

# CITY OF ALBUQUERQUE



January 31, 2018

Diane Hoelzer, P.E.  
Mark Goodwin & Associates  
PO Box 90606  
Albuquerque, NM 87199

**RE: Glendesto Subdivision**  
**Revised Grading Plan Stamp Date: 1/23/18**  
**Drainage Report Stamp Date: 7/7/17**  
**Hydrology File: B18D020**

Dear Ms. Hoelzer:

Based on the information provided in your submittal received on 1/24/18, the revised Grading Plan and the Drainage Report are re-approved for Grading Permit. The adjustments to Tract A have no significant impact on drainage and Hydrology has no reason to require an amended preliminary plat for it.

If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

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



# City of Albuquerque

Planning Department

Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

**Project Title:** \_\_\_\_\_ **Building Permit #:** \_\_\_\_\_ **City Drainage #:** \_\_\_\_\_

**DRB#:** \_\_\_\_\_ **EPC#:** \_\_\_\_\_ **Work Order#:** \_\_\_\_\_

**Legal Description:** \_\_\_\_\_

**City Address:** \_\_\_\_\_

**Engineering Firm:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Owner:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Architect:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Other Contact:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

Check all that Apply:

**DEPARTMENT:**

- ☐ HYDROLOGY/ DRAINAGE  
☐ TRAFFIC/ TRANSPORTATION  
☐ MS4/ EROSION & SEDIMENT CONTROL

**TYPE OF SUBMITTAL:**

- ☐ ENGINEER/ ARCHITECT CERTIFICATION
- ☐ CONCEPTUAL G & D PLAN  
☐ GRADING PLAN  
☐ DRAINAGE MASTER PLAN  
☐ DRAINAGE REPORT  
☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)  
☐ TRAFFIC IMPACT STUDY (TIS)  
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- ☐ BUILDING PERMIT APPROVAL  
☐ CERTIFICATE OF OCCUPANCY
- ☐ PRELIMINARY PLAT APPROVAL  
☐ SITE PLAN FOR SUB'D APPROVAL  
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE  
☐ FOUNDATION PERMIT APPROVAL  
☐ GRADING PERMIT APPROVAL  
☐ SO-19 APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ GRADING/ PAD CERTIFICATION  
☐ WORK ORDER APPROVAL  
☐ CLOMR/LOMR
- ☐ PRE-DESIGN MEETING  
☐ OTHER (SPECIFY) \_\_\_\_\_

IS THIS A RESUBMITTAL?: ☐ Yes ☐ No

**DATE SUBMITTED:** \_\_\_\_\_ **By:** \_\_\_\_\_

COA STAFF: \_\_\_\_\_ ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_



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 ~

January 24, 2018

Hydrology Department  
City of Albuquerque  
PO Box 1293  
Albuquerque, NM 87103

**Re: Glendesto Subdivision – (DRB 1004472) B18-D020  
Revised Grading Plan (Eng Stamp 1-23-18)**

The primary revision in this grading plan is a result of the change in the entrance road configuration and width.

Should you have any questions or concerns, please don't hesitate to contact myself at [diane@goodwinengineers.com](mailto:diane@goodwinengineers.com) or 505-828-2200.

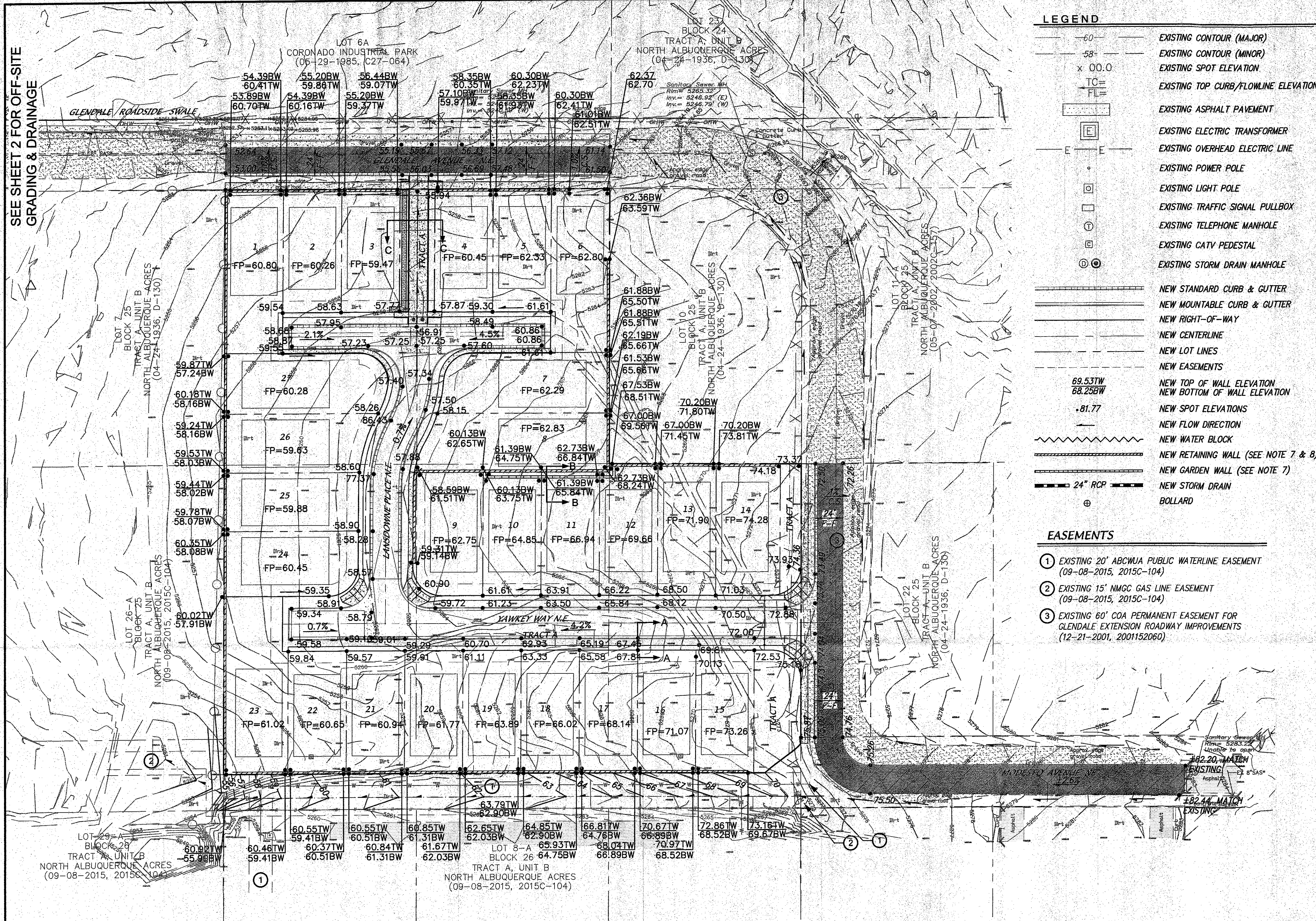
Sincerely,  
MARK GOODWIN & ASSOCIATES, PA

Diane Hoelzer, PE  
Senior Engineer

Attachments as listed herein.



SEE SHEET 2 FOR OFF-SITE  
GRADING & DRAINAGE

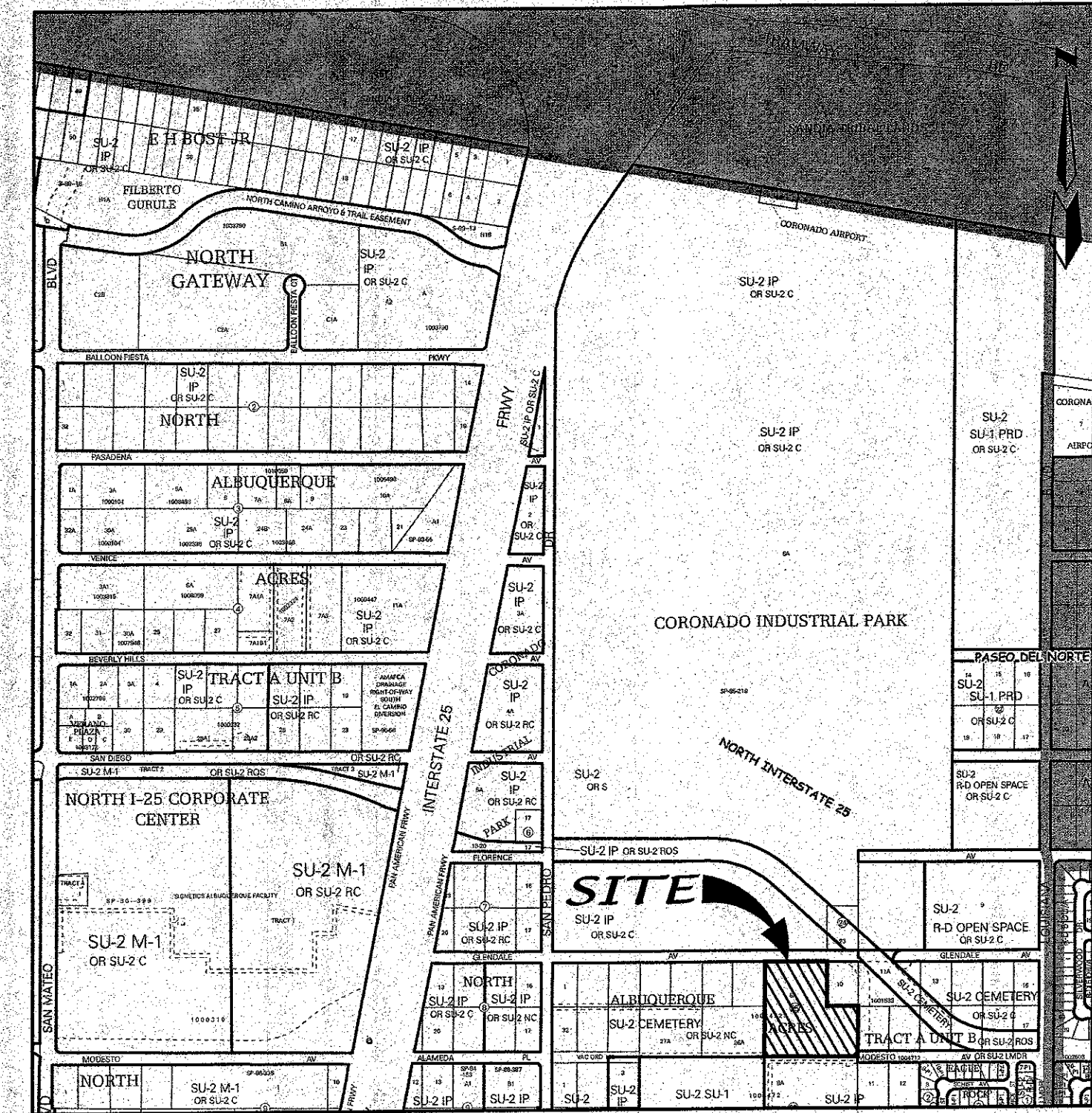


#### LEGEND

- EXISTING CONTOUR (MAJOR)
- EXISTING CONTOUR (MINOR)
- EXISTING SPOT ELEVATION
- EXISTING TOP CURB/FLOWLINE ELEVATION
- EXISTING ASPHALT PAVEMENT
- EXISTING ELECTRIC TRANSFORMER
- EXISTING OVERHEAD ELECTRIC LINE
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING TRAFFIC SIGNAL PULLBOX
- EXISTING TELEPHONE MANHOLE
- EXISTING CATV PEDESTAL
- EXISTING STORM DRAIN MANHOLE
- NEW STANDARD CURB & GUTTER
- NEW MOUNTABLE CURB & GUTTER
- NEW RIGHT-OF-WAY
- NEW CENTERLINE
- NEW LOT LINES
- NEW EASEMENTS
- NEW TOP OF WALL ELEVATION
- NEW BOTTOM OF WALL ELEVATION
- NEW SPOT ELEVATIONS
- NEW FLOW DIRECTION
- NEW WATER BLOCK
- NEW RETAINING WALL (SEE NOTE 7 & 8)
- NEW GARDEN WALL (SEE NOTE 7)
- NEW STORM DRAIN
- BOLLARD

#### EASEMENTS

- EXISTING 20' ABCMUA PUBLIC WATERLINE EASEMENT (09-08-2015, 2015C-104)
- EXISTING 15' NMGC GAS LINE EASEMENT (09-08-2015, 2015C-104)
- EXISTING 60' COA PERMANENT EASEMENT FOR GLENDALE EXTENSION ROADWAY IMPROVEMENTS (12-21-2001, 2001152060)



#### VICINITY MAP (NTS)

#### LEGAL DESCRIPTION

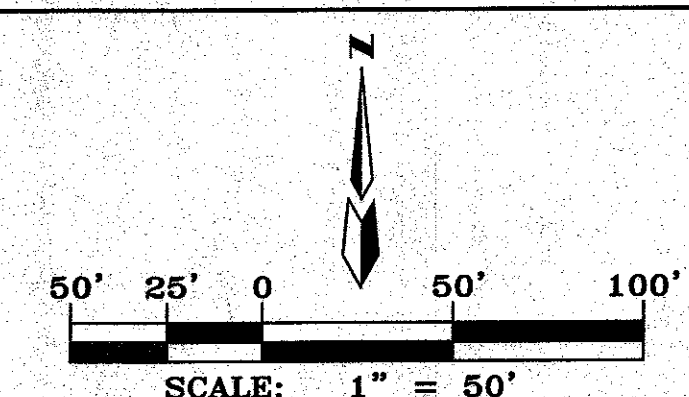
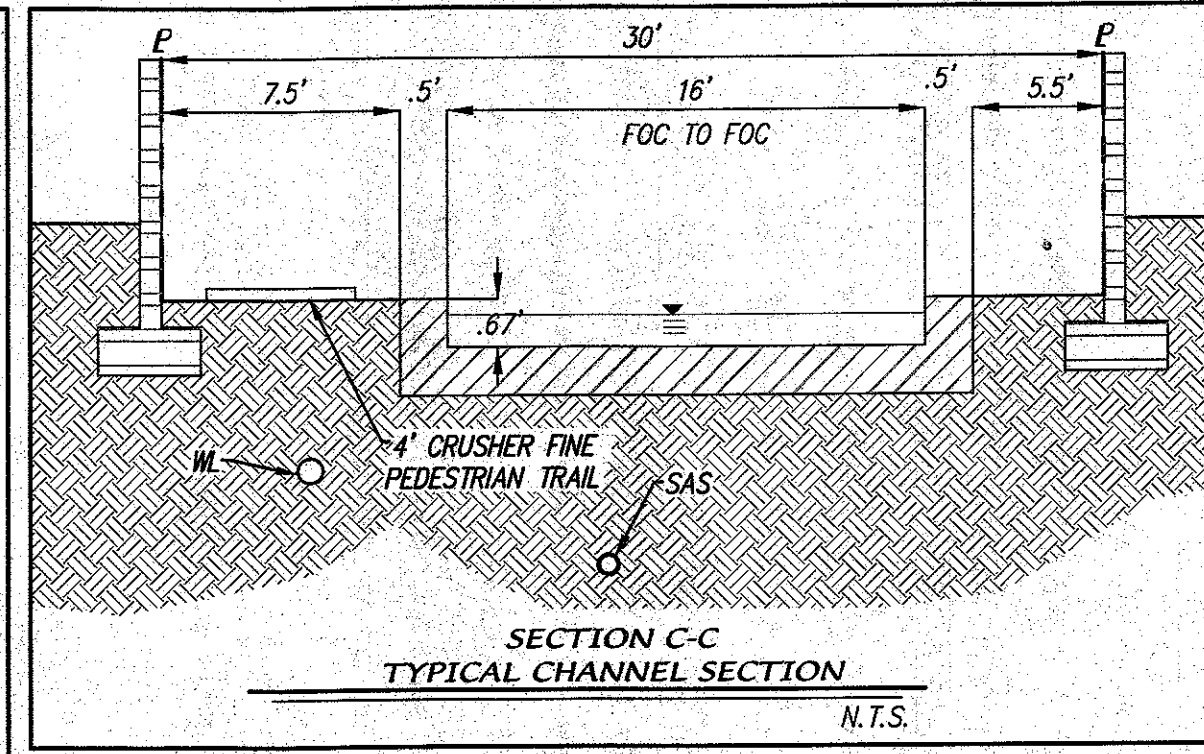
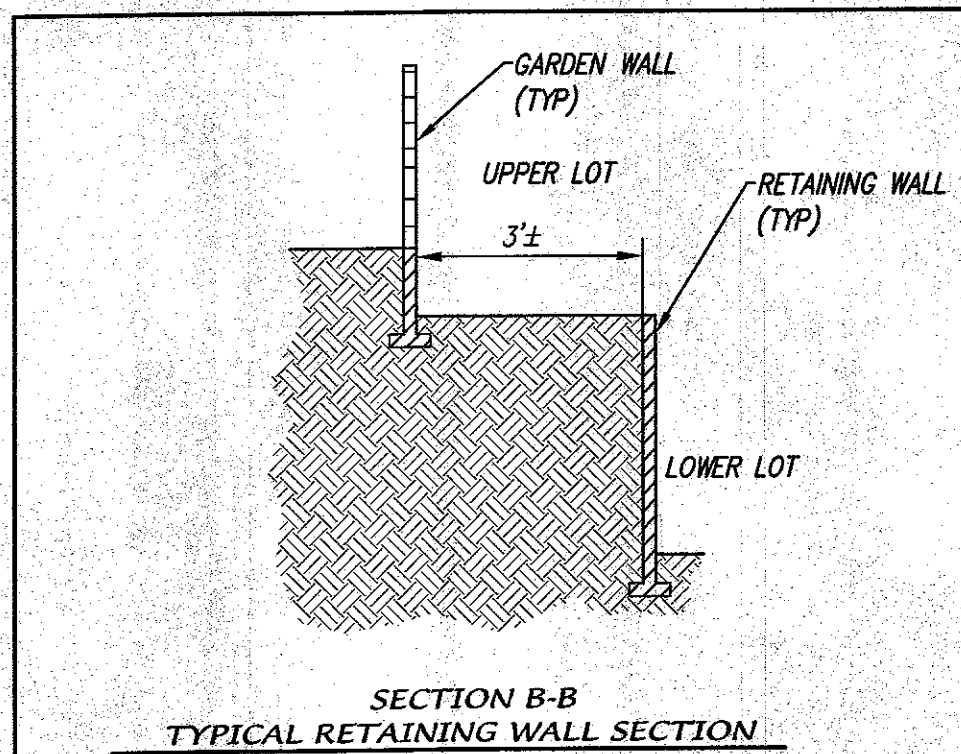
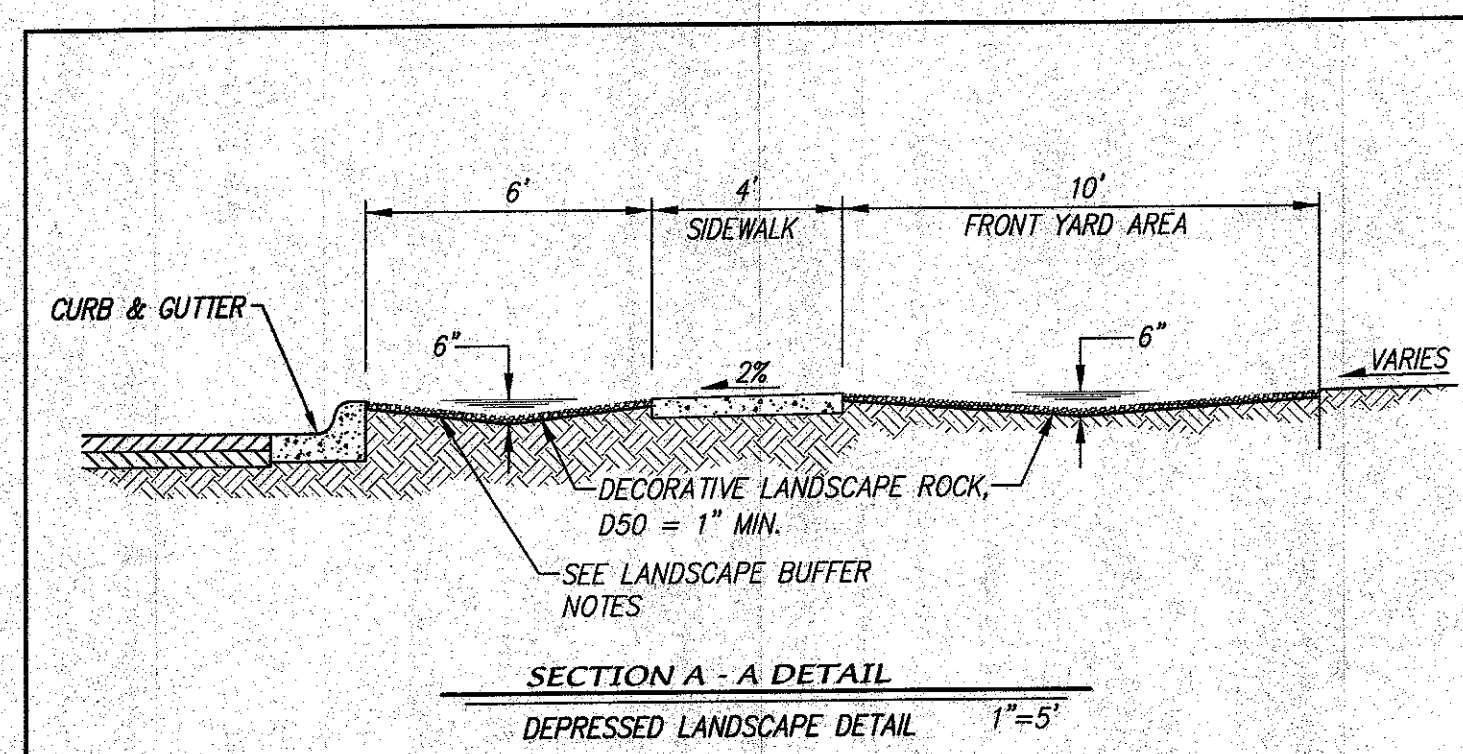
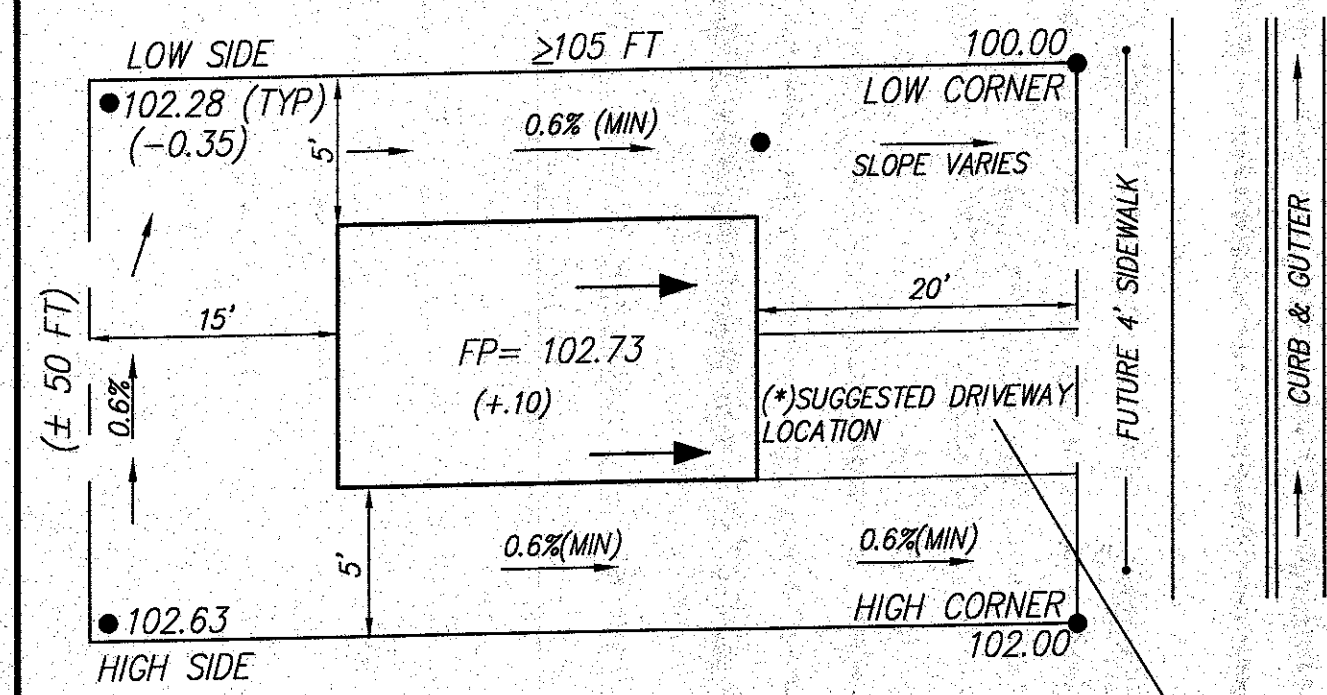
A TRACT OF LAND SITUATE WITHIN THE ELENA GALLEGOS GRANT, PROJECTED SECTION 12, TOWNSHIP 11 NORTH, RANGE 3 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, BEING ALL OF LOT 8-A, BLOCK 25, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, AS THE SAME IS SHOWN AND DESIGNATED ON SAID PLAT, FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON SEPTEMBER 8, 2015, IN PLAT BOOK 2015C, PAGE 104, AND CONTAINING 4.7676 ACRES MORE OR LESS.

#### NOTES

- CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
- CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION SHALL GOVERN ALL WORK.
- THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
- THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
- THE EARTHWORK CONTRACTOR SHALL STOCKPILE ENOUGH MATERIAL ADJACENT TO RETAINING WALL LOCATIONS TO BE UTILIZED FOR WALL BACKFILL.
- SITE DOES NOT LIE IN A 100 YEAR FLOOD ZONE.
- ALL SITE WALLS SHALL CONFORM TO THE GENERAL HEIGHT AND DESIGN REGULATIONS CONTAINED IN SECTION 14-16-3-19 OF THE CITY ZONING CODE.
- COMBINATION GARDEN WALL/RETAINING WALL CANNOT EXCEED 8 FEET. IF THE RETAINING WALL IS GREATER THAN 4 FEET, THE DEVELOPER CAN ADD 3:1 SLOPES IN BACKYARD OR A SECOND RETAINING WALL OFFSET FROM THE FIRST ONE.

#### LANDSCAPE BUFFER NOTES:

- SWALE TO BE 6" DEEP WHEN THE DISTANCE BETWEEN BACK OF CURB AND THE SIDEWALK IS 5 FEET.
- FINAL GRADE OF DIRT TO BE 1 TO 2 INCHES BELOW TOP OF CURB AND TOP OF SIDEWALK GRADE.
- SURFACE BETWEEN BACK OF CURB AND SIDEWALK TO BE COVERED WITH GRAVEL MULCH (MINIMUM 3/4"). COBBLES OF RIP-RAP, DO NOT FILL ENTIRE SWALE.
- LANDSCAPE FABRIC IS RECOMMENDED, BUT NOT REQUIRED, BETWEEN THE DIRT AND THE STONE. IF LANDSCAPE FABRIC IS TO BE USED IT IS TO BE PERMEABLE.




MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87199 OFFICE (505) 828-2200, FAX (505) 797-9539	
CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT	
TITLE: <b>GLENDESTO SUBDIVISION GRADING &amp; DRAINAGE PLAN</b>	
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL
LAST DESIGN UPDATE	MO./DAY/YR.
CITY PROJECT NO.	ZONE MAP NO.
677183	B-18-Z
SHEET	3 OF 19



[illegible]

A graphic scale bar and north arrow. The scale bar is marked with 50', 25', 0, 50', and 100'. Below the bar, it says "SCALE: 1" = 50'". A north arrow points upwards, labeled "N".

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



# CITY OF ALBUQUERQUE

## PUBLIC WORKS DEPARTMENT

TITLE:	<b><i>GLENDESTO SUBDIVISION GRADING &amp; DRAINAGE PLAN</i></b>		
DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE	<div>MO./DAY/YR.</div> <div> </div> <div> </div> <div> </div> <div> </div> <div> </div>

CITY PROJECT NO.	677183	ZONE MAP NO.	B-18-Z	SHEET	4	OF	19
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# CITY OF ALBUQUERQUE



July 10, 2017

Diane Hoelzer, P.E.  
Mark Goodwin & Associates  
PO Box 90606  
Albuquerque, NM, 87199

**RE: Glendesto Subdivision  
Grading Plan and Drainage Report  
Engineers Stamp Date: 7/7/17  
Hydrology File: B18D020**

Dear Ms. Hoelzer:

Based on the information provided in your submittal received on 7/7/17, the Grading Plan and Drainage Report are approved for Grading Permit and Amended Preliminary Plat.

If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

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





# City of Albuquerque

Planning Department

Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

**Project Title:** \_\_\_\_\_ **Building Permit #:** \_\_\_\_\_ **City Drainage #:** \_\_\_\_\_

**DRB#:** \_\_\_\_\_ **EPC#:** \_\_\_\_\_ **Work Order#:** \_\_\_\_\_

**Legal Description:** \_\_\_\_\_

**City Address:** \_\_\_\_\_

**Engineering Firm:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Owner:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Architect:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

**Other Contact:** \_\_\_\_\_ **Contact:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**Phone#:** \_\_\_\_\_ **Fax#:** \_\_\_\_\_ **E-mail:** \_\_\_\_\_

Check all that Apply:

**DEPARTMENT:**

- ☐ HYDROLOGY/ DRAINAGE  
☐ TRAFFIC/ TRANSPORTATION  
☐ MS4/ EROSION & SEDIMENT CONTROL

**TYPE OF SUBMITTAL:**

- ☐ ENGINEER/ ARCHITECT CERTIFICATION
- ☐ CONCEPTUAL G & D PLAN  
☐ GRADING PLAN  
☐ DRAINAGE MASTER PLAN  
☐ DRAINAGE REPORT  
☐ CLOMR/LOMR
- ☐ TRAFFIC CIRCULATION LAYOUT (TCL)  
☐ TRAFFIC IMPACT STUDY (TIS)  
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)
- ☐ OTHER (SPECIFY) \_\_\_\_\_

**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

- ☐ BUILDING PERMIT APPROVAL  
☐ CERTIFICATE OF OCCUPANCY
- ☐ PRELIMINARY PLAT APPROVAL  
☐ SITE PLAN FOR SUB'D APPROVAL  
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE  
☐ FOUNDATION PERMIT APPROVAL  
☐ GRADING PERMIT APPROVAL  
☐ SO-19 APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ GRADING/ PAD CERTIFICATION  
☐ WORK ORDER APPROVAL  
☐ CLOMR/LOMR
- ☐ PRE-DESIGN MEETING  
☐ OTHER (SPECIFY) \_\_\_\_\_

IS THIS A RESUBMITTAL?: ☐ Yes ☐ No

**DATE SUBMITTED:** \_\_\_\_\_ **By:** \_\_\_\_\_

COA STAFF: \_\_\_\_\_ ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_



***Drainage Management Plan  
for  
Glendesto Subdivision  
(aka Tierra Serena Subdivision)  
(27 lots)***



***Prepared by  
Mark Goodwin & Associates, P.A.***

***July 2017***



# City of Albuquerque

Planning Department

Development & Building Services Division

## DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Glendesto Subdivision Building Permit #: \_\_\_\_\_ City Drainage #: B18 / D020  
DRB#: 1004472 EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_  
Legal Description: Lot 8-A, Block 25, Tract A, Unit B, N.A.A.  
City Address: Glendale Avenue

Engineering Firm: Mark Goodwin and Associates, PA Contact: William Travis Barr  
Address: PO Box 90606, Abq, 87199  
Phone#: 505-828-2200 Fax#: \_\_\_\_\_ E-mail: Travis@goodwinengineers.com

Owner: Scott Clark (Managing member) Contact: Scott Clark  
Address: \_\_\_\_\_  
Phone#: 883-1414 Fax#: \_\_\_\_\_ E-mail: scottbrockclark@aol.com

Architect: NA Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone#: \_\_\_\_\_ Fax#: \_\_\_\_\_ E-mail: \_\_\_\_\_

Other Contact: Mark Goodwin and Associates, PA Contact: Diane Hoelzer, PE  
Address: PO Box 90606, Abq, 87199  
Phone#: 505-828-2200 Fax#: \_\_\_\_\_ E-mail: Diane@goodwinengineers.com

Check all that Apply:

### DEPARTMENT:

☒ HYDROLOGY/ DRAINAGE  
☐ TRAFFIC/ TRANSPORTATION  
☐ MS4/ EROSION & SEDIMENT CONTROL

### TYPE OF SUBMITTAL:

☐ ENGINEER/ ARCHITECT CERTIFICATION  
☐ CONCEPTUAL G & D PLAN  
☒ GRADING PLAN  
☐ DRAINAGE MASTER PLAN  
☒ DRAINAGE REPORT  
☐ CLOMR/LOMR  
☐ TRAFFIC CIRCULATION LAYOUT (TCL)  
☐ TRAFFIC IMPACT STUDY (TIS)  
☐ EROSION & SEDIMENT CONTROL PLAN (ESC)  
☐ OTHER (SPECIFY) \_\_\_\_\_

IS THIS A RESUBMITTAL?: ☒ Yes ☐ No

### CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

☐ BUILDING PERMIT APPROVAL  
☐ CERTIFICATE OF OCCUPANCY  
☐ PRELIMINARY PLAT APPROVAL  
☐ SITE PLAN FOR SUB'D APPROVAL  
☐ SITE PLAN FOR BLDG. PERMIT APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ SIA/ RELEASE OF FINANCIAL GUARANTEE  
☐ FOUNDATION PERMIT APPROVAL  
☒ GRADING PERMIT APPROVAL  
☐ SO-19 APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ GRADING/ PAD CERTIFICATION  
☐ WORK ORDER APPROVAL  
☐ CLOMR/LOMR  
☐ PRE-DESIGN MEETING  
☒ OTHER (SPECIFY) Amended Preliminary Plat Approval

DATE SUBMITTED: July 5, 2017 By: William Travis Barr, EI

COA STAFF: \_\_\_\_\_ ELECTRONIC SUBMITTAL RECEIVED: \_\_\_\_\_





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 7, 2017

Mr. Jack Cloud  
DRB Chairman  
City of Albuquerque  
PO Box 1293  
Albuquerque, NM 87102

**Re: Glendesto Subdivision – (DRB 1004472)  
Amended Preliminary Plat, Grading and Drainage Plan, Sidewalk Variance, Sidewalk Waiver and Deferral.**

Dear Mr. Cloud,

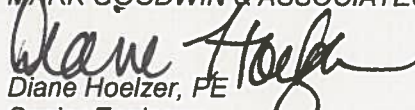
In response to DRB comments two weeks ago, the revised Amended preliminary plat, grading plan and infrastructure list, sidewalk deferral, waiver, variance exhibits is being submitted.

The following is a summary of the revisions:

1. The site was lowered to reduce retaining wall height in the southwest corner,
2. A 16' wide drainage channel was placed down the middle of the 30' wide easement,
3. The drainage report was revised to address the Hydrology Dept. comments,
4. A sidewalk design variance is being requested along the south side of the hammerhead street. The Transportation Engineer requested sidewalk on both sides of the hammerhead to create sidewalk continuity within the development. We are asking for a variance along the south side of the hammerhead adjacent to Lots 27 and 7 because if the landscape easement is added there will not be enough width within the lot for the home product planned for this development. The lot depths adjacent to lots 7 and 8 along Yawkey Way are already at a minimum depth of 105 feet.
5. A sidewalk waiver along lot 24 is being requested as well.

Should you have any questions or concerns, please don't hesitate to contact myself at or 505-828-2200.

Sincerely,  
MARK GOODWIN & ASSOCIATES, PA

  
Diane Hoelzer, PE  
Senior Engineer

DLH/dlh



June 21, 2017

Diane Hoelzer, P.E.  
Mark Goodwin & Associates  
PO Box 90606  
Albuquerque, NM, 87199

**RE: Glendesto Subdivision  
Grading Plan and Drainage Report  
Engineers Stamp Date: 6/15/17  
Hydrology File: B18D020**

Dear Ms. Hoelzer:

Based on the information provided in your submittal received on 6/16/17, the Grading Plan and Drainage Report are not approved for Grading Permit or Preliminary Plat. The following comments must be addressed prior to approval:

1. The proposed channel on Tract A needs to be designed to accommodate 1.0' freeboard according to Ch. 22 of the DPM. Also the channel top width in the drainage report is 9' wide, but the top width shown on the grading plan is only 5' wide.
2. What happens where the Tract A channel crosses the sidewalks on Glendale and at the hammerhead? It seems like arrays of sidewalk culverts need to be sized and designed here and included on the Infrastructure List.
3. The Glendale roadside channel designed in the drainage report does not match the channel shown on the plans.
4. What happened to the double retaining wall along the west side of lot 23, formerly lot 8? The single retaining wall topped with a garden wall will exceed the 8' maximum and the double wall may infringe on the 5' setback for the pad.
5. Recheck the pad elevations. Many pads have enough elevation difference to require retaining walls in between lots such as: lot 21, and lot 24/25.
6. A revised ESC plan is required prior to Grading Permit approval.



# CITY OF ALBUQUERQUE



If you have any questions, please contact me at 924-3695 or [dpeterson@cabq.gov](mailto:dpeterson@cabq.gov).

Sincerely,

A handwritten signature in blue ink, appearing to read 'D. Peterson', is written over a faint, larger signature.

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

PO Box 1293

Albuquerque

New Mexico 87103

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

# **GLENDESTO SUBDIVISION**

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**II. DESIGN CRITERIA AND PREVIOUS REPORTS**

**III. EXISTING DRAINAGE CONDITIONS**

**IV. DEVELOPED DRAINAGE CONDITIONS**

**V. FIRST FLUSH**

**FIGURE 1** Vicinity Map

**FIGURE 2** Existing Drainage Conditions (Google Earth)

**FIGURE 3** FEMA Map

**EXHIBITS:**

Preliminary Plat

Infrastructure List

Master Paving Plan

Master Utility Plan

Grading and Drainage Plan

Existing Drainage Conditions & Sub basins

Proposed Drainage Conditions & Sub basins

**APPENDIX A HYDROLOGY**

AHYMO Summary and Input Files- Existing Conditions

AHYMO Summary and Input Files- Developed Conditions

First Flush Calculations

**APPENDIX B HYDRAULICS**

Glendale Avenue- Northside Swale

SanPedro- Eastside Swale

Swale Sump Inlet Calculation

Glendale Avenue Street Capacity Calculations

Glendesto Channel

Lansdowne Place NE

Yawkey Way NE

**APPENDIX C FINAL N.A.A. MASTER DRAINAGE PLAN**

Excerpts

**POCKET 1 GRADING AND DRAINAGE PLAN**

**POCKET 2 EXISTING DRAINAGE CONDITIONS AND SUB BASINS EXHIBIT**

**DEVELOPED DRAINAGE CONDITIONS AND SUB BASINS EXHIBIT**



## **I. PROJECT DESCRIPTION**

*The Glendesto subdivision project site covers an area of approximately 7.46 acres. This project encompasses grading and infrastructure construction that will support the development of 27 single family residential lots within a gated community.*

*The project site is bounded to the south by the Eagle Rock Business Park and a parking lot with a 30 foot wide vacant strip separating the two properties; to the west by the Sandia Memorial Gardens; to the north is Glendale Avenue; to the east is Modesto Avenue and a vacant acre parcel owned by the Sandia Indian Pueblo.*

*The proposed subdivision will connect to Modesto Avenue to the east through a gate.*

## **II. DESIGN CRITERIA AND PREVIOUS DEVELOPMENT**

*The design criteria used in this report was in accordance with Section 22.2 Hydrology of the Development Process Manual, Volume 2, Design Criteria, January 1993 edition. The 100-year 24-hour storm event was analyzed to determine street capacities and sizing of the storm drain system using  $P(1\text{ hr})=2.10"$ ,  $P(6\text{ hr})=2.50"$  and the  $P(24\text{ hr})=2.85"$ . The onsite Land Treatment values used were based on Table A-5, in the DPM. (Refer to Exhibit 1 Vicinity Map and Exhibit 2 Existing Drainage Conditions- google earth).*

*The site lies in Zone X as shown on Firm Panel 129, map number 3500120129H, revised August 16, 2012.*

*This project site lies within the **North Albuquerque Acres Master Drainage Plan Report** (RTI, Inc., October 1998). Excerpts from this report can be found in Appendix C. Under existing drainage conditions, this property is split between the south third (sub basin 116.0) flowing to the west and the northern two-thirds (sub basin 115.0) flowing to the north and west as shown in Figure 3A. In Figure 4A Future Conditions, the south three acres are to flow to the west and the north two acres are to flow down Glendale. Since there isn't a conveyance system in place to intercept any of the runoff from our site, it was decided to take the entire runoff from our project site to Glendale.*

*According to Figure 5A, there is a planned future storm drain in San Pedro extending from Glendale to the La Cueva arroyo channel. At this time, there is only a 6' manhole in San Pedro immediately south of the La Cueva channel that connects to an inlet on the east side of San Pedro which intercepts existing flows from the remnant natural La Cueva arroyo.*

### **III. EXISTING DRAINAGE CONDITIONS**

*Under existing drainage conditions, runoff from the project site is in a general westerly direction. Refer to "Existing Drainage Conditions" Exhibit. Runoff from the north third flows to Glendale through two incised arroyos. The middle third appears to sheet flow directly to the west to the Sandia Memorial Gardens Cemetery. Runoff from the south third flows through the Cemetery through an incised arroyo where it continues across San Pedro and westward.*

*Runoff from a portion of Modesto Avenue continues in a westerly direction down the same southerly arroyo through the Cemetery.*

### **IV. DEVELOPED DRAINAGE CONDITIONS**

*Under developed drainage conditions, runoff from the project site will discharge into Glendale Avenue and be intercepted by a hardlined swale running along the north side of Glendale. Runoff in the swale will be intercepted by a proposed Double D inlet that will connect to a new 36" RCP storm drain at the San Pedro intersection. A new 36" storm drain in San Pedro will continue north and tie into the existing storm manhole in San Pedro. Refer to the "Proposed Drainage Conditions" Exhibit. The swale is designed to convey flows from Glendale and the project site.*

- 1) A portion of the runoff from "N-S" Modesto Avenue will flow through the existing apron rundown on the La Cueva channel right where Modesto turns west again and becomes Glendale Avenue.*
- 2) The south portion of the flows from "W-E" Modesto Avenue will continue westward in the existing historical flow path through the 30 foot wide easement area.*
- 3) Flows from the vacant Lot 10, immediately east of our project site will continue in the same general flow path to Glendale Avenue.*
- 4) The 30' wide vacant area immediately south of this project site will be regraded to continue runoff in the same historic flow path as before.*

### **V. FIRST FLUSH**

*First flush for the project site will be handled on each individual residential lot. The area between the back of curb and sidewalk will be depressed 6 inches and the front yards will also be depressed by 6" as shown in the standard detail on the grading and drainage plan. First flush calculations can be found in Appendix A Hydrology.*





FIGURE 1 Vicinity Map

ZONE ATLAS B-18





FIGURE 2 Existing Drainage Conditions



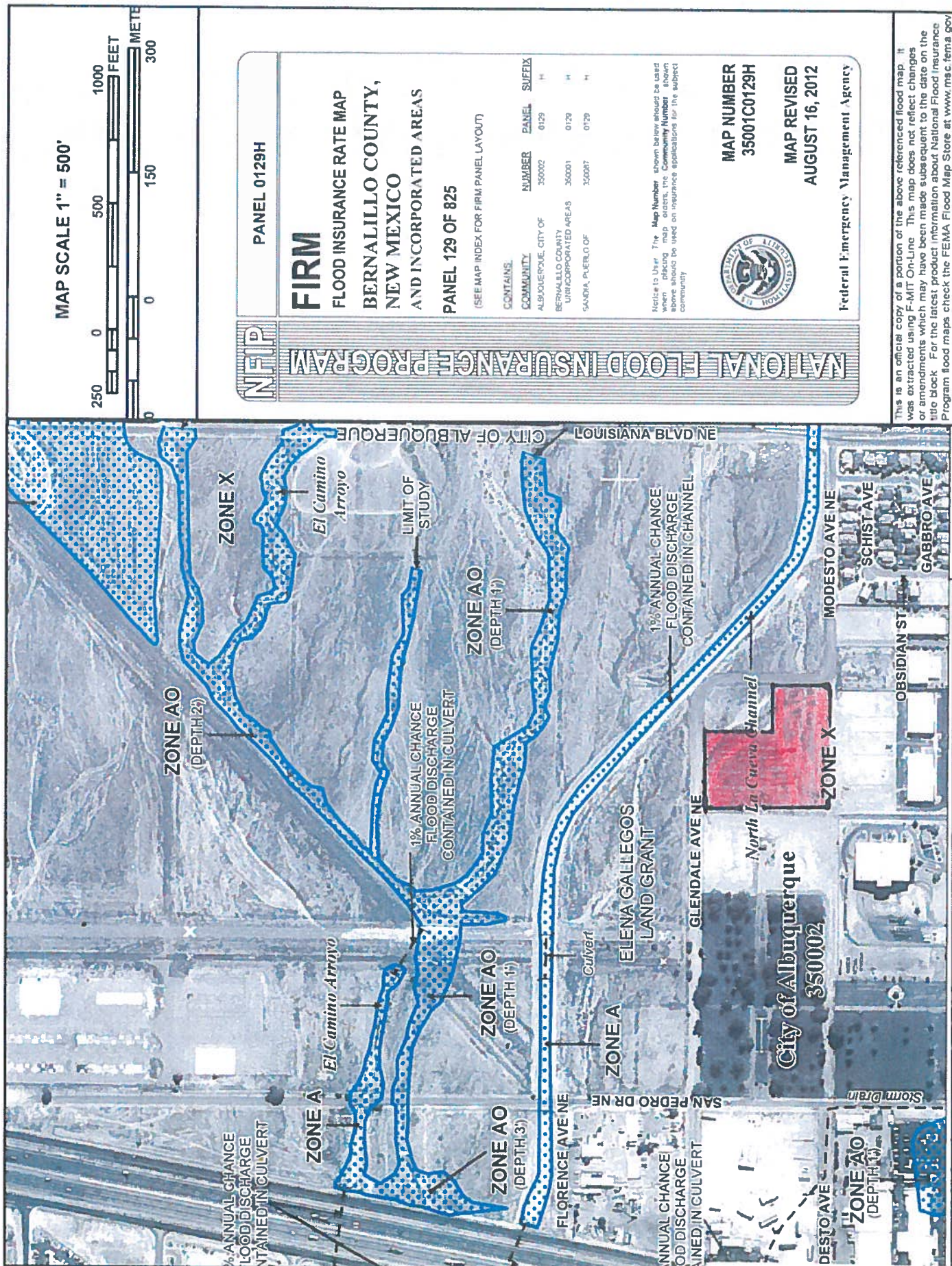


FIGURE 3 FEMA Map



Current DRC  
Project Number: \_\_\_\_\_

FIGURE 12

INFRASTRUCTURE LIST

Date Submitted: July 7, 2017  
Date Site Plan Approved: \_\_\_\_\_  
Date Preliminary Plat Approved: \_\_\_\_\_  
Date Preliminary Plat Expires: \_\_\_\_\_  
DRB Project No.: 1004472  
DRB Application No.: 17DRB-70189

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

Glendesto Subdivision  
PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN

Lot 8-A, Block 25, Tract A, Tract B, N.A.A.  
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
		20' F-F	PAVING				/	/	/
			Res Pvm	Lansdowne Place N.E.	Hammerhead	Yawkey Way N.E.	/	/	/
			G&G (both sides)				/	/	/
		4'	Sidewalk (westside) Deferred	Lansdowne Place N.E.	Hammerhead	Yawkey Way N.E.	/	/	/
		4'	Sidewalk (eastside) Deferred	Lansdowne Place N.E.	Hammerhead	Lot 9	/	/	/
		4'	Sidewalk (eastside)	Lansdowne Place N.E.	Lot 9	Yawkey Way N.E.	/	/	/
		20' F-F	Res Pvm	Yawkey Way N.E.	Lot 23	Modesto Ave. N.E.	/	/	/
			C&G (both sides)				/	/	/
		4'	Sidewalk (southside) Deferred	Yawkey Way N.E.	Lot 23	Modesto Ave. N.E.	/	/	/
		4'	Sidewalk (northside) Deferred	Yawkey Way N.E.	Lansdowne Place N.E.	Modesto Ave. N.E.	/	/	/
		4'	Sidewalk (northside)	Yawkey Way N.E.	Lansdowne Place N.E.	Lot 23	/	/	/
		4'	Sidewalk (southside)	Hammerhead	Lot 1	Lot 3	/	/	/
		4'	Sidewalk (southside)	Hammerhead	Lot 4	Lot 6	/	/	/
		4'	Crusher Fine Trail (westside)	Tract A	Hammerhead	Glendale Ave.	/	/	/
		20' F-F	Res Pvm	Hammerhead	Lot 1	Lot 6	/	/	/
			C&G (both sides)				/	/	/
		4'	Sidewalk (northside) Deferred	Hammerhead	Lot 1	Lot 3	/	/	/
		4'	Sidewalk (northside)	Hammerhead	Lot 3	Lot 4	/	/	/
		4'	Sidewalk (northside) Deferred	Hammerhead	Lot 4	Lot 6	/	/	/
		24' F-E	OFF-SITE PAVING	Glendale Ave	W. Lot 1 Property Line	E. Lot 6 Property Line	/	/	/
			Perm Pvm				/	/	/
		6'	C&G (southside)	Glendale Ave.	W. Lot 1 Property Line	E. Lot 8 Property Line	/	/	/
			Sidewalk (southside)				/	/	/





The items listed below are on the CCIP and approved for Impact Fee credits. Signatures from the Impact Fee Administrator and the City User Department is required prior to DRB approval								
Financially Guaranteed DRC #	Constructed Under DRC #	Size	Type of Improvement	Location	From	To	Construction Certification	
							Private Inspector P.E.	City Cnst Engineer
							/	/
							/	/

Approval of Creditable Items:	
Impact Fee Administrator Signature	Date
City User Dept. Signature	Date

- 1 Sidewalks to be Deferred per Exhibit
- 2 Street Lights Per DPM
- 3 Water Infrastructure Includes Valves, Fittings, Valve Boxes, Fire Hydrants, and Appurtenances.
- 4 Sanitary Sewer Includes manholes and service connection to property line
- 5 Grading & Drainage certification per DPM for release of SIA & Financial Guaranty's. Financial Guaranty's are not required for grading.

AGENT / OWNER DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

AGENT / OWNER	Diane Hoelzer, P.E.	DRB CHAIR - date	PARKS & GENERAL SERVICES - date
NAME (print)	MARK GOODWIN & ASSOCIATES	TRANSPORTATION DEVELOPMENT - date	AMAFCA - date
SIGNATURE - date	<i>Diane Hoelzer</i> 7-6-17	UTILITY DEVELOPMENT - date	- date
MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: N/A		CITY ENGINEER - date	- date

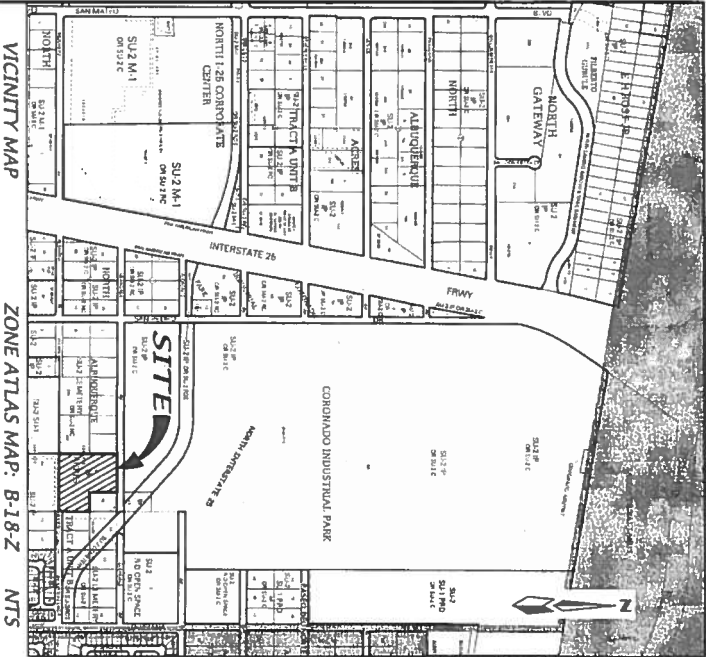
DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT / OWNER



LINE	BEARING	DISTANCE
L1	S 00°05'03" W	5.12'
L2	S 53°40'01" W	20.86'
L3	N 00°12'49" E	29.85'

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	7.50'	25.00'	17°10'40"	S 45°04'41" W	7.47'
C2	11.03'	96.00'	06°34'57"	S 50°22'33" W	11.02'



PURPOSE OF PLAT

- SUBDIVIDE LOT 8-A BLOCK 25, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, INTO 27 RESIDENTIAL LOTS AND 1 TRACT.
- GRANT NEW EASEMENTS AS SHOWN.

NOTES

- BEARINGS ARE GROUND BASED ON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM (CENTRAL ZONE).
- ALL DISTANCES ARE GROUND DISTANCES.
- BEARINGS AND DISTANCES IN PARENTSSES ARE RECORDED.
- BASES OF BOUNDARY ARE THE FOLLOWING PLATS OF RECORD ENTITLED:  
NORTH ALBUQUERQUE ACRES, TRACT A, UNIT B\* (09-08-2015, 2015C-104)  
NORTH ALBUQUERQUE ACRES, TRACT A, UNIT B\* (04-23-2012, 2012C-104)  
NORTH ALBUQUERQUE ACRES, TRACT A, UNIT B\* (05-07-2002, 2002C-157)  
NORTH ALBUQUERQUE ACRES, TRACT A, UNIT B\* (02-12-1993, 82C-038)  
NORTH ALBUQUERQUE ACRES, TRACT A, UNIT B\* (04-24-1936, D-130)
- FIELD SURVEY PERFORMED IN MAY, 2016.
- CITY OF ALBUQUERQUE, NEW MEXICO ZONE, SL-2.
- 100 YEAR FLOOD ZONE DESIGNATION: ZONE X, AS SHOWN ON PAGE 129 OF B25, FLOOD INSURANCE RATE MAP, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, DATED AUGUST 16, 2012. THIS PROPERTY DOES NOT LIE IN THE 100 YEAR FLOOD ZONE.
- TITLE REPORT: NONE PROVIDED.
- LIABILITIES WILL BE SET AT ALL POINTS OF CURVATURE, POINTS OF TANGENCY, STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTRIFUGAL MOMENTUM.

PROPERTY CORNERS

- FOUND 5/8" REBAR WITH 2" ALUMINUM CAP  
TS 12651 (TTP)

EASEMENTS

- EXISTING 20' AGRICULTURAL WATERLINE EASEMENT  
(09-08-2015, 2015C-104)
- EXISTING 15' NACCC GAS LINE EASEMENT  
(09-08-2015, 2015C-104)
- EXISTING 60' GMA PERMANENT EASEMENT FOR  
GLENDALE EXTENSION ROADWAY IMPROVEMENTS  
(12-31-2001, 200113060)

OWNERS

CCG PARTNERSHIP  
A NEW MEXICO GENERAL PARTNERSHIP  
ATTN: SCOTT B. CLARK  
P.O. BOX 14641 ADDRESS  
ALBUQUERQUE, NM 87191  
(505) 883-1414

ENGINEERS

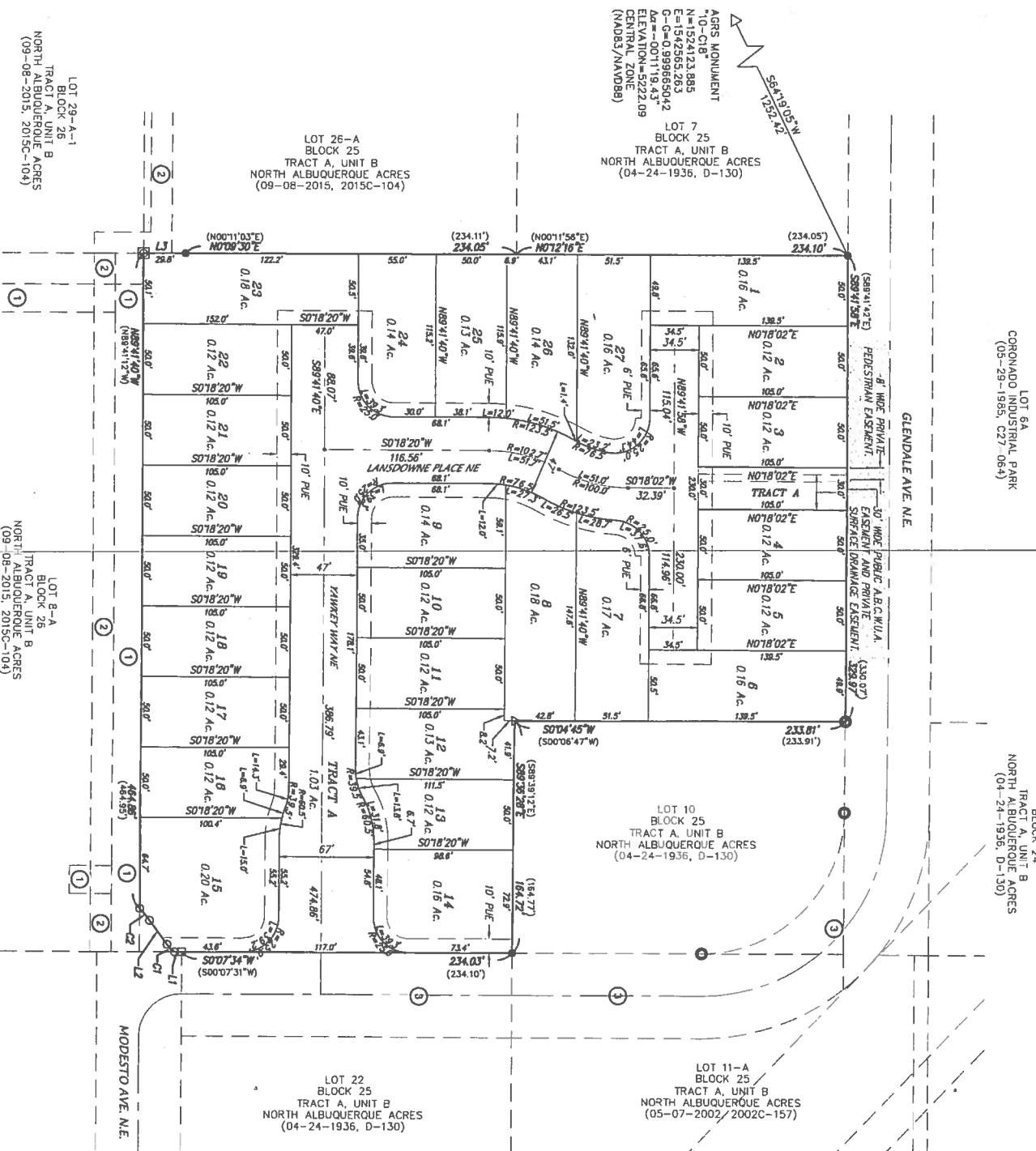
D. MARK GOODMAN & ASSOCIATES, P.A.  
CONSULTING ENGINEERS  
P.O. BOX 30701  
ALBUQUERQUE, NM 87190  
(505) 828-2200

SURVEYOR

ALBUQUERQUE LAND SURVEYING  
P.O. BOX 30701  
ALBUQUERQUE, NM 87190  
(505) 884-1980

SITE BENCHMARK

AGRS MONUMENT  
N=1524123.885  
E=1542565.263  
O-G=0.989865042  
A=0.001119.437  
ELEVATION=5222.09  
(NAD83/NAD98)



LEGAL DESCRIPTION

A TRACT OF LAND SITUATE WITHIN THE ELENA GALLEGO GRANT, PROJECTED SECTION 12, TOWNSHIP 11 NORTH, RANGE 3 EAST, NEW MEXICO PRINCIPAL MERIDIAN, COUNTY OF BERNALILLO, NEW MEXICO, AND DESIGNATED AS ALL OF LOT 8-A, BLOCK 25, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, AS THE SAME IS SHOWN AND DESIGNATED ON SAID PLAT, FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON SEPTEMBER 8, 2015, IN PLAT BOOK 2015C, PAGE 104, AND CONTAINING 4.7676 ACRES MORE OR LESS.

SUBDIVISION DATA

GROSS ACREAGE: 4.7676 AC  
ZONE ATLAS NO.: B-18-Z  
NO. OF EXISTING TRACTS/LOTS: 1 TRACT/0 LOTS  
NO. OF TRACTS CREATED: 1 TRACT  
NO. OF LOTS CREATED: 27 LOTS  
DATE OF SURVEY: MAY, 2016

AMENDED  
PRELIMINARY PLAT  
FOR  
GLENDESTE SUBDIVISION

WITHIN THE  
ELENA GALLEGO GRANT  
PROJECTED SECTION 12  
TOWNSHIP 11 NORTH, RANGE 3 EAST, NMPM  
CITY OF ALBUQUERQUE  
BERNALILLO COUNTY, NEW MEXICO  
JUNE, 2017

SCOTT B. CLARK, MANAGING PARTNER (40% OWNER)  
CCG PARTNERSHIP, A NEW MEXICO PARTNERSHIP  
DATE: 6/13/2017

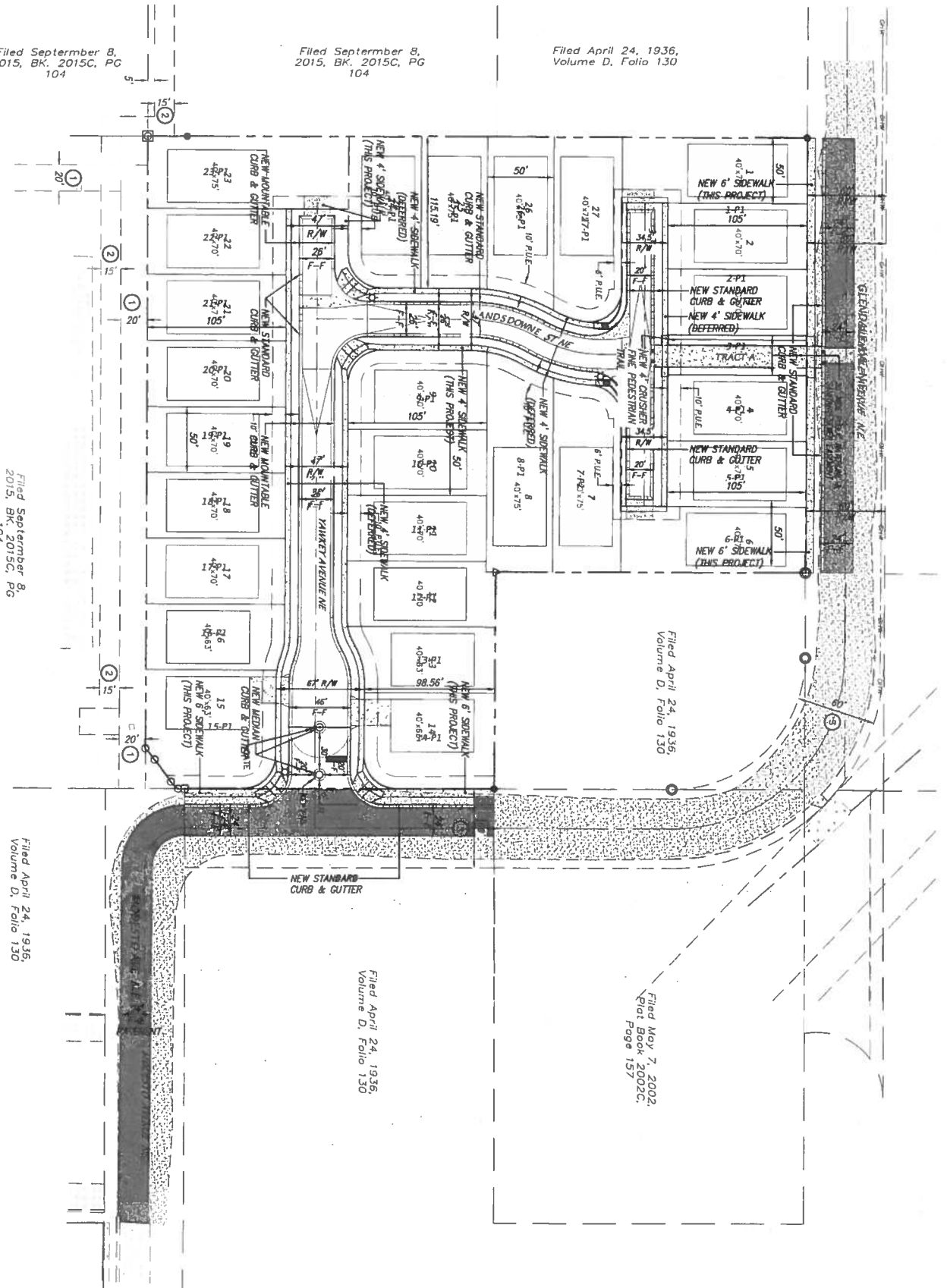
SCOTT B. CLARK (40% OWNER)  
DATE: 6/13/2017

PAULELLA W. CLARK, HIS WIFE (40% OWNER)  
DATE: 6/13/2017

CARLTON F. DAVENPORT (20% OWNER)  
DATE: 6/13/17

NANCY B. WHITMAN-DAVENPORT, HIS WIFE (20% OWNER)  
DATE: 6/13/17

JOHN M. ROSENBERG, F.S.  
DATE: 6/14/17



CONSTRUCTION NOTES

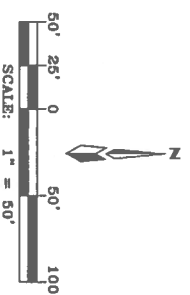
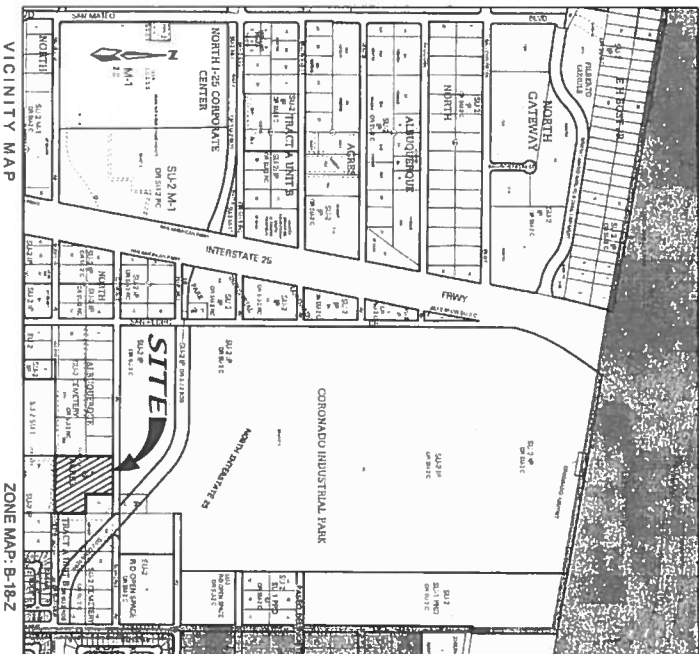
1. ALL SIDEWALKS PER CITY OF ALBUQUERQUE STANDARD DING #2430.
2. ALL 6' VALETT GUTTERS PER CITY OF ALBUQUERQUE STANDARD DING #2420.
3. ALL HANDICAP RAMPS ARE PER CITY OF ALBUQUERQUE STANDARD DING #2441, CASE 1, UNLESS OTHERWISE NOTED. WITH ADA COMPLIANT DETECTABLE WARNING SURFACES TO BE CAST IN PLACE AND REPLACEMENT SUBMIT SPECIFICATIONS TO ENGINEER PRIOR TO CONSTRUCTION.
4. TRANSITION SECTION FROM FULL CROWN TO NO CROWN TO BE A MINIMUM OF 50 FEET PER CITY OF ALBUQUERQUE STANDARD DING #2410.
5. TRANSITION FROM MOUNTABLE ROLL CURB AND GUTTER TO STANDARD CURB AND GUTTER SHALL BE 10 FEET WHEN NOT TRANSITIONING AT INTERSECTIONS. TRANSITION FROM MOUNTABLE ROLL CURB TO STANDARD CURB AND GUTTER AT INTERSECTIONS SHALL OCCUR THROUGH THE HC RAMP PER CITY OF ALBUQUERQUE STANDARD DING #2410.
6. SOIL NOT HAVING THE MINIMUM R-VALUE > 50 FOR STREETS SHALL BE REMOVED TO A DEPTH OF 2 FEET AND REPLACED BY THE CONTRACTOR WITH SUITABLE MATERIAL OR A PAYMENT SECTION SHALL BE DESIGNED BY THE CONSULTANT ACCOMMODATING THE EXISTING R-VALUE PER CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS.
7. ALL MOUNTABLE ROLL CURB & GUTTER PER CITY OF ALBUQUERQUE STANDARD DING #2415A.
8. ALL STANDARD CURB & GUTTER PER CITY OF ALBUQUERQUE STANDARD DING #2415A.
9. ALL DEPRESSSED STANDARD CURB & GUTTER PER CITY OF ALBUQUERQUE STANDARD DING #2415A.

EASEMENTS

1. EXISTING 20' AGRICOLA PUBLIC WATERLINE EASEMENT (09-08-2015, 2015C-104)
2. EXISTING 15' IMGC GAS LINE EASEMENT (09-08-2015, 2015C-104)
3. EXISTING 60' COA PERMANENT EASEMENT FOR CANALINE EXTENSION ROADWAY IMPROVEMENTS (12-21-2001, 2001S2080)

LEGEND

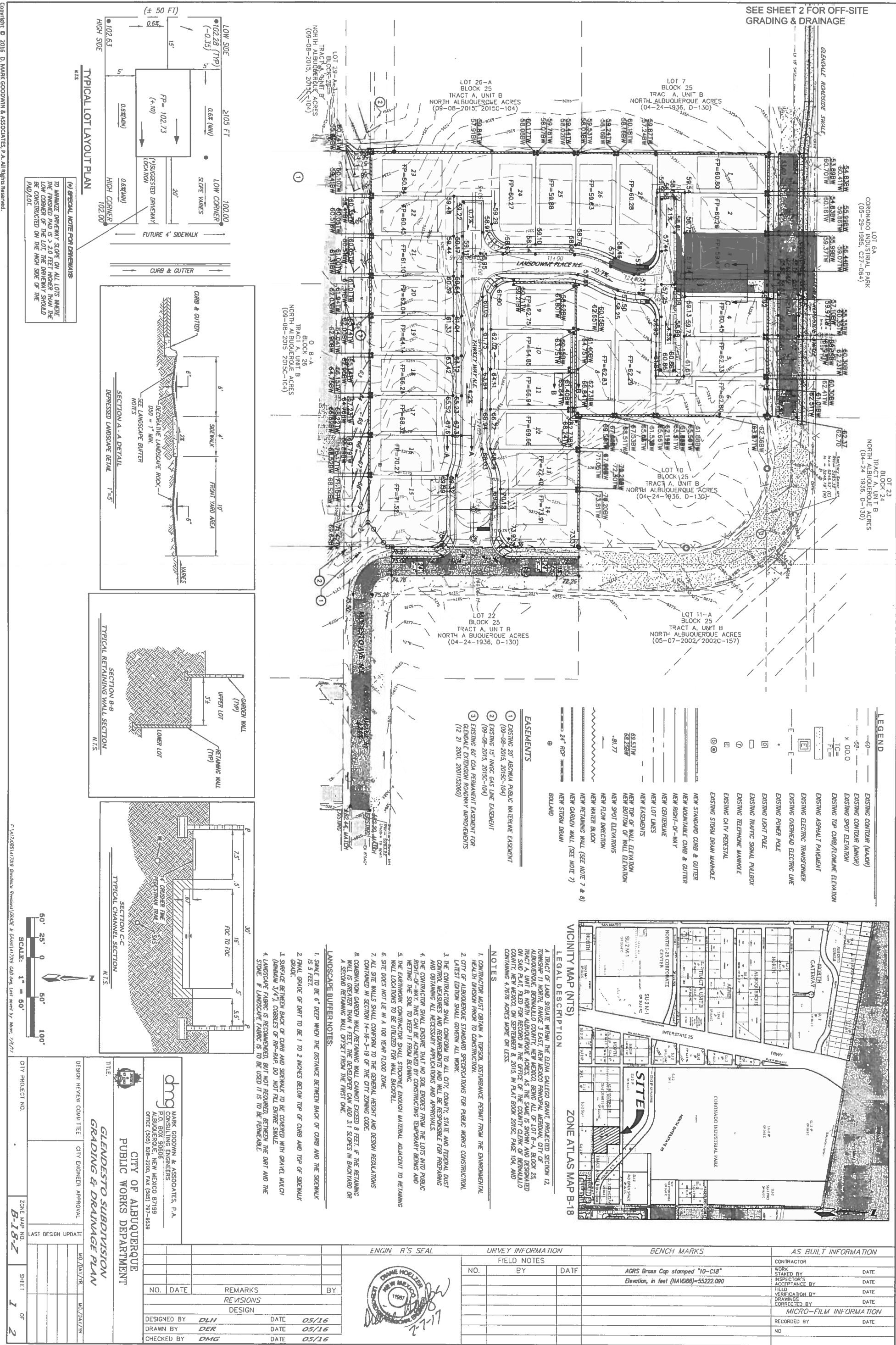
- NEW BOUNDARY LINE
- NEW RIGHT OF WAY LINE
- NEW LOT LINE
- EXISTING ADJACENT LINE
- NEW CENTER LINE
- NEW EASEMENT LINE
- NEW SIDEWALK (THIS PROJECT)- ALL OTHERS DEFERRED
- NEW MOUNTABLE ROLL CURB & GUTTER
- NEW STANDARD CURB & GUTTER
- NEW DEPRESSSED STANDARD CURB & GUTTER
- CROWN TO NO CROWN TRANSITION
- NEW WHEELCHAIR RAMP WITH TRUNCATED DOME
- NEW STREET LIGHT
- NEW LOT ID
- NEW TEMPORARY PAVEMENT
- NEW 4" A.C. PAVEMENT (2-2' LFTS)
- NEW CONCRETE
- EXISTING GRAVEL ROAD



CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT GLENDESTO SUBDIVISION MASTER PAVING PLAN		MARK GOODMAN & ASSOCIATES P.A. CONSULTING ENGINEERS P.O. BOX 90606 ALBUQUERQUE, NEW MEXICO 87119 OFFICE (505) 828-2200, FAX (505) 797-9539		DESIGNED BY DLH DATE 06/16 DRAWN BY DER DATE 06/16 CHECKED BY DMG DATE 06/16	
CITY PROJECT NO		ZONE MAP NO B-18-Z		SHEET X OF X	
DESIGN REVIEW COMMITTEE		CITY ENGINEER AP NOVAL		LAST DESIGN UPDATE	
TITLE		CONTRACTOR		WORK STAKED BY	
				INSPECTOR'S ACCEPTANCE BY	
				FIELD VERIFICATION BY	
				DRAWINGS CORRECTED BY	
				RECORDED BY	
				NO	



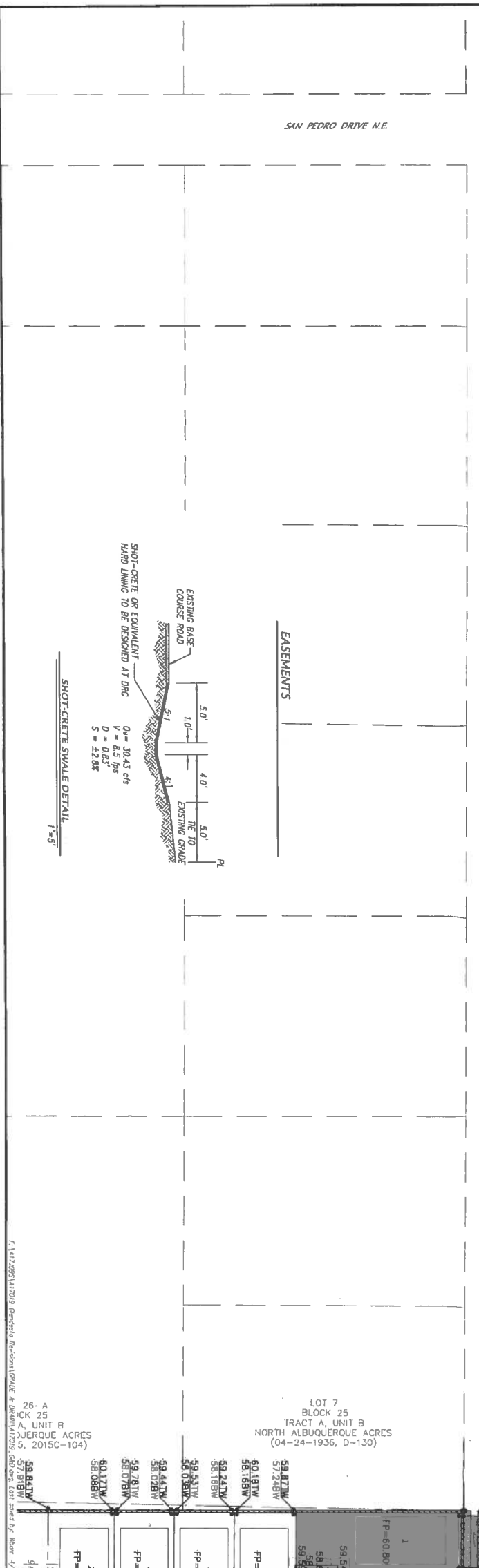
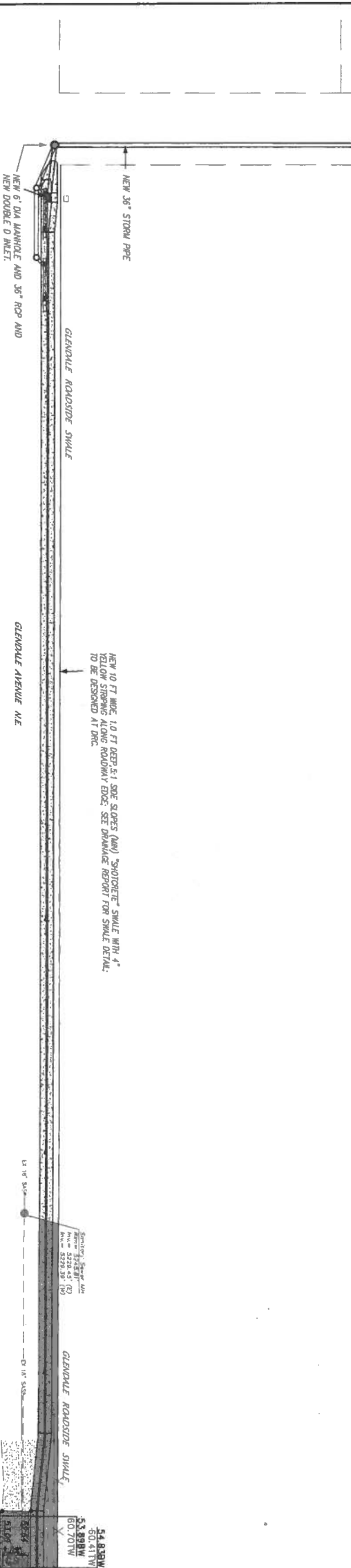
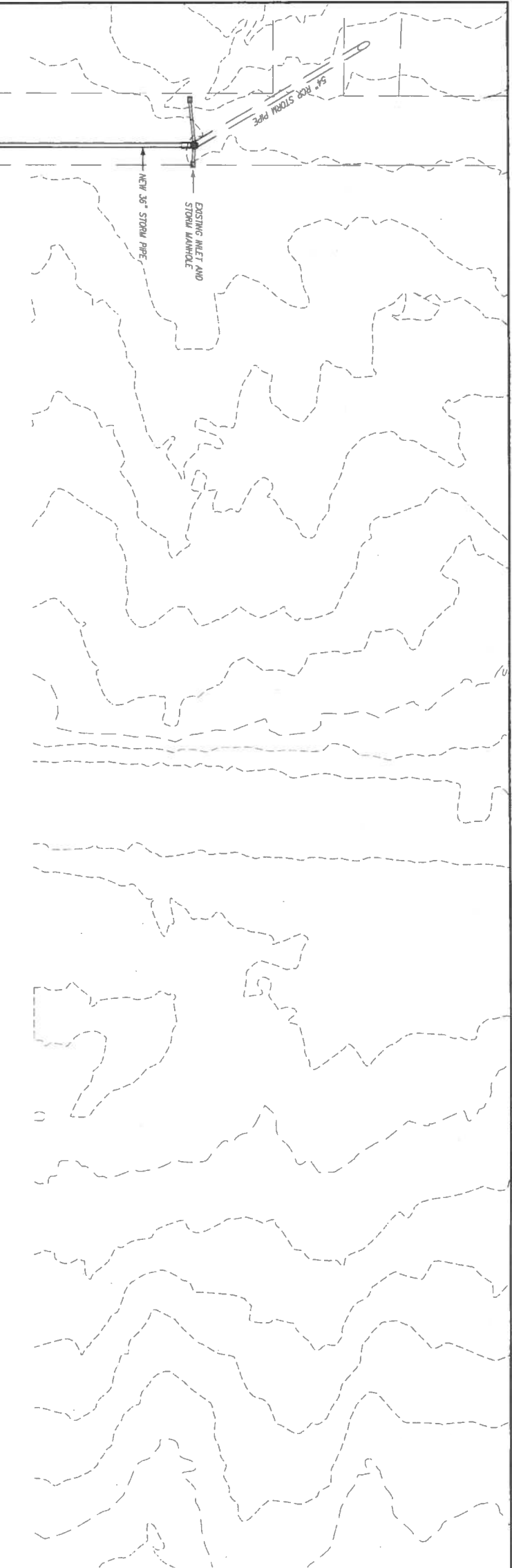






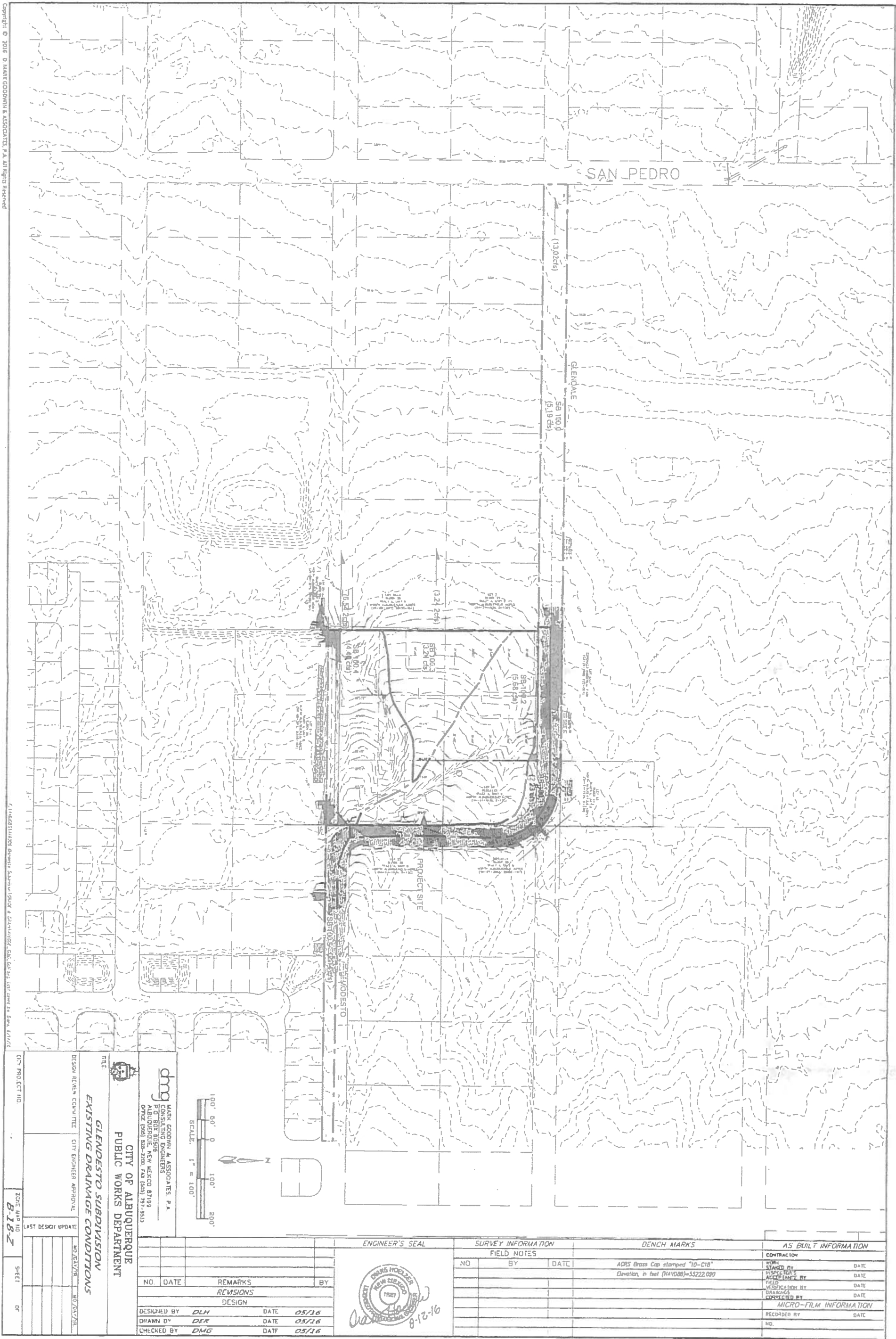
LEGEND			
	EXISTING CONTOUR (MAJOR)		
	EXISTING CONTOUR (MINOR)		
	EXISTING SPOT ELEVATION		
	EXISTING TOP CURB/FLOWLINE ELEVATION		
	EXISTING ASPHALT PAVEMENT		
	EXISTING ELECTRIC TRANSFORMER		
	EXISTING OVERHEAD ELECTRIC LINE		
	EXISTING POWER POLE		
	EXISTING LIGHT POLE		
	EXISTING TRAFFIC SIGNAL PEDISTAL		
	EXISTING TELEPHONE MANHOLE		
	EXISTING CATCH BASIN MANHOLE		
	NEW STANDARD CURB & GUTTER		
	NEW ADJUSTABLE CURB & GUTTER		
	NEW RIGHT-OF-WAY		
	NEW CENTERLINE		
	NEW LOT LINES		
	NEW EASEMENTS		
	NEW TOP OF WALL ELEVATION		
	NEW BOTTOM OF WALL ELEVATION		
	NEW SPOT ELEVATIONS		
	NEW FLOW DIRECTION		
	NEW WATER BLOCK		
	NEW RETAINING WALL (SEE NOTE 7)		
	NEW GARDEN WALL (SEE NOTE 7)		

BENCH MARKS		AS BUILT INFORMATION	
AGRS Brass Cap stamped "10-C18"		CONTRACTOR	
Elevation, in feet (NAVD88)=55222.090		WORK STARTED BY	DATE
		INSPECTION BY	DATE
		FIELD VERIFICATION BY	DATE
		DRAWING CORRECTED BY	DATE
MICRO-FILM INFORMATION			
		RECORDED BY	DATE
		NO.	



CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT		MARK GOODWIN & ASSOCIATES, P.A. CONSULTING ENGINEERS 1100 UNIVERSITY AVENUE, SUITE 1000 ALBUQUERQUE, NEW MEXICO 87109 OFFICE (505) 828-2200, FAX (505) 797-8539	
TITLE GLENDESTO SUBDIVISION GRADING & DRAINAGE PLAN		DESIGNED BY <b>DLH</b> DATE <b>05/16</b> DRAWN BY <b>DER</b> DATE <b>05/16</b> CHECKED BY <b>DMG</b> DATE <b>05/16</b>	
DESIGN REVIEW COMMITTEE		CITY ENGINEER APPROVAL	
CITY PROJECT NO.		ZONE MAP NO.	
B-18-2		SHEET 2 OF 2	

ENGINEER'S SEAL			SURVEY INFORMATION			BENCH MARKS			AS BUILT INFORMATION		
			FIELD NOTES			AGRS Brass Cap stamped "10-C18"			CONTRACTOR		
			NO.	BY	DATE				WORK STARTED BY		DATE
									INSPECTION BY		DATE
									FIELD VERIFICATION BY		DATE
									DRAWING CORRECTED BY		DATE
									MICRO-FILM INFORMATION		
									RECORDED BY		DATE
									NO.		







## ***APPENDIX A - HYDROLOGY***



# EXISTING DRAINAGE CONDITIONS - SUMMARY TABLE

AHYMO PROGRAM SUMMARY TABLE (AHYMO-S4)  
 INPUT FILE = C:\Program Files (x86)\AHYMO-S4\GLENEX.DAT  
 - Ver. S4.01a, Rel: 01a  
 RUN DATE (MON/DAY/YR) = 06/15/2016  
 USER NO. = N-GoodwinMSiteA90075759

COMMAND	HYDROGRAPH IDENTIFICATION	FROM TO ID NO.	AREA (SQ MI)	PEAK DISCHARGE (CFS)	RUNOFF VOLUME (AC-FT)	RUNOFF (INCHES)	TIME TO PEAK (HOURS)	CFS PER ACRE	PAGE = 1	NOTATION
*S*****	Tierra Serena Subdivision									
*S	100 YEAR 24 HOUR STORM EVENT									
*S	FILE: GLENEX.DAT									
*S	LAST REVISED: 6-15-16									
*S	NOAA ATLAS 2, VOL IV ZONE B-18									
START										
LOCATION	NEW MEXICO									
RAINFALL	TYPE= 2 NOAA 14									
*S*****	*****									
*S	EXISTING DRAINAGE CONDITIONS									
COMPUTE NM HYD	100.00	-	1	0.00289	5.19	0.152	0.98842	1.532	2.806	PER IMP= 0.00
COMPUTE NM HYD	100.10	-	1	0.00124	2.23	0.065	0.98842	1.532	2.813	PER IMP= 0.00
COMPUTE NM HYD	100.20	-	1	0.00388	5.68	0.170	0.82168	1.532	2.287	PER IMP= 0.00
COMPUTE NM HYD	100.30	-	1	0.00221	3.24	0.097	0.82168	1.532	2.290	PER IMP= 0.00
COMPUTE NM HYD	100.40	-	1	0.00301	4.40	0.132	0.82168	1.532	2.288	PER IMP= 0.00
COMPUTE NM HYD	100.50	-	1	0.00092	2.14	0.078	1.60396	1.532	3.649	PER IMP= 40.00
FINISH										
								TIME=	0.00	
								RAIN24=	2.850	

# EXISTING DRAINAGE CONDITIONS

```

*S*****
*S          GLENDESTO SUBDIVISION
*S          100 YEAR 24 HOUR STORM EVENT
*S
*S          FILE: GLENEX.DAT
*S          LAST REVISED: 6-15-16
*S          NOAA ATLAS 2, VOL IV ZONE B-18
START          TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
LOCATION        NEW MEXICO
RAINFALL       TYPE=2 RAIN QUARTER=0.0
               RAIN ONE=2.10 IN RAIN SIX=2.50 IN
               RAIN DAY=2.85 IN DT=0.0333 HRS
*S*****
*S  EXSTING DRAINAGE CONDITIONS
** *****
** SUB BASIN 100.0
** *****
COMPUTE NM HYD      ID=1  HYD NO=100.0 AREA= 0.002888 SQ MI
                   PER A=20 PER B=80 PER C=0 PER D=0
                   TP=-.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=1
** *****
** SUB BASIN 100.1
** *****
COMPUTE NM HYD      ID=1  HYD NO=100.1 AREA= 0.001236 SQ MI
                   PER A=20 PER B=80 PER C=0 PER D=0
                   TP=-.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=1
** *****
** SUB BASIN 100.2
** *****
COMPUTE NM HYD      ID=1  HYD NO=100.2 AREA= 0.003884 SQ MI
                   PER A=100 PER B=0 PER C=0 PER D=0
                   TP=-.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=1
** *****
** SUB BASIN 100.3
** *****
COMPUTE NM HYD      ID=1  HYD NO=100.3 AREA= 0.002210 SQ MI
                   PER A=100 PER B=0 PER C=0 PER D=0
                   TP=-.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=1
** *****
** SUB BASIN 100.4
** *****
COMPUTE NM HYD      ID=1  HYD NO=100.4 AREA= 0.003007 SQ MI
                   PER A=100 PER B=0 PER C=0 PER D=0
                   TP=-.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=1
** *****
** SUB BASIN 100.5
** *****
COMPUTE NM HYD      ID=1  HYD NO=100.5 AREA= 0.000915 SQ MI
                   PER A=25 PER B=35 PER C=0 PER D=40
                   TP=-.1333 HR MASS RAIN=-1
PRINT HYD          ID=1 CODE=1
FINISH

```





## PROPOSED CONDITIONS

```
PROGRAM (AHYMO-S4)
  RUN DATE (MON/DAY/YR) = 08/10/2016
  START TIME (HR:MIN:SEC) = 14:17:12
  INPUT FILE = C:\Program Files (x86)\AHYMO-S4\qlenp6.dat
  USER NO. = M-Goodwin\MSiteA90075759
  - Version: S4.01a - Rel: 01a
```

```

*****
*S S Tennessee Subdivision
*S S PROPOSED DRAINAGE CONDITIONS
*S S 100 YEAR 24 HOUR STORM EVENT
*S S FILE: GLENP6.DAT
*S S LAST REVISED: 8-8-16
*S S NOAA ATLAS 2, VOL IV ZONE B-18
*S S TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
START
LOCATION NEW MEXICO
State of New Mexico soil infiltration values (LAND FACTORS) used for computations.
Land Treatment Initial Abstr. (in) Unif. Infiltr. (in/hour)
A 0.65 1.67
B 0.50 1.25
C 0.35 0.83
D 0.10 0.04

```

TYPE=1 RAIN QUARTER=0.0			RAIN ONE=2.10 IN RAIN SIX=2.50 IN			RAIN DAY=2.85 IN DT=0.033 HRS		
6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1								
DT = 0.033300 HOURS			END TIME =			5.994000 HOURS		
0.0000	0.0018	0.0036	0.0054	0.0074	0.0094	0.0116		
0.0138	0.0161	0.0186	0.0212	0.0265	0.0319	0.0377		
0.0438	0.0499	0.0565	0.0631	0.0699	0.0769	0.0839		
0.0912	0.0985	0.1063	0.1145	0.1227	0.1320	0.1413		
0.1558	0.1760	0.1962	0.2231	0.2502	0.2824	0.3203		
0.3582	0.4145	0.4714	0.5475	0.6458	0.7441	0.9994		
1.2612	1.4697	1.6149	1.7600	1.8362	1.9091	1.9698		
2.0158	2.0617	2.0943	2.1261	2.1541	2.1775	2.2008		
2.2187	2.2364	2.2501	2.2588	2.2675	2.2753	2.2831		
2.2902	2.2966	2.3029	2.3088	2.3146	2.3204	2.3260		
2.3316	2.3345	2.3372	2.3399	2.3425	2.3451	2.3475		
2.3499	2.3523	2.3547	2.3570	2.3593	2.3616	2.3638		
2.3660	2.3681	2.3702	2.3723	2.3743	2.3763	2.3784		
2.3803	2.3822	2.3841	2.3860	2.3878	2.3897	2.3915		
2.3933	2.3950	2.3967	2.3984	2.4001	2.4018	2.4035		
2.4051	2.4068	2.4084	2.4100	2.4116	2.4132	2.4147		
2.4163	2.4178	2.4193	2.4209	2.4224	2.4239	2.4253		
2.4268	2.4283	2.4297	2.4311	2.4326	2.4340	2.4354		
2.4368	2.4381	2.4395	2.4409	2.4422	2.4436	2.4449		

```

*****
**S*****
**S PROPOSED DRAINAGE CONDITIONS*****
*****

```



```

*** SUB BASINS 201.0
***
*** COMPUTE NM HYD
***
ID=1    HYD NO=201.0  AREA= 0.002442 SQ MI
PER A=20 PER B=80    PER C=0    PER D=0
TP=-.1333 HR  MASS RAIN=-1

```

```

K = 0.138116HR TP = 0.133300HR K/TP RATIO = 1.036128 SHAPE CONSTANT, N = 3.406848
UNIT PEAK = 5.7427 CFS UNIT VOLUME = 0.9977 B = 313.47 P60 = 2.1000
AREA = 0.002442 SQ MI IA = 0.53000 INCHES INF = 1.33400 INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

```

PARTIAL HYDROGRAPH 201.00

RUNOFF VOLUME = 0.98842 INCHES = 0.1287 ACRE-FEET  
PEAK DISCHARGE RATE = 4.39 CFS AT 1.532 HOURS BASIN AREA = 0.0024 SQ. MI.

```

*** SUB BASINS 201.1 ***
***
*** COMPUTE NM HYD
ID=1  HYD NO=201.1  AREA= 0.000712  SQ MI
PER A=0  PER B=28  PER C=0  PER D=72
TP=-.1333 HR  MASS RAIN=-1

```

```

K = 0.072649HR    TP = 0.133300HR    K/TP RATIO = 0.545000    SHAPE CONSTANT, N = 7.106428
UNIT PEAK = 2.0239    CFS    UNIT VOLUME = 0.9941    B = 526.28    P60 = 2.1000
AREA = 0.000513 SQ MI    IA = 0.10000    INCHES    INF = 0.04000    INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

```

```

K = 0.133173HR    TP = 0.133300HR    K/TP RATIO = 0.999050    SHAPE CONSTANT, N = 3.533543
UNIT PEAK = 0.48273    CFS    UNIT VOLUME = 0.9712    B = 322.78    P60 = 2.1000
AREA = 0.000199    SQ MI    IA = 0.50000    INCHES    INF = 1.25000    INCHES PER HOUR
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

```

```

PRINT HYD
ID=1 CODE=1
PARTIAL HYDROGRAPH 201.10

```

RUNOFF VOLUME = 1.91043 INCHES = 0.0725 ACRE-FeET  
PEAK DISCHARGE RATE = 2.05 CFS AT 1.532 HOURS BASIN AREA = 0.0007 SQ. MI.

```

*****
*** SUB BASINS 201.2
*** ONSISTE SUB BASIN
*** *****
***
*** COMPUTE NM HYD
*** ID=1   HYD NO=201.2 AREA= 0.007444 SQ MI
*** PER A=0 PER B=21.5 PER C=21.5 PER D=57
*** TP=-.1333 HR MASS RAIN=-1

```

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 16.752 CFS UNIT VOLUME = 0.9986 B = 526.28 P60 = 2.1000  
AREA = 0.004243 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

K = 0.120817HR TP = 0.133300HR K/TP RATIO = 0.906356 SHAPE CONSTANT, N = 3.908407  
UNIT PEAK = 8.3810 CFS UNIT VOLUME = 0.9989 B = 349.02 P60 = 2.1000  
AREA = 0.003201 SQ MI IA = 0.42500 INCHES INF = 1.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.20

RUNOFF VOLUME = 1.78078 INCHES = 0.7070 ACRE-FEET  
PEAK DISCHARGE RATE = 20.48 CFS AT 1.532 HOURS BASIN AREA = 0.0074 SQ. MI.

\*\*\*\*\*  
\*S\* ROUTE THRU ONSISTE POND  
\*\*\*\*\*  
\*S\* ROUTE THRU ONSISTE POND  
\*\*\*\*\*  
ROUTE RESERVOIR ID=12 HYD=POND.12 INFLOW=1 CODE=24  
OUTFLOW(CFS) STORAGE(ACFT) ELEV(FT)  
0.00 0.0000 49.0  
0.01 0.36049 54.5  
10.88 0.4279 55.0

TIME (HRS)	INFLOW (CFS)	ELEV (FEET)	VOLUME (AC-FT)	OUTFLOW (CFS)
0.00	0.00	49.00	0.000	0.00
0.80	0.03	49.00	0.000	0.00
1.60	16.81	54.67	0.383	3.60
2.40	0.74	54.54	0.366	0.94
3.20	0.08	54.50	0.361	0.09
4.00	0.05	54.50	0.361	0.05
4.80	0.05	54.50	0.361	0.05
5.59	0.07	54.50	0.361	0.07
6.39	0.01	54.50	0.361	0.01

PEAK DISCHARGE = 10.245 CFS - PEAK OCCURS AT HOUR 1.70  
MAXIMUM WATER SURFACE ELEVATION = 54.971  
MAXIMUM STORAGE = 0.4240 AC-FT INCREMENTAL TIME= 0.033300HRS

PRINT HYD ID=12 CODE=50

HYDROGRAPH FROM AREA POND.12

0.0	25.974	0.0	52.614	0.0	79.254	0.0	105.894	0.0	132.534	0.0
-----	--------	-----	--------	-----	--------	-----	---------	-----	---------	-----



RUNOFF VOLUME = 1.10157 INCHES = 0.4373 ACRE-FEET  
PEAK DISCHARGE RATE = 10.24 CFS AT 1.698 HOURS BASIN AREA = 0.0074 SQ. MI.

\*\*\* \*\*\*\*\*  
\*\*\* SUB BASINS 201.3  
\*\*\* \*\*\*\*\*

COMPUTE NM HYD

ID=1 HYD NO=201.3 AREA= 0.001617 SQ MI  
PER A=78 PER B=22 PER C=0 PER D=0  
TP=-.1333 HR MASS RAIN=-1

K = 0.152449HR TP = 0.133300HR K/TP RATIO = 1.143653 SHAPE CONSTANT, N = 3.096457  
UNIT PEAK = 3.5130 CFS UNIT VOLUME = 0.9958 B = 289.60 P60 = 2.1000  
AREA = 0.001617 SQ MI IA = 0.61700 INCHES INF = 1.57760 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.30

RUNOFF VOLUME = 0.86460 INCHES = 0.0746 ACRE-FEET  
PEAK DISCHARGE RATE = 2.51 CFS AT 1.532 HOURS BASIN AREA = 0.0016 SQ. MI.

\*\*\* \*\*\*\*\*  
\*\*\* SUB BASINS 201.4  
\*\*\* \*\*\*\*\*

COMPUTE NM HYD

ID=1 HYD NO=201.4 AREA= 0.000439 SQ MI  
PER A=20 PER B=80 PER C=0 PER D=0  
TP=-.1333 HR MASS RAIN=-1

K = 0.138116HR TP = 0.133300HR K/TP RATIO = 1.036128 SHAPE CONSTANT, N = 3.406848  
UNIT PEAK = 1.0324 CFS UNIT VOLUME = 0.9869 B = 313.47 P60 = 2.1000  
AREA = 0.000439 SQ MI IA = 0.53000 INCHES INF = 1.33400 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.40

RUNOFF VOLUME = 0.98842 INCHES = 0.0231 ACRE-FEET  
PEAK DISCHARGE RATE = 0.80 CFS AT 1.532 HOURS BASIN AREA = 0.0004 SQ. MI.

\*\*\* \*\*\*\*\*  
\*\*\* SUB BASINS 201.5  
\*\*\* \*\*\*\*\*

COMPUTE NM HYD

ID=1 HYD NO=201.5 AREA= 0.000409 SQ MI  
PER A=0 PER B=28 PER C=0 PER D=72  
TP=-.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.1626 CFS UNIT VOLUME = 0.9896 B = 526.28 P60 = 2.1000  
AREA = 0.000294 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

K = 0.133173HR TP = 0.133300HR K/TP RATIO = 0.999050 SHAPE CONSTANT, N = 3.533543  
UNIT PEAK = 0.27730 CFS UNIT VOLUME = 0.9522 B = 322.78 P60 = 2.1000  
AREA = 0.000115 SQ MI IA = 0.50000 INCHES INF = 1.25000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.50

RUNOFF VOLUME = 1.91043 INCHES = 0.0417 ACRE-FEET  
PEAK DISCHARGE RATE = 1.19 CFS AT 1.532 HOURS BASIN AREA = 0.0004 SQ. MI.

\*\*\* SUB BASINS 201.6  
\*\*\*

COMPUTE NM HYD ID=1 HYD NO=201.6 AREA= 0.000545 SQ MI  
PER A=100 PER B=0 PER C=0 PER D=0  
TP=-.1333 HR MASS RAIN=-1

K = 0.157886HR TP = 0.133300HR K/TP RATIO = 1.184438 SHAPE CONSTANT, N = 2.996859  
UNIT PEAK = 1.1512 CFS UNIT VOLUME = 0.9873 B = 281.57 P60 = 2.1000  
AREA = 0.000545 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.60

RUNOFF VOLUME = 0.82168 INCHES = 0.0239 ACRE-FEET  
PEAK DISCHARGE RATE = 0.81 CFS AT 1.532 HOURS BASIN AREA = 0.0005 SQ. MI.

\*\*\* SUB BASINS 201.7  
\*\*\*

COMPUTE NM HYD ID=1 HYD NO=201.7 AREA= 0.000909 SQ MI  
PER A=25 PER B=0 PER C=35 PER D=40  
TP=-.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428  
UNIT PEAK = 1.4355 CFS UNIT VOLUME = 0.9910 B = 526.28 P60 = 2.1000  
AREA = 0.000364 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

K = 0.129055HR TP = 0.133300HR K/TP RATIO = 0.968152 SHAPE CONSTANT, N = 3.648501



UNIT PEAK = 1.3544 CFS UNIT VOLUME = 0.9899 B = 331.02 P60 = 2.1000  
AREA = 0.000545 SQ MI IA = 0.47500 INCHES INF = 1.18000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.70

RUNOFF VOLUME = 1.54680 INCHES = 0.0750 ACRE-FEET  
PEAK DISCHARGE RATE = 2.26 CFS AT 1.532 HOURS BASIN AREA = 0.0009 SQ. MI.

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

\*\*\* EXISTING CONDITIONS FOR THE ONSITE PROJECT AREA

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

\*\*\* SUB BASINS 100.2

\*\*\* ONSISTE SUB BASIN

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

COMPUTE NM HYD

ID=1 HYD NO=201.2 AREA= 0.007444 SQ MI  
PER A=100 PER B=0 PER C=0 PER D=0  
TP=-.1333 HR MASS RAIN=-1

K = 0.157886HR TP = 0.133300HR K/TP RATIO = 1.184438 SHAPE CONSTANT, N = 2.996859  
UNIT PEAK = 15.724 CFS UNIT VOLUME = 0.9989 B = 281.57 P60 = 2.1000  
AREA = 0.007444 SQ MI IA = 0.65000 INCHES INF = 1.67000 INCHES PER HOUR  
RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.033300

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 201.20

RUNOFF VOLUME = 0.82168 INCHES = 0.3262 ACRE-FEET  
PEAK DISCHARGE RATE = 10.88 CFS AT 1.532 HOURS BASIN AREA = 0.0074 SQ. MI.

FINISH

NORMAL PROGRAM FINISH END TIME (HR:MIN:SEC) = 14:17:12

## ***APPENDIX B - HYDRAULICS***



## IMPERVIOUS AREA

PAD AREA

2555 SF

FF=72 CF

DRIVEWAY

360 SF

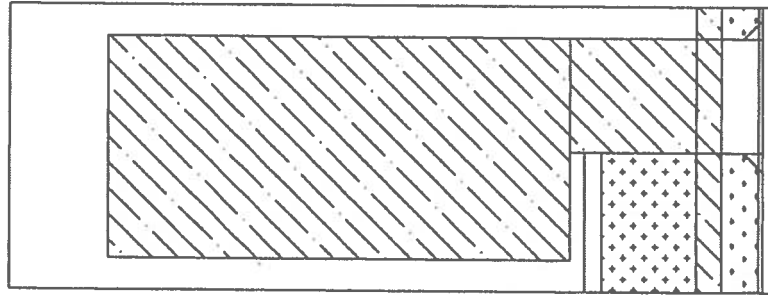
FF=10.2 CF

SIDEWALK

180 SF

FF=5.1 CF

(first flush =  $5F \times 0.34''/12''$ )



## DEPRESSED AREA PROVIDED

Concept: Depressed areas are provided to capture the first flush from impervious areas on each individual lot. These depressed areas will be landscaped with rock or grass which will allow drainage to pass through retaining some volume but in some cases will not retain all the flow in the volume provided in this calculation because varying street slopes will effectively reduce the amount of runoff that can be intercepted and retained on any given individual lot.

front yard volume=  
 $(19' \times 15' \times 0.5')/2 =$   
71.25 CF

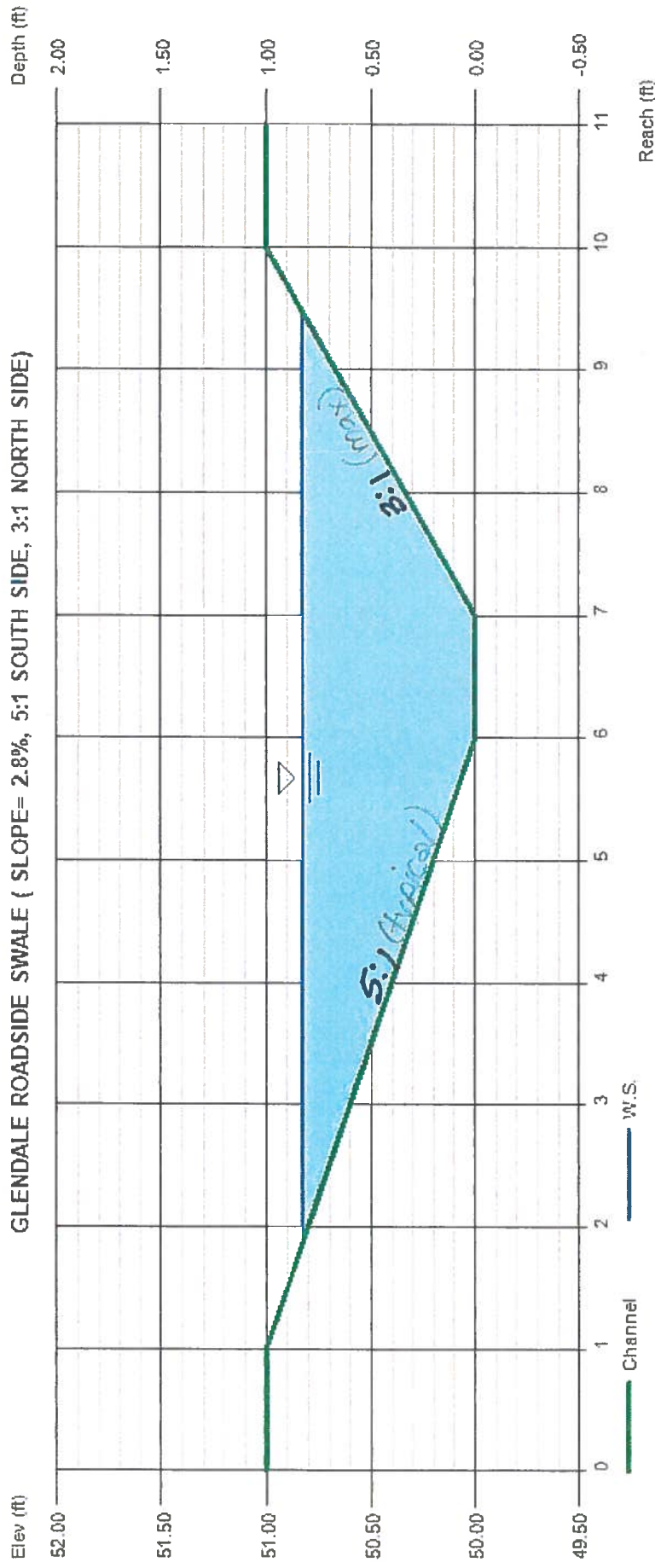
Curb-sdwk volume=  
 $(19' \times 5.88' \times 0.5')/2 =$   
27.9 CF

## GLENDISTO SUBDIVISION

### FIRST FLUSH CALCULATIONS FOR TYPICAL LOT

(scale 1 inch=30 feet)

# GLENDALE ROADSIDE SWALE (SLOPE= 2.8%, 5:1 SOUTH SIDE, 3:1 NORTH SIDE)



Depth (ft)	Q (cfs)	Area (sqft)	Veloc (ft/s)	Wp (ft)	Yc (ft)	TopWidth (ft)	Energy (ft)
0.83	30.43	3.586	8.49	7.86	1.00	7.64	1.95

**GLENESTO SUBDIVISION**  
**CALCULATIONS FOR INLET AT END OF SWALE**  
**(SAN PEDRO)**

*Capacity is measured using the orifice equation:  $Q = c \times a \times ((2 \times g \times H)^{.5})$*

*FOR SINGLE TYPE D INLET*

*Assume 2 feet of head:  $Q = (0.6) \times (4.56 \text{ sq.ft.}) \times ((2 \times 32.4 \times 2 \text{ ft})^{.5}) = 31.15 \text{ cfs}$*

*FOR DOUBLE TYPE D INLET*

*Assume 2 feet of head  $Q = (0.6) \times (9.12 \text{ sq.ft.}) \times ((2 \times 32.4 \times 2 \text{ ft})^{.5}) = 62.30 \text{ cfs}$*

***The 100 year flow to the sump in San Pedro is 30.43 cfs.***

***Assume a 50% clogging factor ~ Use a double D Inlet.***

Note: Refer to Standard drawing 2220 DRAINAGE STORM INLET ALBUQUERQUE GRATE



# GENERAL NOTES:

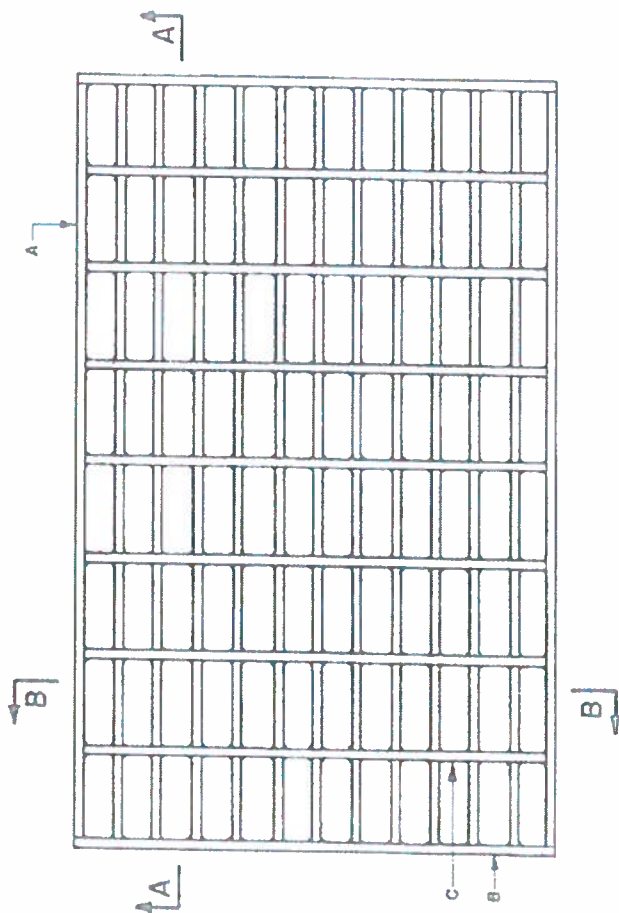
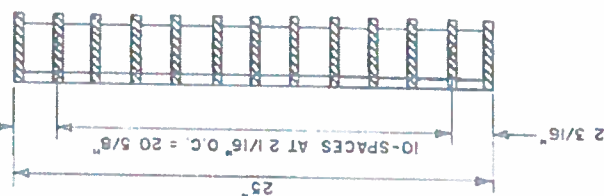
1. ALL BARS SHALL BE STRUCTURAL GRADE STEEL, GRADE A36.
2. THE GRATE SHALL BE WELDED WITH 1/8" FILLET WELD AROUND BOTH SIDES OF CROSS BARS, 1/4" FILLET WELD BOTH SIDES OF BEARING BARS TO END BARS.
3. AFTER CLEANING SURFACE OF SCALE, RUST, OILS, ETC., PAINT GRATE WITH ONE SHOP COAT RED OXIDE, TWO FINISH COATS ALUMINUM PAINT (AASHTO M 69).
4. TOP OF CROSS BARS SHALL BE FLUSH WITH TOP OF GRATE.
5. GRIND WELDS FLUSH WITH BEARING BARS.
6. WHEN INSTALLED IN FRAME, PUSH TIGHT TO ONE SIDE, OTHER SIDE SHALL HAVE 1/2" MAX. OPENING. SPACERS WELDED TO FRAME MAY BE USED IF REQUIRED TO KEEP 1/2" SPACE UP LESS.

## CONSTRUCTION NOTES:

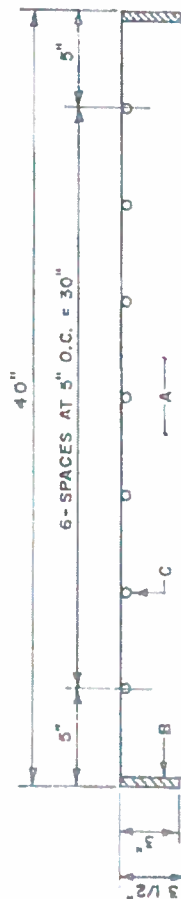
- A. BEARING BARS, (13) 1/2" X 3 1/2" X 39"
- B. END BARS, (2) 1/2" X 3" X 25"
- C. CROSS BARS, (7) 1/2" DIA. X 24"

$40'' - 4.5'' = 35.5''$   
 $25'' - 6.5'' = 18.5''$   
 $656.75 \text{ sq in (OPENING)}$   
 $= 4.56 \text{ sq ft (OPENING)}$   
 $= 1 \text{ EA.}$   
 $2 \text{ EA} = 9.12 \text{ sq ft.}$

SECTION B-B



PLAN



SECTION A-A

CITY OF ALBUQUERQUE

DRAINAGE  
 STORM INLET  
 ALBUQUERQUE GRATE  
 DWG. 2220

AUG. 1986

# Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Thursday, Jul 6 2017

## Glendesto Channel

### Rectangular

Bottom Width (ft) = 16.00  
Total Depth (ft) = 0.67

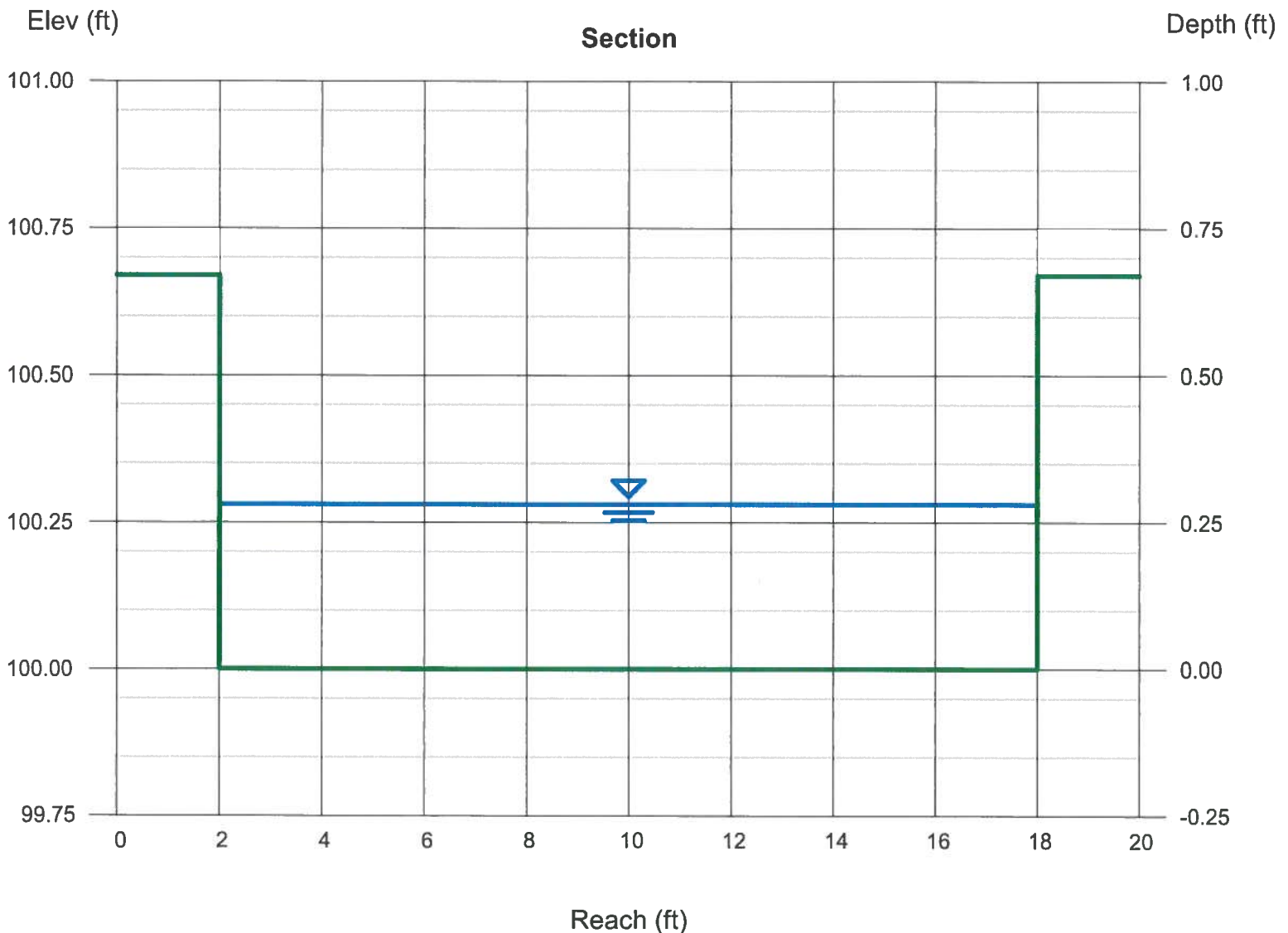
Invert Elev (ft) = 100.00  
Slope (%) = 1.00  
N-Value = 0.013

### Calculations

Compute by: Known Q  
Known Q (cfs) = 20.48

### Highlighted

Depth (ft) = 0.28  
Q (cfs) = 20.48  
Area (sqft) = 4.48  
Velocity (ft/s) = 4.57  
Wetted Perim (ft) = 16.56  
Crit Depth, Yc (ft) = 0.38  
Top Width (ft) = 16.00  
EGL (ft) = 0.60



# Channel Report

Hydraflow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc.

Thursday, Jul 6 2017

## Lansdowne Place NE

### User-defined

Invert Elev (ft) = 99.50  
Slope (%) = 0.70  
N-Value = 0.013

### Calculations

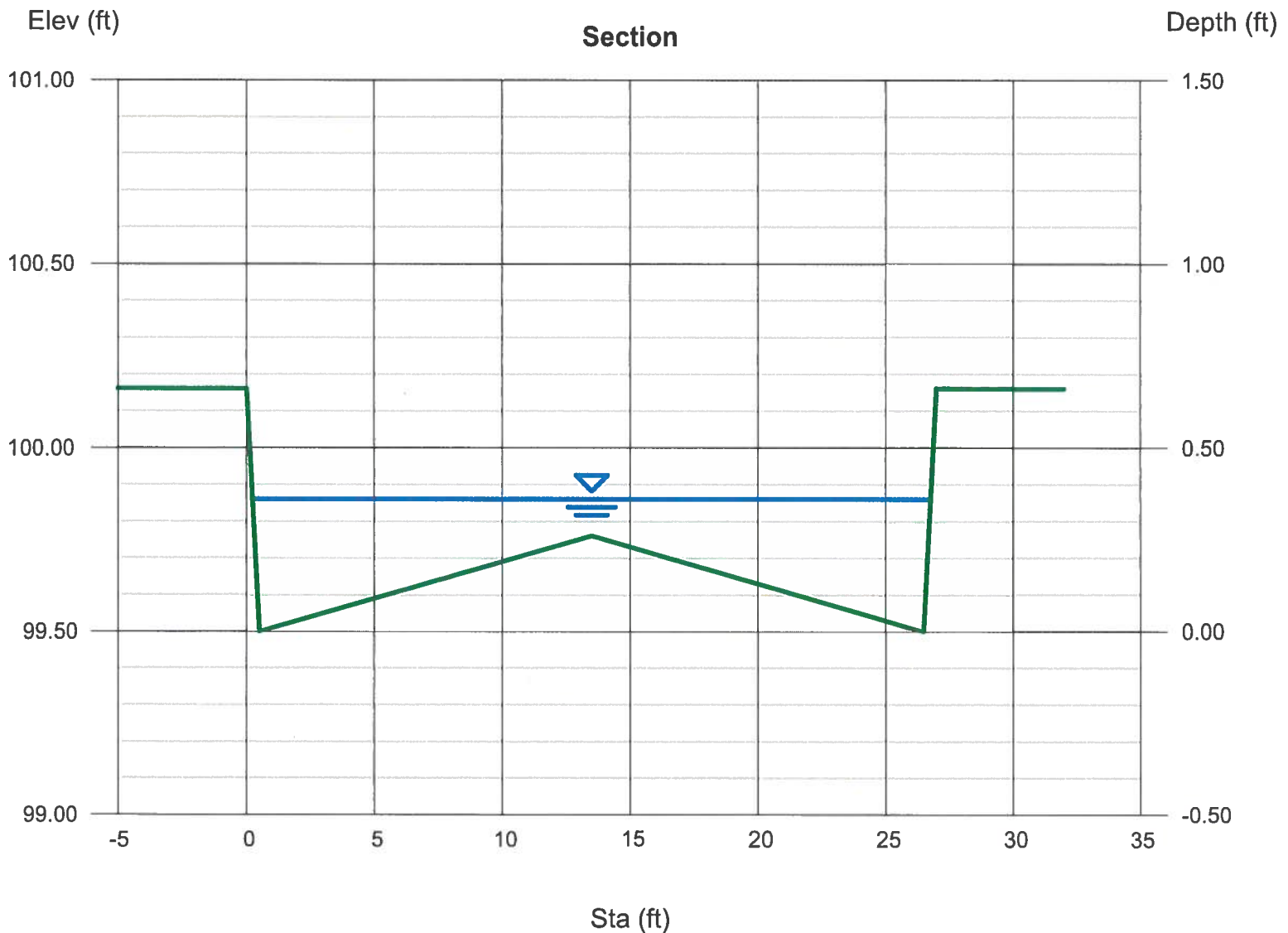
Compute by: Known Q  
Known Q (cfs) = 20.48

### Highlighted

Depth (ft) = 0.36  
Q (cfs) = 20.48  
Area (sqft) = 6.08  
Velocity (ft/s) = 3.37  
Wetted Perim (ft) = 26.91  
Crit Depth, Yc (ft) = 0.40  
Top Width (ft) = 26.55  
EGL (ft) = 0.54

### (Sta, El, n)-(Sta, El, n)...

(0.00, 100.16)-(0.50, 99.50, 0.013)-(2.50, 99.54, 0.013)-(13.50, 99.76, 0.013)-(24.50, 99.54, 0.013)-(26.50, 99.50, 0.013)-(27.00, 100.16, 0.013)





# Channel Report

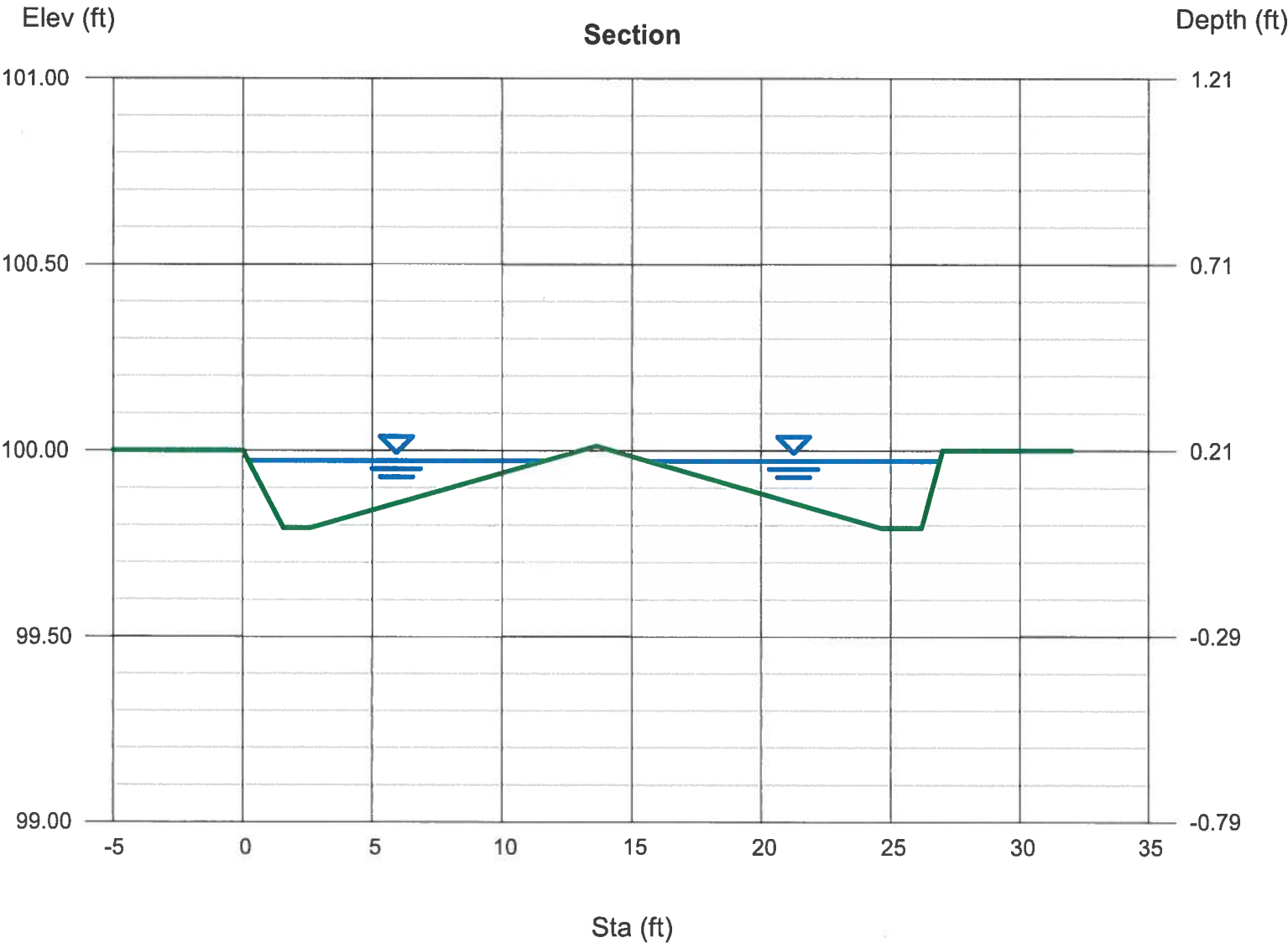
## Yawkey Way NE

User-defined		Highlighted	
Invert Elev (ft)	= 99.79	Depth (ft)	= 0.18
Slope (%)	= 4.20	Q (cfs)	= 10.24
N-Value	= 0.013	Area (sqft)	= 2.28
		Velocity (ft/s)	= 4.50
		Wetted Perim (ft)	= 22.72
		Crit Depth, Yc (ft)	= 0.22
		Top Width (ft)	= 22.68
		EGL (ft)	= 0.49

### Calculations

Compute by: Known Q  
Known Q (cfs) = 10.24

(Sta, El, n)-(Sta, El, n)...  
(0.00, 100.00)-(1.57, 99.79, 0.013)-(2.63, 99.79, 0.013)-(13.63, 100.01, 0.013)-(24.63, 99.79, 0.013)-(26.19, 99.79, 0.013)-(27.00, 100.00, 0.013)



## ***APPENDIX C – FINAL N.A.A. MASTER DRAINAGE PLAN***

FINAL  
NORTH ALBUQUERQUE ACRES  
MASTER DRAINAGE PLAN

Prepared For:



City of Albuquerque

Prepared By:



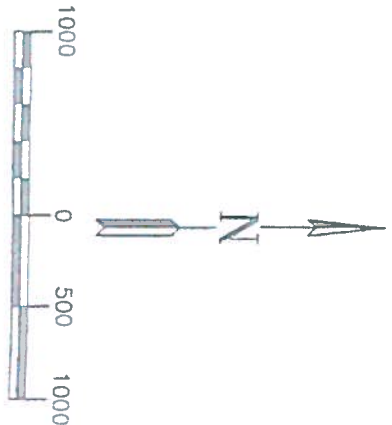
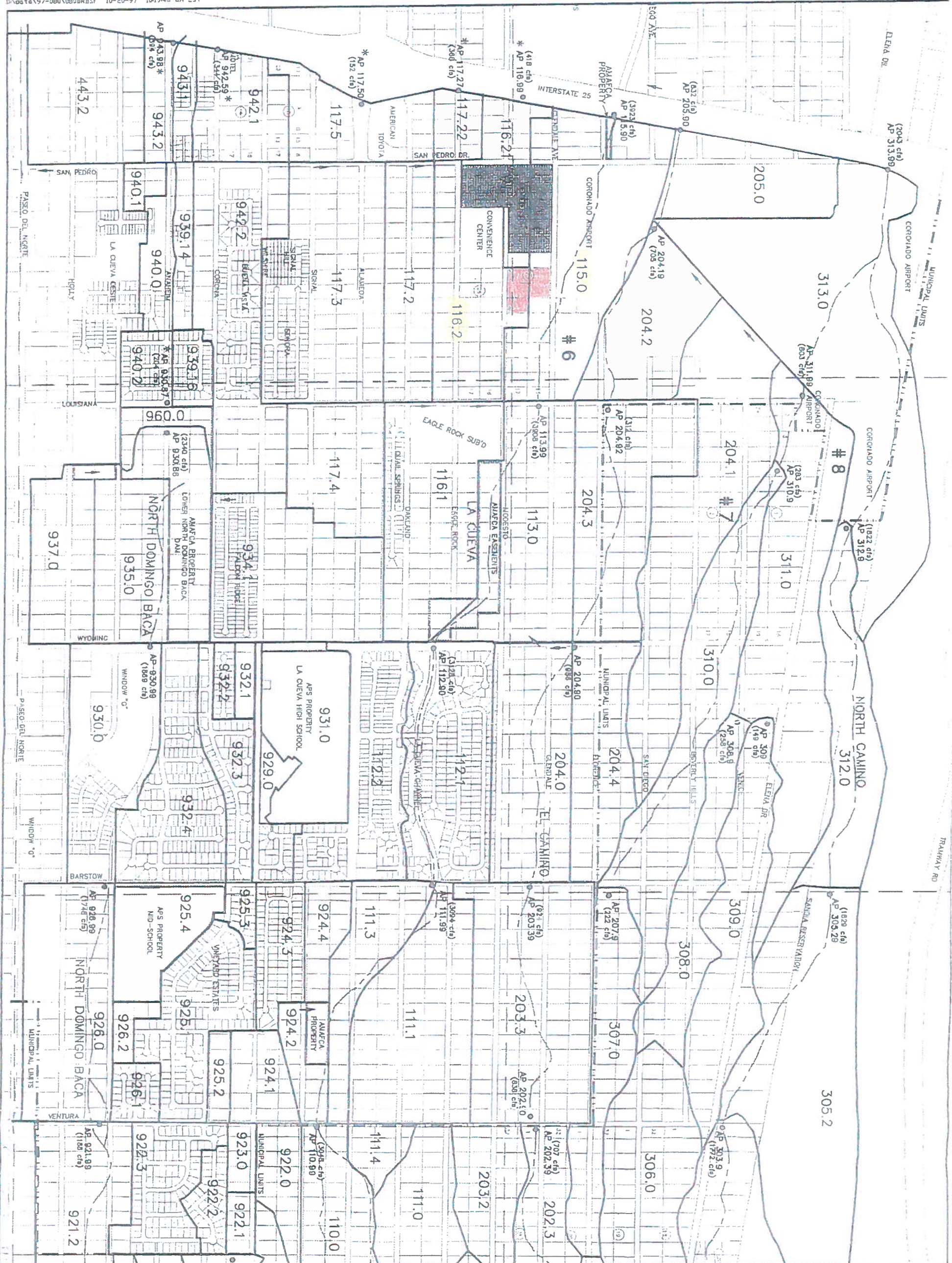
ENGINEERS AND ENVIRONMENTAL SCIENTISTS  
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October 1998









# LEGEND

- 107.1 SUBBASIN DESIGNATION
- SUBBASIN BOUNDARY
- EXISTING PLATTING
- EXISTING ARROYO FLOW PATH
- ANALYSIS POINT AND FUTURE CONDITION FLOW RATE
- \* FLOW RATE NOT BULKED FOR SEDIMENT
- POTENTIAL AVULSION LOCATION
- MUNICIPAL LIMITS

NORTH ALBUQUERQUE ACRES  
MASTER DRAINAGE PLAN  
FUTURE CONDITION  
FIGURE 4A  
CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT



CITY OF  
Albuquerque

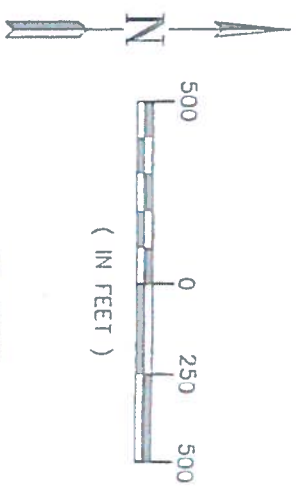
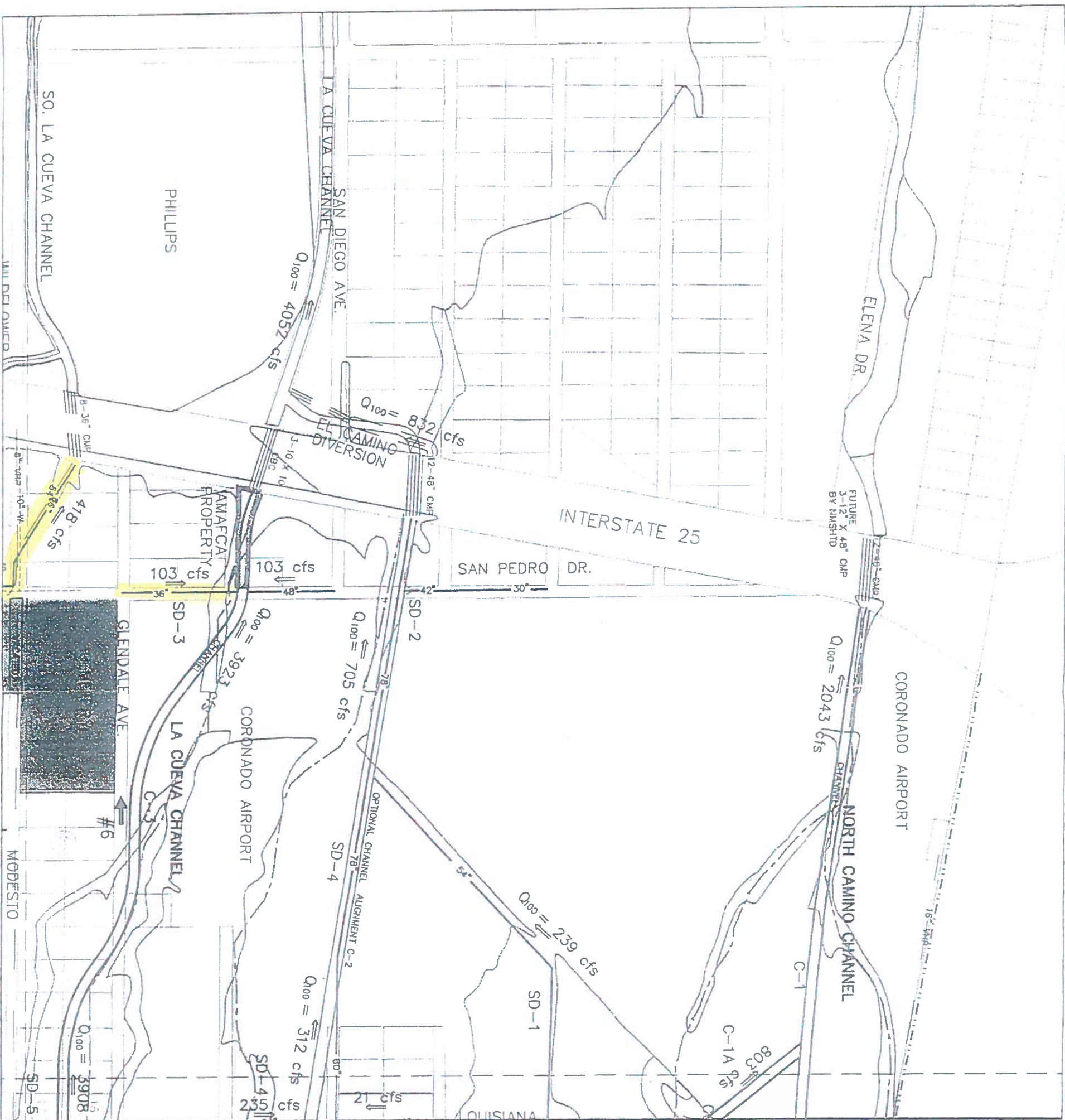
Resource Technology, Inc.

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### LEGEND

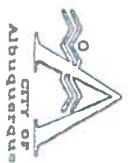
- MUNICIPAL LIMITS
- EXISTING PLATTING
- EXISTING ARROYO FLOW PATH
- EXISTING WATER LINE
- EXISTING SANITARY SEWER
- EXISTING GAS LINE
- EXISTING STORM DRAIN
- PROPOSED STORM DRAIN
- PROPOSED CHANNEL

- PROPOSED STRUCTURE OR ROAD
- PROPOSED DIKE
- POTENTIAL AVULSION

NOTE:  
All flow rates shown are future condition 100-year.

### NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN STORM DRAIN FACILITIES B-18

FIGURE 5A  
CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT



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TABLE A-9

## LA CUEVA ARROYO FUTURE CONDITIONS

Sub-basin	Area (sq. mi.)	10-yr Vol (ac-ft)	10-yr Qp (cfs)	100-yr Vol (ac-ft)	100-yr Qp (cfs)
110.0	.1634	5.774	138.24	11.738	275.61
111.0	.0533	1.823	57.02	3.739	108.83
111.1	.0500	2.054	57.41	7.699	195.97
111.3	.0420	2.498	64.56	4.348	107.90
111.4	.0141	0.482	15.09	0.989	28.80
112.1	.0894	5.152	129.98	8.942	219.11
112.2	.0826	4.760	120.22	8.262	202.31
113.0	.1000	6.393	159.65	10.797	262.65
115.0	.1202	7.581	189.15	12.750	312.21
116.1	.1028	6.570	164.05	11.100	270.05
116.2	.0719	4.529	113.32	7.629	185.54
116.21	.0344	1.682	45.58	3.024	79.13
117.2	.0500	2.788	72.23	4.836	121.61
117.22	.0156	1.108	27.22	1.820	43.06
117.3	.1172	6.536	167.85	11.336	286.33
117.4	.0512	3.225	80.83	5.432	132.07
117.5	.0550	3.907	95.92	6.417	151.76

TABLE A-2 (cont.)

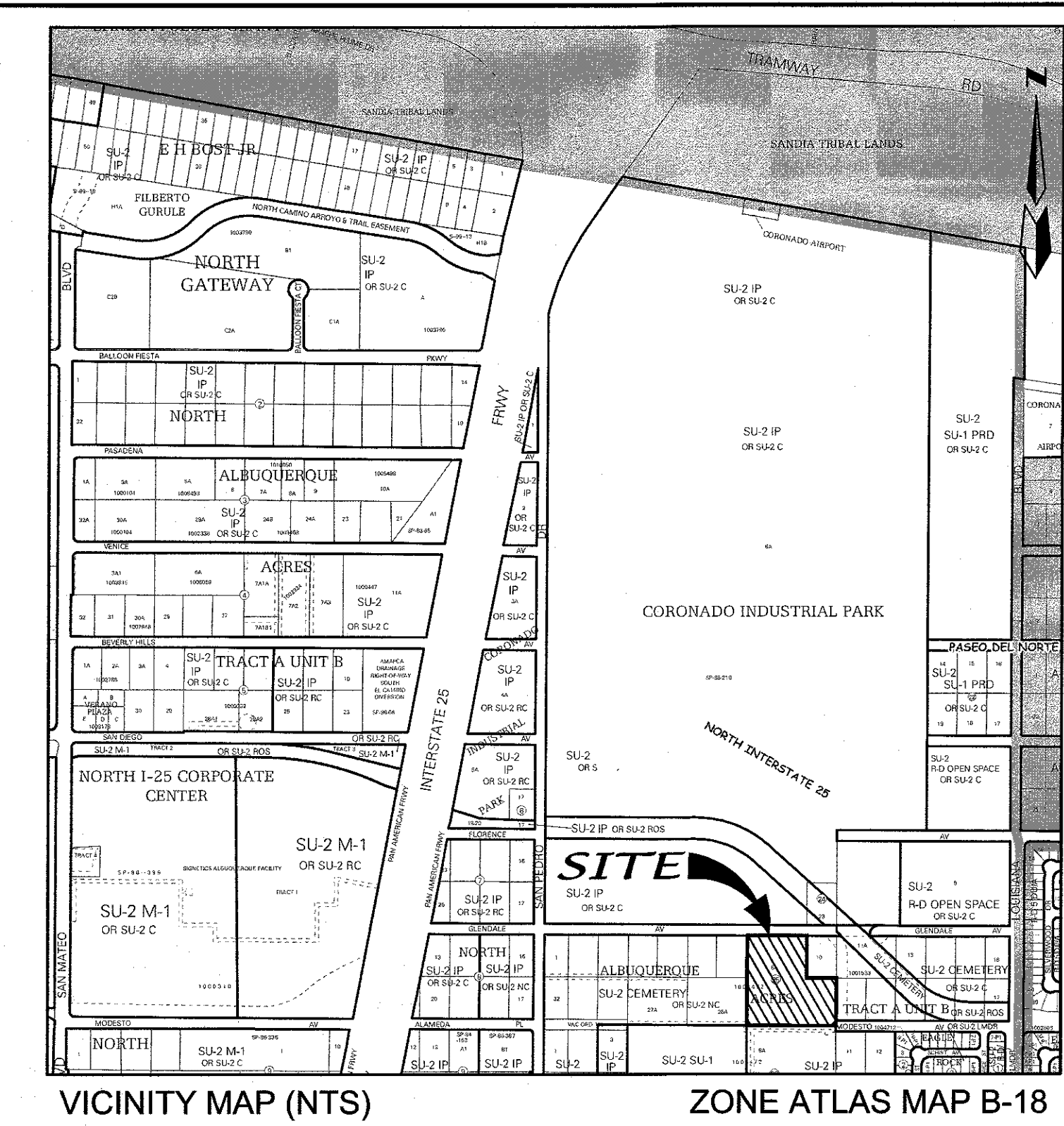
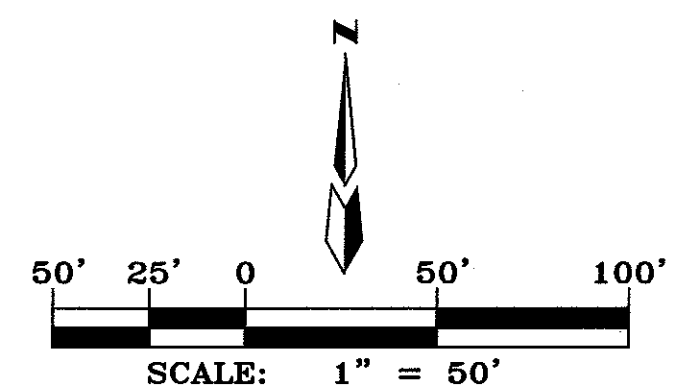
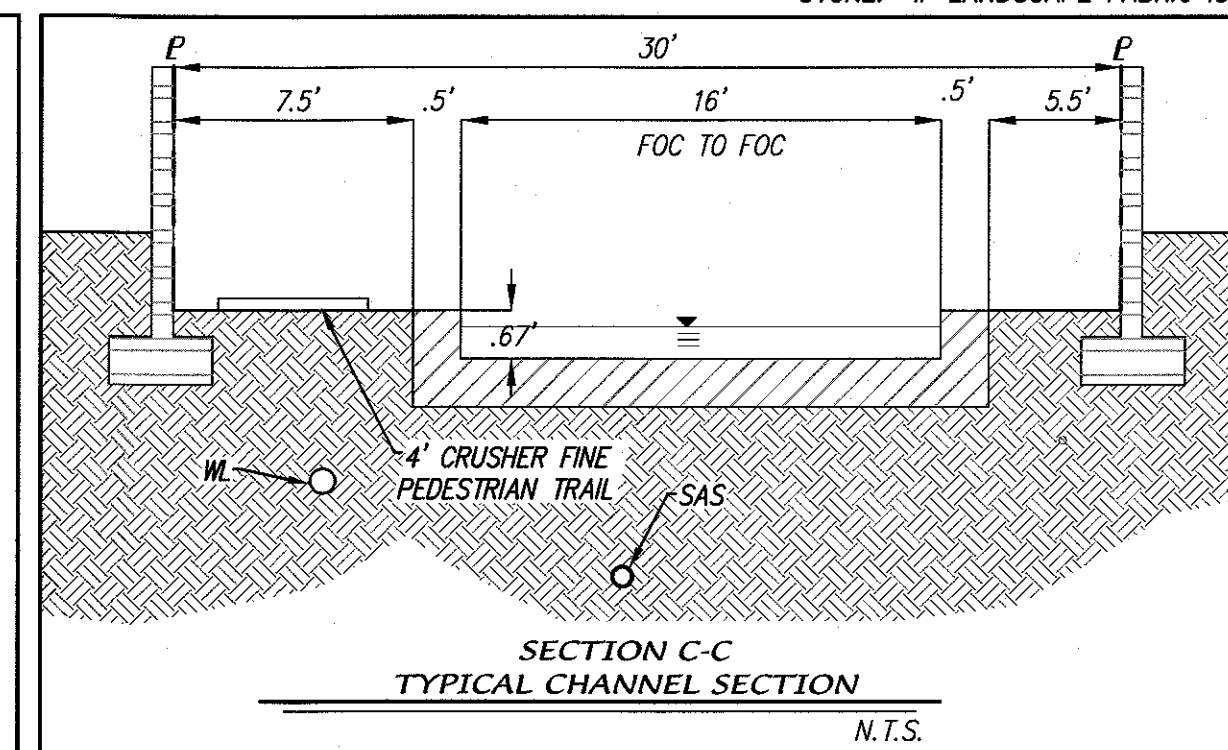
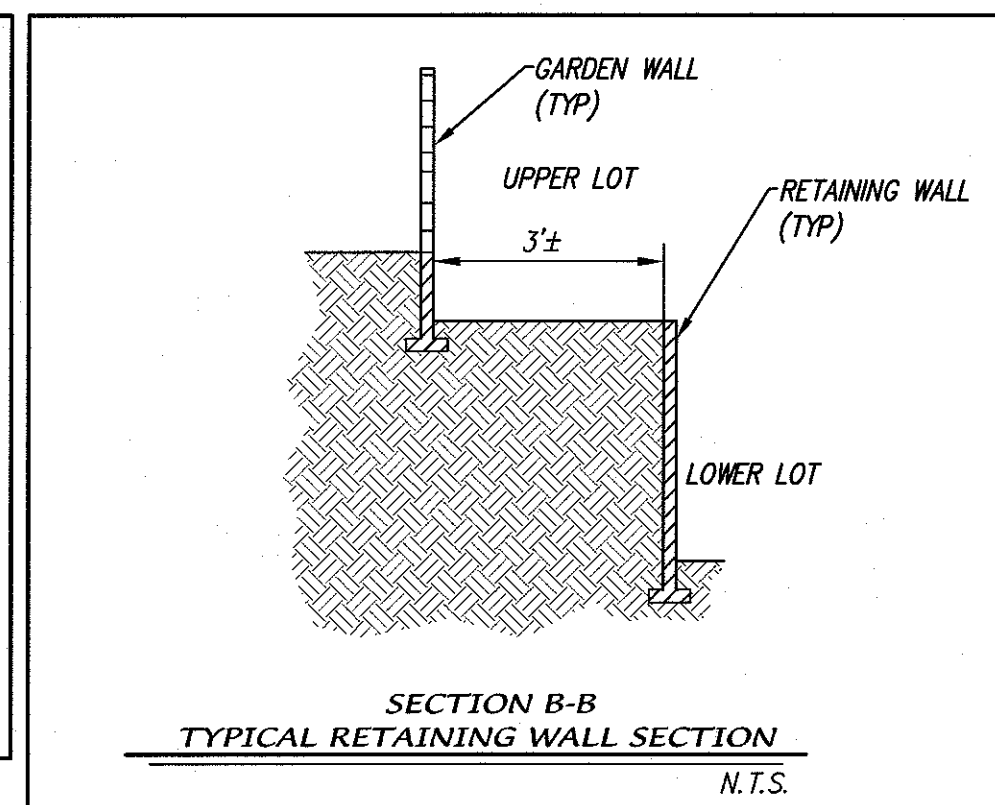
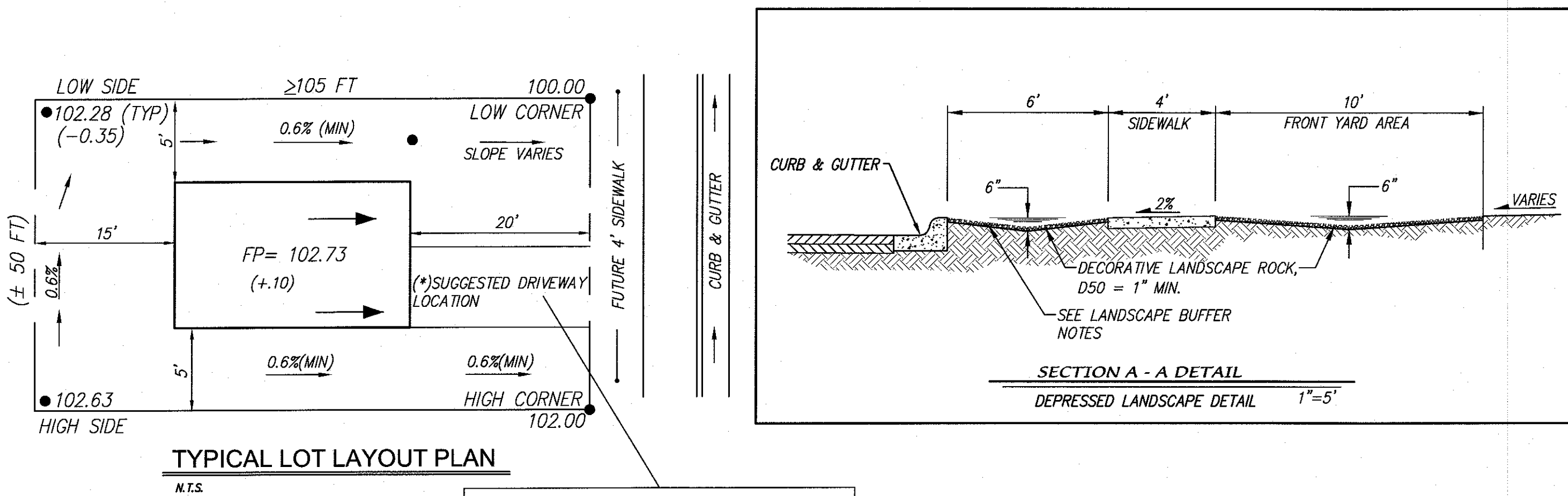
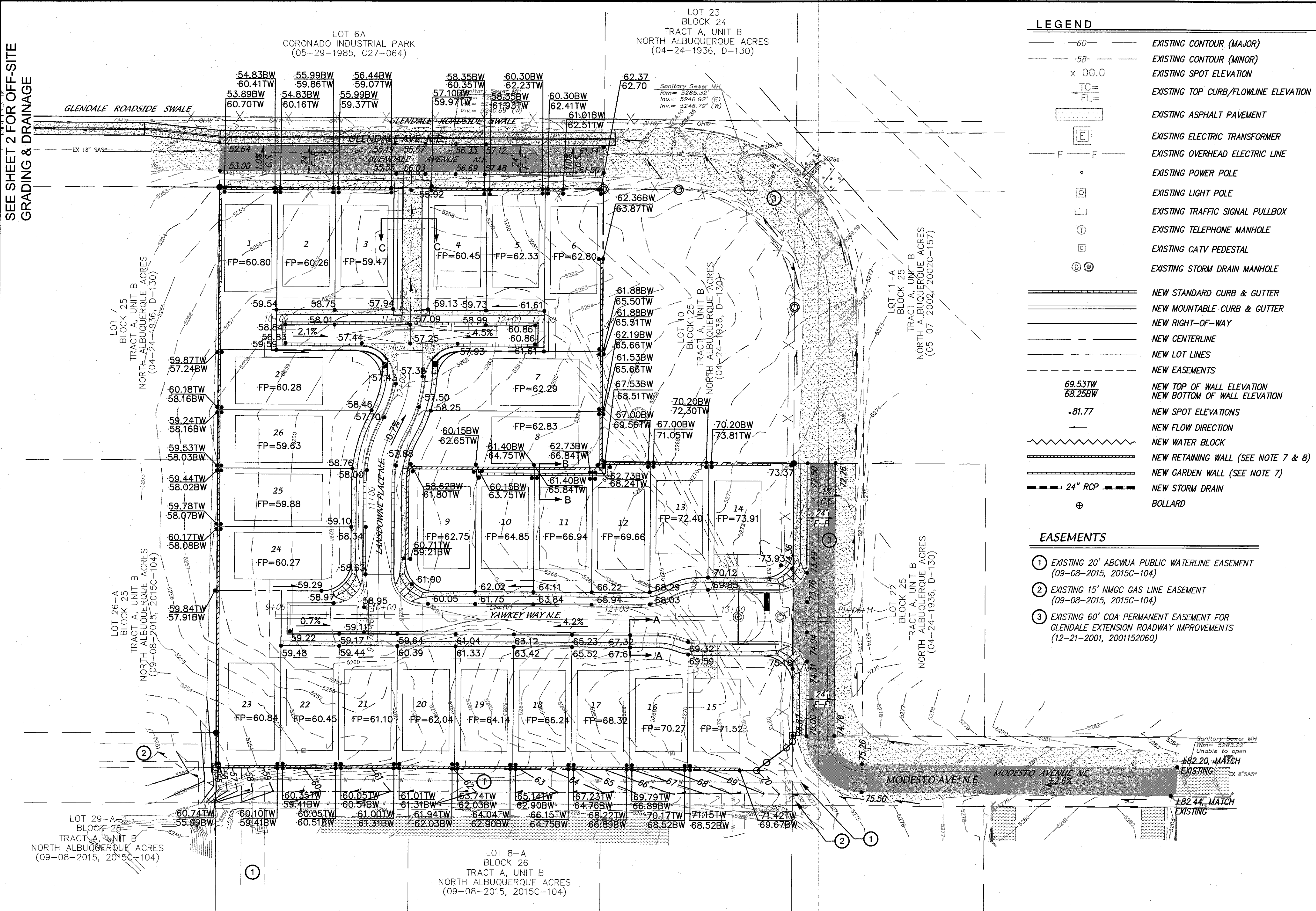
## LA CUEVA ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi <sup>2</sup> )	Land Treatment (%)				TP (hrs)
			A	B	C	D	
113*	Existing	.1136	80	0	15	5	.133
	Future	.1000	0	25	15	60	.133
115*	Existing	.1337	80	0	15	5	.133
	Future	.1202	0	26	12	62	.133
116*	Existing	.1309	80	0	5	15	.133
116.1	Future	.1000	0	25	15	50	.133
116.2	Future	.0719	0	25	15	50	.133
116.21	Future	.0344	0	40	20	40	.133
117.2*	Existing	.1391	73	0	7	20	.22
	Future	.0500	0	34	16	50	.133
117.21*	Existing	.0234	0	34	16	50	.133
117.22*	Future	.0156	0	20	10	70	.133
117.3*	Existing	.0863	65	5	15	15	.133
	Future	.1172	0	34	16	50	.133
117.31*	Existing	.0250	0	34	16	50	.133
117.32*	Existing	.0090	0	34	16	50	.133
117.4*	Existing	.0750	85	0	5	10	.133
	Future	.0512	0	25	15	60	.133
117.5*	Existing	.0550	0	10	20	70	.133
	Future	.0550	0	10	20	70	.133
118	Existing	.0649	0	20	10	70	.133
	Future	.0649	0	20	10	70	.133
118.1	Existing	.0306	75	5	10	10	.133
	Future	.0306	0	20	30	50	.133
119	Existing	.0549	0	20	10	70	.133
	Future	.0549	0	20	10	70	.133
120	Existing	.0268	50	0	0	50	.133
	Future	.0268	0	20	10	70	.133
121	Existing	.0489	80	0	15	5	.133
	Future	.0489	0	20	10	70	.133

\*Modified for COA NAA MDP 9/97



SEE SHEET 2 FOR OFF-SITE  
GRADING & DRAINAGE



## LEGAL DESCRIPTION

A TRACT OF LAND SITUATE WITHIN THE ELENA GALLEGOS GRANT, PROJECTED SECTION 12, TOWNSHIP 11 NORTH, RANGE 3 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, BEING ALL OF LOT 8-A, BLOCK 25, TRACT A, UNIT B, NORTH ALBUQUERQUE ACRES, AS THE SAME IS SHOWN AND DESIGNATED ON SAID PLAT, FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON SEPTEMBER 8, 2015, IN PLAT BOOK 2015C, PAGE 104, AND CONTAINING 4.7676 ACRES MORE OR LESS.

NOTES

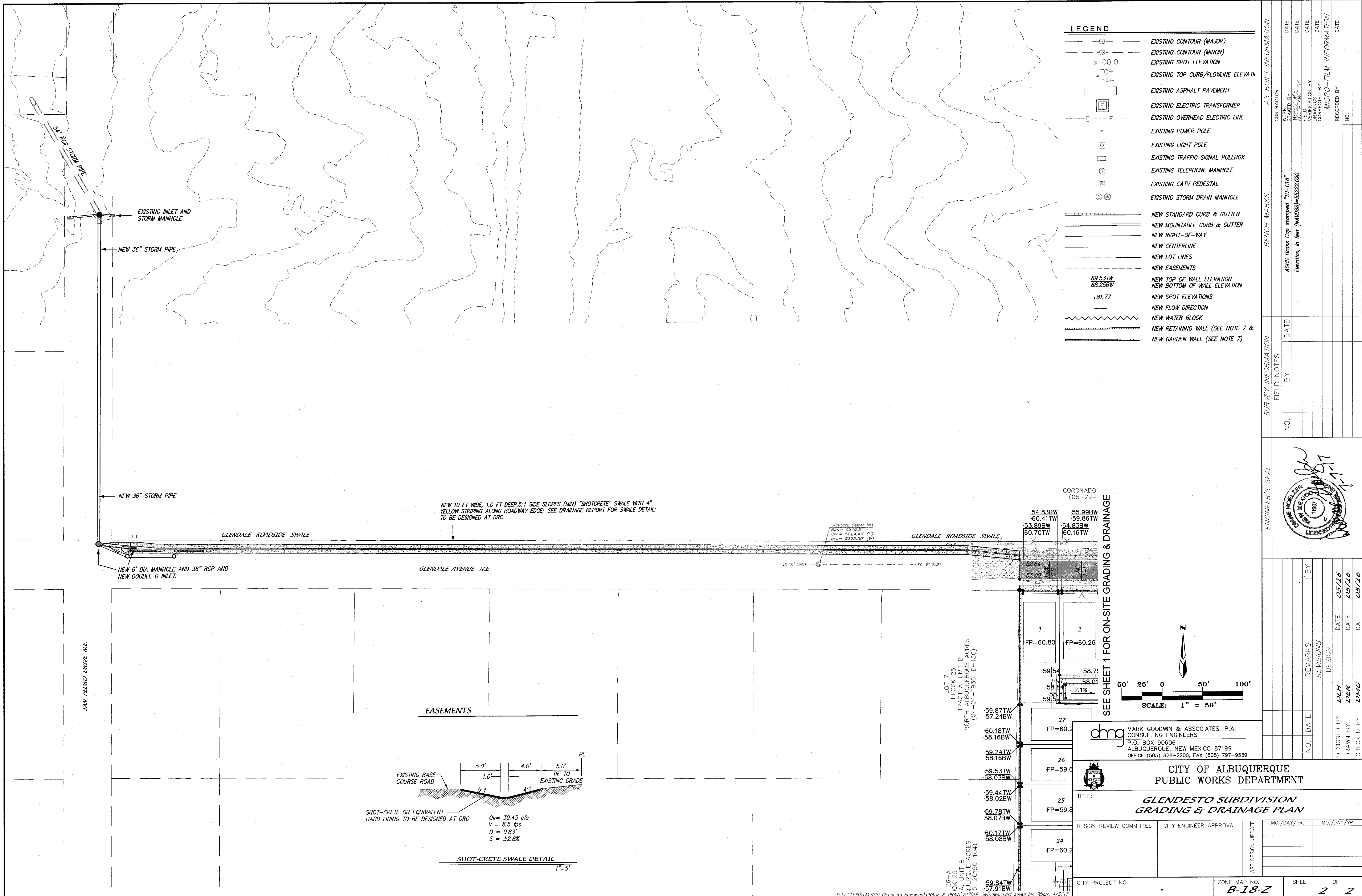
1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.
2. CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION SHALL GOVERN ALL WORK.
3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE AND FEDERAL DUST CONTROL MEASURES AND REQUIREMENTS AND WILL BE RESPONSIBLE FOR PREPARING AND OBTAINING ALL NECESSARY APPLICATIONS AND APPROVALS.
4. THE CONTRACTOR SHALL ENSURE THAT NO SOIL ERODES FROM THE LOTS INTO PUBLIC RIGHT-OF-WAY. THIS CAN BE ACHIEVED BY CONSTRUCTING TEMPORARY BERMS AND WETTING THE SOIL TO KEEP IT FROM BLOWING.
5. THE EARTHWORK CONTRACTOR SHALL STOCKPILE ENOUGH MATERIAL ADJACENT TO RETAINING WALL LOCATIONS TO BE UTILIZED FOR WALL BACKFILL.
6. SITE DOES NOT LIE IN A 100 YEAR FLOOD ZONE.
7. ALL SITE WALLS SHALL CONFORM TO THE GENERAL HEIGHT AND DESIGN REGULATIONS CONTAINED IN SECTION 14-16-3-19 OF THE CITY ZONING CODE.
8. COMBINATION GARDEN WALL/RETAINING WALL CANNOT EXCEED 8 FEET. IF THE RETAINING WALL IS GREATER THAN 4 FEET, THE DEVELOPER CAN ADD 3:1 SLOPES IN BACKYARD OR A SECOND RETAINING WALL OFFSET FROM THE FIRST ONE.

LANDSCAPE BUFFER NOTES:

1. SWALE TO BE 6" DEEP WHEN THE DISTANCE BETWEEN BACK OF CURB AND THE SIDEWALK IS 5 FEET.
2. FINAL GRADE OF DIRT TO BE 1 TO 2 INCHES BELOW TOP OF CURB AND TOP OF SIDEWALK GRADE.
3. SURFACE BETWEEN BACK OF CURB AND SIDEWALK TO BE COVERED WITH GRAVEL MULCH (MINIMUM 3/4"). COBBLES OF RIP-RAP. DO NOT FILL ENTIRE SWALE.
4. LANDSCAPE FABRIC IS RECOMMENDED, BUT NOT REQUIRED, BETWEEN THE DIRT AND THE STONE. IF LANDSCAPE FABRIC IS TO BE USED IT IS TO BE PERMEABLE.

<b>ENGINEER'S SEAL</b>						<b>SURVEY INFORMATION</b>		<b>BENCH MARKS</b>		<b>AS BUILT INFORMATION</b>	
						FIELD NOTES					
						NO.		DATE			
NO.		DATE		REMARKS		BY					
						DESIGN REVISIONS					
						DESIGN					
DESIGNED BY						DLH		DATE		05/16	
DRAWN BY						DER		DATE		05/16	
CHECKED BY						DMG		DATE		05/16	





LEGEND	
---	EXISTING CONTOUR (MAJOR)
---	EXISTING CONTOUR (MINOR)
x 00.0	EXISTING SPOT ELEVATION
→ TC=	EXISTING TOP CURB/FLOWLINE ELEVATION
---	EXISTING ASPHALT PAVEMENT
E	EXISTING ELECTRIC TRANSFORMER
---	EXISTING OVERHEAD ELECTRIC LINE
---	EXISTING POWER POLE
---	EXISTING LIGHT POLE
---	EXISTING TRAFFIC SIGNAL PULLBOX
---	EXISTING TELEPHONE MANHOLE
---	EXISTING CATV PEDESTAL
---	EXISTING STORM DRAIN MANHOLE
---	NEW STANDARD CURB & GUTTER
---	NEW MOUNTABLE CURB & GUTTER
---	NEW RIGHT-OF-WAY
---	NEW CENTERLINE
---	NEW LOT LINES
---	NEW EASEMENTS
---	NEW TOP OF WALL ELEVATION
---	NEW BOTTOM OF WALL ELEVATION
---	NEW SPOT ELEVATIONS
---	NEW FLOW DIRECTION
---	NEW WATER BLOCK
---	NEW RETAINING WALL (SEE NOTE 7 &
---	NEW GARDEN WALL (SEE NOTE 7)

ELEVATIONS	
54.83BW	55.99BW
60.41TW	59.86TW
53.89BW	54.83BW
60.70TW	60.16TW
52.64	53.00
59.54	58.71
58.84	58.01
59.87TW	57.24BW
60.18TW	58.16BW
59.24TW	58.16BW
59.53TW	58.03BW
59.44TW	58.02BW
59.78TW	58.07BW
60.17TW	58.08BW
59.84TW	57.91BW

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CITY OF ALBUQUERQUE  
PUBLIC WORKS DEPARTMENT

TITLE: **GLENDESTO SUBDIVISION  
GRADING & DRAINAGE PLAN**

DESIGN REVIEW COMMITTEE	CITY ENGINEER APPROVAL	LAST DESIGN UPDATE
		MO./DAY/YR.
		MO./DAY/YR.
		MO./DAY/YR.
		MO./DAY/YR.

CITY PROJECT NO.	ZONE MAP NO.	SHEET	OF
	<b>B-18-Z</b>	<b>2</b>	<b>2</b>





