

# CITY OF ALBUQUERQUE



January 10, 2017

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

RE: 18th & Lomas Townhouse  
Grading and drainage Plan  
Engineer's Stamp Date 1-5-17 (File: J13D203)

Dear Mr. Arfman:

Based upon the information provided in your submittal received 1-5-17, the above referenced Grading and Drainage plan is approved for Building Permit.

Please attach a copy of this approved plan in the construction sets when submitting for a building permit. Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

PO Box 1293

If you have any questions, you can contact me at 924-3999.

Albuquerque

Sincerely,

New Mexico 87103

Shahab Biazar, P.E.  
City Engineer, Planning Dept.  
Development Review Services

www.cabq.gov

MA/SB



# 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 or Bryan Bobrick  
Address: 128 Monroe Street NE - Albuquerque, NM 87108  
Phone#: (505) 268-8828 Fax#: \_\_\_\_\_ E-mail: freda@iacivil.com  
bryanb@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) \_\_\_\_\_

1-5-17  
VS

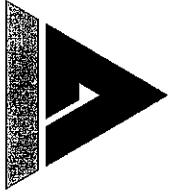
**CHECK TYPE OF APPROVAL/ACCEPTANCE SOUGHT:**

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

IS THIS A RESUBMITTAL?:  Yes  No

DATE SUBMITTED: January 4, 2017 By: Fred C. Arfman

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



December 30, 2016

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

RE: 18<sup>TH</sup> & LOMAS TOWNHOMES (FILE: J13/D203)

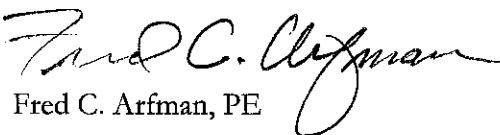
Dear Mr. Carrillo,

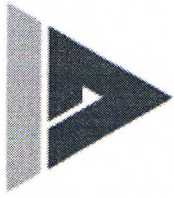
Attached is a revised Grading and Drainage Plan for the referenced project. Revisions were made based on your review comments dated December 20, 2016 as follows:

1. The proposed ponding in this area is consistent with a flat grading concept with FF elevations raised approx. 1' above surrounding grades. The owner of the properties in the vicinity of the ponds (existing and proposed) understands the risks associated with a flat grading concept which includes shallow ponding adjacent to structures (see following page for signed disclaimer).
2. The percolation trench detail has been modified to ensure the length is greater than the depth dimension.
3. Per the original detail, the rock filled percolation trench is surrounded by a Geotex 501 non-woven geotextile fabric (top, bottom and sides).

Please don't hesitate to contact me or Bryan Bobrick with any additional questions or comments.

Sincerely,  
Isaacson & Arfman, PA

  
Fred C. Arfman, PE



Per the Bernalillo County Contour exhibit above, the SITE is in an area of flat grades with stormwater ponding in low areas around buildings. As noted on the plan, this concept will be accommodated with the addition of on-site shallow ponding areas sized to accept the increase in runoff due to construction. The finish floor of the proposed properties (4959.6) and the existing properties (4959.2 – 4959.5) are approx. 1’ above the surrounding grade which is typical for construction in flat areas. The residence to the north is elevated (per the available contours shown above) and includes a rear yard depth of approx. 15’.

The owner of the SITE to be developed is also the owner of the buildings shown with an asterisk and is aware of the risk associated with ponding water around existing and proposed buildings (see signature below).

I, Anita Delgado, Owner of the SITE and buildings shown above (yellow asterisks) accept that a flat grading concept which ponds stormwater in close proximity to the existing / proposed buildings may impact the structures.

Anita Delgado  
Owner Name (print and sign)

12/30/16  
Date

### WATER HARVESTING

SOUTHEAST		
Contour	Area	Volume
4958.50	620	248 CF
4958.00	373	114 CF
4957.50	82	114 CF
VOLUME		362 CF

THE DEVELOPED DISCHARGE (100-YR 6-HR STORM) WILL BE AN INCREASE OF 0.1 CFS WITH A VOLUME INCREASE OF 402 CF. THE PROPOSED WATER HARVESTING AREAS HAVE ADEQUATE CAPACITY TO ACCEPT THE MAJORITY OF ON-SITE STORMWATER.

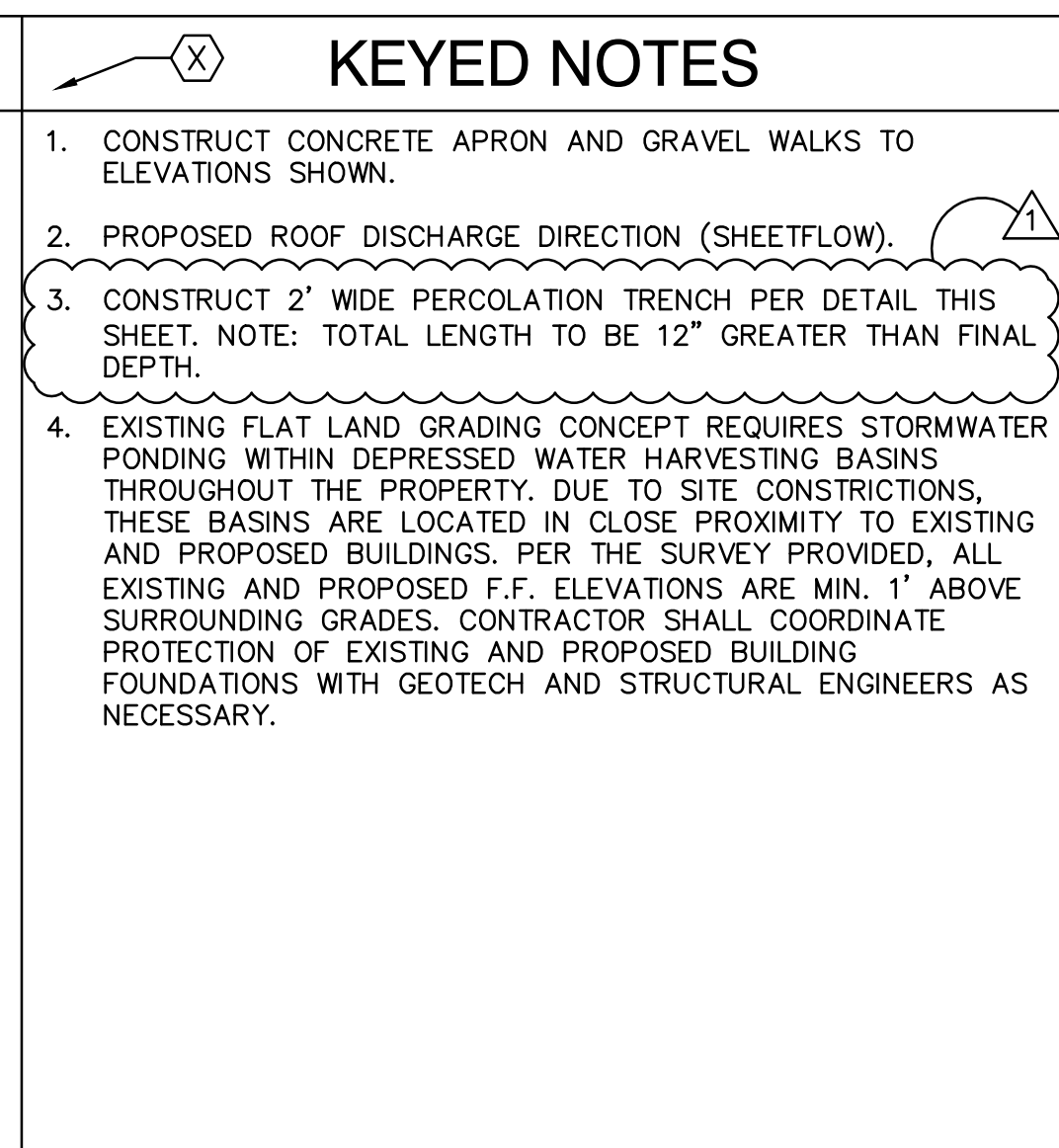
SOUTHWEST		
Contour	Area	Volume
4958.20	354	61 CF
4958.00	257	131 CF
4957.00	5	131 CF
VOLUME		192 CF

NORTH		
Contour	Area	Volume
4958.50	1023	390 CF
4958.00	537	183 CF
4957.50	193	183 CF
VOLUME		573 CF

TOTAL VOLUME 1127

- ### GENERAL NOTES
- 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.
  - 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.
  - 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 ±0.1' FROM PLAN ELEVATIONS. BUILDING PAD ELEVATION SHALL BE ±0.05' FROM PLAN ELEVATION.
  - WHERE GRADES BETWEEN NEW AND EXISTING ARE SHOWN AS 'MATCH' OR '±', TRANSITIONS SHALL BE SMOOTH.
  - 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.
  - 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.
  - 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 RAINFALL TO IDENTIFY NEW AREAS OF EROSION AND INSTALL ADDITIONAL EROSION PROTECTION AS NEEDED BASED ON ACTUAL OCCURRENCES.
  - 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

- ### KEYED NOTES
- CONSTRUCT CONCRETE APRON AND GRAVEL WALKS TO ELEVATIONS SHOWN.
  - PROPOSED ROOF DISCHARGE DIRECTION (SHEETFLOW).
  - CONSTRUCT 2' WIDE PERCOLATION TRENCH PER DETAIL THIS SHEET. NOTE: TOTAL LENGTH TO BE 12" GREATER THAN FINAL DEPTH.
  - 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.
- ADA REQUIREMENTS.
  - 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.
  - THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SITE SAFETY.
  - CONSTRUCTION ACTIVITY SHALL BE LIMITED TO THE PROPERTY AND/OR PROJECT LIMITS.
  - CONSTRUCTION EQUIPMENT SHALL NOT OBSTRUCT DRIVEWAYS OR TRAFFIC LANES. THE CONTRACTOR SHALL NOT STORE ANY EQUIPMENT OR MATERIAL IN THE RIGHT-OF-WAY.
  - 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.
  - FIVE WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR MUST CONTACT NM811 (811) FOR LOCATION OF EXISTING UTILITIES.
  - ALL TRASH, DEBRIS, & SURFACE VEGETATION SHALL BE CLEARED AND LEGALLY DISPOSED OF OFFSITE.
  - VIBRATORY COMPACTION SHALL NOT BE USED OVER IN-PLACE UTILITIES.
  - ADJUST ANY RIMS OF EXISTING UTILITY FEATURES AS NECESSARY TO MATCH NEW GRADES. UTILITIES IN PAVED AREAS SHALL BE HS-25 TRAFFIC RATED.
  - CONTRACTOR SHALL COMPLY WITH LOCAL REGULATIONS FOR RESEEDING OF DISTURBED AREAS.



### 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

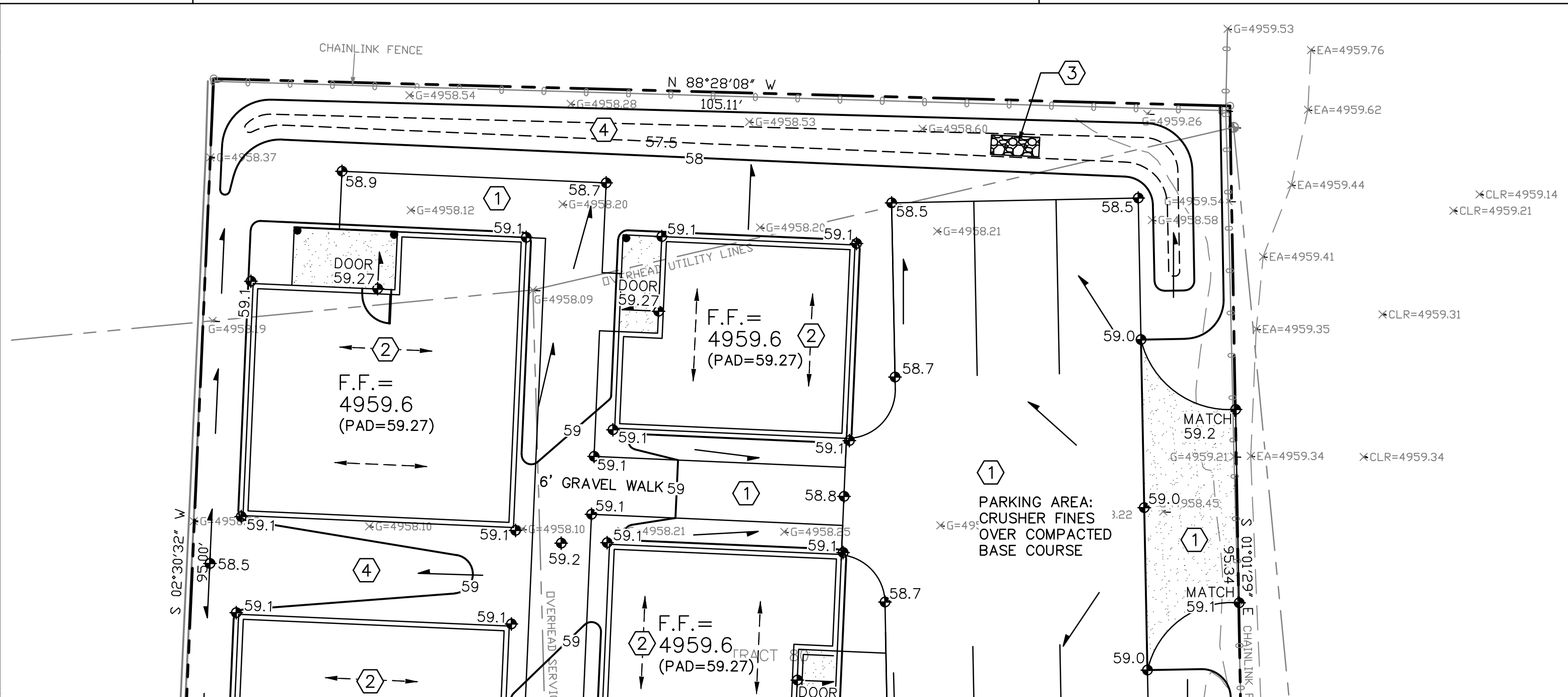
ON-SITE		
AREA OF SITE:	9736 SF = 0.22	
<b>HISTORIC FLOWS:</b>		
Area A = 0	Treatment SF = 0	% = 0%
Area B = 1947.2	Treatment SF = 1947	% = 20%
Area C = 7788.8	Treatment SF = 2921	% = 30%
Area D = 0	Treatment SF = 4868	% = 50%
Total Area = 9736	Total Area = 9736	100%

DEVELOPED FLOWS:		
Area A = 0	Treatment SF = 0	% = 0%
Area B = 1947.2	Treatment SF = 1947	% = 20%
Area C = 7788.8	Treatment SF = 2921	% = 30%
Area D = 0	Treatment SF = 4868	% = 50%
Total Area = 9736	Total Area = 9736	100%

On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)  
Weighted E =  $\frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$   
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  
 $Q_{pA} = 1.56$ ,  $Q_{pB} = 2.28$ ,  $Q_{pC} = 3.14$ ,  $Q_{pD} = 4.70$   
Historic  $Q_p = 0.7$  CFS | Developed  $Q_p = 0.8$  CFS



### PROJECT DATA

LEGAL: TRACTS 69 AND 80, M.R.G.C.D. MAP NO. 38, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.  
TOTAL AREA: 0.4793  
ADDRESS: 1703 LOMAS BLVD. NW

**EXISTING CONDITION:** THE PRESENT 0.5-ACRE SITE (TWO PROPERTIES) IS A DEVELOPED RESIDENTIAL PROPERTY WITH AN EXISTING RESIDENCE AND GARAGE BLDGS. THE SITE FOLLOWS A 'FLAT' GRADING CONCEPT COMMON FOR THE AREA. DEVELOPED RESIDENTIAL PROPERTIES BORDER THE PROPERTY TO THE WEST AND NORTH, 18TH ST. NW IS TO THE EAST AND LOMAS BLVD. NW IS TO THE SOUTH.

**PROPOSED IMPROVEMENTS:** FOUR APARTMENT UNITS WILL BE CONSTRUCTED ON THE NORTHERN HALF OF THE PROPERTY WITH ASSOCIATED ASPHALT PAVEMENT FOR PARKING, PEDESTRIAN ACCESS WALKS AND LANDSCAPE IMPROVEMENTS.

**BENCHMARK:** VERTICAL DATUM IS BASED ON THE ALBUQUERQUE STATION No. "12-J13", HAVING AN ELEVATION OF 4957.502, (NAVD88).

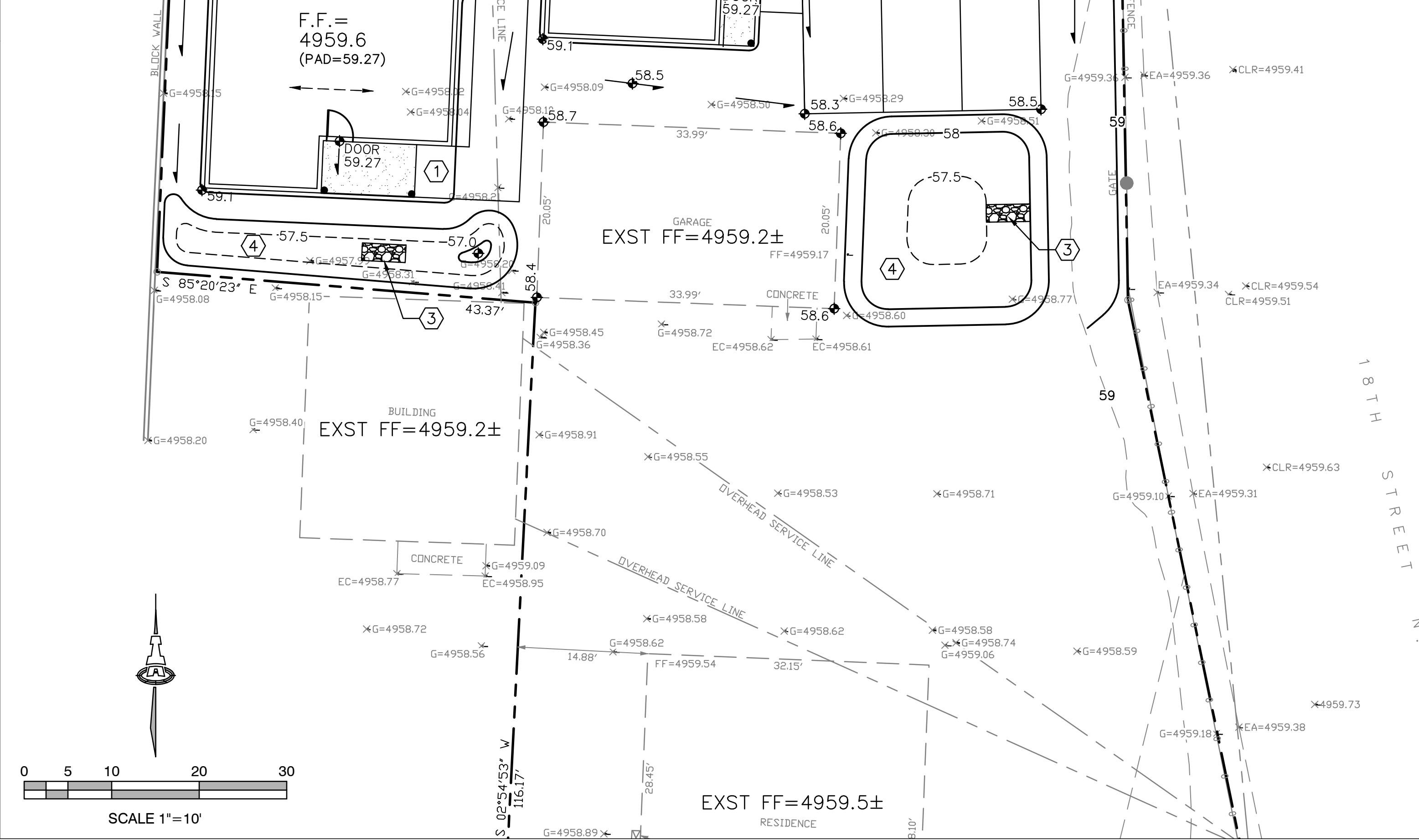
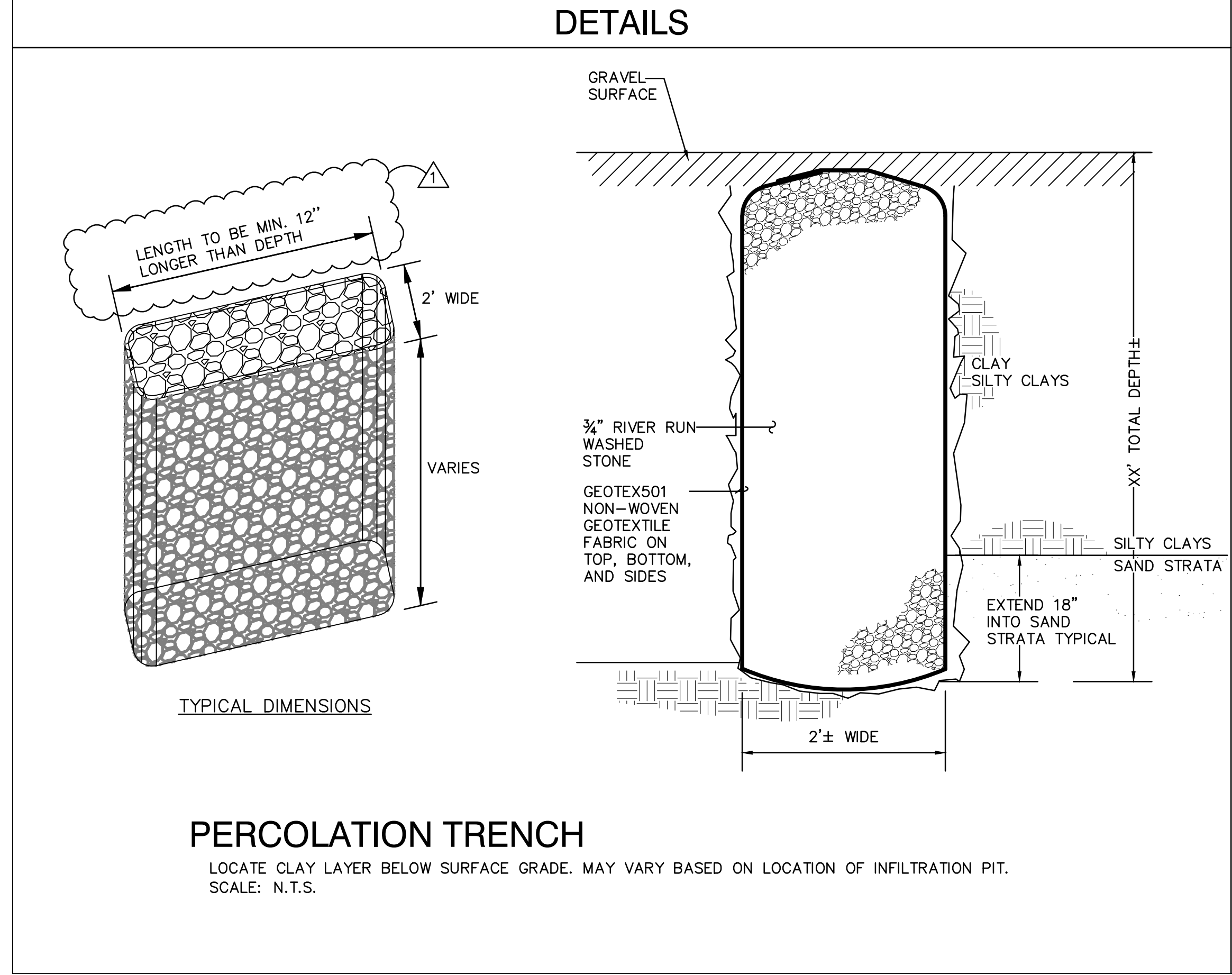
**DRAINAGE CONCEPT:** BASED ON A SITE OBSERVATION AND A CURRENT AS-BUILT SURVEY, THE FLAT GRADING CONCEPT WILL BE ACCOMMODATED WITH THE ADDITION OF ON-SITE SHALLOW PONDING AREAS (< 18" DEPTH) SIZED TO ACCEPT THE INCREASE IN RUNOFF DUE TO CONSTRUCTION OF IMPERVIOUS AREA.

**FLOOD HAZARD:** PER FIRM MAP 35001C0333H DATED AUGUST 16, 2012, THE PROPERTY LIES WITHIN FLOOD ZONE X, DEFINED AS AREAS OF MINIMAL FLOOD HAZARD, WHICH ARE THE AREAS OUTSIDE THE SFHA AND HIGHER THAN THE ELEVATION OF THE 0.2-PERCENT-ANNUAL-CHANCE FLOOD"

**OFF-SITE DRAINAGE:** NO OFF-SITE DRAINAGE IMPACTS THIS PROPERTY.

**ENGINEER:** FRED C. ARFMAN, NMPE 7322  
ISAACSON & ARFMAN, P.A.  
PHONE: 268-8828

**SURVEYOR:** Anthony L. Harris, N.M.P.S.#11463  
THE SURVEY OFFICE, LLC  
PHONE: 998-0303



### LEGEND

- EXISTING SPOT ELEVATION
- EXISTING CONTOUR
- PROPOSED SPOT ELEVATION
- SURFACE FLOW DIRECTION
- FLOW LINE
- FINISHED FLOOR
- INVERT ELEVATION

**ISAACSON & ARFMAN, P.A.**  
Consulting Engineering Associates  
128 Montev Street N.E.  
Albuquerque, New Mexico 87108  
Ph. 505-268-8828 www.isaacson.com

2198 CG-101.dwg Dec 30, 2016

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### 18th & Lomas Townhomes

BCR Construction

### Drainage & Grading Plan

Date: 01-04-17	No. Revision: 1	Date: 01.04.17	Job No. 2198
Drawn By: BJB			CG-101
Ckd By: FCA			SH. OF