

# CITY OF ALBUQUERQUE

Planning Department  
David Campbell, Director



Mayor Timothy M. Keller

August 15, 2018

David Thompson, PE  
Thompson Engineering Consultants, Inc.  
PO Box 65760  
Albuquerque, NM, 87193

**RE: Ladera Self Storage  
Grading and Drainage Plan  
Engineer's Stamp Date: 07/31/18  
Hydrology File: H09D001F**

Dear Mr. Thompson:

PO Box 1293

Based upon the information provided in your resubmittal received 08/09/2018, the Grading and Drainage Plan is approved for Building Permit and SO-19 Permit.

Albuquerque

Please attach a copy of this approved plan in the construction sets for Building Permit processing along with a copy of this letter.

NM 87103

Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required and a formal Elevation Certificate needs to be submitted to Hydrology.

www.cabq.gov

Please provide a Private Facility Drainage Covenant per Chapter 17 of the DPM for first flush ponds prior to Permanent Release of Occupancy. Please submit this on the 4th floor of Plaza de Sol. A \$25 fee will be required.

If you have any questions, please contact me at 924-3995 or [rbrissette@cabq.gov](mailto:rbrissette@cabq.gov).

Sincerely,

Renée C. Brissette, P.E. CFM  
Senior Engineer, Hydrology  
Planning Department



DRAINAGE PLAN:

LEGAL DESCRIPTION: LOT B-1, MARIPOSA SQUARE

SITE AREA: 1.904 ACRES

FLOOD HAZARD STATEMENT: F.E.M.A. FLOODWAY BOUNDARY AND FLOODWAY MAP DATED NOVEMBER 4, 2016 (PANEL NO. 35001C03261) INDICATES A FLOOD HAZARD ZONE X WHICH IS AN AREA DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.

EXISTING DRAINAGE CONDITIONS:

THE DRAINAGE ANALYSIS FOR THIS SITE IS IN ACCORDANCE WITH SECTION 22 OF THE CITY OF ALBUQUERQUE DEVELOPMENT PROCESS MANUAL (DPM), ENTITLED "DRAINAGE, FLOOD CONTROL, AND EROSION CONTROL." THE DESIGN STORM USED FOR BOTH UNDEVELOPED AND DEVELOPED CONDITIONS IS THE 100-YEAR, 6-HOUR STORM EVENT FOR RUNOFF. THE SITE IS LOCATED IN ZONE 1 SO THE 100-YEAR, 6-HOUR STORM EVENT IS 2.23 INCHES. UNDER EXISTING CONDITIONS LOT B-1 IS UNDEVELOPED AND THEREFORE ASSUMED TO BE LAND TREATMENT A.

LOT B-1 IS LOCATED IN NORTHWEST ALBUQUERQUE, JUST SOUTH OF THE LADERA-72ND STREET INTERSECTION. CURRENTLY THE SITE IS UNDEVELOPED. THE PROPERTY DRAINS FROM WEST TO EAST TO 72ND STREET. THE RUNOFF FROM THE SITE IS COLLECTED IN A STORM DRAIN IN 72ND STREET WHICH DRAINS NORTH TO THE LADERA POND SYSTEM. THE EXISTING PEAK RUNOFF FROM LOT B-1 UNDER EXISTING CONDITIONS IS 2.46 CFS AND 3,041 CUBIC FEET OF RUNOFF VOLUME DURING A 100-YEAR, 6-HOUR STORM. THERE ARE NO OFF-SITE FLOWS THAT REACH THE PROPERTY.

DEVELOPED DRAINAGE CONDITIONS:

THIS PROJECT INVOLVES THE CONSTRUCTION OF A STORAGE UNIT FACILITY. THE SITE HAS BEEN DIVIDED INTO TWO DRAINAGE BASINS, BASIN A AND BASIN B. BASIN A IS LOCATED IN THE SOUTHWEST CORNER OF THE SITE. IT INCLUDES THE OFFICE AND ENTRANCE PARKING. THE REMAINDER OF THE SITE IS BASIN B, WHICH INCLUDES THE STORAGE UNIT AREA AND DRIVEWAYS. BASIN A DRAINS FROM NORTHWEST TO SOUTHEAST INTO THE LANDSCAPED AREA. ALL RUNOFF IS CONVEYED IN THE PAVED AREAS TO A FIRST FLUSH POND LOCATED AT THE SOUTHEAST PART OF THE BASIN. THE FIRST FLUSH POND HAS A VOLUME OF 203 CUBIC-FEET. THE POND OVERFLOWS TO THE EAST TO THE LANDSCAPED AREA ON THE SOUTH END OF BASIN B WHERE A SERIES OF FIRST FLUSH PONDS ARE LOCATED.

BASIN B DRAINS FROM NORTH TO SOUTH TO THE LANDSCAPED AREA ALONG THE SOUTH BOUNDARY OF THE PROPERTY. RUNOFF FROM BASIN B IS CONVEYED IN 2-FOOT WIDE CONCRETE SWALES IN THE NORTH-SOUTH DRIVEWAYS. EXCEPT FOR THE EASTERN MOST DRIVEWAY WHERE THE RUNOFF IS CONVEYED IN THE GUTTER SECTION OF THE CURB AND GUTTER LOCATED ALONG THE EAST PROPERTY LINE. AT THE SOUTH EDGE OF THE PAVED DRIVEWAYS 2-FOOT WIDE CURB CUTS ARE LOCATED AT THE LOCATION OF THE CONCRETE SWALES OR GUTTER SECTION TO ALLOW THE RUNOFF TO DRAIN INTO THE FIRST FLUSH PONDS LOCATED IN THE LANDSCAPED AREA ALONG THE SOUTH PROPERTY BOUNDARY. THERE IS A SERIES OF FIRST FLUSH PONDS LOCATED IN THE SOUTHERN 10-FOOT WIDE LANDSCAPED AREA. THESE FIRST FLUSH PONDS OVERFLOW FROM WEST TO EAST. THE TOTAL VOLUME OF THE FIRST FLUSH PONDS IS 1,922 CUBIC-FEET. IN THE LANDSCAPED AREA AT THE EAST PROPERTY LINE IS A 24-INCH SIDEWALK CULVERT WHICH DRAINS THE FIRST FLUSH PONDS OVERFLOW TO 72ND STREET TO BE COLLECTED BY THE EXISTING STORM DRAIN NORTH OF THE SITE.

100-YEAR HYDROLOGIC CALCULATIONS

BASIN #	AREA (acre)	LAND TREATMENT				WEIGHTED E (in)	100-YEAR PRECIPITATION				
		A (%)	B (%)	C (%)	D (%)		V (6-hr) (acre-ft)	V (24-hr) (cu-ft)	V (24-hr) (acre-ft)	V (24-hr) (cu-ft)	Q (cfs)
EXISTING CONDITIONS											
BASIN A	0.2531	100.00	0.00	0.00	0.00	0.44	0.01	404	0.01	404	0.33
BASIN B	1.6509	100.00	0.00	0.00	0.00	0.44	0.06	2,637	0.06	2,637	2.13
TOTAL RUNOFF	1.9040						0.07	3,041	0.07	3,041	2.46
PROPOSED CONDITIONS											
BASIN A	0.2531	0.00	17.50	17.50	65.00	1.57	0.03	1,443	0.04	1,718	0.94
BASIN B	1.6509	0.00	3.10	3.20	93.70	1.90	0.26	11,376	0.32	13,959	7.02
TOTAL RUNOFF	1.9040						0.29	12,820	0.36	15,677	7.95
EXCESS PRECIP.		0.44	0.67	0.99	1.97	E <sub>1</sub> (in)					
PEAK DISCHARGE		1.29	2.03	2.87	4.37	Q <sub>1</sub> (cfs)					
							ZONE = 1				
WEIGHTED E (in) = (E <sub>1</sub> )(%A) + (E <sub>2</sub> )(%B) + (E <sub>3</sub> )(%C) + (E <sub>4</sub> )(%D)							P <sub>6HR</sub> (in.) = 2.23				
V <sub>6HR</sub> (acre-ft) = (WEIGHTED E)(AREA)/12							P <sub>24HR</sub> (in.) = 2.69				
V <sub>10DAY</sub> (acre-ft) = V <sub>6HR</sub> + (A <sub>1</sub> )(P <sub>10DAY</sub> - P <sub>6HR</sub> )/12							P <sub>10DAY</sub> (in.) = 3.67				
Q (cfs) = (Q <sub>1</sub> )(A <sub>1</sub> ) + (Q <sub>2</sub> )(A <sub>2</sub> ) + (Q <sub>3</sub> )(A <sub>3</sub> ) + (Q <sub>4</sub> )(A <sub>4</sub> )											

WEIGHTED E (in) = (E<sub>1</sub>)(%A) + (E<sub>2</sub>)(%B) + (E<sub>3</sub>)(%C) + (E<sub>4</sub>)(%D)  
V<sub>6HR</sub> (acre-ft) = (WEIGHTED E)(AREA)/12  
V<sub>24HR</sub> (acre-ft) = V<sub>6HR</sub> + (A<sub>2</sub>)(P<sub>24HR</sub> - P<sub>6HR</sub>)/12  
Q (cfs) = (Q<sub>1</sub>)(A<sub>1</sub>) + (Q<sub>2</sub>)(A<sub>2</sub>) + (Q<sub>3</sub>)(A<sub>3</sub>) + (Q<sub>4</sub>)(A<sub>4</sub>)

ZONE = 1

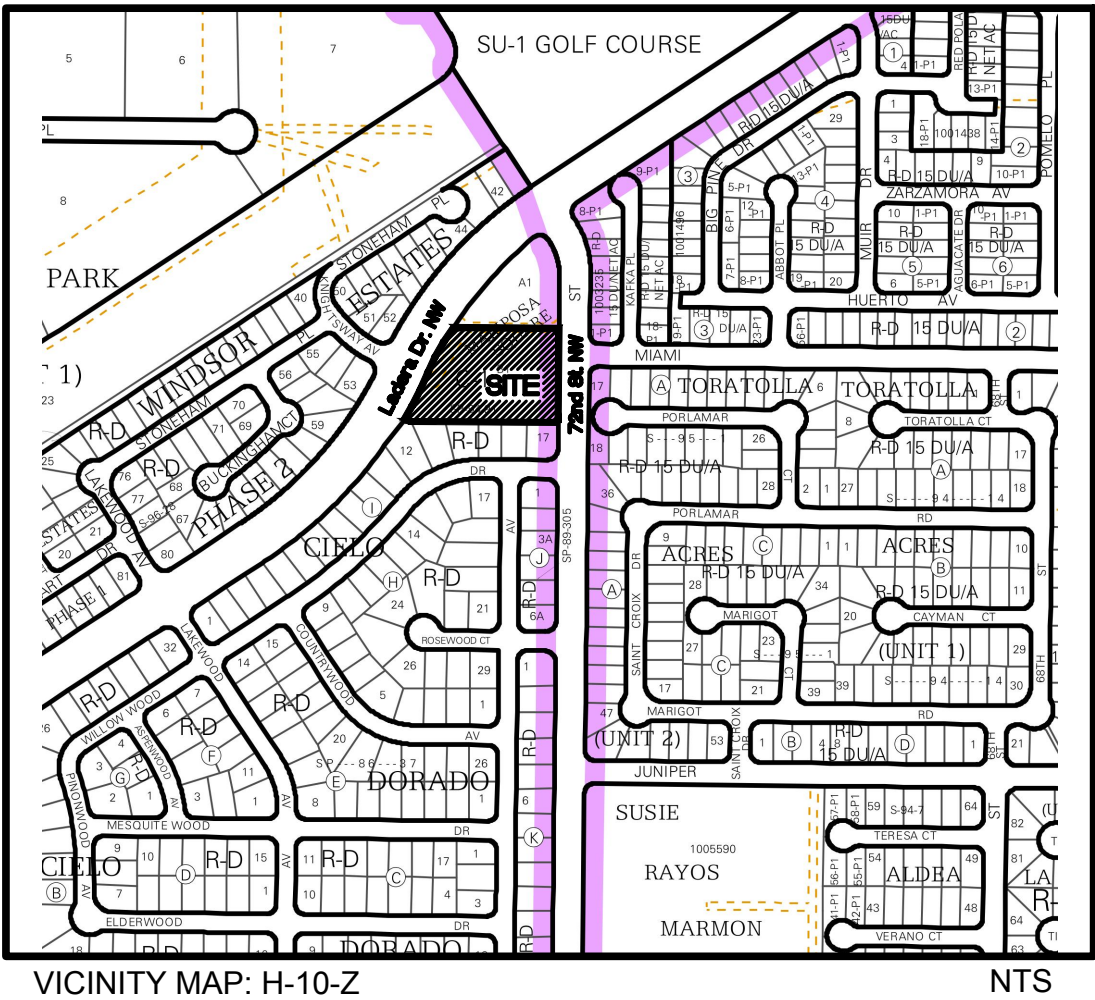
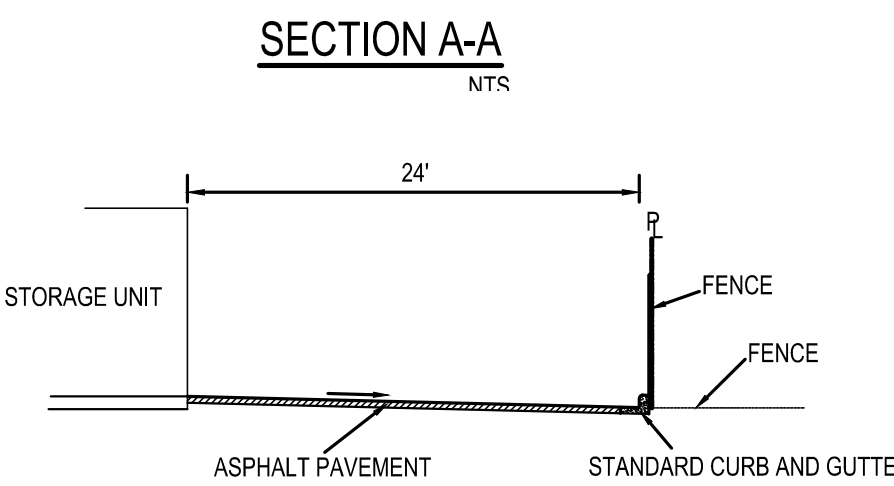
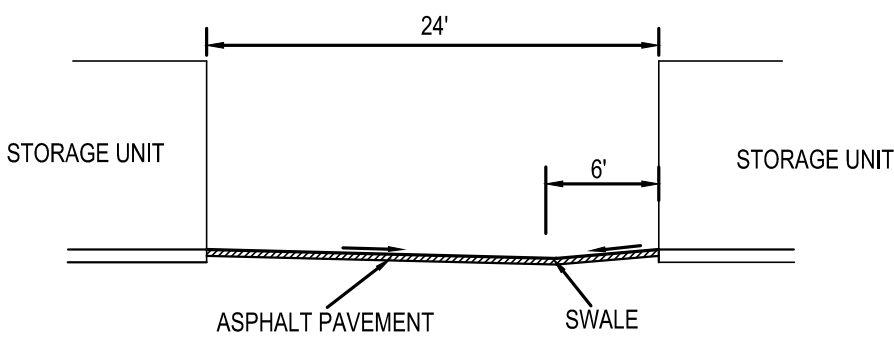
P<sub>6HR</sub> (in.) = 2.23

P<sub>24HR</sub> (in.) = 2.69

P<sub>100AY</sub> (in.) = 3.67

PRIVATE DRAINAGE FACILITIES WITHIN CITY RIGHT-OF-WAY NOTICE TO CONTRACTOR  
(SPECIAL ORDER 19 ~ "SO-19")

1. AN EXCAVATION PERMIT WILL BE REQUIRED BEFORE BEGINNING ANY WORK WITHIN CITY RIGHT-OF-WAY.
2. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
3. TWO WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NEW MEXICO ONE CALL, DIAL "811" [OR (505) 260-1990] FOR THE LOCATION OF EXISTING UTILITIES.
4. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE LOCATIONS OF ALL OBSTRUCTIONS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM AMOUNT OF DELAY.
5. BACKFILL COMPACTION SHALL BE ACCORDING TO TRAFFIC/STREET USE.
6. MAINTENANCE OF THE FACILITY SHALL BE THE RESPONSIBILITY OF THE OWNER OF THE PROPERTY BEING SERVED.
7. WORK ON ARTERIAL STREETS MAY BE REQUIRED ON A 24-HOUR BASIS.
8. CONTRACTOR MUST CONTACT JASON RODRIGUEZ AT 235-8016 AND CONSTRUCTION COORDINATION AT 924-3416 TO SCHEDULE AN INSPECTION.



FIRST FLUSH CALCULATIONS:

BASIN A: (0.34 IN / 12 IN/FT) x (0.2531 AC x 43,560 SF/AC x 0.65) = 203 CF  
BASIN B: (0.34 IN / 12 IN/FT) x (1.6509 AC x 43,560 SF/AC x 0.937) = 1909 CF

WEIR EQUATIONS:

1. 24" CURB OPENING  
Q=3.0(2)(0.5)<sup>1.5</sup> = 2.1 CFS
2. 12" CONCRETE CHANNEL  
Q=3.0(1)(0.5)<sup>1.5</sup> = 1.1 CFS
3. 24" SIDEWALK CULVERT  
Q=3.0(2)(0.58)<sup>1.5</sup> = 2.65 CFS

KEYED NOTES

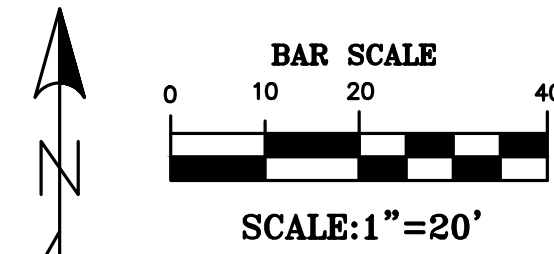
1. 2" CURB CUT
2. 24" SIDEWALK CULVERT  
PER COA STD DWG 2236  
INV. W=31.86  
INV. E=31.60
3. 12" CONCRETE CHANNEL  
INV. N=37.56  
INV. S=37.36

GENERAL NOTE

- ALL ELEVATIONS ARE AT FLOWLINE

LEGEND

- EXIST. MAJOR CONTOURS
- EXIST. MINOR CONTOURS
- BASIN BOUNDARY
- BASIN NUMBER
- PROPOSED CURB AND GUTTER
- PROPOSED SPOT ELEVATIONS
- EXISTING SPOT ELEVATIONS
- PROPOSED FLOW DIRECTION
- EXISTING CURB & GUTTER
- PROPERTY BOUNDARY (THIS IS NOT A BOUNDARY SURVEY)
- PROPOSED SWALE



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Project Title: Ladera Self Storage  
Tract B1 of Tracts A1 & B1, Mariposa Square Subdivision  
Albuquerque, NM 87120

Drawing Title: Grading and Drainage Plan



THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED

Print Date: 08.31.17 Job Number: 17.08

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