, and*
- *Inlet 11 located just west of the site on the south side of Glendale*

The Drainage Basin Map and its detail on Sheet 2 have also been changed to more accurately demonstrate where the inlets are located relative to the basins that drain to them. The Inlet ID column in the Hydrology Summary Table on Sheet 2 has also been revised to coincide with these clarifications. Basin 100 has been added to the table and this represents the previously missing Desert Highlands Subdivision, which drains into the existing 18-inch storm drain that currently transverses Unit I. The previously proposed 18-inch storm drain running between the new SD manhole at the north end of Twilight Lane and the existing MH in Glendale has been increased to 24-ich diameter pipe in order to better accommodate Unit I on-site flows and off-site flows from the existing Desert Highlands Subdivision.

Please contact me if I can be of further assistance.

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

John MacKenzie, PE
Senior Engineer

JMM/kb

Cherne, Curtis

B19/D027

From: Cherne, Curtis
Sent: Wednesday, June 27, 2012 5:40 PM
To: 'John MacKenzie'
Subject: glendale house

John,

Just got done speaking with your client at Glendale Estates about building the house. Told him I need a pad cert to approve the building permit. Pad cert to include top of curb. I forgot to tell him it also includes the retaining walls and must drain per your grading plan. This is consistent with other developers.

Curtis

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

April 12, 2012

Mr. Curtis Cherne
City of Albuquerque, Flood Plain Administrator
PO Box 1293
Albuquerque, NM 87103

Re: The Estates at Glendale Unit 1 Grading and Drainage Plan (B19/D027) City Project 1008656

Dear Mr. Cherne:

The Purpose of this letter is to respond to your letter of March 27, 2012. The five bullets in your letter have been numbered sequentially in this response.

1) The location of the existing SD pipe in Glendale cannot be reasonably changed, and the close proximity of the curb and gutter is unavoidable. The existing pipe is 13' deep, so the curb and gutter will fall within the limits of the 1:1 trenching prism whether the Glendale roadway is 40' FF or 32'FF. No changes were made to the plan(s) as a result of this comment. The new Glendale inlets will be shallow and will connect to the existing manholes at the same elevation as the existing inlets being removed, so constructability does not seem to be a problem.
ok
2) The retaining wall and garden wall will be offset from each other along the west edge of this property. Sheet 1 of the grading plan was modified by adding a concrete channel between the retaining wall and the garden wall in Typical Section C-C. A 4' wide private drainage easement was added to the plat, and the private concrete channel was added to the infrastructure list. not req'd
ok
3) The 1:1 slope symbol was removed from the south and east sides of Unit 1. It had been inadvertently left on the sheet from a previous design and had not been intended to be part of this plan. Sidewalk culverts were added on the grading plan sheets 1, 3 & 4 where the private concrete drainage channel ties into the cul-de-sac.
OK
4) Sheet 1 of the grading plan was modified by adding spot elevations along the west and north top of bank of the pond, a note "Match to existing grade was added to the south and east top of bank of the pond, and all of the side slopes of the pond were redrawn to accommodate 3:1 slope. Section F-F was added to Sheet 1 at the spillway location, and the west pond embankment was extended north to the south edge of the Glendale right of way.
Ok
5) There is no manhole at the south end of Twilight Pl. There is an existing 18"45 degree bend that was constructed with COA Project #702782.
ok

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

Gregory J. Krenik, PE
Senior Engineer
GJK/kb
Attachments

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APR 14 2012
HYDROLOGY SECTION

F:\1-Projects\2011\A11004 - Estates at Glendale\Drainage resubmital 2012-04-11.doc

CITY OF ALBUQUERQUE

April 25, 2012

Gregory J. Krenik, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale Unit 1, Grading and Drainage Plan
Engineer's Stamp dated 4-23-12 (B19/D027)

Dear Mr. Krenik,

Since the board approved the grading plan on 4-25-12, with a comment to dimension the 5 foot setback in section E-E, the above mentioned plan is approved for Grading Permit.

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

Sincerely,

Curtis a Cherne

Curtis Cherne, P.E., CFM
Principal Engineer, Planning Dept.
Development and Building Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

C: e-mail

CITY OF ALBUQUERQUE

April 24, 2012

Gregory J. Krenik, P.E.
Mark Goodwin & Associates, PA
P.O. Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale Unit 1, Grading and Drainage Plan
Engineer's Stamp dated 4-23-12 (B19/D027)

Dear Mr. Krenik,

Based upon the information provided in your submittal received 4/23/12, the above referenced plan is approved for Preliminary Plat action by the DRB. Once the board approves the Grading Plan, Hydrology will issue a letter approving Grading Permit.

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

Sincerely,

Curtis a Cherne

Curtis Cherne, P.E., CFM
Principal Engineer, Planning Dept.
Development and Building Services

C: e-mail

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

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

PROJECT TITLE: THE ESTATES AT GLENDALE-UNIT 1 ZONE MAP/DRG. FILE # B-19 / D027
DRB#: 1008656 EPC#: _____ WORK ORDER#: _____

LEGAL DESCRIPTION: LOTS 4-9, BLK 12, TRACT 1, UNIT 3, NAA
CITY ADDRESS: _____

ENGINEERING FIRM: MARK GOODWIN & ASSOC. CONTACT: GREGORY J. KRENK
ADDRESS: PO BOX 90606 PHONE: 828-2200
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87199

OWNER: GLENDALE, LLC CONTACT: RANDY SCHMILLE
ADDRESS: 3519 CAMPBELL FARM LANE NW PHONE: 315-0312
CITY, STATE: ALBUQUERQUE, NM ZIP CODE: 87104

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

SURVEYOR: ALDRICH LAND SURVEYING CONTACT: TIM ALDRICH
ADDRESS: _____ PHONE: 328-3988
CITY, STATE: _____ ZIP CODE: _____

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

TYPE OF SUBMITTAL:

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

REVISIONS PER HYDROLOGY COMMENTS

CHECK TYPE OF APPROVAL SOUGHT:

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

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APR 23 2012

WAS A PRE-DESIGN CONFERENCE ATTENDED:

- ___ YES
- ___ NO
- ___ COPY PROVIDED

SUBMITTED BY: _____ DATE: 4-23-12
GREGORY J. KRENIK

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

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

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

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

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

April 23, 2012

Mr. Curtis Cherne
City of Albuquerque, Flood Plain Administrator
PO Box 1293
Albuquerque, NM 87103

Re: The Estates at Glendale Unit 1 Grading and Drainage Plan (B19/D027) City Project 1008656

Dear Mr. Cherne:

The Purpose of this letter is to respond to your comments received by our office on April 17 and 18, 2012.

1) A 2-foot sidewalk culvert has been added at the NW corner of the site to drain runoff from the private channel along the west boundary of the site to Glendale Ave.
2) A new cross-section has been added to the plan on Sheet 1 to better demonstrate how the north end of this channel will drain north thru the proposed retaining wall and then into the sidewalk culvert.
3) Storm drain stubouts have been provided to future North Star Lane and Moondust Lane on Sheets 1 and 2. New storm drains collecting local flows and running parallel to the existing storm drain in Glendale Ave. have been added across Twilight Lane and North Star Lane.
4) Two 2-foot sidewalk culverts have been switched out on the south cul-de-sacs of each new private street to replace the ones that were previously called out as singular 3.33-foot sidewalk culverts.
5) Additional paving west of the site along Glendale Ave. was added to the infrastructure list to convey runoff to the existing inlet in Glendale west of the site. Incidental items referenced above, to include site retaining walls, have also been added to the infrastructure list.

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

John MacKenzie, PE
Senior Engineer
JMM/jm
Attachments

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APR 23 2012

CITY OF ALBUQUERQUE

September 21, 2011

James D. Hughes, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale, Grading and Drainage Plan
Engineer's Stamp dated 6-2-11 (B19-D027)

Dear Mr. Hughes,

Based upon the information provided in your submittal received 6-6-11, the above referenced plan is approved for Preliminary Plat action by the DRB unless changes are made due to other DRB members' comments or your client. Items may include:

- The width of Glendale Ave is shown as 32 feet F-F. Transportation asked for 40 feet F-F.
- If the slope paving changes to a vertical wall.
- If there are changes to the subdivision entrance.

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

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Planning Department
Development and Building Services

Copy: file

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
HYDROLOGY DEVELOPMENT SECTION

DEVELOPMENT REVIEW BOARD MEMO

DRB PROJECT NO: 1008656 **AGENDA ITEM NO: 4**

SUBJECT:	**ENGINEERING COMMENTS:**
Vacation of Public Drainage Easement	Hydrology has no objection, once the new plat is approved.
Sidewalk Waiver	Hydrology has no objection.
Subdivision Design Variance	Hydrology has no objection.
Temp Defr Sdwk Constr	Hydrology has no objection.
Preliminary Plat Approval	The Grading and Drainage Plan, stamp date 6-2-11, is approved for Preliminary Plat if the 32 foot F-F section for Glendale is approved by Transportation. Else, a revised Grading Plan is required. It appears a SD manhole is in the curb and gutter with the proposed 32 foot F-F street width. This is not an acceptable condition.

RESOLUTION/COMMENTS:

SIGNED:
Curtis Cherne
Hydrology Section
City Engineer Designee
AMAFCA Designee
924-3968

DATE: 8-31-11

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

PROJECT TITLE: Estates @ Glendale Unit 1 ZONE MAP/DRG. FILE # B-19 / D 027
DRB#: 1009656 EPC#: WORK ORDER#:

LEGAL DESCRIPTION: Lot 4-9 Block 12 Tract 1 Unit 3 North Albuquerque Acres
CITY ADDRESS:

ENGINEERING FIRM: Mark Goodwin & Assoc CONTACT: Doug Hughes
ADDRESS: PO Box 90606 PHONE: 828-2200
CITY, STATE: Albuquerque NM ZIP CODE: 87199

OWNER: Glendale Estates LLC CONTACT: Randy
ADDRESS: 7101 Natalie Tenac PHONE: 345-0312
CITY, STATE: Albuquerque NM ZIP CODE: 87109

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

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

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

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

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

hold Solved width on not' easement or

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JUN 2 2011
HYDROLOGY SECTION

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

SUBMITTED BY: James D. Hughes DATE: 6-2-11

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

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

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

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

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

June 2, 2011

Mr. Jack Cloud
DRB Chair, City of Albuquerque
PO Box 1293
Albuquerque, NM 87103

Re: Estates at Glendale - Project # 1008656

Dear Mr. Cloud:

Attached please find the revised Infrastructure List, Preliminary Plat, Grading Plan and Sidewalk Exhibit. Changes include:

1) adding two notes requiring conformance to the Zoning Code 14-16-3-19 Wall Height limitations, one on section AA and the other in the legend next to the slope paving symbol both on the Grading and Drainage Plan sheet 1,
2) revising sections AA, BB, CC, and DD changing offset of stepped walls from 5' to 4' horizontal distance, moving all walls completely out of Right Of Way(s), and replacing retaining wall in section DD with slope paving,
3) made Lot #4 two(2) feet wider and lots 5 and 6 one (1) foot narrower to provide extra room for the new slope paving and concrete vee channel in section DD,
4) changing the 'Meandering 4' Sidewalk' on Glendale to a 'Meandering 8' AC Trail' and add permanent C&G the entire length of the Glendale frontage on the Infrastructure list, the G&D Plan, and on the Sidewalk Exhibit, deleting 'Deferred Sidewalk' along Glendale,
5) changing Glendale pavement from 'residential' to 'major local' on the infrastructure List and showed the differing pavement types for information only on the G&D plan,
6) adding a note to the G&D Plan directing the "contractor to coordinate common wall construction with the neighbor(s) to the south prior to beginning work",
7) adding an 8' x 8' PDE to the southwest corner of Parcel # 2,
8) adding two additional inlets on the south side of Glendale, one at the east edge of the development at the transition from 40' FF to 32' FF, and the other future inlet between the two east one acre lots, both to prevent a portion of the 100-YR peak flow in the south side of the roadway from spilling over the unusual crown into the north side of the roadway. The supporting drainage calculations are summarized in a table on sheet 2 of the G&D Plan and the offsite basins were added to the map there.

Please note that the existing inlets adjacent to this development will have to be relocated whether Glendale Ave is 40'FF or 32'FF because they are located in the middle of the two proposed intersections to be constructed this project.

Also please note that the existing sidewalk on the south side of Glendale east of this subdivision is 4' wide.

Sincerely,
MARK GOODWIN & ASSOCIATES, PA

James D. Hughes, PE
Senior Engineer

JDH/dlm

Attachments

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JUN 0 6 2011
HYDROLOGY SECTION

CITY OF ALBUQUERQUE

May 11, 2011

James D. Hughes, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale, Grading and Drainage Plan
Engineer's Stamp dated 5-6-11 (B19-D027)

Dear Mr. Hughes,

Based upon the information provided in your submittal received 5-9-11, the above referenced plan cannot be approved for Preliminary Plat action by the DRB until the following comments are addressed:

- You are proposing to narrow Glendale Ave. by 8 feet. This may cause runoff to leave the ROW. Inlets have already been constructed for the 40 foot F-F. Provide the flow rate in Glendale Ave, the contributing basin(s) (not just this development), and the street depth.
- As mentioned in the e-mail dated 5-9-11:
  1. On section D-D: Why the 6" gap between the slope paving and the wall? Why not slope pave to the wall?
  2. Owner to the south approval is required to "Provide an opening in existing block wall".
  3. Doesn't look like Glendale is wide enough. Comment on IL.
  4. On the IL, you need to FG the permanent section.
  4a. Due to #3 and #4, will have to discuss D inlet in front of parcel 2.
  5. Water will be moving fast down the 3' wide channel dumping into lot 4. Per section D-D, it will erode the dirt at the base of the wall. Something should be built to convey these flows. An easement is also required in Parcel 2.
  6. Show a retaining wall in plan view for Lot 6.
  7. Show the property line in Section B-B.
  8. In Section A-A, the footer needs to be on the lot not in the ROW.

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

Sincerely,

Curtis Cherne, P.E.
Principal Engineer, Planning Department
Development and Building Services

Copy: file

PO Box 1293
Albuquerque
NM 87103
www.cabq.gov

Cherne, Curtis

To: Doug Hughes
Cc: Metro, Kristal D.; Cloud, Jack W.
Subject: RE: Estates at Glendalee- Proj # 1008656

Doug,
A few things.
1. On section D-D: (a) Why the 6" gap between the slope paving and the wall? Why not slope pave to the wall?
2. Owner to the south approval is required to "Provide an opening in existing block wall".
3. Doesn't look like Glendale is wide enough. Comment on IL.
4. On the IL, you need to FG the permanent section.
4a. Due to #3 and #4, will have to discuss D inlet in front of parcel 2.
5. Water wil be moving fast down the 3' wide channel dumping into lot 4. Per section D-D, it wll erode the dirt at the base of the wall. Something should be built to convey these flows. An easement is also requred in Parcel 2.
6. Show a retaining wall in plan view for Lot 6.
7. Show the property line in Section B-B.
8. In Section A-A, the footer needs to be on the lot not in the ROW.

That should do it.
Curtis

From: Doug Hughes [mailto:Doug@goodwinengineers.com]
Sent: Monday, May 09, 2011 11:47 AM
To: Cloud, Jack W.; Metro, Kristal D.; Cherne, Curtis ; Sandoval, Christina M.; Porter, Allan K.
Cc: Randy Schmille (schmilleco@yahoo.com)
Subject: Estates at Glendalee- Proj # 1008656

Hard copies (full size) were delivered to each DRB member's inbox at One Stop front counter at 4:30 PM Friday (see Attached).

Attached please find the revised Infrastructure List, Preliminary Plat, Grading Plan, and Sidewalk Exhibit. Changes include:

1) "Unit 1" added to the name of this subdivision.
2) lots that were being proposed as Unit 2 are deleted and replaced by Parcel 2.
3) Unit 2 improvements were deleted.
4) Residential Pavement with Temporary AC curb was added to the Infrastructure List on Glendale at Parcel 2
5) Residential Pavement with Type 1 Pinned Curb was added to the Infrastructure List on Glendale 120' west of Lot 1-P1 for drainage purposes.
6) notes #10 and #11 were added on the Preliminary Plat describing the purpose of Parcels 1 and 2
7) Line types were clarified on the Sidewalk Exhibit
8) Retaining Walls and 1:1 Slope Paving were added to the Infrastructure List
9) Slope paving was replaced by terraced retaining walls on the west boundary

The Grading and Drainage Plan was resubmitted to Hydrology this morning.

As-Built plans of Glendale Paving were delivered to Transportation this morning.

City Surveyor's signature is being acquired on the Preliminary Plat this morning.

Please review these documents and provide any preliminary feedback as soon as possible so that those additional revisions can be made before the Hearing Wednesday May 11.

Doug Hughes, PE
MARK GOODWIN & ASSOCIATES, PA
(505) 828-2200
(505) 797-9539 fax
(505) 821-9313 cell
doug@goodwinengineers.com

CITY OF ALBUQUERQUE

April 26, 2011

James D. Hughes, P.E.
Mark Goodwin & Associates
PO Box 90606
Albuquerque, NM 87199

Re: The Estates at Glendale, Grading and Drainage Plan
Engineer's Stamp dated 4-7-11 (B19-D027)

Dear Mr. Hughes,

Based upon the information provided in your submittal received 4-08-11, the above referenced plan cannot be approved for Preliminary Plat action by the DRB until the following comments are addressed:

- NAA MOP Ground Cover "A" is used for calculating runoff. Land Treatment "A" is used for areas undisturbed by human activity. Add these areas to Land Treatment "B" and recalculate.
- that It appears there is a garden wall along the eastern boundary of 7821 Modesto Dr NE. This would change the offsite basins.
- Provide as-builts for the storm drain running north from the Desert Highland Subdivision. An easement will be required on the plat at the south end of the development. 7027.B2
- asphalt low swale There isn't curb and gutter west of this development on Glendale Ave. Provide the amount of flow at the west edge of the development in Glendale Ave. Seems some form of erosion protection should be built to the inlet 125 feet to the west.
- offset not quite Lots 13 and 14 should be able to drain to Glendale without requiring cross-lot drainage. Why is the pad so low for Lot 14? turn 2 side pad
- How is drainage from the south entering lot 14? turn back
- Is there a swale on the west side of Lot 14? It seems the side yard setback should be larger. not going
- Provide proposed flow line elevations in Glendale near the northeast corner of Lot 13 and about every 150 feet. ok
- Why grade the back of Lot 13 to drain east? It drains west in the existing condition. run to st
- Show the property line between the Units.
- Side yard flow arrows are shown where a wall will be. Lots should not drain against a wall. can Dong

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NM 87103
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CITY OF ALBUQUERQUE

- The slope from Unit 3 to Unit 2 and Unit 2 to Unit 1 are about 1:1.5.This should be terraced or an engineered means of erosion control is required.
- Drainage for Section C-C onto the neighboring lot is a change from existing conditions. The western retaining wall should be raised. OK
- Add TW/BW grades at regular intervals for all retaining walls at regular intervals. FGL FGW
- This plan should be graded at one time or a grading plan showing phases is required. OK
- The PDE should be defined.

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

add walls to DL

Sincerely,

Curtis Cherne

Curtis Cherne, PE
Principal Engineer, Planning Department
Development and Building Services

PO Box 1293

Albuquerque

NM 87103

C: File