

# CITY OF ALBUQUERQUE



December 20, 2016

Fred C. Arfman, P.E.  
Isaacson & Arfman, P.A.  
128 Monroe Street NE  
Albuquerque, NM, 87108

Richard J. Berry, Mayor

**RE:** 18<sup>th</sup> & Lomas Townhouse  
Grading and drainage Plan  
Engineer's Stamp Date 11-18-16 (File: J13D203)

Dear Mr. Arfman:

Based upon the information provided in your submittal received 11-18-16, the above referenced submittal cannot be approved for Building Permit, until the following comments are addressed:

1. Are the ponds in the south west and in the north too close to existing structure?  
Will they effect the foundation?
2. An infiltration system design should have the width or length dimensions, in plan view, greater than the depth dimension otherwise it is considered an injection well and a permit from the New Mexico Environment Department is required.
3. The infiltration system design should include a filter material to prevent fine material from entering the system.

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

Sincerely,

Abiel Carrillo, P.E.  
Principal Engineer, Planning Dept.  
Development Review Services

Orig: Drainage file



# City of Albuquerque

Planning Department

Development & Building Services Division

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

Project Title: 18th & Lomas Townhomes Building Permit #: \_\_\_\_\_ City Drainage #: J13 D203  
DRB#: \_\_\_\_\_ EPC#: \_\_\_\_\_ Work Order#: \_\_\_\_\_  
Legal Description: Tracts 69 and 80, MRGCD Map No. 38  
City Address: 1703 Lomas Blvd. NW - Albuquerque, NM 87104

Engineering Firm: Isaacson & Arfman, P.A. Contact: Fred C. Arfman  
Address: 128 Monroe Street NE - Albuquerque, NM 87108  
Phone#: (505) 268-8828 Fax#: \_\_\_\_\_ E-mail: freda@iacivil.com

Owner: BCR Construction Contact: Billy Baca  
Address: P.O. Box 7489 - Albuquerque, NM 87194  
Phone#: (505) 345-1983 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) \_\_\_\_\_

IS THIS A RESUBMITTAL?: ☐ Yes ☒ No

DATE SUBMITTED: November 18, 2016 By: Fred C. Arfman

### 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

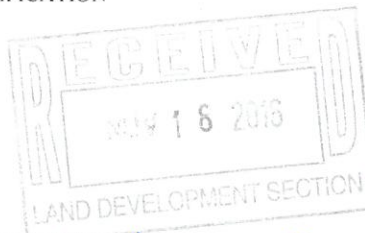
☐ GRADING/ PAD CERTIFICATION

☐ WORK ORDER APPROVAL

☐ CLOMR/LOMR

☐ PRE-DESIGN MEETING

☐ OTHER (SPECIFY) \_\_\_\_\_



\$50.00

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



| SOUTHEAST |      |                  |  |
|-----------|------|------------------|--|
| Contour   | Area | Volume           |  |
| 4958.50   | 620  | 248 CF<br>114 CF |  |
| 4958.00   | 373  |                  |  |
| 4957.50   | 82   |                  |  |
| VOLUME    |      | 362 CF           |  |

| SOUTHWEST |      |                 |  |
|-----------|------|-----------------|--|
| Contour   | Area | Volume          |  |
| 4958.20   | 354  | 61 CF<br>131 CF |  |
| 4958.00   | 257  |                 |  |
| 4957.00   | 5    |                 |  |
| VOLUME    |      | 192 CF          |  |

| NORTH   |      |                  |  |
|---------|------|------------------|--|
| Contour | Area | Volume           |  |
| 4958.50 | 1023 | 390 CF<br>183 CF |  |
| 4958.00 | 537  |                  |  |
| 4957.50 | 193  |                  |  |
| VOLUME  |      | 573 CF           |  |

- A. PROPOSED SPOT AND CONTOUR ELEVATIONS SHOWN REPRESENT TOP OF FINISH MATERIAL (I.E. TOP OF CONCRETE, TOP OF CONCRETE BUILDING PAD, TOP OF PAVEMENT MATERIAL, TOP OF LANDSCAPING MATERIAL, ETC.). CONTRACTOR SHALL GRADE, COMPACT SUBGRADE AND DETERMINE EARTHWORK ESTIMATES BASED ON ELEVATIONS SHOWN MINUS FINISH MATERIAL THICKNESSES.
- B. THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND THE CITY OF ALBUQUERQUE MAY REQUIRE AN EROSION AND SEDIMENT CONTROL (ESC) PERMIT FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES MEET THE EPA THRESHOLD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR USING EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES (BMP'S) TO ENSURE THAT NO SOIL ERODES FROM THE SITE ONTO ADJACENT PUBLIC RIGHT-OF-WAY.
- C. ALL NEW PAVEMENT SURFACES SHALL BE CONSTRUCTED WITH POSITIVE SLOPE AWAY FROM BUILDINGS AND POSITIVE SLOPE TOWARD EXISTING AND/OR PROPOSED DRAINAGE PATHS. PAVING AND ROADWAY GRADES SHALL BE  $\pm 0.1'$  FROM PLAN ELEVATIONS. BUILDING PAD ELEVATION SHALL BE  $\pm 0.05'$  FROM PLAN ELEVATION.
- D. WHERE GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH.
- E. SIDESLOPES STEEPER THAN 4:1 BUT LESS THAN 2:1 MUST HAVE PERMANENT EROSION PROTECTION INSTALLED, TYPICAL. NO SLOPE SHALL BE STEEPER THAN 2:1.
- F. POND DESIGN PARAMETERS AND STORMWATER CONTROL MEASURES SHOWN ON THIS PLAN (TOP OF POND, BOTTOM OF POND, SIZE OF ORIFICE, AREA OF POND, ETC.) TO BE STRICTLY ADHERED TO FOR CERTIFICATION PURPOSES.
- G. POST-CONSTRUCTION MAINTENANCE FOR PRIVATE STORMWATER FACILITIES WILL BE THE RESPONSIBILITY OF THE FACILITIES OWNER. ENGINEER RECOMMENDS THAT OWNER INSPECT SITE YEARLY AND AFTER EACH MAJOR RAIN TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.
- H. THE CONTRACTOR SHALL ABIDE BY ALL STATE, LOCAL, AND FEDERAL LAWS, CODES, RULES AND REGULATIONS WHICH APPLY TO THE CONSTRUCTION OF THESE IMPROVEMENTS, INCLUDING EPA AND

# L NOTES

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ADA REQUIREMENTS.

- I. ALL WORK DETAILED ON THESE PLANS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE CITY OF ALBUQUERQUE STANDARD SPECIFICATIONS FOR PUBLIC WORKS.
- J. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SAFETY.
- K. CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS.
- L. CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL IN THE RIGHT-OF-WAY.
- M. EXISTING UTILITY LINES ARE SHOWN IN AN APPROXIMATE MANNER ONLY AND MAY BE INCOMPLETE OR OBSOLETE. SUCH LINES MAY OR MAY NOT EXIST WHERE SHOWN OR NOT SHOWN. CONTRACTOR SHALL CONTACT NM-811 FOR UTILITY LINE SPOTS FIVE WORKING DAYS PRIOR TO CONDUCTING SITE FIELD WORK. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY ITS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING UTILITIES, PIPELINES, AND UNDERGROUND UTILITY LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF NECESSARY DRY UTILITY ADJUSTMENTS.
- N. FIVE WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NM811 (811) FOR LOCATION OF EXISTING UTILITIES.
- O. ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
- P. VIBRATORY COMPACTION SHALL NOT BE USED OVER IN-PLACE UTILITIES.
- Q. ADJUST ANY RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES. UTILITIES IN PAVED AREAS SHALL BE HS-25 TRAFFIC RATED.
- R. CONTRACTOR SHALL COMPLY WITH LOCAL REGULATIONS FOR RESEEDING OF DISTURBED AREAS.



## KEYED NOTES

1. CONSTRUCT CONCRETE APRON AND GRAVEL WALKS TO ELEVATIONS SHOWN.
2. PROPOSED ROOF DISCHARGE DIRECTION (SHEETFLOW).
3. CONSTRUCT 2' WIDE X 5' LONG PERCOLATION TRENCH PER DETAIL THIS SHEET.
4. EXISTING FLAT LAND GRADING CONCEPT REQUIRES STORMWATER PONDING WITHIN DEPRESSED WATER HARVESTING BASINS THROUGHOUT THE PROPERTY. DUE TO SITE CONSTRAINTS, THESE BASINS ARE LOCATED IN CLOSE PROXIMITY TO EXISTING AND PROPOSED BUILDINGS. PER THE SURVEY PROVIDED, ALL EXISTING AND PROPOSED F.F. ELEVATIONS ARE MIN. 1' ABOVE SURROUNDING GRADES. CONTRACTOR SHALL COORDINATE PROTECTION OF EXISTING AND PROPOSED BUILDING FOUNDATIONS WITH GEOTECH AND STRUCTURAL ENGINEERS AS NECESSARY.

[illegible]

# **CALCULATIONS**

## **CALCULATIONS: 2198 18th Street Townhomes : November 17, 2016**

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

### **ON-SITE**

AREA OF SITE: 9736 SF = 0.22

100-year, 6-hour

### **HISTORIC FLOWS:**

### **DEVELOPED FLOWS:**

### **EXCESS PRECIP:**

|              | Treatment SF | %    |              | Treatment SF | %    | Precip. Zone     | 2    |
|--------------|--------------|------|--------------|--------------|------|------------------|------|
| Area A =     | 0            | 0%   | Area A =     | 0            | 0%   | E <sub>A</sub> = | 0.53 |
| Area B =     | 1947.2       | 20%  | Area B =     | 1947         | 20%  | E <sub>B</sub> = | 0.78 |
| Area C =     | 7788.8       | 80%  | Area C =     | 2921         | 30%  | E <sub>C</sub> = | 1.13 |
| Area D =     | 0            | 0%   | Area D =     | 4868         | 50%  | E <sub>D</sub> = | 2.12 |
| Total Area = | 9736         | 100% | Total Area = | 9736         | 100% |                  |      |

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)

Weighted E = 
$$\frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$$

$$A_A + A_B + A_C + A_D$$

|            |   |          |             |   |          |
|------------|---|----------|-------------|---|----------|
| Historic E | = | 1.06 in. | Developed E | = | 1.56 in. |
|------------|---|----------|-------------|---|----------|

On-Site Volume of Runoff:  $V_{360} = E * A / 12$

|                    |   |        |                     |   |         |
|--------------------|---|--------|---------------------|---|---------|
| Historic $V_{360}$ | = | 860 CF | Developed $V_{360}$ | = | 1262 CF |
|--------------------|---|--------|---------------------|---|---------|

On-Site Peak Discharge Rate:  $Q_p = Q_{pA} A_A + Q_{pB} A_B + Q_{pC} A_C + Q_{pD} A_D / 43.560$

For Precipitation Zone 2

$Q_{pA} = 1.56$   $Q_{pC} = 3.14$

$Q_{pB} = 2.28$   $Q_{pD} = 4.70$

|                |   |         |                 |   |         |
|----------------|---|---------|-----------------|---|---------|
| Historic $Q_p$ | = | 0.7 CFS | Developed $Q_p$ | = | 0.8 CFS |
|----------------|---|---------|-----------------|---|---------|

## **OVERALL SITE**

TOTAL AREA: 0.4793

**TYPICAL DIMENSIONS**

5' LONG  
2' WIDE  
VARIES

**DETAILS**

GRAVEL SURFACE

3/4" RIVER RUN WASHED STONE

GEOTEX501 NON-WOVEN GEOTEXTILE FABRIC ON TOP, BOTTOM, AND SIDES

CLAY SILTY CLAYS

SILTY CLAYS SAND STRATA

EXTEND 18" INTO SAND STRATA TYPICAL

2' DIA. MIN.

XX' TOTAL DEPTH

**PERCOLATION TRENCH**

LOCATE CLAY LAYER BELOW SURFACE GRADE. MAY VARY BASED ON LOCATION OF INFILTRATION PIT.  
SCALE: N.T.S.

