

Oakland Ridge Subdivision
Drainage Management Plan

Prepared by
Mark Goodwin & Associates, P.A.

May 2017





City of Albuquerque

Planning Department
Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 09/2015)

Project Title: Oakland Ridge Subdivision **Building Permit #:** _____ **City Drainage #:** _____
DRB#: 1010793 **EPC#:** _____ **Work Order#:** _____
Legal Description: Lots 15, 16, 17, 18, Block 28, Tract A, Unit B, North Albuquerque Acres
City Address: Oakland Ave and Olivine Ct.

Engineering Firm: Mark Goodwin & Associates, PA **Contact:** Diane Hoelzer, PE
Address: PO BOX 90606, Albuquerque, NM 87199
Phone#: 505-828-2200 **Fax#:** _____ **E-mail:** diane@goodwinengineers.com

Owner: Brian Urlacher, a Single Man **Contact:** Bo Johnson, Bokay Construction
Address: 5160 San Francisco NE, Albuquerque, NM 87109
Phone#: 505-450-4616 **Fax#:** _____ **E-mail:** bo@bokayconst.com

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

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) _____

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

DATE SUBMITTED: May 19, 2017 **By:** Diane Hoelzer, PE

COA STAFF: _____ ELECTRONIC SUBMITTAL RECEIVED: _____

Oakland Ridge Subdivision

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I. PROJECT DESCRIPTION

The proposed Oakland Ridge Subdivision covers an area of approximately 2.83 acres. It is bounded by Oakland Ave. to the north, Louisiana Blvd. to the east, Alameda Blvd. to the south and a new subdivision currently under construction to the west. The subdivision will consist of 23 single family residential homes.

II. DESIGN CRITERIA AND PREVIOUS REPORTS

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 6-hour storm event was analyzed to determine flow to be conveyed within the roadways using $P(1 \text{ hr})=2.10"$, $P(6\text{-hr})=2.50"$. The onsite Land Treatment values were determined based on Table A-5 Percent Treatment D for single family residential. First Flush volumes were calculated using 0.34 inches of precipitation over the new impervious areas (60%), which is the latest "design criteria" used by the City of Albuquerque.

There is an approved North Albuquerque Acres Master Drainage Plan (Dixon, 10-28-98). This project site lies within sub basins 117.2 and 117.3 in the NAA MDP report. Half of our site is allowed free discharge to the north in Oakland Avenue and half as allowable flows south to Alameda Blvd. In the NAA MDP report Land treatment values for future developed conditions were assumed to be Treatment A/B/C/D = 0/34/16/50. The 100 year discharge in this report used Treatment values of 0/20/20/60. A comparison was made between the allowable discharge based on the NAA MDP report and the actual discharge based on treatment values used in this project. The allowable discharge is 11.51 cfs as compared to the actual 12.21 cfs. There is a 0.7 cfs difference between these values, which for the 100 year storm event is considered an insignificant increase.

The project site is in FEMA flood zone X as shown on FIRM Panel 137 of 825, map number 35001C0137H, August 16, 2012 (Figure 3).

III. EXISTING DRAINAGE CONDITIONS

Under existing drainage conditions, onsite runoff is conveyed as overland surface flow in a westerly direction. There is a current development underway that is blocking the natural flow westward. They have constructed temporary ponds on this project site to prevent this site's runoff from flowing onto their property. Since this property is bounded by developed streets with curb and gutter on the other three sides, no offsite runoff enters this site.

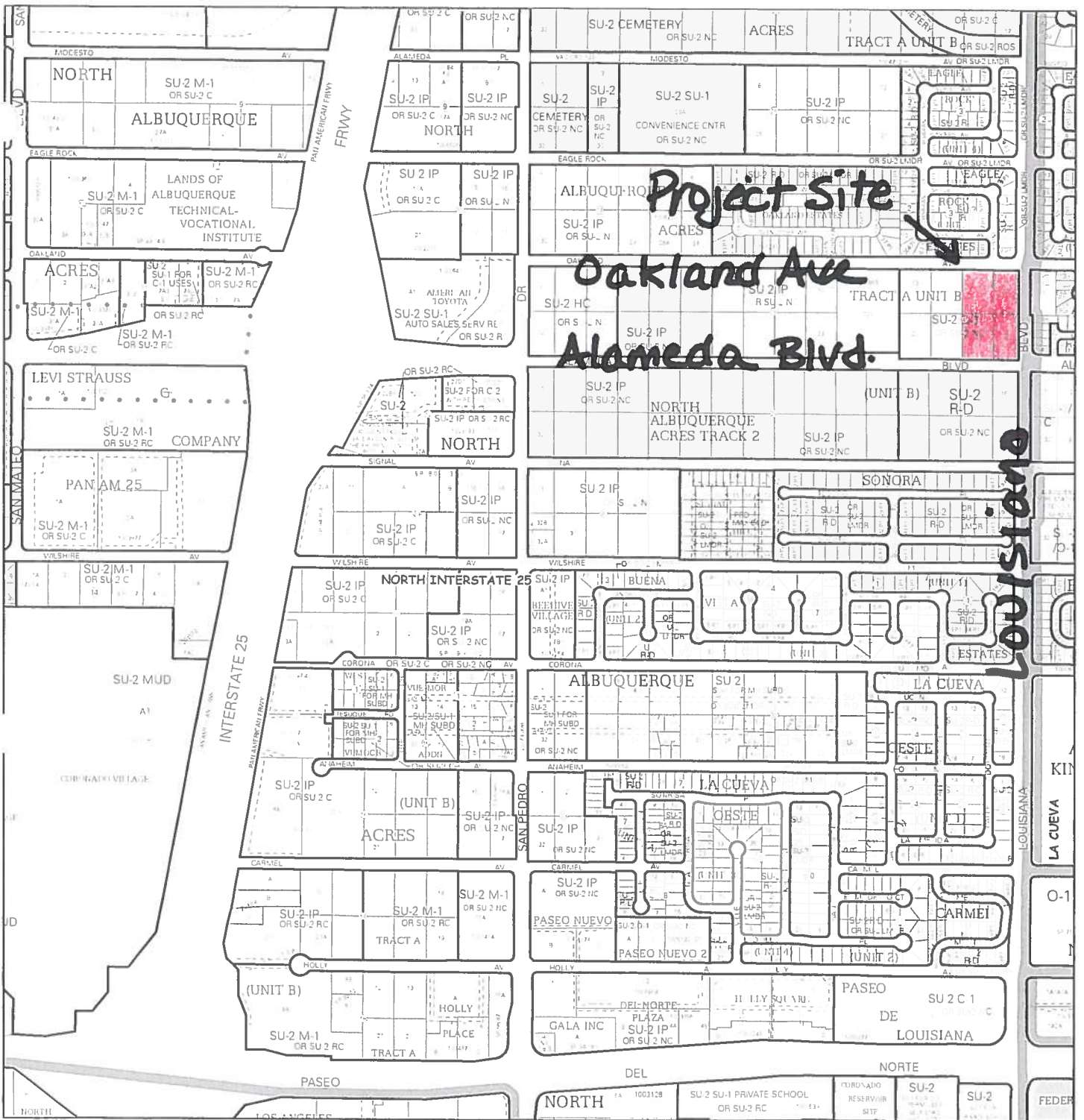
IV. DEVELOPED DRAINAGE CONDITIONS

The total peak 100 year 6 hour discharge under developed conditions from this project site is 12.21 cfs. The North Sub basin will discharge 5.15 cfs into Oakland Avenue. There is an existing storm drain in Oakland Avenue with inlets that would intercept these flows. The South Sub basin will discharge 7.05 cfs into Alameda Avenue. There is an existing storm drain in Alameda with an existing inlet close enough to our project site, that an onsite inlet can connect to the existing inlet in Alameda Blvd. and convey the 7.05 cfs.

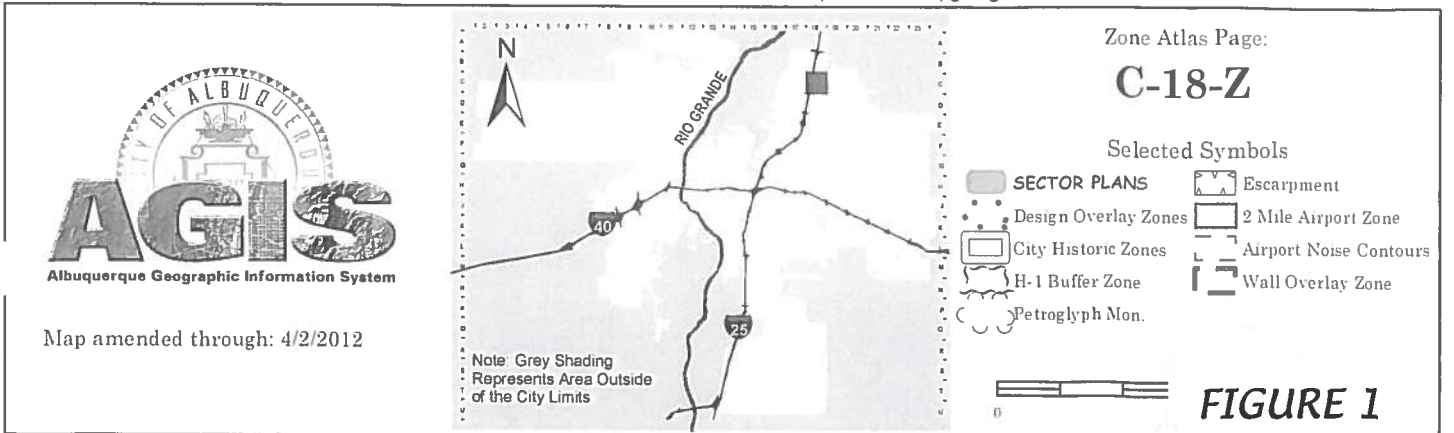
V. FIRST FLUSH PONDS

It is proposed to construct first flush ponds in the front yard areas and along the landscape strip between the curb and sidewalk as illustrated in Figure 4. These ponds should be constructed to be 6" deep (typical) with side slopes no greater than 3:1 (maximum). The grading plan shows the area required for each of the front yard ponds.

A summary of First Flush pond calculations and exhibit can be found in Figure 5 and 4, respectively. Additional first flush volume calculations can be found in Appendix A as well.



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





Project Site

ne St NE

Limestone Ave NE

Oakland Ave NE

Alameda Blvd NE

Alameda Blvd

Louisiana Blvd NE

Glen Mohr Ln NE

© 2016 Google

FIGURE 2

Project Site

1545000 FT

0129

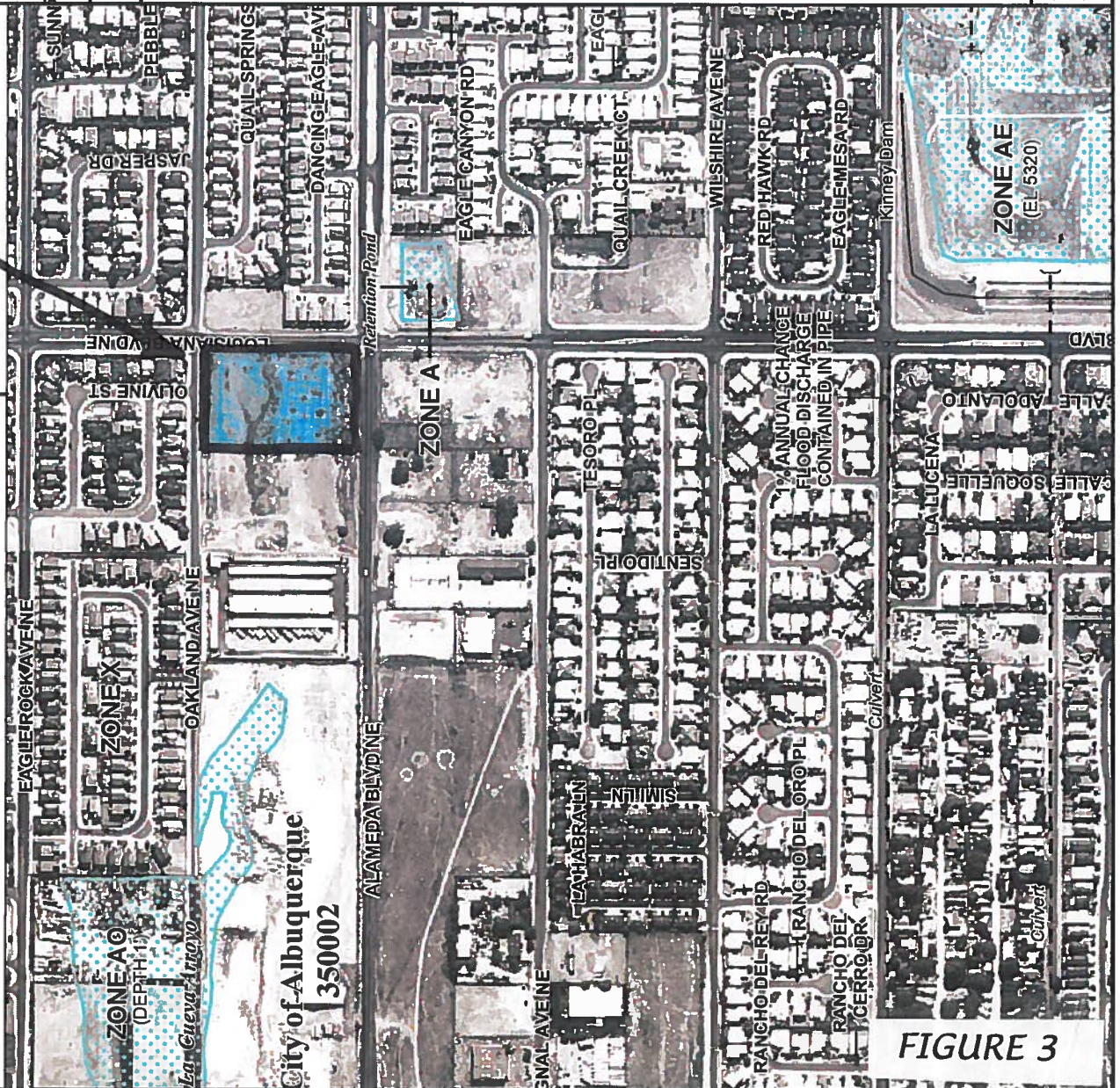


FIGURE 3

MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0137H

FIRM
 FLOOD INSURANCE RATE MAP
 BERNALILLO COUNTY,
 NEW MEXICO
 AND INCORPORATED AREAS

PANEL 137 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ALBUQUERQUE, CITY OF	350002	0137	H
BERNALILLO COUNTY			
UNINCORPORATED AREAS	350001	0137	H

Notice to Users: The Map Number shown below should be used when ordering a map. The Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
35001C0137H

MAP REVISED
AUGUST 16, 2012

Federal Emergency Management Agency

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

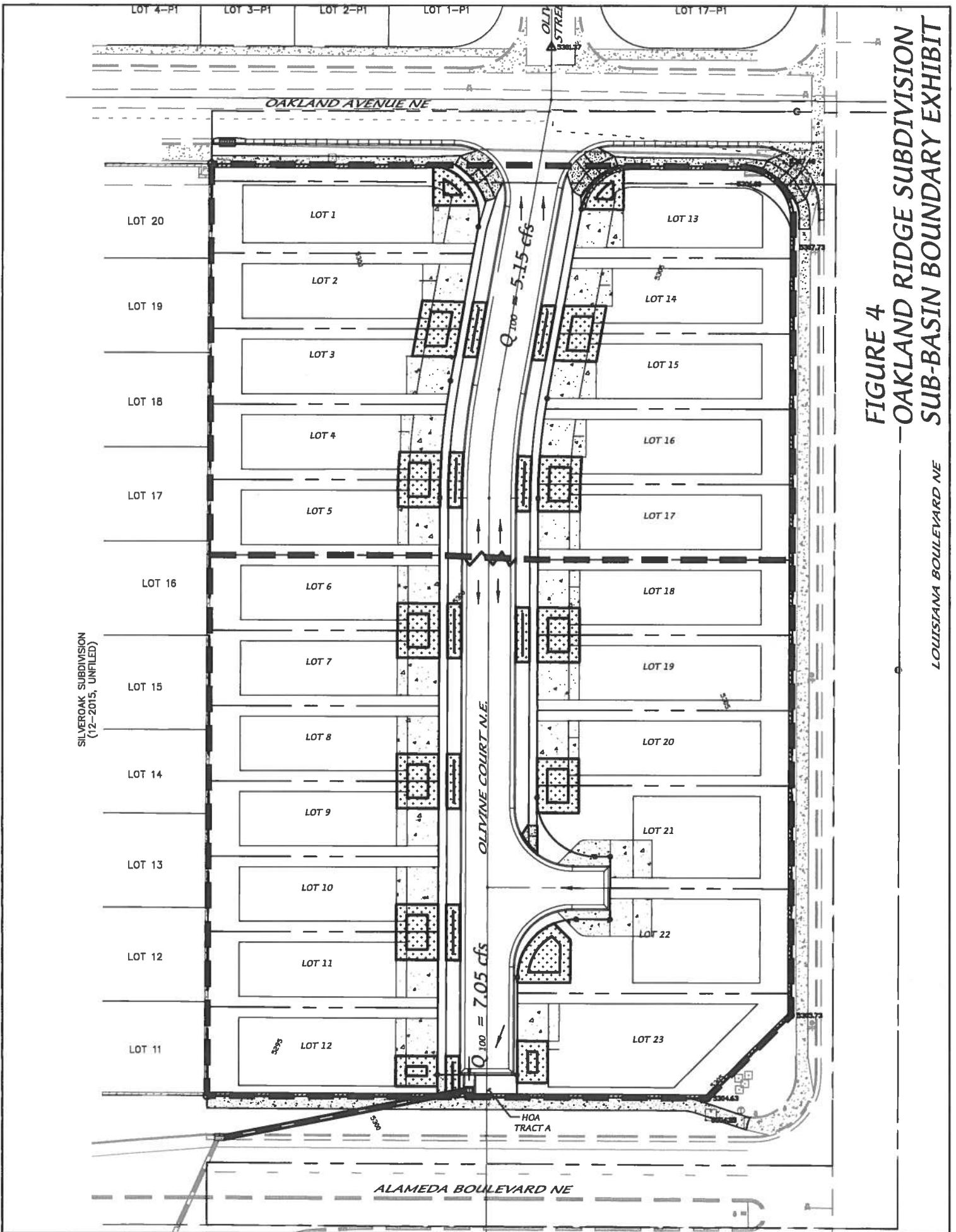


FIGURE 4
OAKLAND RIDGE SUBDIVISION
SUB-BASIN BOUNDARY EXHIBIT

LOUISIANA BOULEVARD NE

SILVEROAK SUBDIVISION
 (12-2015, UNFILED)

OAKLAND RIDGE FIRST FLUSH POND CALCULATIONS					
NORTH BASIN			SOUTH BASIN		
LOCATION	Front Yard	Curbside	LOCATION	Front Yard	Curbside
	cu.ft.	cu.ft.		cu.ft.	cu.ft.
Lot 1	72.2				
Lot 2 & 3	166.0	30.5			
Lot 4 & 5	163.5	30.3			
			Lot 6 & 7	161.4	30.0
			Lot 8 & 9	161.4	30.0
			Lot 10 & 11	165.1	30.8
			Lot 12	74.9	20.1
Lot 13	74.5				
Lot 14 & 15	166.3	30.5			
Lot 16 & 17	162.6	30.3			
			Lot 18 & 19	161.4	30.0
			Lot 20 & 21	161.4	
			Lot 22	180.4	
			Lot 23	74.9	
	805.0	121.5		1140.9	140.9
Total provided		926.5			1281.7
Total required		885			1,211

FIGURE 5

Current DRC Project Number: _____ Date Submitted: 5/19/17
 Date Site Plan Approved: _____
 Date Preliminary Plat Approved: _____
 Date Preliminary Plat Expires: _____
 DRB Project No.: 1010793
 DRB Application No.: _____

FIGURE 12
INFRASTRUCTURE LIST
EXHIBIT "A"
TO SUBDIVISION IMPROVEMENTS AGREEMENT
DEVELOPMENT REVIEW BOARD (D.R.B.) REQUIRED INFRASTRUCTURE LIST
Oakland Ridge Subdivision
PROPOSED NAME OF PLAT AND/OR SITE DEVELOPMENT PLAN
Lots 15,16,17, and 18, Block 28, Tract A, Unit 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
		25' FF	ON-SITE PAVING Res Pvmnt	Olivine Court	Oakland Ave	Lot 12 and 23	/	/	/
		4'	Curb & Gutter	Olivine Court	Oakland Ave	Lot 12	/	/	/
		4'	Sidewalk (west side) (1)	Olivine Court	Oakland Ave	Lot 21	/	/	/
		4'	Sidewalk (east sides) (1)	Olivine Court	Oakland Ave	Lot 21	/	/	/
		20' FF	Res Pvmnt	Olivine Stub	Olivine Court	Lot 21 & 22	/	/	/
		4'	Curb & Gutter	Oakland Ave	West P.L.	Louisiana	/	/	/
		6'	Sidewalk (south side)	Alameda Blvd	West P.L.	Louisiana	/	/	/
		6'	Sidewalk (north side)	Alameda Blvd	West P.L.	Louisiana	/	/	/
		8"	WATER Waterline	Olivine Court	Ex. WL Oakland Ave	Ex. WL Alameda	/	/	/
		8"	SANITARY SEWER SAS	Olivine Court	Ex SAS Oakland Ave	Lot 12/23	/	/	/
		PRO-RATA	\$1,293.30	WATER			/	/	/
		PRO-RATA	\$1,526.85	SANITARY SEWER			/	/	/
		24"	DRAINAGE RCP	Olivine Court	South End of ROW	Ex. Inlet Alameda	/	/	/

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 of

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 approved 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 releas of SIA & Financial Guaranty's. Financial Guaranty's are not required for grading.

AGENT / OWNER

Diane Hoesler, P.E.
 NAME (print)

MARK GOODWIN & ASSOCIATES

Diane Hoesler 5-19-17
 SIGNATURE - date

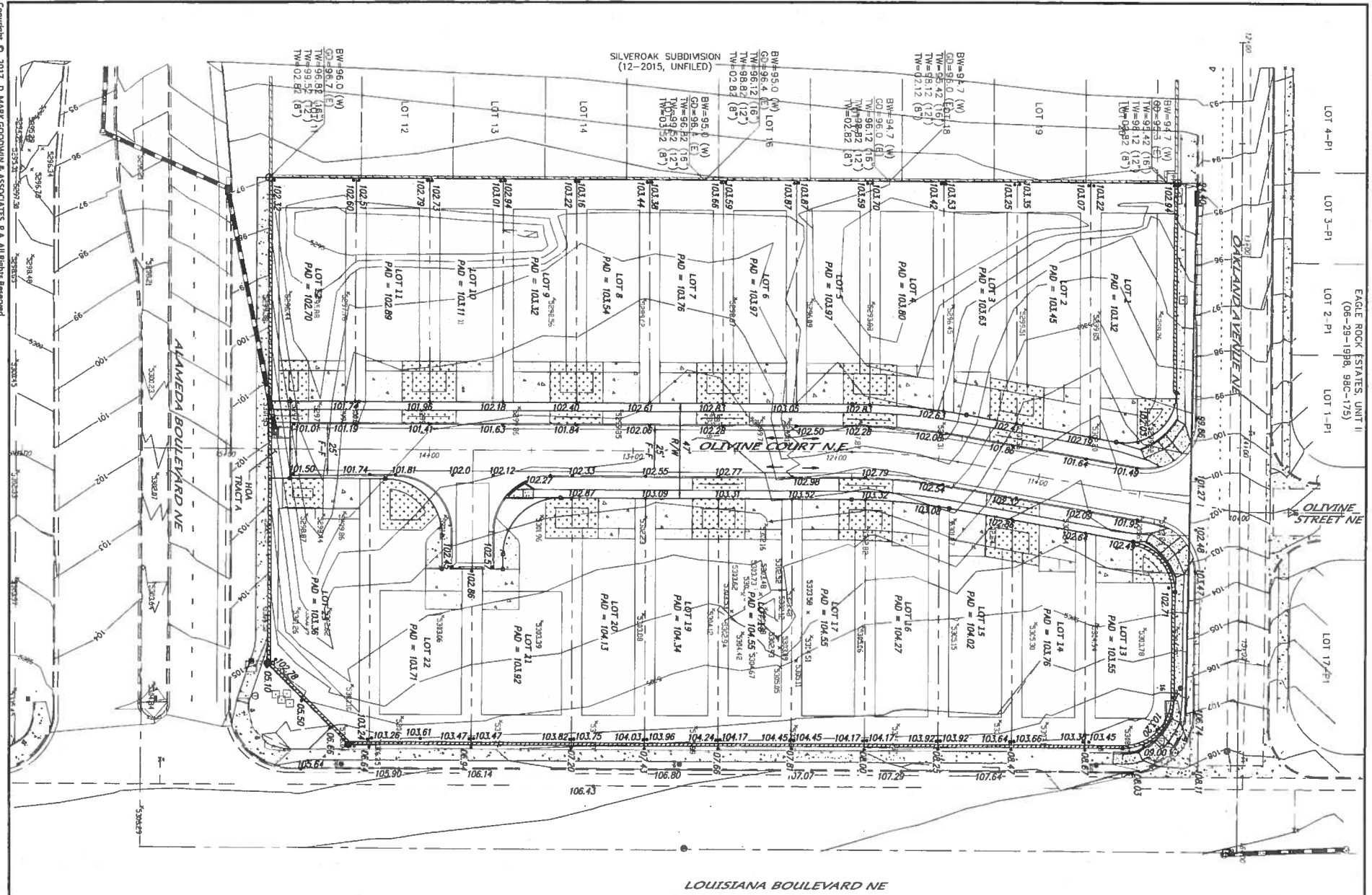
MAXIMUM TIME ALLOWED TO CONSTRUCT THE IMPROVEMENTS WITHOUT A DRB EXTENSION: N/A

DEVELOPMENT REVIEW BOARD MEMBER APPROVALS

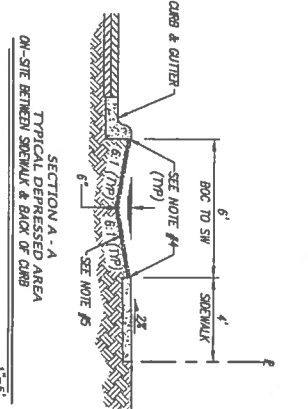
DRB CHAIR - date _____ PARKS & GENERAL SERVICES - date _____
 TRANSPORTATION DEVELOPMENT - date _____ AMAFCA - date _____
 UTILITY DEVELOPMENT - date _____ - date _____
 CITY ENGINEER - date _____ - date _____

DESIGN REVIEW COMMITTEE REVISIONS

REVISION	DATE	DRC CHAIR	USER DEPARTMENT	AGENT / OWNER

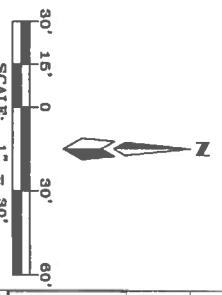
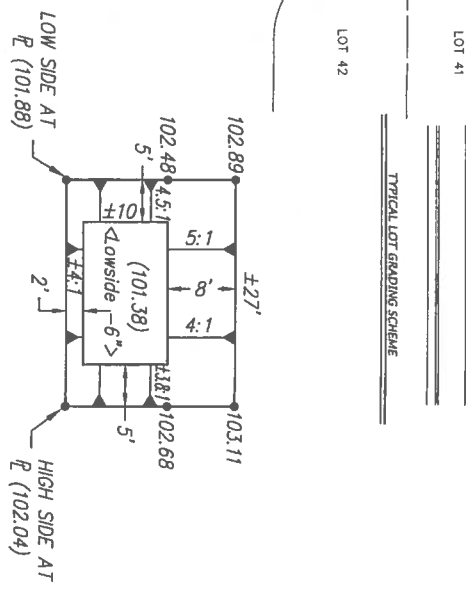
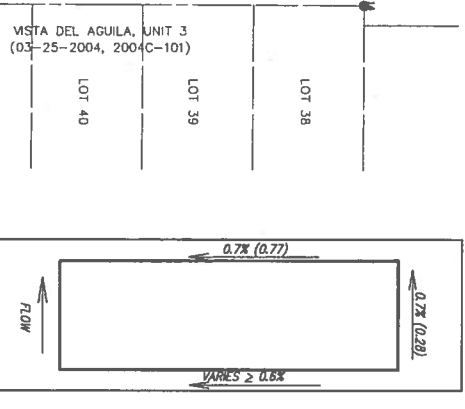


CAUTION:
NOTE THAT ALL EXISTING UTILITIES MAY NOT BE SHOWN. ALL EXISTING SERVICE CONNECTIONS ARE APPROXIMATE. APPROXIMATE LOCATIONS ONLY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT ALL NECESSARY FIELD INVESTIGATIONS PRIOR TO ANY EXCAVATIONS TO DETERMINE THE ACTUAL LOCATION OF UTILITIES AND OTHER IMPROVEMENTS.



LANDSCAPE BUFFER NOTES:
1. Surface between back of curb and sidewalk to be covered with gravel mulch (minimum 3/4"), cobbles or rip-rap. Do not fill entire swale.
2. 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.
3. The 6" depth is measured from top of curb to top of landscape rock material or gravel mulch.

- LEGEND**
- EXISTING CONCRETE
 - EXISTING BLOCK WALL
 - EXISTING METAL FENCE
 - EXISTING METAL FENCING W/BLACK PLASTERS
 - EXISTING WATER VALE
 - EXISTING PRE-HOOKUP
 - EXISTING STORM DRAIN MANHOLE
 - EXISTING STORM DRAIN MANHOLE
 - EXISTING UTILITY FEDESTAL
 - EXISTING UNDERGROUND GAS LINE
 - EXISTING UNDERGROUND SANITARY SINKER
 - EXISTING UNDERGROUND STORM DRAIN LINE
 - EXISTING UNDERGROUND WATER LINE
 - EXISTING SPOT ELEVATION
 - EXISTING BACK OF CURB ELEVATION
 - EXISTING FLOW LINE ELEVATION
 - EXISTING TOP ELEVATION
 - EXISTING TOP OF CONCRETE ELEVATION
 - NEW STANDARD CURB & GUTTER
 - NEW ADJUSTABLE CURB & GUTTER
 - NEW RIGHT-OF-WAY
 - NEW CENTERLINE
 - NEW LOT LINES
 - NEW EXISTENTS
 - NEW TOP OF WALL ELEVATION
 - NEW BOTTOM OF WALL ELEVATION
 - NEW SPOT ELEVATIONS
 - NEW FLOW DIRECTION
 - NEW STORM DRAIN



LEGAL DESCRIPTION
A TRACT OF LAND SITUATE WITHIN THE EAGLE ROCKS SUBDIVISION, PROJECTED SUBDIVISION 11, IN THE COUNTY OF ALBUQUERQUE, NEW MEXICO, BEING LOT 15, 16, 17 & 18, BLOCK 24, TRACT A, UNIT B, NORTH ALBUQUERQUE AVENUE, AS THE SAME IS SHOWN AND DESCRIBED ON SAID PLAN, FILED FOR RECORD IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON APRIL 24, 1936, IN PLAT BOOK D, PAGE 120, AND CONTAINING 4.0465 ACRES MORE OR LESS.

EXCEPTING THEREFROM, AN AREA OF UNDEVELOPED RIGHT-OF-WAY BEING PART OF THE OLD ALBUQUERQUE WATER CONDUIT, AS SHOWN AND DESCRIBED IN THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON OCTOBER 29, 2011, IN DOCUMENT NO. 20110527, AND CONTAINING 0.4453 ACRES MORE OR LESS.

COMPRESSING 2.7777 NET ACRES, MORE OR LESS.

GENERAL 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 COMPLY TO ALL CITY, COUNTY, STATE AND FEDERAL DIST. CONTROL MEASURES AND REQUIREMENTS AND 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 BARRIERS AND SETTING 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.

NO.	DATE	REMARKS	BY
DESIGNED BY	DMG	DATE	01/17
DRAWN BY	DER	DATE	01/17
CHECKED BY	DMG	DATE	01/17

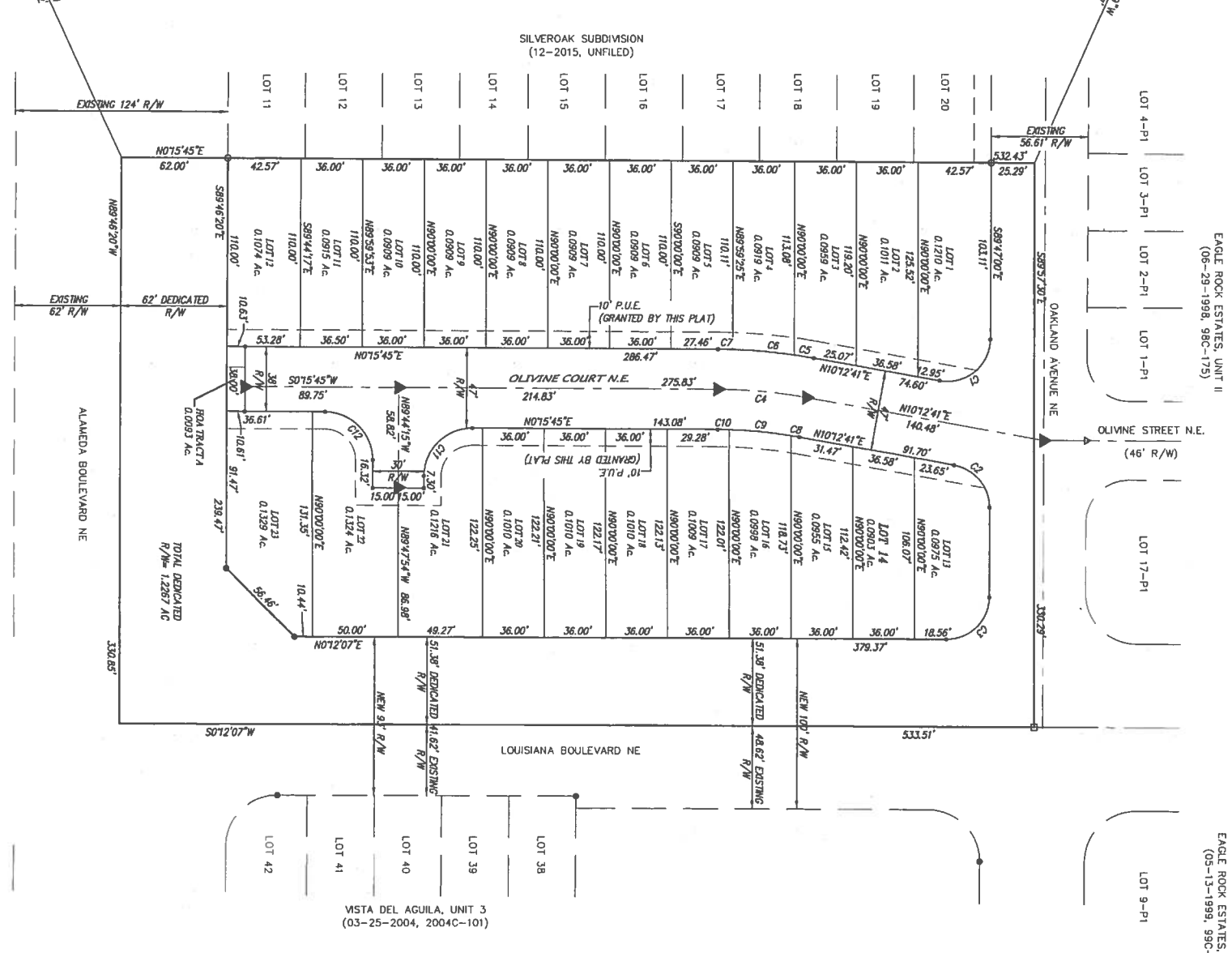
CITY OF ALBUQUERQUE
PLANNING DEPARTMENT
MARK GOODMAN & ASSOCIATES, P.A.
P.O. BOX 30806
ALBUQUERQUE, NEW MEXICO 87199
PHONE (505) 426-2800 FAX (505) 797-9539

CITY PROJECT NO. C-18-Z
SHEET 1 OF 1

ENGINEER'S SEAL
DAME MOELER
NEW MEXICO
1987
5-19-17

AGRS MONUMENT
 10-C18
 N=1524123.885
 E=1542583.283
 O=0313889.942
 Z=0313889.942
 ELEVATION=5222.09
 CENTRAL ZONE
 (NAD83/NAVD83)

AGRS MONUMENT
 9-C18
 N=1521497.624
 E=1542501.428
 O=0313889.942
 Z=0313889.942
 ELEVATION=5232.47
 CENTRAL ZONE
 (NAD83/NAVD83)



EAGLE ROCK ESTATES, UNIT II
 (06-23-1999, 98C-175)

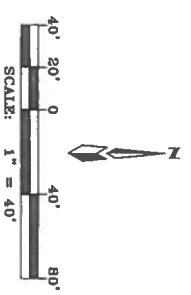
EAGLE ROCK ESTATES, UNIT III
 (05-13-1999, 99C-118)

VISTA DEL AGUILA, UNIT 3
 (03-25-2004, 2004C-101)

PRELIMINARY PLAT
 FOR
OAKLAND RIDGE SUBDIVISION
 WITHIN THE
 ELENA GALLEGOS GRANT
 PROJECTED SECTION 13
 TOWNSHIP 11 NORTH, RANGE 3 EAST, NMPM
 CITY OF ALBUQUERQUE
 BERNALILLO COUNTY, NEW MEXICO
 FEBRUARY, 2017

- PROPERTY CORNERS**
- FOUND 5/8" REBAR WITH ALUMINUM CAP OR PK WITH TAG "LS 11599" (TRP.)
 - FOUND CROSS SCRIBED IN CONCRETE
 - △ FOUND C.O.A. CENTERLINE MONUMENT
 - "LS 7719" (TRP.)
 - SET 1/2" REBAR WITH CAP "LS 7719" (TRP.)

Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	43.31	25.00	89.27	S39° 25' 19"E	38.10
C2	34.90	25.00	80.00	N50° 12' 34"E	32.14
C3	39.26	25.00	89.99	S44° 47' 28"E	35.35
C4	52.09	300.00	9.95	S5° 14' 13"W	52.03
C5	56.17	323.50	9.95	N5° 14' 13"E	56.10
C6	56.17	323.50	9.95	N5° 14' 13"E	56.10
C7	56.17	323.50	9.95	N5° 14' 13"E	56.10
C8	48.01	276.50	9.95	N5° 14' 13"E	47.95
C9	48.01	276.50	9.95	N5° 14' 13"E	47.95
C10	48.01	276.50	9.95	N5° 14' 13"E	47.95
C11	43.98	28.00	90.00	S44° 44' 15"E	39.80
C12	43.98	28.00	90.00	S45° 15' 45"W	39.60



APPENDIX A

*First Flush Calculations
AHYMO printouts
Excerpts from N.A.A. Master Drainage Plan*

OAKLAND RIDGE SUBDIVISION

First Flush Calculations:

Project Site Area = 123,350 SF

Impervious Area:

NUMBER OF LOTS = 23

N value = $23/2.83 = 8.12$

Therefore Treatment D = 60 %

$((123,350 \text{ SF}) \times (0.6)) (0.34")/(12) = \underline{2,097 \text{ cu.ft.}}$

Total required treatment volume = 2,097 cubic feet

North Sub basin area = 42.22% x 2097 cu.ft. = 885 cu.ft.

South Sub basin area = 57.78% x 2097 cu.ft. = 1212 cu.ft.

FIRST FLUSH TREATMENT PONDS DESIGN DIMENSIONS

Front Yards: Dimensions as shown on the plan,

6" maximum depth with varying side slopes, with a 3:1 maximum on any one side

Curbside: Six feet wide, 6" maximum depth, with 6:1 side slopes (typical).

AHYMO PROGRAM (AHYMO-S4) - Version: S4.01a - Rel: 01a
 RUN DATE (MON/DAY/YR) = 05/17/2017 USER NO.= M-GoodwinMMSiteA90075759
 START TIME (HR:MIN:SEC) = 09:30:51
 INPUT FILE = C:\Program Files (x86)\AHYMO-S4\oakland.dat

TIME=0.0 HR PUNCH CODE=0 PRINT LINES=-6
 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

*North Basin (42.22%)
 Q = 5.16cfs
 South Basin (57.78%)
 Q = 7.05cfs*

*S***** FILE: OAKLAND.DAT REV: 5-16-17 DLH
 *S***** ZONE ATLAS
 *S*****
 *S*****
 *S***** 100 YEAR 6 HOUR STORM EVENT
 *S*****
 *S*****
 RAINFALL TYPE=1 RAIN QUARTER=0.0
 RAIN ONE=2.1 IN RAIN SIX=2.50 IN
 RAIN DAY=2.85 IN DT=0.05 HRS

6-HOUR RAINFALL DIST. - BASED ON NOAA ATLAS 14 FOR CONVECTIVE AREAS (NM & AZ) - D1
 DT = 0.050000 HOURS END TIME = 6.000000 HOURS

*S*****
 *S DEVELOPED CONDITIONS
 *S SUB BASIN 100
 *S AREA= 2.8317 ACRES
 *S*****
 COMPUTE NM HYD ID=1 HYD NO=100. AREA= 0.004425 SQ MI
 PER A=0 PER B=20 PER C=20 PER 60
 TP=-.1333 HR MASS RAIN=-1

K = 0.072649HR TP = 0.133300HR K/TP RATIO = 0.545000 SHAPE CONSTANT, N = 7.106428
 UNIT PEAK = 10.482 CFS UNIT VOLUME = 0.9981 B = 526.28 P60 = 2.1000
 AREA = 0.002655 SQ MI IA = 0.10000 INCHES INF = 0.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

K = 0.120817HR TP = 0.133300HR K/TP RATIO = 0.906356 SHAPE CONSTANT, N = 3.908407
 UNIT PEAK = 4.6344 CFS UNIT VOLUME = 0.9984 B = 349.02 P60 = 2.1000
 AREA = 0.001770 SQ MI IA = 0.42500 INCHES INF = 1.04000 INCHES PER HOUR
 RUNOFF COMPUTED BY INITIAL ABSTRACTION/INFILTRATION NUMBER METHOD - DT = 0.050000

PRINT HYD ID=1 CODE=1

PARTIAL HYDROGRAPH 100.00

RUNOFF VOLUME = 1.81394 INCHES = 0.4281 ACRE-FEET
 PEAK DISCHARGE RATE = 12.21 CFS AT 1.500 HOURS BASIN AREA = 0.0044 SQ. MI.
 *S*****
 FINISH END TIME (HR:MIN:SEC) = 09:30:51

**FINAL
NORTH ALBUQUERQUE ACRES
MASTER DRAINAGE PLAN**

Prepared For:



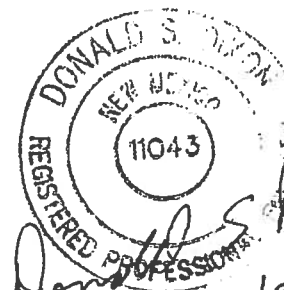
City of Albuquerque

Prepared By:

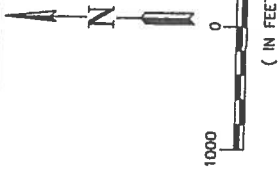


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October 1998



Donald S. Dixon
10/28/98



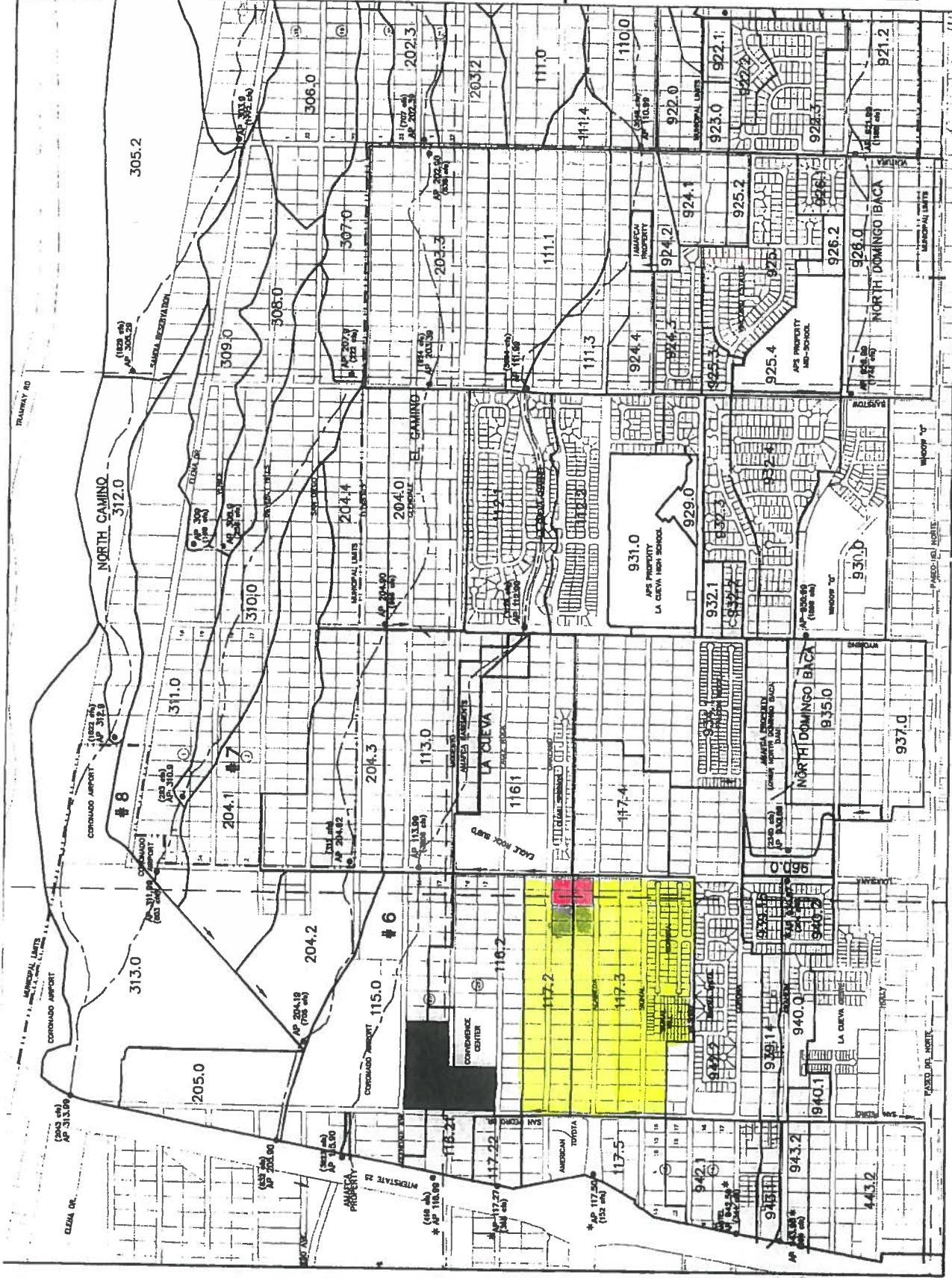
LEGEND

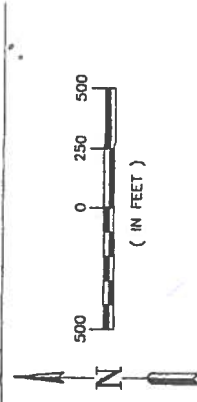
- 107.1 SUBBASIN DESIGNATION
- SUBBASIN BOUNDARY
- EXISTING PLATTING
- EXISTING ARROYO FLOW PATH
- ANALYSIS POINT AND FUTURE CONDITION FLOW RATE
- * FLOW RATE NOT BULKED FOR SEDIMEN
- # 2 POTENTIAL AVULSION LOCATION
- MUNICIPAL LIMITS

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



Resource Technology, Inc.
 10000 North Central Expressway, Suite 100
 Albuquerque, New Mexico 87113
 Phone: (505) 263-1111
 Fax: (505) 263-1112
 E-mail: info@rti.com





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.

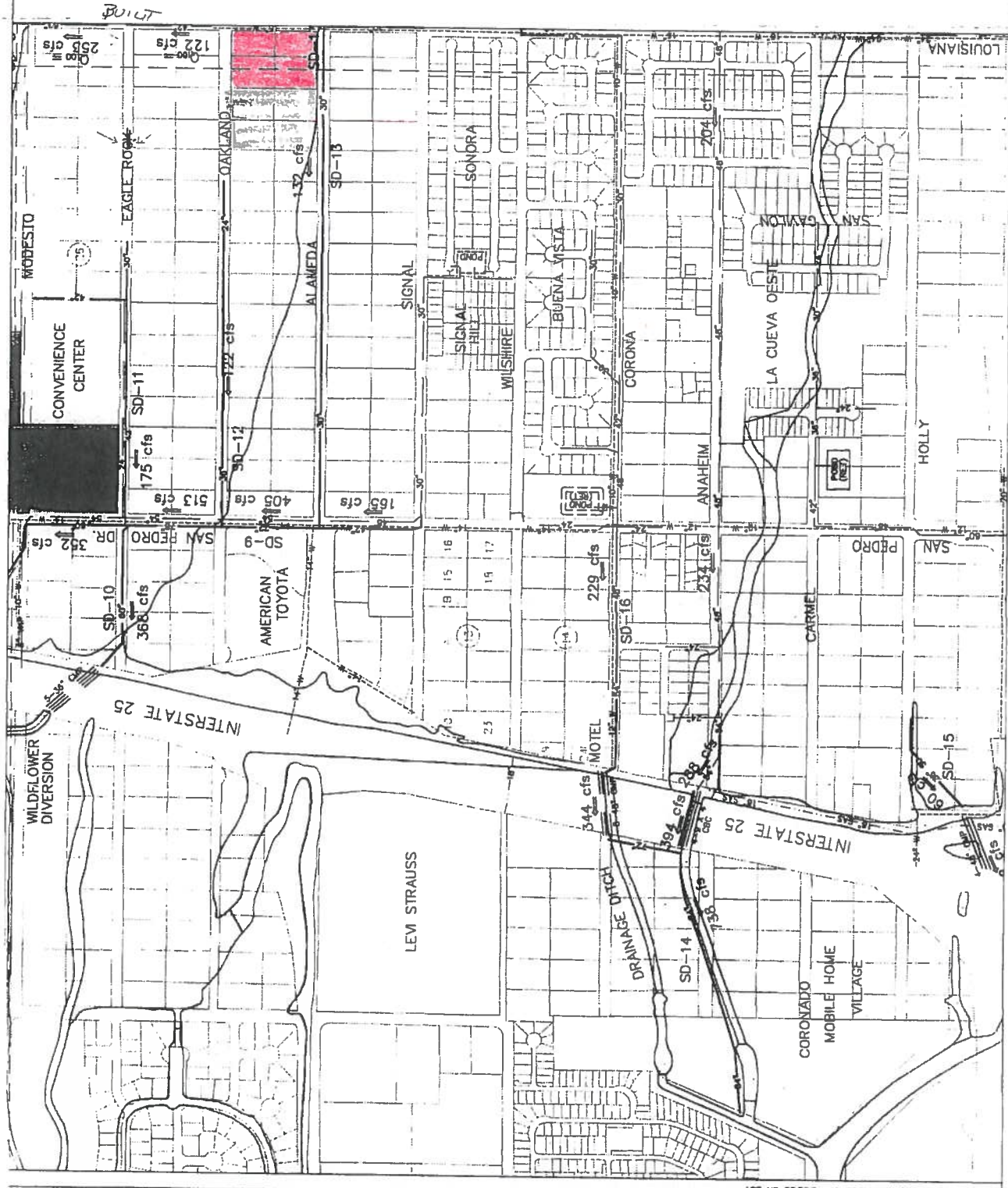
NORTH ALBUQUERQUE ACRES MASTER DRAINAGE PLAN
STORM DRAIN FACILITIES C-18

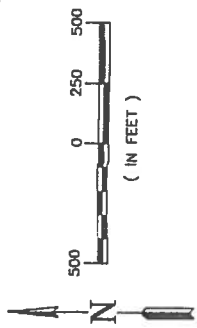
FIGURE 5D

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT



Resource Technology, Inc.
 Civil Engineering 1720 - B Randolph Road SE
 Albuquerque, New Mexico 87106
 Environmental Science
 Water Resources
 Landscape Architecture Telephone: (505) 243-7200
 Fax: (505) 243-7100





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 C-19

FIGURE 5E

CITY OF ALBUQUERQUE PUBLIC WORKS DEPARTMENT



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 7700 - B Road NE
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 Telephone: (505) 253-7000
 Facsimile: (505) 253-7490

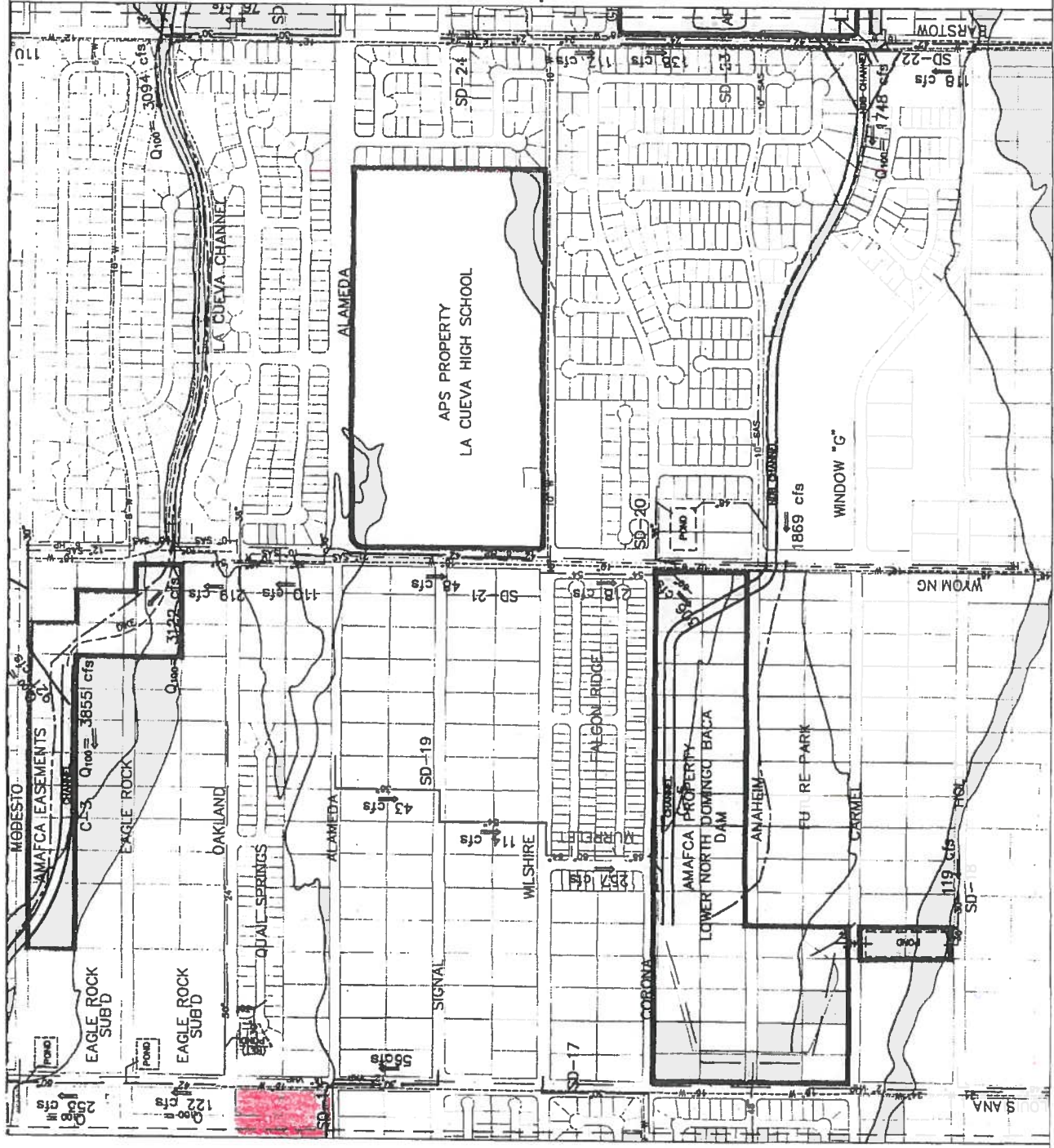


TABLE A-2 (cont.)

LA CUEVA ARROYO SUB-BASIN CHARACTERISTICS

Basin ID	Hydrologic Condition	Basin Area (mi ²)	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	60 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