CITY OF ALBUQUERQUE

PLANNING DEPARTMENT – Development Review Services

Richard J. Berry, Mayor

June 17, 2014

Scott J. Steffen, PE
BOHANNAN-HUSTON, INC.
7500 Jefferson Street NE Courtyard I
Albuquerque, NM 87109

RE: **Valle Vista at the Trails**
Drainage Report for Valle Vista at the Trails Subdivision
Engineer's Stamp Date 6-12-2014 (File: C09D009)

Dear Mr. Steffen:

Based upon the information provided in your submittal received 6-13-14, the above referenced plan is approved for Preliminary Plat and Grading Permit.

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

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

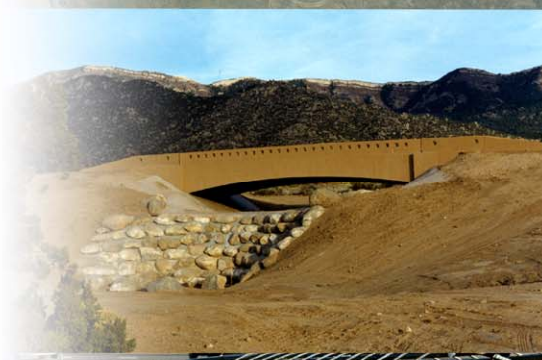
Sincerely,

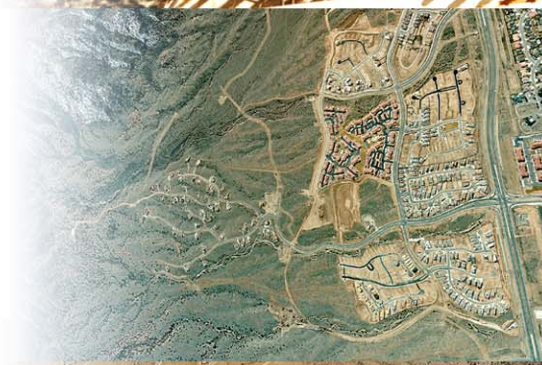
Rita Harmon, P.E.
Senior Engineer, Planning Dept.
Development Review Services

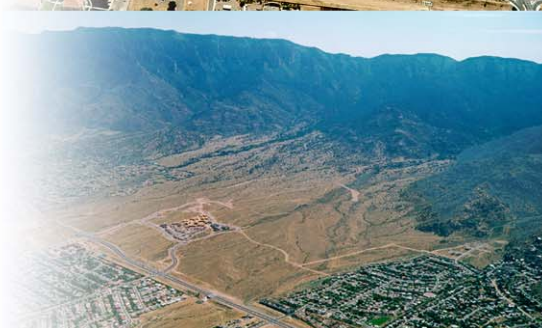
Orig: Drainage file
c.pdf: via Email: Recipient, Tim Sims, Monica Ortiz

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

DRAINAGE REPORT
FOR
VALLE VISTA
AT
THE TRAILS SUBDIVISION





JUNE 2014

Prepared for:

Woodmont Paseo, LLC

6300 Riverside Plaza Lane, Suite 160

Albuquerque, NM 87120

Bohannan Huston

Engineering

Spatial Data

Advanced Technologies

DRAINAGE REPORT
FOR
VALLE VISTA AT THE TRAILS
SUBDIVISION

JUNE 12, 2014

Prepared for:

WOODMONT PASEO, LLC

6300 RIVERSIDE PLAZA LANE, SUITE 160

ALBUQUERQUE, NM 87120

Prepared by:

BOHANNAN HUSTON, INC.

COURTYARD I

7500 JEFFERSON STREET NE

ALBUQUERQUE, NM 87109

Prepared By:

Scott J. Steffen, P.E. 6/12/14
Project Engineer Date

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APPENDICES

EXHIBITS

I. PURPOSE

This report establishes a drainage management plan for Valle Vista at the Trails Subdivision. The proposed development consists of 51 single family detached residential lots on approximately 11 acres. This project is located within the Volcano Trails Sector Plan area, in northwest Albuquerque, east of Rainbow Blvd and south of Woodmont Avenue. Valle Vista was originally developed to be an 18 lot subdivision and is currently graded as such with street improvements constructed, which is discussed in greater detail below. Valle Vista is in the Trails Units 1-3 Drainage Master Plan (DMP) area and discharges developed flows to an existing storm drain system that is in the Valle Vista Subdivision. The Trails drainage outfall is to the Boca Negra Dam through a storm drain in Universe Boulevard. Discharge to the Boca Negra Dam is limited by the Trails Universe storm drain capacity. Flows in excess of the storm drain capacity surge to detention ponds east of Universe Boulevard. This report is submitted in support of grading approval and preliminary plat approval by the DRB.

II. CONCEPTS AND METHODOLOGIES

Drainage conditions were analyzed utilizing the 100-year, 24-hour storm event (P_{60}=1.84 in, P_{360}=2.20 in, P_{1440}=2.66 in), in accordance with the City of Albuquerque DPM. The use of the 24-hour storm event is consistent with the Trails Units 1-3 DMP. The Arid-lands Hydrologic Model (AHYMO) was utilized to determine peak flow rates for design of the storm drainage improvements within the project. The results are included in **Appendix A**. Street capacity and storm drain inlet calculations supporting this study are located in **Appendix B**.

The following document was referenced in the preparation of this report:

- *Amendment to the Drainage Master Plan for the Trails Units 1, 2, and 3*, prepared by Thompson Engineering Consultants, dated April 2014.

This amendment to the Drainage Management Plan (DMP) for the Trails “is to update the land use of the undeveloped parcels to match the density identified in the recently approved Volcano Trails Sector Development Plan (VTSDP) and to update the Developed Conditions Drainage Master Plan to adhere to the peak flow discharge from the previously approved Trails DMP”. This DMP allows a discharge of 37.78 cfs from Valle Vista.

- *Drainage Report for Tract 11 of the Trail Unit II (Valle Vista at the Trails Unit II)*, prepared by Wilson and Company, dated December 2005.

This report provided the drainage analysis of the previous layout for Valle Vista which was originally 18 lots. Existing infrastructure that was design and constructed from this report will be utilized with this revised layout. This Drainage report allows a discharge of 33.32 cfs from Valle Vista.

III. SITE LOCATION AND CHARACTERISTICS

The land comprising Valle Vista was graded several years ago and the roadway improvements associated with the previous design have been constructed. The site generally slopes from west to east. It is bounded by Woodmont Avenue to the north, Rainbow Avenue to the east and undeveloped property to the west and Tierra Antiqua Elementary School to the south. Access to Valle Vista will be from Woodmont Avenue. Runoff generated by the project site in its present state drains towards existing drop inlets located in the existing roadway.

IV. DEVELOPED HYDRAULIC AND HYDROLOGIC CONDITIONS

Valle Vista is a proposed single-family residential development with 51 lots on 11 acres and will be subdivided into 3 units. Unit 1 consists of 9 lots, Unit 2 consists of 19 lots and Unit 3 consists of 23 lots. Proposed street and lot configurations are shown on the *Preliminary Plats*, **Exhibit 1.** Valle Vista is encompassed by Tract 11 at the Trails Unit 3A and labeled as Basin H1 with a Q=37.78 cfs in the DMP. The DMP allows for full discharge of developed flows from Valle Vista to enter the existing storm drain system that is in the Valle Vista Subdivision.

The percent impervious land treatment for the proposed conditions is determined from Table A-5 of the DPM, Section 22.2. The percent impervious land treatment value used in the Trails DMP AHYMO analysis assumed an impervious land treatment value of 68%. The Valle Vista percent impervious land treatment calculated in this report had a cumulative impervious land treatment value of 47%.

A. OFFSITE FLOWS

No offsite surface flows reach Valle Vista. Woodmont Avenue is an existing street north of Valle Vista. There is a water block in Valle Prado Lane just south of Woodmont Avenue that prevents flows from Woodmont Avenue from entering the site. Flows in

Woodmont Avenue correspond to Basin E6 of the DMP and are accounted for in the Valle Prado Units 1 and 2 Drainage Report. Tracts 6 and 9 of the Trails Unit 3A are north of Woodmont Avenue. Flows from Tracts 6 and 9 correspond to Basins E3 and E5 of the DMP and are accounted for in the Valle Prado Units 1 and 2 Drainage Report. No flows reach the site from the east or south as Valle Vista is higher in elevation than Rainbow Boulevard to the east and Tierra Antigua Elementary School to the south. There is an existing temporary detention pond on Tract 8 at the Trails Unit 3A to the west of Valle Vista that intercepts undeveloped flows from the west. The pond drains through an existing standpipe into a 24-inch storm drain pipe that is routed through Valle Vista, connecting to the existing 54-inch storm drain in Woodmont Avenue. No flow from Valle Vista is added to this 24-inch storm drain. This storm drain is designed to carry 31.3 cfs per the DMP when Tracts 7 and 8 at the Trails Unit 3A are developed.

B. ONSITE FLOWS

Developed flows from Valle Vista will be directed to the existing storm drain network in the Valle Vista Subdivision. There are no storm drain improvements required for Valle Vista Unit 1. Runoff from Unit 1 is conveyed in Valle Prado Lane to an existing Type 'A' single grate storm drain inlet at an intermediate low point in Valle Prado Lane near the location of proposed Inlet #1. A Type 'A' Double Grate, Double Wing inlet (Inlet #1) will be located at the low point in Valle Huerto Lane and is required for the development of Units 2 and 3. The existing inlet will be converted to a Type D inlet or replaced with a manhole. Flows from Basin 1 (15.1 cfs) and Basin 2 (8.2 cfs) are captured by Inlet #1. There is an emergency spill way present (Tract C) for Inlet #1, therefore the inlet has not been sized to capture two times the 100-year storm event. A 15% clogging factor analysis has been completed for Inlet #1 and is shown in **Appendix B**.

Basin 3 drains to an existing Type 'A' Single Grate sump inlet in the terminal cul-de-sac of the Valle Vista Subdivision. The cul-de-sac will be relocated further east with the Unit 3 development. Two (2) –Type 'A' Single Grate inlets (Inlets #2 and 3), will be located at a new low point in Valle Jardin Lane and are required for development of Valle Vista Unit 3. Flow from Basin 3 (8.9 cfs) is captured by Inlets #2 and #3. Inlets #2 and 3 are in a sump condition and there is no emergency spill way present, therefore the inlets have been sized to capture two times the 100-year storm event as shown in **Appendix B**. The total runoff from Valle Vista is Q=32.2 cfs, which is less that the runoff of Q=37.78 cfs calculated in the DMP.

Please see **Exhibit 2** – Fully Developed Basin Map for basin locations and **Exhibit 3** – Grading Plan for existing storm drain and inlet locations.

C. FIRST FLUSH REQUIREMENTS

Valle Vista Units 1 through 3 are required to meet the first flush requirements of the new City Drainage Ordinance. However, due to the fact that Valle Vista is a previously developed residential subdivision with a storm drain system and roadways in place, and that Pond H downstream of Valle Vista was designed and constructed as a surge pond, it is not reasonable for Valle Vista to hold back the first flush as required by the Drainage Ordinance. Therefore the first flush requirement for Valle Vista will be waived. The Valle Vista first flush requirement will be transferred to the Valle Prado Units 1 and 2 developments north of Woodmont Avenue, which are not required to meet first flush requirements. The Valle Prado Units 1 and 2 developed area is approximately 14.2 acres. The Valle Vista developed area is approximately 11.0 acres. Holding the first flush from all of Valle Prado Units 1 and 2 will result in a greater first flush volume being held than if Valle Vista was able to hold its first flush volume. The Valle Prado first flush will be held in Pond E.

D. OFFSITE STORM DRAIN IMPROVEMENTS

Flows from the Valle Vista storm drain system join flows from Rainbow Boulevard (DMP Basin H2) storm drain system and pass through a storm drain under the Trails Pond H. The Amended Trails Units 1-3 DMP, April 2014, requires modification to the Pond H inlet and outlet structures to meet the revised inflow and outflow flow rates. The Pond H modifications will be constructed as part of the Valle Vista Unit 2 development to include the following:

- Provide outlet control (orifice) to limit the pond bypass flow plus routed discharge through the pond to a maximum of 26.8 cfs, when the pond water surface is at the 100-year pond volume elevation.
- Provide outlet bypass capacity around the orifice at the maximum pond water surface elevation to accommodate the 26.8 cfs if the orifice gets clogged.
- Provide pond inflow capacity to match the DMP inflow (bypass plus surge) of 111 cfs.

V. CONCLUSION

This report provides a detailed study of the developed runoff and street capacities for the proposed Valle Vista at the Trails Subdivision. Included is the preliminary plat, basin

map, grading plan, and all necessary hydrologic and hydraulic analyses. The proposed drainage plan for Valle Vista can be safely conveyed by the existing and proposed improvements in this drainage plan. This drainage plan maintains the overall drainage pattern of the area, is consistent with the Trails Units 1-3 DMP and allows for the safe management of storm runoff in the fully developed condition as well as interim conditions.

APPENDICES

APPENDIX A: DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

APPENDIX B: STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

APPENDIX A

DEVELOPED CONDITIONS AHYMO SUMMARY, OUTPUT, AND INPUT FILES

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*s                    ***********************
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*S
*S
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*S COMPUTE BASIN 3 ****************************************************
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FINISH
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A-1

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*S
*S
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A-2

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*S
*  CREATED JUNE 11, 2014
*
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     The following default values were used.
     Land Treatment     Initial Abstr.(in)    Unif. Infilt.(in/hour)
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          B             0.50                  1.25
          C             0.35                  0.83
          D             0.10                  0.04

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**************************************************
*
**************************************************
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                             RAIN DAY=2.66 IN  DT=0.10 HRS


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                 2.6308  2.6327  2.6346  2.6364  2.6383  2.6401  2.6419
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                 2.6564  2.6582  2.6600

*S
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*s                    **********************
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*S
*S
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A-3

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*


FINISH

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A-4

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*  CREATED JUNE 11, 2014
*
*
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**************************************************
LOCATION   NM
*
**************************************************
*
**************************************************
*100 YEAR - 24 HOUR
RAINFALL              TYPE=2  RAIN QUARTER=0
                RAIN ONE=1.84 IN  RAIN SIX=2.20 IN
                RAIN DAY=2.66 IN  DT=0.10 HRS

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*S                    **********************
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*s                    **********************
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*S
*S
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FINISH
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A-5

APPENDIX B

STREET HYDRAULICS AND STORM DRAIN INLET ANALYSIS

MANNING'S N = 0.017 SLOPE = 0.029

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.5	4.0	10.5	0.1	7.0	37.5	0.0
2.0	7.9	0.3	5.0	23.5	0.4	8.0	39.1	0.3
3.0	9.5	0.0	6.0	36.5	0.1	9.0	47.0	0.5

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.050	0.050	0.032	0.040	1.280	1.268	1.263	0.075
0.100	0.100	0.126	0.254	2.559	2.013	2.526	0.163
0.150	0.150	0.301	0.647	5.529	2.150	5.482	0.222
0.200	0.200	0.713	1.716	11.034	2.408	10.976	0.290
0.250	0.250	1.399	4.032	16.539	2.883	16.470	0.379
0.300	0.300	2.360	7.959	22.044	3.373	21.964	0.477
0.350	0.350	3.613	13.387	29.315	3.705	29.228	0.564
0.400	0.400	5.317	21.354	38.236	4.016	38.146	0.651
0.450	0.450	7.347	33.770	43.156	4.596	43.065	0.779

VALLE CANTERO

JUST WEST OF VALLE HUERTO LANE.

85% BASIN 1 - 13 CFS

WSEL ≈ 0.33 ✓ ok

B-1

MANNING'S N = 0.017 SLOPE = 0.016

POINT	DIST	ELEV	POINT	DIST	ELEV	POINT	DIST	ELEV
1.0	0.0	0.5	4.0	10.5	0.1	7.0	37.5	0.0
2.0	7.9	0.3	5.0	23.5	0.4	8.0	39.1	0.3
3.0	9.5	0.0	6.0	36.5	0.1	9.0	47.0	0.5

WSEL FT.	DEPTH INC	FLOW AREA SQ.FT.	FLOW RATE (CFS)	WETTED PER (FT)	FLOW VEL (FPS)	TOPWID PLUS OBSTRUCTIONS	TOTAL ENERGY (FT)
0.050	0.050	0.032	0.030	1.280	0.949	1.263	0.064
0.100	0.100	0.126	0.190	2.559	1.506	2.526	0.135
0.150	0.150	0.301	0.484	5.529	1.608	5.482	0.190
0.200	0.200	0.713	1.284	11.034	1.802	10.976	0.250
0.250	0.250	1.399	3.017	16.539	2.157	16.470	0.322
0.300	0.300	2.360	5.955	22.044	2.524	21.964	0.399
0.350	0.350	3.613	10.015	29.315	2.772	29.228	0.470
0.400	0.400	5.317	15.976	38.236	3.005	38.146	0.540
0.450	0.450	7.347	25.265	43.156	3.439	43.065	0.634

VALLE HUERTO

JUST NORTH OF INLET #1

DASIN 2 - 8.2 CFS

USEL

$$\frac{10.0 - 5.9}{0.35 - 0.30} = \frac{10 - 8.2}{0.35 - x} \Rightarrow \frac{4.1}{0.05} = \frac{1.8}{0.35 - x} \Rightarrow 0.095 = 1.435 - 4.1x$$

$$x = 0.32' < 0.33'$$

✓ Ok

B-2

INLET #1

Double A inlet, in sump condition:

Open Area (for orifice calc in sq. ft.):	7.7977431
Length of Weir (feet):	7.9791667
Orifice Coeficient	0.6
Weir Coeficient	3

Head (ft)	Head (in)	1 Wing Weir Q (cfs)	Grate Weir Q (cfs)	Grate Orifice Q (cfs)	Control Q Sgl Wing (cfs)	Control Q Dbl Wing (cfs)
0.05	0.6	0.13	0.27	8.40	0.40	0.54
0.1	1.2	0.38	0.76	11.87	1.14	1.52
0.15	1.8	0.70	1.39	14.54	2.09	2.78
0.2	2.4	1.07	2.14	16.79	3.21	4.29
0.25	3	1.50	2.99	18.77	4.49	5.99
0.3	3.6	1.97	3.93	20.56	5.91	7.88
0.35	4.2	2.48	4.96	22.21	7.44	9.93
0.4	4.8	3.04	6.06	23.75	9.09	12.13
0.45	5.4	3.62	7.23	25.19	10.85	14.47
0.5	6	4.24	8.46	26.55	12.71	16.95
0.55	6.6	4.89	9.76	27.84	14.66	19.55
0.6	7.2	5.58	11.13	29.08	16.70	22.28
0.65	7.8	6.29	12.54	30.27	18.83	25.12
0.667	8.0	6.54	13.04	30.66	19.58	26.11
0.7	8.4	7.03	14.02	31.41	21.05	28.08
0.75	9	7.79	15.55	32.52	23.34	31.14
0.8	9.6	8.59	17.13	33.58	25.71	34.30
0.85	10.2	9.40	18.76	34.62	28.16	37.57
0.9	10.8	10.25	20.44	35.62	30.68	40.93
0.95	11.4	11.11	22.16	36.60	33.28	44.39
1	12	12.00	23.94	37.55	35.94	47.94
1.05	12.6	12.91	25.76	38.47	38.67	51.58
1.1	13.2	13.84	27.62	39.38	41.46	55.31
1.15	13.8	14.80	29.52	40.26	44.32	59.12
0.567	6.804	5.12	10.22	28.27	15.34	20.47

Calculation of open area:

Total Grate Area	2000	13.888889
Cross Bar Area	-732	-5.083333
Supports (ends)	-115.625	-0.802951
(middle)	-100	-0.694444
Areas Counted Twice	70.5	0.4895833
	1122.875	7.7977431

Calculation of Length of Weir:

Total Perimeter of Grate	130	10.833333
Short Cross Bars	-7	-0.583333
Bearing Bars	-13	-1.083333
End Supports	-9.25	-0.770833
Middle Supports	-5	-0.416667
	110	7.9791667

BASIN 1 - 15.1 CFS

BASIN 2 - 8.2 CFS

23.3 CFS

↳ h = 0.6' ✓ ok

x 15% CLOGGING FACTOR = 26.9 CFS

↳ h = 0.68 ✓ ok

B-3

INLETS #2 & #3

Single A inlet, in sump condition with curb openings on both sides:
Open Area (for orifice calc in sq. ft.): 3.9314236
Length of Weir (feet): 11.354167

Head (ft)	Head (in)	Weir Q	Orifice Q	Control Q
0.05	0.6	0.34	4.23	0.34
0.1	1.2	0.96	5.99	0.96
0.15	1.8	1.77	7.33	1.77
0.2	2.4	2.72	8.47	2.72
0.25	3	3.80	9.46	3.80
0.3	3.6	5.00	10.37	5.00
0.35	4.2	6.30	11.20	6.30
0.4	4.8	7.70	11.97	7.70
0.45	5.4	9.19	12.70	9.19
0.5	6	10.76	13.39	10.76
0.55	6.6	12.41	14.04	12.41
0.6	7.2	14.14	14.66	14.14
0.65	7.8	15.95	15.26	15.26
0.7	8.4	17.82	15.84	15.84
0.75	9	19.76	16.39	16.39
0.8	9.6	21.77	16.93	16.93
0.85	10.2	23.85	17.45	17.45
0.9	10.8	25.98	17.96	17.96
0.95	11.4	28.18	18.45	18.45
1	12	30.43	18.93	18.93

Calculation of open area:

	(in^2)	(ft^2)
Total Grate Area	1000	6.9444444
Cross Bar Area	-366	-2.541667
Supports (ends)	-115.625	-0.802951
Areas Counted Twice	47.75	0.3315972
	566.125	3.9314236

Calculation of Length of Weir:

	(in)	(ft)
Total Perimeter of Grate	90	7.5
Short Cross Bars	-3.5	-0.291667
End Supports	-9.25	-0.770833
Bearing Bars	-13	-1.083333
Curb Openings	72	6
	136.25	11.354167

BASIN 2 - 9.0 CFS / 2 = 4.5 CFS / INLET
∴ h = 0.30' ✓

2 x 100 yr = 9.0 CFS / INLET
∴ h = 0.45' ✓

B-4

EXHIBITS

EXHIBIT 1: PRELIMINARY PLAT

EXHIBIT 2: FULLY DEVELOPED BASIN MAP

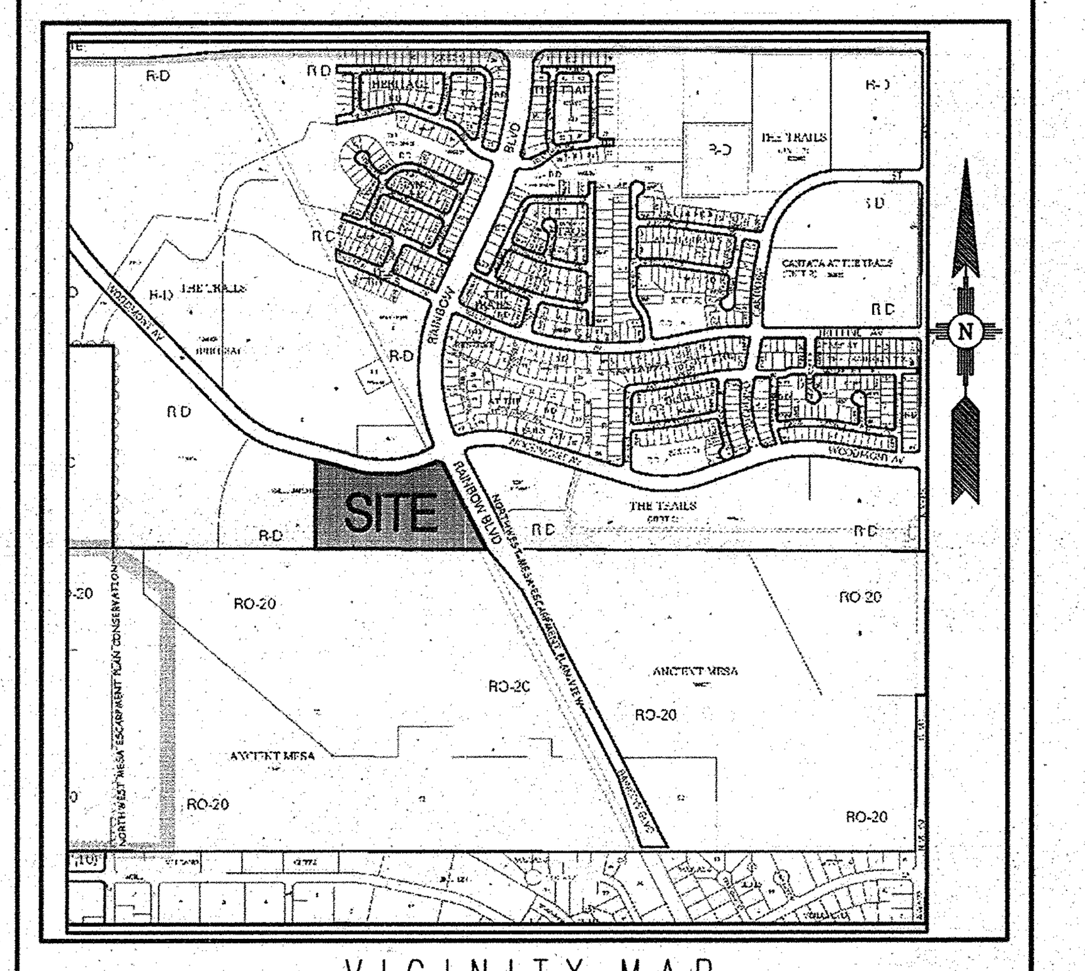
EXHIBIT 3: GRADING PLAN

EXHIBIT 4: SUPPLEMENTAL EXHIBITS

EXHIBIT 1

PRELIMINARY PLAT

PRELIMINARY PLAT FOR
VALLE VISTA UNIT 1
LOTS 1–10 & TRACTS A1 & A2
JUNE, 2014



LEGAL DESCRIPTION

Lots 1–4 and Tract A, Valle Vista at The Trails Unit 2 Subdivision, City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the correction plat entitled "VALLE VISTA AT THE TRAILS UNIT 2 WITHIN THE TOWN OF ALAMEDA GRANT IN PROJECTED SECTIONS 16, TOWNSHIP 11 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on June 21, 2007, in Plat Book 2007C, Page 168, as Document No. 2007091303.

GENERAL NOTES

1. EXISTING ZONING: SU–2, RD, TRAILS RESIDENTIAL DEVELOPING AREA
   PROPOSED ZONING: SU–2, RD, TRAILS RESIDENTIAL DEVELOPING AREA
2. PROPOSED ACREAGE: 3.65 AC
   NUMBER OF LOTS: 10
   PROPOSED DENSITY: 3.96 DU/AC
3. MIN. LOT DIMENSIONS: 45' X 95'
   MINIMUM LOT AREA: 4,275 SQFT
4. ALL UTILITIES, AND STORM DRAIN IMPROVEMENTS ARE TO BE PUBLIC AND TO BE DEDICATED TO THE CITY OF ALBUQUERQUE FOR MAINTENANCE.
5. LOT SETBACKS SHALL CONFORM TO THE VOLCANO TRAILS SECTOR DEVELOPMENT PLAN.
6. TRACTS A1 AND A2 SHALL CONTAIN PRIVATE STREET RIGHT OF WAY. STREET IMPROVEMENTS TO BE OWNED AND MAINTAINED BY THE TRAILS COMMUNITY ASSOCIATION, INC.
7. ALL PRIVATE STREET RIGHT OF WAY (TRACTS A1 AND A2) SHALL HAVE A PUBLIC SANITARY SEWER, WATER AND DRAINAGE EASEMENT GRANTED TO THE CITY OF ALBUQUERQUE.
8. NO LOTS SHALL HAVE DIRECT ACCESS TO WOODMONT AVENUE.

SITE DATA

ZONE ATLAS NO.	C–09–Z
ZONING	SU–2, RD
MILES OF FULL WIDTH STREETS CREATED	0.29 MILES
NO. OF EXISTING TRACTS	5
NO. OF LOTS CREATED	10
NO. OF HOA TRACTS CREATED	2

SURVEY NOTES:

1. ALL BOUNDARY CORNERS SHOWN (●) ARE FOUND REBAR W\CAP.
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PTS, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS (▲) AND WILL BE MARKED BY (4") ALUMINUM CAP STAMPED "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION MARKED, DO NOT DISTURB PLS 9750".
3. THE SUBDIVISION BOUNDARY WILL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
4. BASIS OF BEARINGS WILL BE NEW MEXICO STATE PLANE BEARINGS.
5. DISTANCES SHALL BE GROUND DISTANCES.
6. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, TANGENCY STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.

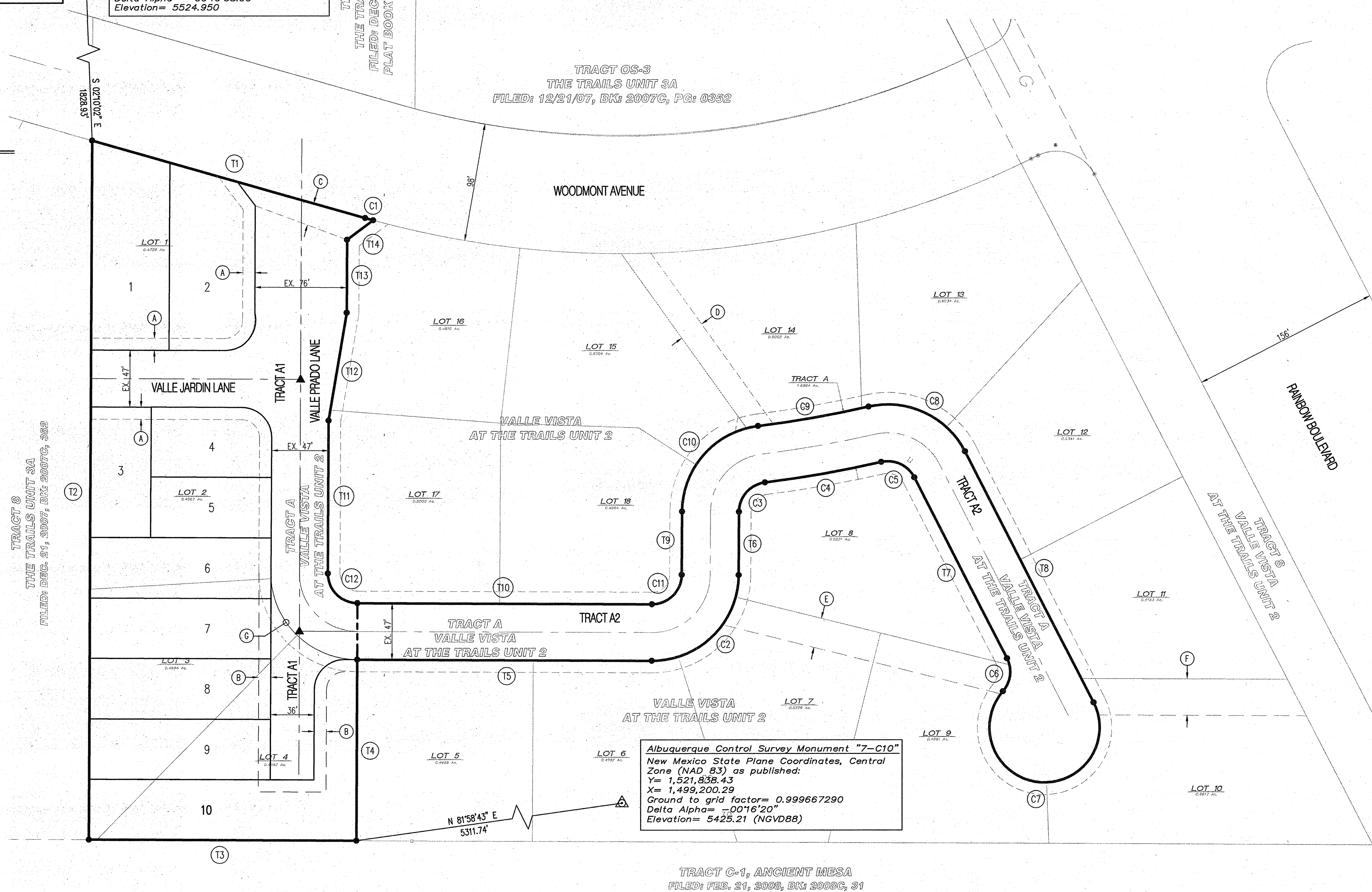
BOUNDARY CURVE TABLE

ID	ARC	RADIUS	DELTA	TANGENT
C1	6.82'	770.00'	00°30'27"	3.41'
C2	112.31'	71.50'	90°00'00"	71.50'
C3	35.35'	24.50'	82°39'34"	21.55'
C4	97.46'	966.50'	05°46'40"	48.77'
C5	32.40'	24.50'	75°46'56"	19.07'
C6	29.16'	24.50'	68°11'47"	16.59'
C7	197.10'	45.50'	248°11'47"	-----
C8	94.57'	71.50'	75°46'56"	55.64'
C9	92.72'	919.50'	05°46'40"	46.40'
C10	103.15'	71.50'	82°39'34"	62.88'
C11	38.48'	24.50'	90°00'00"	24.50'
C12	38.48'	24.50'	89°59'10"	24.49'

BOUNDARY TANGENT TABLE

ID	BEARING	LENGTH
T1	N74°04'05"W	234.56'
T2	S00°15'20"W	577.91'
T3	S89°40'58"E	220.95'
T4	N00°16'10"E	149.68'
T5	S89°43'50"E	243.26'
T6	N00°16'10"E	52.11'
T7	S27°04'01"E	168.15'
T8	N27°04'01"W	233.14'
T9	S00°16'10"W	52.11'
T10	N89°43'50"W	243.26'
T11	N00°15'20"E	126.11'
T12	N09°29'40"E	90.31'
T13	N00°15'20"E	60.25'
T14	N53°01'03"E	26.89'

Albuquerque Control Survey Monument "UNION"
New Mexico State Plane Coordinates, Central Zone (NAD 83) as published:
N=1,523,503.475
E=1,493,655.030
Ground to grid factor= 0.999664360
Delta Alpha= –00°16'58.96
Elevation= 5524.950



KEYED NOTES

- (A) EXISTING 10' PUBLIC UTILITY EASEMENT
- (B) 10' PUBLIC UTILITY EASEMENT GRANTED BY THIS PLAT.
- (C) EXISTING PUBLIC PEDESTRIAN ACCESS EASEMENT
- (D) EXISTING 20' PUBLIC DRAINAGE EASEMENT
- (E) EXISTING 25' PUBLIC SANITARY SEWER AND PUBLIC DRAINAGE EASEMENT.
- (F) EXISTING 30' PUBLIC SANITARY SEWER, WATER, PUBLIC DRAINAGE AND PUBLIC PEDESTRIAN ACCESS EASEMENT.
- (G) TRACT LINE ELIMINATED WITH THIS PLAT

LEGEND

- SUBDIVISION BOUNDARY LINE
- TRACT BOUNDARY
- NEW LOT LINE
- ADJOINING PROPERTY LINE
- ▲ CENTERLINE MONUMENT TO BE INSTALLED
- △ CITY OF ALBUQUERQUE SURVEY CONTROL MONUMENT

APPROVED

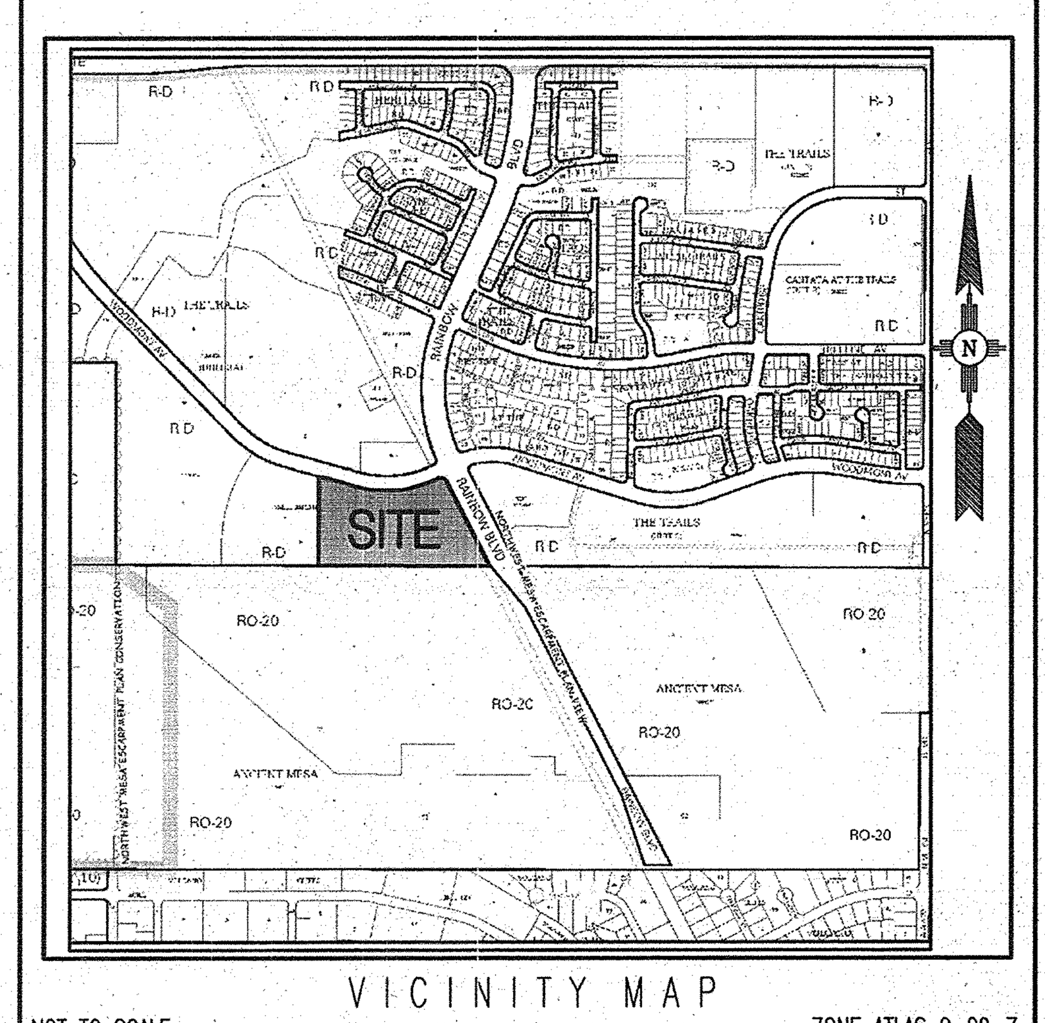
[signature] 6-10-14
CITY SURVEYOR — DATE

[signature] 6/9/14
KELLY CALHOUN — DATE
MANAGER, WOODMONT–PASEO, LLC

[signature] 6/9/14
KELLY CALHOUN — DATE
PRESIDENT, THE TRAILS COMMUNITY ASSOCIATION INC.

Bohannan Huston

Mon, 9–Jun–2014 – 2:04:pm, Plotted by: DHUERTA
P:\20150018\CDP\Plans\General\Pre–Plat\U1\20150018_PRE–PLAT_U1.dwg



BOUNDARY CURVE TABLE				
ID	ARC	RADIUS	DELTA	TANGENT
C1	38.48'	24.50'	89°59'10"	24.49'
C2	39.28'	25.00'	90°00'50"	25.01'
C3	207.45'	770.00'	15°26'12"	104.36'
C4	9.63'	71.50'	07°43'00	4.82'
C5	92.72'	919.50'	05°46'40"	46.40'
C6	94.57'	71.50'	75°46'56"	55.64'

BOUNDARY TANGENT TABLE		
ID	BEARING	LENGTH
T1	S53°01'03"W	26.89'
T2	S00°15'20"W	60.25'
T3	S09°29'40"W	90.31'
T4	S00°15'20"W	126.11'
T5	S00°16'10"W	47.00'
T6	N89°17'41"W	10.31'
T7	S00°15'20"W	74.57'
T8	S89°40'58"E	266.70'
T9	S89°44'33"E	793.63'
T10	N27°16'48"W	153.93'
T11	S89°46'05"E	170.25'
T12	S27°04'01"E	210.94'

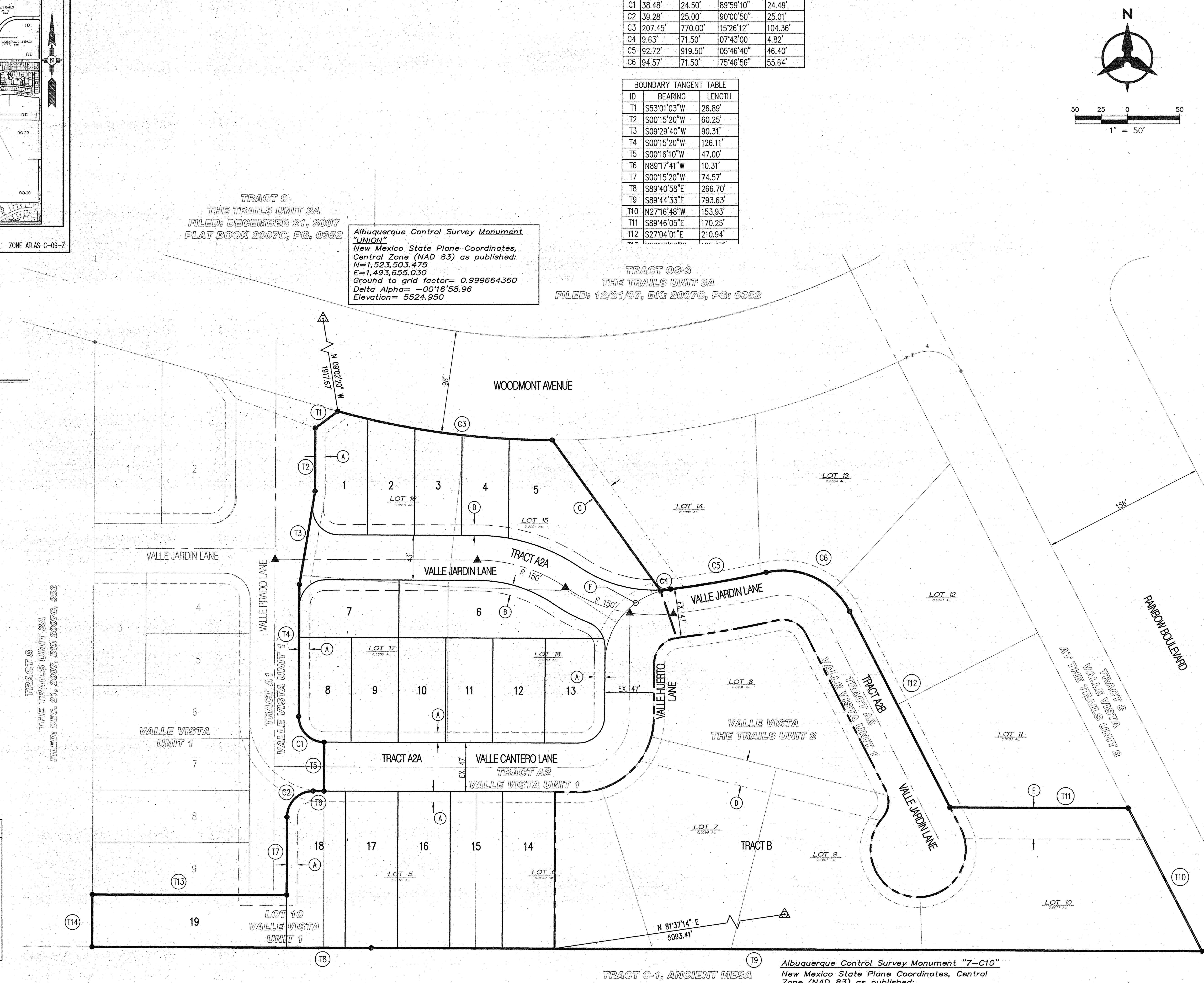
PRELIMINARY PLAT FOR VALLE VISTA UNIT 2

LOTS 1–19 & TRACTS A2A, A2B, B

JUNE 2014

KEYED NOTES

- (A) EXISTING 10' PUBLIC UTILITY EASEMENT
- (B) 10' PUBLIC UTILITY EASEMENT GRANTED BY THIS PLAT.
- (C) EXISTING 20' PUBLIC DRAINAGE EASEMENT
- (D) EXISTING 25' PUBLIC SANITARY SEWER AND PUBLIC DRAINAGE EASEMENT.
- (E) EXISTING 30' PUBLIC PEDESTRIAN ACCESS EASEMENT UNIT 3.
- (F) TRACT LINE ELIMINATED WITH THIS PLAT



LEGEND

- SUBDIVISION BOUNDARY LINE
- TRACT BOUNDARY
- NEW LOT LINE
- ADJOINING PROPERTY LINE
- ▲ CENTERLINE MONUMENT TO BE INSTALLED
- △ CITY OF ALBUQUERQUE SURVEY CONTROL MONUMENT

LEGAL DESCRIPTION

Lots 5–10 and 15–18, Valle Vista at The Trails Unit 2 Subdivision, City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the correction plat entitled "VALLE VISTA AT THE TRAILS UNIT 2 WITHIN THE TOWN OF ALAMEDA GRANT IN PROJECTED SECTIONS 16, TOWNSHIP 11 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on June 21, 2007, in Plat Book 2007C, Page 168, as Document No. 2007091303 & Lot 10 & Tract A2, Valle Vista Unit 1 City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the plat entitled "SUBDIVISION PLAT OF VALLE VISTA UNIT 1 (LOTS 1–10 & TRACTS A1, A2 & B), CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on ________, in Plat Book _______, Page _______, as Document No. _______..

GENERAL NOTES

1. EXISTING ZONING: SU–2, RD, TRAILS RESIDENTIAL DEVELOPING AREA
   PROPOSED ZONING: SU–2, RD, TRAILS RESIDENTIAL DEVELOPING AREA
2. PROPOSED ACREAGE: 6.32 AC
   NUMBER OF LOTS: 19
   PROPOSED DENSITY: 5.37 DU/AC
3. MIN. LOT DIMENSIONS: 45' X 95'
   MINIMUM LOT AREA: 4,275 SQFT
4. ALL UTILITIES, AND STORM DRAIN IMPROVEMENTS ARE TO BE PUBLIC AND TO BE DEDICATED TO THE CITY OF ALBUQUERQUE FOR MAINTENANCE.
5. LOT SETBACKS SHALL CONFORM TO THE VOLCANO TRAILS SECTOR DEVELOPMENT PLAN.
6. TRACTS A2A AND A2B SHALL CONTAIN PRIVATE STREET RIGHT OF WAY. STREET IMPROVEMENTS TO BE OWNED AND MAINTAINED BY THE TRAILS COMMUNITY ASSOCIATION, INC.
7. ALL PRIVATE STREET RIGHT OF WAY (TRACTS A2A AND A2B) SHALL HAVE A PUBLIC SANITARY SEWER, WATER AND DRAINAGE EASEMENT GRANTED TO THE CITY OF ALBUQUERQUE.
8. NO LOTS SHALL HAVE DIRECT ACCESS TO WOODMONT AVENUE.
9. TRACT B TO BE OWNED AND MAINTAINED BY THE TRAILS COMMUNITY ASSOCIATION, INC. AND TO BE SUBDIVIDED AS PART OF VALLE VISTA UNIT 3.

SITE DATA

ZONE ATLAS NO.	C–09–Z
ZONING	SU–2, RD
MILES OF FULL WIDTH STREETS CREATED	0.23 MILES
NO. OF EXISTING TRACTS	12
NO. OF LOTS CREATED	19
NO. OF HOA TRACTS CREATED	3

SURVEY NOTES:

1. ALL BOUNDARY CORNERS SHOWN (●) ARE FOUND REBAR W\CAP.
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PTS, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS (▲) AND WILL BE MARKED BY (4") ALUMINUM CAP STAMPED "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION MARKED, DO NOT DISTURB PLS 9750".
3. THE SUBDIVISION BOUNDARY WILL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
4. BASIS OF BEARINGS WILL BE NEW MEXICO STATE PLANE BEARINGS.
5. DISTANCES SHALL BE GROUND DISTANCES.
6. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, TANGENCY STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.

APPROVED

[signature] 6-10-14
CITY SURVEYOR — DATE

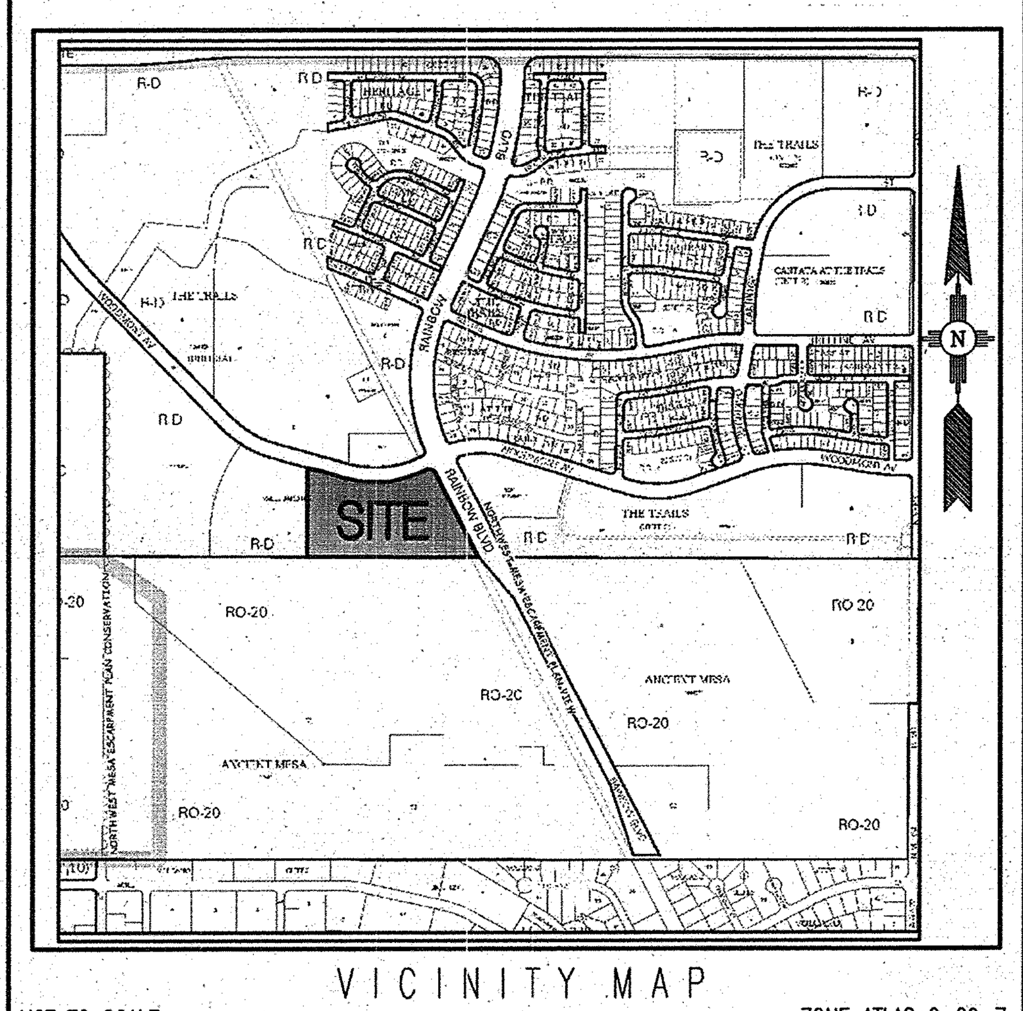
[signature] 6/9/14
LAWRENCE OTERO, OWNER, LOT 5 — DATE

[signature] 6/9/14
KELLY CALHOUN, MANAGER, WOODMONT–PASEO, LLC — DATE

[signature] 6/9/14
KELLY CALHOUN, PRESIDENT, THE TRAILS COMMUNITY ASSOCIATION INC. — DATE

Bohannan ▲ Huston

Mon, 9–Jun–2014 – 2:14:pm, Plotted by: DHUERTA
P:\20150018\CDP\Plans\General\Pre–Plat\U2\20150018_PRE–PLAT_U2.dwg

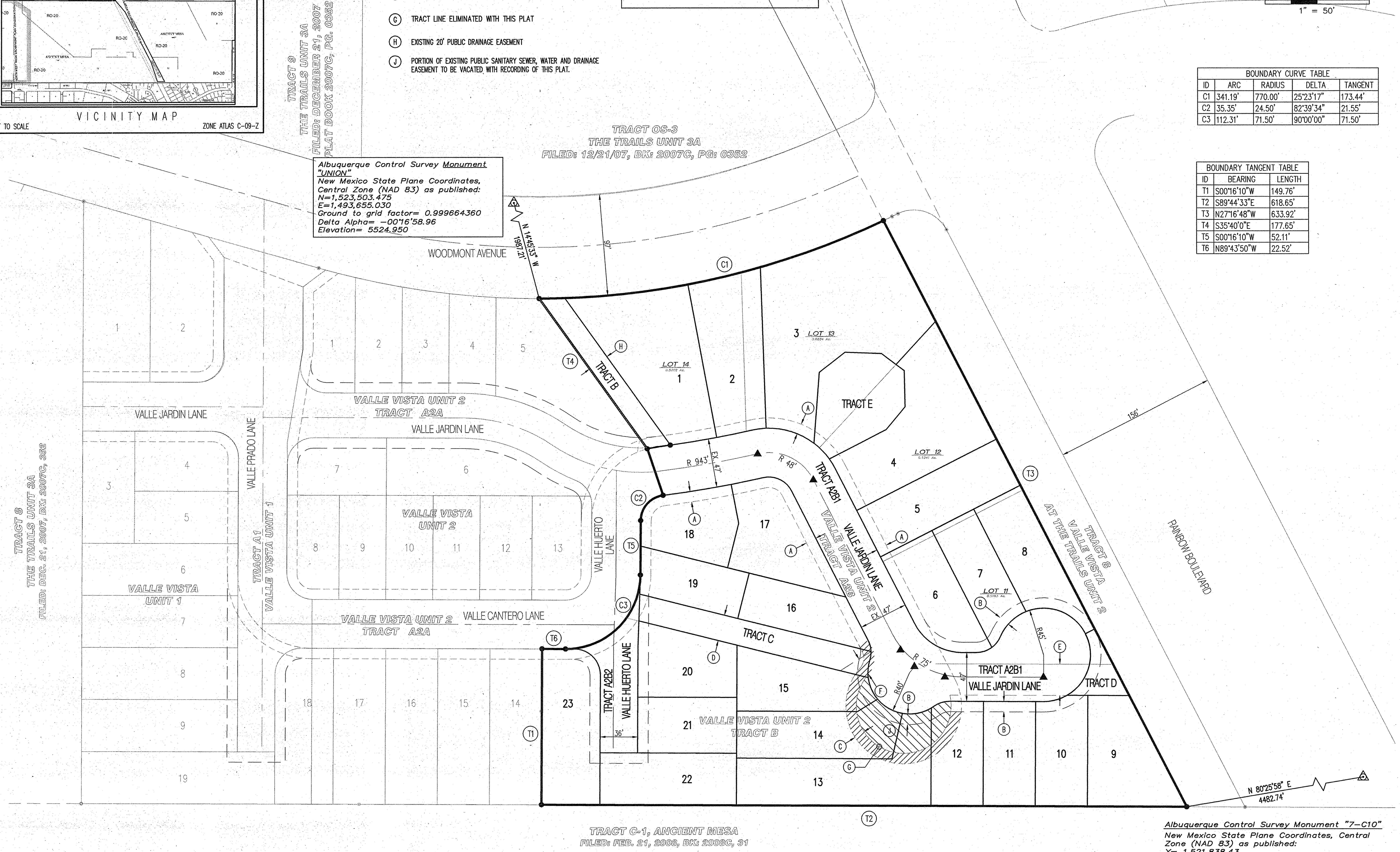


KEYED NOTES

- (A) EXISTING 10' PUBLIC UTILITY EASEMENT
- (B) 10' PUBLIC UTILITY EASEMENT
- (C) EXISTING 10' PUBLIC UTILITY EASEMENT TO BE VACATED WITH THE RECORDING OF THIS PLAT.
- (D) EXISTING 25' PUBLIC SANITARY SEWER AND PUBLIC DRAINAGE EASEMENT.
- (E) EXISTING 30' PUBLIC SANITARY SEWER, WATER, PUBLIC DRAINAGE AND PUBLIC PEDESTRIAN ACCESS EASEMENT.
- (F) PRIVATE ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOT 15
- (G) TRACT LINE ELIMINATED WITH THIS PLAT
- (H) EXISTING 20' PUBLIC DRAINAGE EASEMENT
- (J) PORTION OF EXISTING PUBLIC SANITARY SEWER, WATER AND DRAINAGE EASEMENT TO BE VACATED WITH RECORDING OF THIS PLAT.

LEGEND

- SUBDIVISION BOUNDARY LINE
- TRACT BOUNDARY
- NEW LOT LINE
- ADJOINING PROPERTY LINE
- ▲ CENTERLINE MONUMENT TO BE INSTALLED
- △ CITY OF ALBUQUERQUE SURVEY CONTROL MONUMENT



BOUNDARY CURVE TABLE				
ID	ARC	RADIUS	DELTA	TANGENT
C1	341.19'	770.00'	25°23'17"	173.44'
C2	35.35'	24.50'	82°39'34"	21.55'
C3	112.31'	71.50'	90°00'00"	71.50'

BOUNDARY TANGENT TABLE		
ID	BEARING	LENGTH
T1	S00°16'10"W	149.76'
T2	S89°44'33"E	618.65'
T3	N27°16'48"W	633.92'
T4	S35°40'0"E	177.65'
T5	S00°16'10"W	52.11'
T6	N89°43'50"W	22.52'

Albuquerque Control Survey Monument "7-C10"
New Mexico State Plane Coordinates, Central Zone (NAD 83) as published:
Y= 1,521,838.43
X= 1,499,200.29
Ground to grid factor= 0.999667290
Delta Alpha= -00°16'20"
Elevation= 5425.21 (NGVD88)

PRELIMINARY PLAT FOR
VALLE VISTA UNIT 3
LOTS 1-23 & TRACTS A2B1, A2B2 AND B-E
JUNE 2014

LEGAL DESCRIPTION

Lots 11-14, Valle Vista at The Trails Unit 2 Subdivision, City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the correction plat entitled "VALLE VISTA AT THE TRAILS UNIT 2 WITHIN THE TOWN OF ALAMEDA GRANT IN PROJECTED SECTIONS 16, TOWNSHIP 11 NORTH, RANGE 2 EAST, NEW MEXICO PRINCIPAL MERIDIAN, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on June 21, 2007, in Plat Book 2007C, Page 168, as Document No. 2007091303 & Tracts B and A2B, Valle Vista Unit 2 City of Albuquerque, Bernalillo County, New Mexico, as the same is shown and designated on the plat entitled "SUBDIVISION PLAT OF VALLE VISTA UNIT 2 (LOTS 1-18 & TRACTS A2A, A2B & B), CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO", filed in the office of the County Clerk of Bernalillo County, New Mexico, on ________, in Plat Book _______, Page _______, as Document No. _______..

GENERAL NOTES

1. EXISTING ZONING: SU-2, RD, TRAILS RESIDENTIAL DEVELOPING AREA
   PROPOSED ZONING: SU-2, RD, TRAILS RESIDENTIAL DEVELOPING AREA
2. PROPOSED ACREAGE: 5.15 AC
   NUMBER OF LOTS: 23
   PROPOSED DENSITY: 4.47 DU/AC
3. MIN. LOT DIMENSIONS: 45' X 95'
   MINIMUM LOT AREA: 4,275 SQFT
4. ALL UTILITIES, AND STORM DRAIN IMPROVEMENTS ARE TO BE PUBLIC AND TO BE DEDICATED TO THE CITY OF ALBUQUERQUE FOR MAINTENANCE.
5. LOT SETBACKS SHALL CONFORM TO THE VOLCANO TRAILS SECTOR DEVELOPMENT PLAN.
6. TRACTS A2B1 AND A2B2 SHALL CONTAIN PRIVATE STREET RIGHT OF WAY. STREET IMPROVEMENTS TO BE OWNED AND MAINTAINED BY THE TRAILS COMMUNITY ASSOCIATION, INC.
7. ALL PRIVATE STREET RIGHT OF WAY (TRACTS A2B1 AND A2B2) SHALL HAVE A PUBLIC SANITARY SEWER, WATER AND DRAINAGE EASEMENT GRANTED TO THE CITY OF ALBUQUERQUE.
8. NO LOTS SHALL HAVE DIRECT ACCESS TO WOODMONT AVENUE.
9. TRACT B-E TO BE OWNED AND MAINTAINED BY THE TRAILS COMMUNITY ASSOCIATION, INC.
10. TRACT D IS SUBJECT TO A BLANKET PRIVATE ACCESS EASEMENT FOR THE USE AND BENEFIT OF LOTS 9 & 10.
11. TRACT E IS SUBJECT TO A BLANKET PRIVATE ACCESS AND LANDSCAPE EASEMENT.

SITE DATA

ZONE ATLAS NO.	C-09-Z
ZONING	SU-2, RD
MILES OF FULL WIDTH STREETS CREATED	0.11 MILES
NO. OF EXISTING TRACTS	6
NO. OF LOTS CREATED	23
NO. OF HOA TRACTS CREATED	6

SURVEY NOTES:

1. ALL BOUNDARY CORNERS SHOWN (●) ARE FOUND REBAR W\CAP.
2. ALL STREET CENTERLINE MONUMENTATION SHALL BE INSTALLED AT ALL CENTERLINE PC'S, PTS, ANGLE POINTS, AND STREET INTERSECTIONS AND SHOWN THUS (▲) AND WILL BE MARKED BY (4") ALUMINUM CAP STAMPED "CITY OF ALBUQUERQUE CENTERLINE MONUMENTATION MARKED, DO NOT DISTURB PLS 9750".
3. THE SUBDIVISION BOUNDARY WILL BE TIED TO THE NEW MEXICO STATE PLANE COORDINATE SYSTEM AS SHOWN.
4. BASIS OF BEARINGS WILL BE NEW MEXICO STATE PLANE BEARINGS.
5. DISTANCES SHALL BE GROUND DISTANCES.
6. MANHOLES WILL BE OFFSET AT ALL POINTS OF CURVATURE, TANGENCY STREET INTERSECTIONS, AND ALL OTHER ANGLE POINTS TO ALLOW USE OF CENTERLINE MONUMENTATION.

APPROVED

[signature] DATE 6-10-14
CITY SURVEYOR

[signature] DATE 6/9/14
KELLY CALHOUN
MANAGER, WOODMONT-PASEO, LLC

[signature] DATE 6/9/14
KELLY CALHOUN
PRESIDENT, THE TRAILS COMMUNITY ASSOCIATION INC.

Bohannan Huston

Mon, 9-Jun-2014 - 2:13:pm, Plotted by: DHUERTA
P:\20150018\CDP\Plans\General\Pre-Plat\U3\20150018_PRE-PLAT_U3.dwg

EXHIBIT 2

FULLY DEVELOPED BASIN MAP

VALLE VISTA
FULLY DEVELOPED BASIN MAP

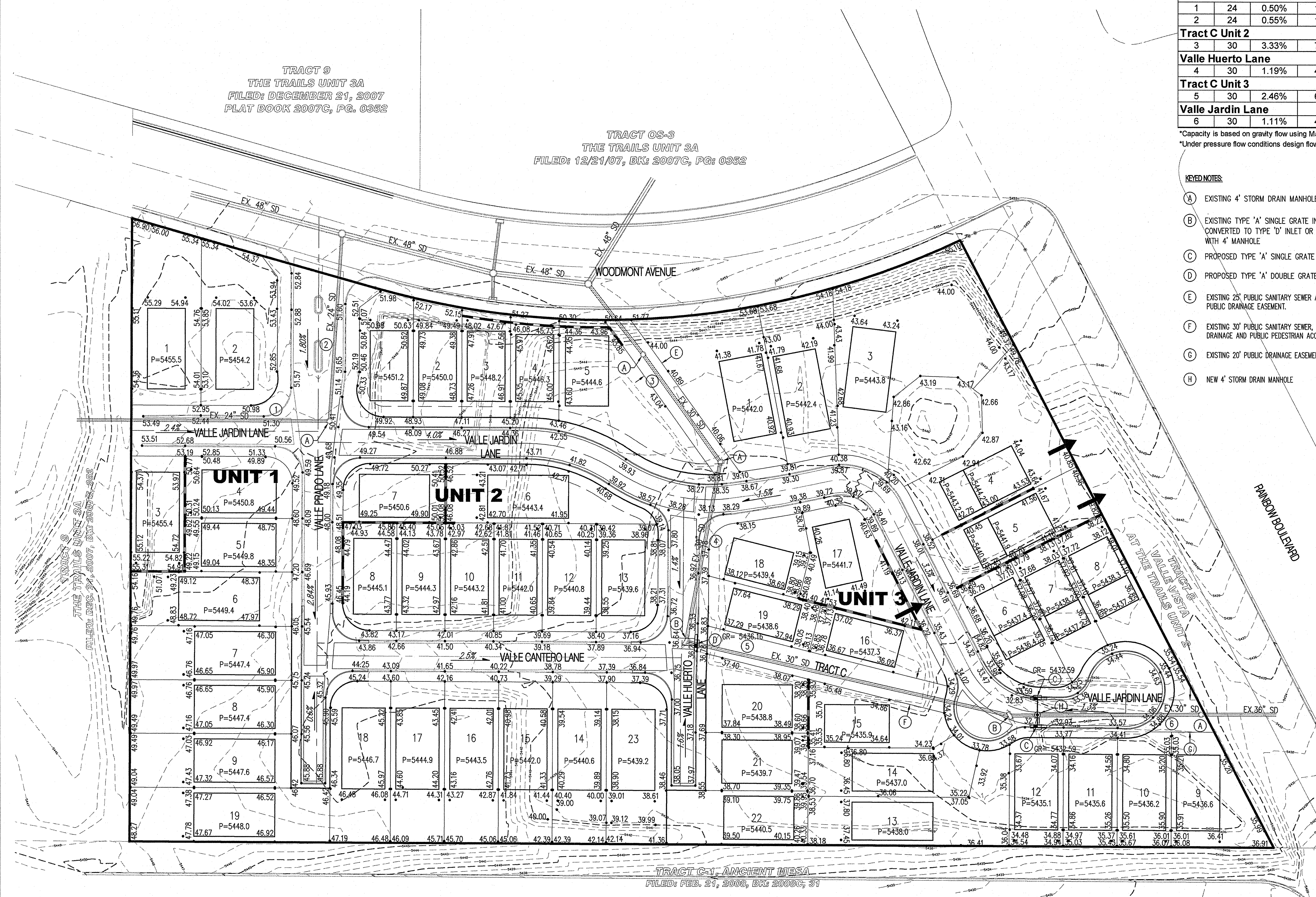
BASIN	AREA	% LAND TREATMENT				Q (100YR-24HR)
	(AC)	A	B	C	D	(CFS)
BASIN 1	5.1	0.0%	25.0%	25.0%	50.0%	15.1
BASIN 2	2.8	0.0%	28.0%	28.0%	44.0%	8.2
BASIN 3	3.1	0.0%	28.0%	28.0%	44.0%	8.9
TOTAL	**11.0**					**32.2**

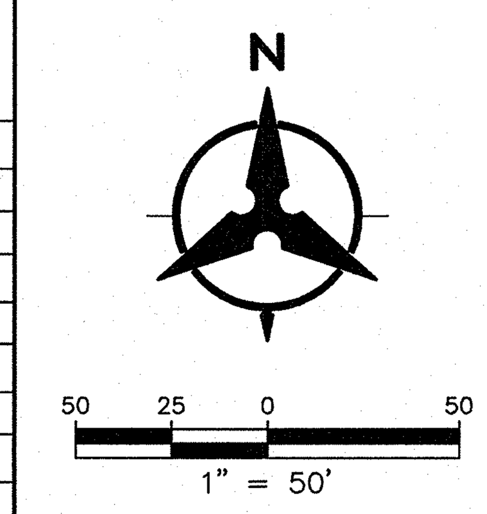
P:\20150018\CDP\Plans\General\Drainage Exhibits\20150018_FULLY DEVELOPED BASIN MAP_recover.dwg
June 13, 2014 - 11:02am

Bohannan Huston
www.bhinc.com 800.877.5332

EXHIBIT 3

GRADING PLAN





VALLE VISTA STORM DRAIN CAPACITY CALCULATIONS				
Pipe #	Size in.	Slope	Capacity cfs	Design Flow cfs
Valle Jardin Lane				
1	24	0.50%	16.00	31.30
2	24	0.55%	16.78	31.30
Tract C Unit 2				
3	30	3.33%	74.85	22.30
Valle Huerto Lane				
4	30	1.19%	44.74	22.30
Tract C Unit 3				
5	30	2.46%	64.33	45.60
Valle Jardin Lane				
6	30	1.11%	43.21	54.50

*Capacity is based on gravity flow using Manning's Equation with n=0.013
*Under pressure flow conditions design flow may exceed capacity

KEYED NOTES:

(A) EXISTING 4' STORM DRAIN MANHOLE

(B) EXISTING TYPE 'A' SINGLE GRATE INLET TO BE CONVERTED TO TYPE 'D' INLET OR REPLACED WITH 4' MANHOLE

(C) PROPOSED TYPE 'A' SINGLE GRATE INLET

(D) PROPOSED TYPE 'A' DOUBLE GRATE INLET

(E) EXISTING 25' PUBLIC SANITARY SEWER AND PUBLIC DRAINAGE EASEMENT.

(F) EXISTING 30' PUBLIC SANITARY SEWER, WATER, PUBLIC DRAINAGE AND PUBLIC PEDESTRIAN ACCESS EASEMENT.

(G) EXISTING 20' PUBLIC DRAINAGE EASEMENT

(H) NEW 4' STORM DRAIN MANHOLE

GENERAL NOTES

1. CONTRACTOR MUST OBTAIN A TOPSOIL DISTURBANCE PERMIT FROM THE ENVIRONMENTAL HEALTH DIVISION PRIOR TO CONSTRUCTION.

2. THE CONTRACTOR IS TO REFER TO EARTHWORK SPECIFICATION AS NOTED IN THE SOILS REPORT.

3. THE CONTRACTOR SHALL CONFORM TO ALL CITY, COUNTY, STATE, AND FEDERAL DUST CONTROL MEASURES & 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 AS PER DETAIL, SHEET 3B, AND WETTING THE SOIL TO KEEP IT FROM BLOWING.

5. ALL SPOT ELEVATIONS ARE TO FLOWLINE UNLESS OTHERWISE NOTED.

6. BOULDERS GREATER THAN 3 FEET IN DIAMETER EXCAVATED DURING GRADING ACTIVITIES SHALL BE STOCKPILED AND DISPOSED OF AT THE DISCRETION OF THE OWNER.

7. ALL WALLS SHOWN ARE TO BE PLACED ALONG PROPERTY LINE. WALLS ARE SHOWN OFFSET FOR VISUAL PURPOSE ONLY.

LEGEND

- • 91.62 — PROPOSED SPOT ELEVATION
- × 92.46 — EXISTING SPOT ELEVATION (GRND & TC)
- EXISTING CURB & GUTTER
- PROPOSED MOUNTABLE CURB & GUTTER
- PROPOSED STANDARD CURB & GUTTER
- 5470 — EXISTING CONTOUR W/ INDEX ELEVATION
- FLOW ARROW
- PROPOSED RETAINING WALL
- PROPOSED SLOPE
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN MANHOLE
- PROPOSED STORM DRAIN INLET
- HIGH POINT
- WALL DRAIN

AS-BUILT INFORMATION
CONTRACTOR — DATE
WORK STAKED BY — DATE
INSPECTOR'S ACCEPTANCE BY — DATE
FIELD VERIFICATION BY — DATE
DRAWINGS CORRECTED BY — DATE

MICROFILM INFORMATION
RECORDED BY — DATE
NO.

BENCH MARKS
ACS MONUMENT STAMPED "UNION"
GEOGRAPHIC POSITION (NAD 83)
N.M. STATE PLANE COORDINATES (CENTRAL ZONE)
N = 1,523,503.475 E = 1,493,655.030
GROUND-TO-GRID FACTOR = 0.999664360
Δα = -00°16'58.96"
NAVD 1988 ELEVATION = 5524.950

SURVEY INFORMATION
FIELD NOTES
NO. | BY | DATE

ENGINEER'S SEAL
SCOTT STEFFEN, NEW MEXICO, 14604, REGISTERED PROFESSIONAL ENGINEER
6/12/14

REMARKS
REVISIONS
DESIGN
No. | Date | By
Designed By: SJS DATE:11/13
Drawn By: DTH DATE:11/13
Checked By: SJS DATE:11/13

Bohannan ▲ Huston
www.bhinc.com 800.877.5332

CITY OF ALBUQUERQUE
PUBLIC WORKS DEPARTMENT

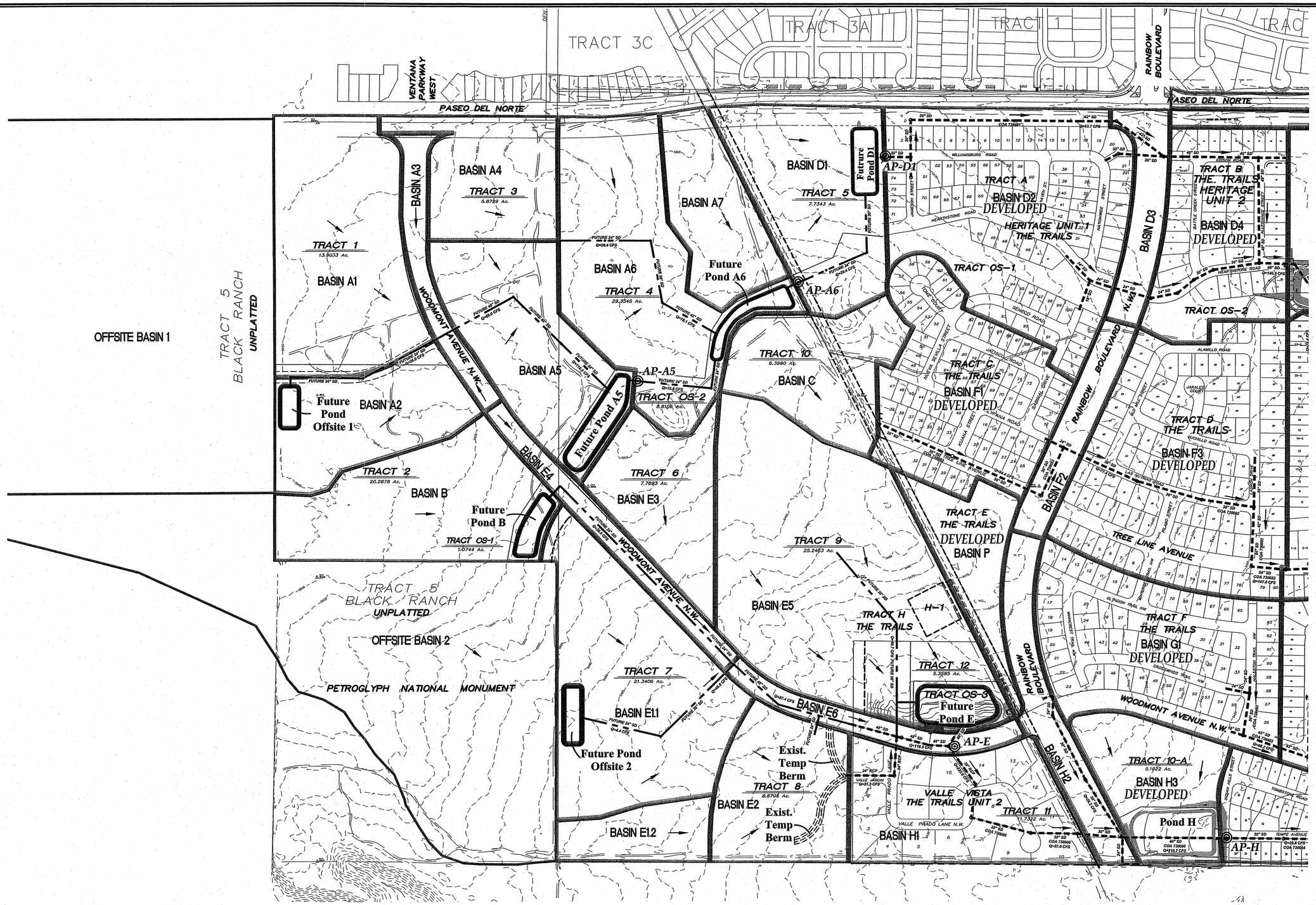
VALLE VISTA UNITS 1, 2 & 3
GRADING AND DRAINAGE PLAN

Design Review Committee	City Engineer Approval	Last Design Update	Mo./Day/Yr.	Mo./Day/Yr.

City Project No.	Zone Map No.	Sheet	Of
XXXXXX	C-09-Z	1	2

EXHIBIT 4

SUPPLEMENTAL EXHIBITS



NOTES:

1. STORM DRAIN SIZES BASED ON 100-YR, 24-HR STORM FLOWS. FUTURE PROJECTS MAY BE REQUIRED TO INCREASE STORM DRAIN SIZE BASED ON 100-YR, 6-HR STORM FLOWS.
2. THE INTENDED FUTURE CONTRIBUTION FROM THE TRAILS UNIT 4 IS 20 CFS TO THE MAXIMUM DOWNSTREAM DISCHARGE OF 62 CFS IN UNIVERSE BLVD.

LEGEND

- ANALYSIS POINT
- EXISTING STORM DRAIN
- FLOW DIRECTION
- FUTURE DEVELOPED STORM DRAIN

N

200' 100' 0 200' 400'

SCALE: 200'

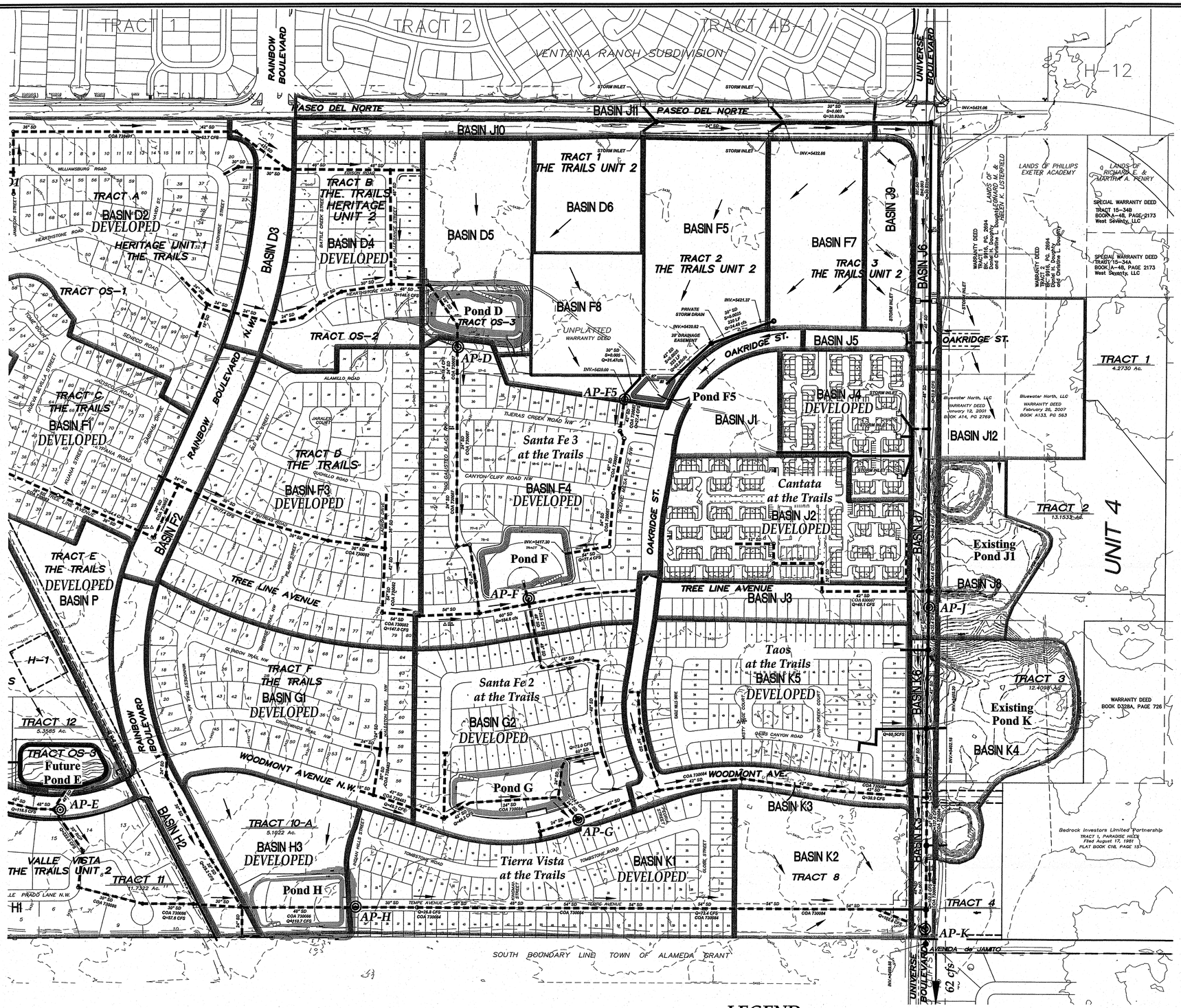
DATUM NAVD 1929

Thompson Engineering Consultants, Inc.
tecnm@yahoo.com
P.O. BOX 65760
ALBUQUERQUE, NM 87193
PHONE: (505) 271-2199
FAX: (505) 830-8248

AMENDMENT TO DMP FOR THE TRAILS UNITS 1,2 AND 3

PLATE 1

DAVID C. THOMPSON 9677 REGISTERED PROFESSIONAL ENGINEER 4-14-14



DETENTION POND CHARACTERISTICS

POND	DRAIN AREA (AC)	Q100 IN (CFS)	Q100 OUT (CFS)	BYPASS Q (CFS)	MAX VOL (ac-ft)	V100 (ac-ft)	TOP ELEV	BOTTOM ELEV	WSEL
OFF 1	127.9	37.00	9.25		2.44	2.302	6	0	5.80
A5	166.8	110.22	15.56		4.61	4.004	5516	5511	5515.59
A6	191.4	81.87	15.81		4.72	3.114	5506	5500	5504.64
D1	209.8	60.24	13.41		6.06	5.111	5475	5471	5474.29
D	261.9	154.87	5.93	13.77	6.24	4.035	5436.9	5429.5	5435.03
F5	18.9	62.89	19.84		1.40	1.386	5426	5421	5425.97
F	359.4	255.89	17.66	6.20	11.76	10.383	5424.3	5415.08	5423.56
G	391.8	93.49	7.00	17.61	7.21	2.955	5422.5	5415.67	5419.84
OFF 2	51.5	13.87	4.43		1.08	0.813	5	0	4.19
B	12.8	34.80	3.36		0.99	0.950	5519	5515	5518.86
E	137.0	198.83	6.80	15.30	7.52	6.008	5448	5441.6	5447.02
H	167.0	89.12	5.20	21.60	3.02	2.870	5422	5418.65	5421.89
J	57.9	141.18	6.05	26.34	7.94	3.771	5417	5414	5415.66
K	672.6	189.53	15.81	44.91	14.84	8.391	5409	5404.85	5407.79

ANALYSIS POINT PEAK FLOWS

ANALYSIS POINT	PEAK FLOW
AP-A5	15.56 CFS
AP-A6	15.81 CFS
AP-D1	13.41 CFS
AP-D	19.70 CFS
AP-F5	27.40 CFS
AP-F	23.86 CFS
AP-G	24.61 CFS
AP-E	22.30 CFS
AP-H	26.80 CFS
AP-J	32.39 CFS
AP-K	60.72 CFS

DEVELOPED DRAINAGE BASIN CHARACTERISTICS

BASIN	AREA	LAND TREATMENT				Q	VOL
	ACRES	A	B	C	D	CFS	AC-FT
OFFSITE 1	127.87	100	0	0	0	37.00	4.426
A1	13.50	0	12.5	12.5	75	31.68	2.610
A2	8.52	0	33	33	34	23.43	0.960
A3	3.21	0	5	5	90	11.41	0.606
A4	7.59	0	7.5	7.5	85	26.39	1.381
A5	11.71	0	17	17	66	37.55	1.829
A6	16.97	0	19	19	62	53.44	2.558
A7	6.75	0	12.5	12.5	75	22.52	1.137
C	8.18	0	25	25	50	24.36	1.100
D1	11.62	0	19	19	62	36.60	1.752
D2	22.12	0	28.5	28.5	43	63.65	2.763
D3	3.71	0	5	5	90	13.18	0.701
D4	12.55	0	28.5	28.5	43	36.12	1.568
D5	8.75	0	23	23	54	26.55	1.224
D6	5.00	0	18	18	64	15.89	0.764
F1	14.13	0	21.7	21.8	56.5	43.39	2.025
F2	3.67	0	5	5	90	13.02	0.692
F3	22.80	0	21.7	21.8	56.5	70.02	3.267
F4	24.91	0	25	25	50	74.16	3.349
F5	11.85	0	12.5	12.5	75	39.52	1.996
F7	7.02	0	7.5	7.5	85	24.42	1.278
F8	5.00	0	18	18	64	15.89	0.764
G1	16.20	0	25	25	50	48.23	2.178
G2	16.19	0	25	25	50	48.22	2.177
OFFSITE 2	51.52	100	0	0	0	13.87	1.783
B	12.79	0	34	34	32	34.80	1.407
E1.1	17.62	0	33	33	34	48.45	1.986
E1.2	3.76	0	33	33	34	10.36	0.424
E2	8.63	0	18	18	64	27.42	1.324
E3	7.66	0	25	25	50	22.82	1.030
E4	3.69	0	5	5	90	13.11	0.697
E5	28.17	0	29	29	42	80.67	3.482
E6	3.12	0	5	5	90	11.09	0.590
P	3.41	43	25	25	7	10.08	0.327
H1	11.68	0	16	16	68	37.78	1.856
H2	5.35	0	5	5	90	19.16	1.018
H3	7.62	0	20	20	60	23.79	1.128
J1	3.31	0	12.5	12.5	75	11.04	0.557
J2	10.92	0	12.5	12.5	75	36.40	1.839
J3	3.71	0	19	19	62	11.70	0.560
J4	6.44	0	12.5	12.5	75	21.47	1.084
J5	0.86	0	5	5	90	3.05	0.162
J6	2.70	0	5	5	90	9.59	0.510
J7	2.84	0	5	5	90	10.09	0.536
J8	5.78	0	70	30	0	12.31	0.355
J9	3.51	0	7.5	7.5	85	12.20	0.638
J10	4.02	0	5	5	90	14.27	0.759
J11	4.79	0	5	5	90	16.65	0.886
J12	9.08	100	0	0	0	10.65	0.314
K1	17.11	0	19	19	62	50.54	2.579
K2	9.51	0	15	15	70	29.39	1.537
K3	5.83	0	5	5	90	20.76	1.104
K4	8.58	0	70	30	0	18.28	0.527
K5	15.13	0	19	19	62	47.63	2.281
K6	1.41	0	5	5	90	5.01	0.266

NOTES:

1. *STORM DRAIN SIZES BASED ON 100-YR, 24-HR STORM FLOWS. FUTURE PROJECTS MAY BE REQUIRED TO INCREASE STORM DRAIN SIZE BASED ON 100-YR, 6-HR STORM FLOWS.*
2. *THE INTENDED FUTURE CONTRIBUTION FROM THE TRAILS UNIT 4 IS 20 CFS TO THE MAXIMUM DOWNSTREAM DISCHARGE OF 62 CFS IN UNIVERSE BLVD.*

LEGEND

- ANALYSIS POINT
- EXISTING STORM DRAIN
- FLOW DIRECTION
- FUTURE DEVELOPED STORM DRAIN

N

200' 100' 0 200' 400'

SCALE: 200'

4-14-14

DATUM NAVD 1929

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tecnm@yahoo.com
P.O. BOX 65760 ALBUQUERQUE, NM 87193
PHONE: (505) 271-2199
FAX: (505) 830-9246

AMENDMENT TO DMP FOR THE TRAILS UNITS 1, 2 AND 3

PLATE 2