CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

November 21, 2022

Reza Afaghpour, P.E.
SBS Construction & Engineering, LLC
7632 William Myers NE
Albuquerque, NM 87122

RE: **Loma Alegre Subdivision**
TRACTS 473 AND 474, UNIT 7, TOWN OF ATRISCO GRANT
Grading and Drainage Plan
Engineer's Stamp Date: 6/8/22
Hydrology File: L10D033

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Dear Mr. Afaghpour:

Based upon the information provided in your submittal received 10/25/22, the Grading & Drainage Plan **is not** approved for Grading Permit. The following comments need to be addressed for approval of the above referenced project:

1. Please insert north arrow.

2. Include project benchmark and datum.

3. Include drainage calculations for lots 1 through 8 and 17 through 21.

4. Change Tract 476 to 473 under "Location".

5. Correct a typo of "Are" in the "Area @ the Throat".

6. Verify the Retention Volume Provided = 6,484.70 CF under "Lot 22 – Volume requirements" since the same item listed in the table shows 6,824.35 CF.

7. Add cross-sectional details for Loma Alegre Road, Sandia Sunrise Ct and Zia Valley Ct. Add more FL and TC elevations for all three proposed roads.

8. Drainage covenants will be required.

As a reminder, if the project total area of disturbance (including the staging area and any work within the adjacent Right-of-Way) is 1 acre or more, then an Erosion and Sediment Control (ESC) Plan and Owner's certified Notice of Intent (NOI) is required to be submitted to the Stormwater Quality Engineer (Doug Hughes, PE, jhughes@cabq.gov, 505-924-3420) 14 days prior to any earth disturbance.

CITY OF ALBUQUERQUE

Planning Department
Alan Varela, Director

Mayor Timothy M. Keller

If you have any questions, please contact me at 505-924-3695 or tchen@cabq.gov.

Sincerely,

Tiequan Chen, P.E.
Principal Engineer, Hydrology
Planning Department, Development Review Services

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Project Title: LOMA ALEGRE SUBDIVISION   Building Permit #:_____   Hydrology File #: _____

DRB#:_____   EPC#:_____   Work Order#: _____

Legal Description: TRACTS 473 AND 474, UNIT 7, TOWN OF ATRISCO GRANT

City Address: _____

Applicant: SBS CONSTRUCTION AND ENGINEEING, LLC   Contact: SHAWN BIAZAR

Address: 7632 WILLIAM MYERS, NE, ALBUQUERQUE, NM 87122

Phone#:   (505) 804-5013   Fax#:   (505) 897-4996   E-mail: AECLLC@AOL.COM

Other Contact: _____   Contact: _____

Address: _____

Phone#: _____   Fax#: _____   E-mail: _____

TYPE OF DEVELOPMENT: _____ PLAT (# of lots) _____ RESIDENCE _____ DRB SITE __X__ ADMIN SITE

IS THIS A RESUBMITTAL? _____ Yes ___X___ No

DEPARTMENT _____ TRANSPORTATION ___X___ HYDROLOGY/DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

_____ ENGINEER/ARCHITECT CERTIFICATION

_____ PAD CERTIFICATION

_____ CONCEPTUAL G & D PLAN

__X__ GRADING PLAN

_____ DRAINAGE REPORT

_____ DRAINAGE MASTER PLAN

_____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC

_____ ELEVATION CERTIFICATE

_____ CLOMR/LOMR

_____ TRAFFIC CIRCULATION LAYOUT (TCL)

_____ TRAFFIC IMPACT STUDY (TIS)

_____ STREET LIGHT LAYOUT

_____ OTHER (SPECIFY) _____

_____ PRE-DESIGN MEETING?

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

__X__ GRADING PERMIT APPROVAL

_____ SO-19 APPROVAL

_____ PAVING PERMIT APPROVAL

_____ GRADING/ PAD CERTIFICATION

_____ WORK ORDER APPROVAL

_____ CLOMR/LOMR

_____ FLOODPLAIN DEVELOPMENT PERMIT

_____ OTHER (SPECIFY) _____

DATE SUBMITTED: 10-21-2022   By: SHAWN BIAZAR

- -

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED:_____

FEE PAID:_____

Location

Tract 476 and 474, Unit 7, Town of Atrisco Grant is located between Sage Road and San Ygnacio just east of Abeyta Road containing 10.12 acre. See attached portion of Vicinity for exact location of the project.

Purpose

The purpose of this drainage report is to present a grading and drainage solution in support of the proposed 22 lot subdivision.

Existing Drainage Conditions

This site is fairly flat and falls within Basin S8-D (Map No.2) of the Tower/Sage Drainage Master Plan. The total S8-D basin is 43.70 with a discharge of 87 cfs. The allowable discharge under Basin S8-D is (87/43.70) 1.99 cfs/ac. Therefore, this site can discharge at a total flow rate of (10.12 ac x 1.99 cfs/ac) 20.14 cfs to the Sage Rd. 48" Storm Drainage Pipe. No offsite runoff enters this site. Based on the attached FIRM Map the site does not fall within a 100-year Floodplain.

Proposed Conditions and On-Site Drainage Management Plan

Lots 1 through 8 and 17 through 22 will be retainig the ruonff within a retention pond on each lot. State Curbing is used froning these lots to allow the runoff to drain the lots. Lots 9-16 will discharge at a total flow rate of 8.04 cfs (which is less than allow discharge of 20.14 cfs) to a proposed type C Inlet on site. Then from there the runoff will drain to the exiting 48" storm drain pipe via 18" RCP pipe in Sage Road.

RUNOFF (100 YR-6 HR)/VOL. (100 YR-10 DAY) CALCULATIONS

BASIN	AREA (SF)	AREA (AC)	AREA (MI)
LOT 22	44,568.39	1.02315	0.001599
LOTS 9-16	100,659.72	2.31083	0.003611

$$E = \frac{EA(AA) + EB(AB) + EC(AC) + ED(AD)}{AA + AB + AC + AD}$$

V-360 = Weighted E (AA + AB + AC + AD)/12
V-10 DAY = V360 + AD(P10 DAY- P 360) / 12 IN/FT

EA = 0.55   P-60=1.69
EB = 0.73   P-360=2.17
EC = 0.95   P-1140=2.49
ED = 2.24   P-10 DAY=3.90

LOT 22 Weighted E = 1.23
LOTS 9-16 Weighted E = 1.68

V-360 (LOT 22) = 4,557.12 CF
V-10 DAY (LOT 22) = 6,484.70 CF

A = 1.54 CFS/AC
B = 2.16 CFS/AC
C = 2.87 CFS/AC
D = 4.12 CFS/AC

TOTAL QP =QPA AA+QPB AB+QPC AC+QPD AD
QP (LOTS 9-16) = 8.04 CFS

STORM DROP INLET "TYPE C" (EFFECTIVE AREA-IN SWAMP CONDITION)

Area @ the Grate:

L = 38 " - 7 (½"MIDDLE BARS)
   = 34 " = 2.9063'

W = 25 ½" - 13 (⅜"MIDDLE BARS)
   = 19" = 1.5833'

Area = 2.9063 x 1.5833
      = 4.601 SF

Effective are = 4.60 SF @ the Grate

Are @ the Throat:

L = 47 " = 3.9479'

H = 10 ¾" - 4 ½"
   = 6 ¼" = 0.5208'

Area = 3.9479' x 0.5208
      = 2.06 SF @ the Throat

Total Area

Area = 4.60Grate + 2.06Throat
      = 6.66 SF

18" PIPE FLOW CAPACITY ANALYSIS

Circular Channel: Manning's Equation

Solve For	Actual Depth		
Diameter..	1.50 ft	Velocity..	8.17 fps
Slope..	0.015 ft/ft	Flow Area..	0.98 sf
Manning's n..	0.012	Critical Slope..	0.0064 ft/ft
Discharge..	8.04 cfs	Critical Depth..	1.10 ft
Depth..	0.82 ft	Percent Full..	54.49%
		Froude Number	1.77
		Full Capacity..	13.94 cfs
		QMAX @ 0.94D..	14.99 cfs

Open Channel Flow Module, Version 3.13 (c)

Haestad Methods, Inc. * 37 Brookside Rd * Waterbury, Ct 06708

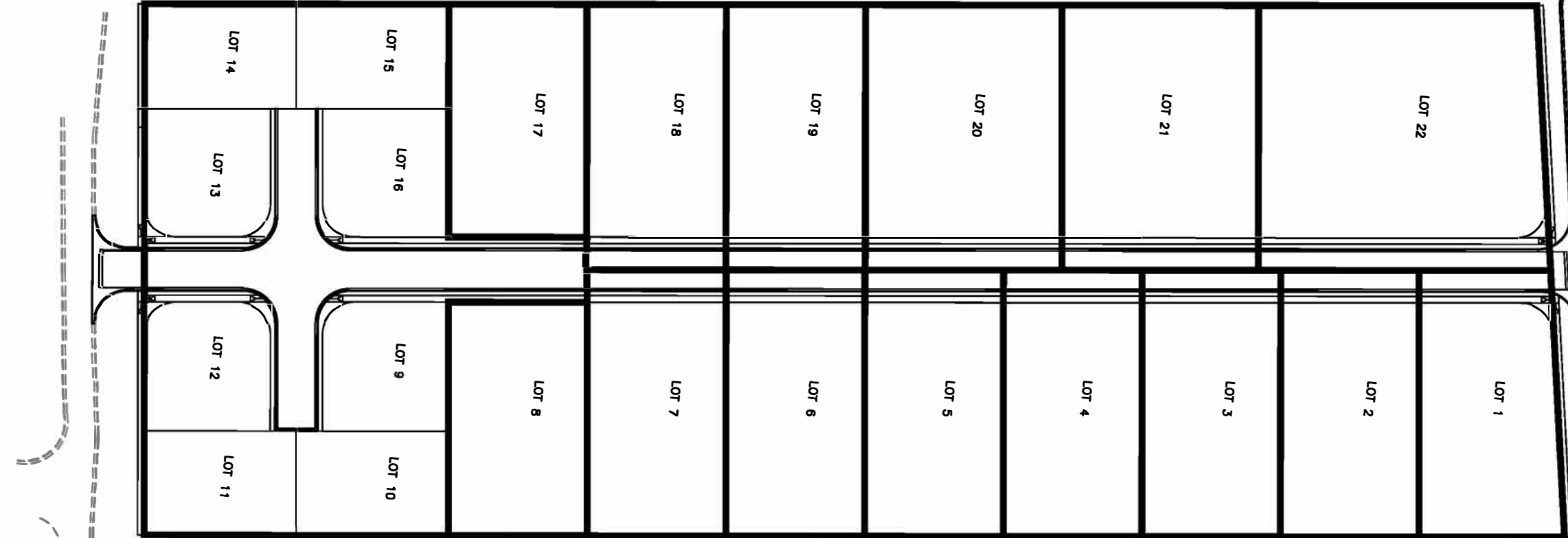### 18" PIPE FLOW CAPACITY CALCULATIONS (USING ORIFICE EQUATION)

Q = CA(2gH)^0.50

H (head) = 5.89' (from top of curb to top of 18" RCP)
A = 1.767 sf
g = 32.20

Q = 0.60 x 1.767 x (2 x 32.2 x 4.41)^0.50
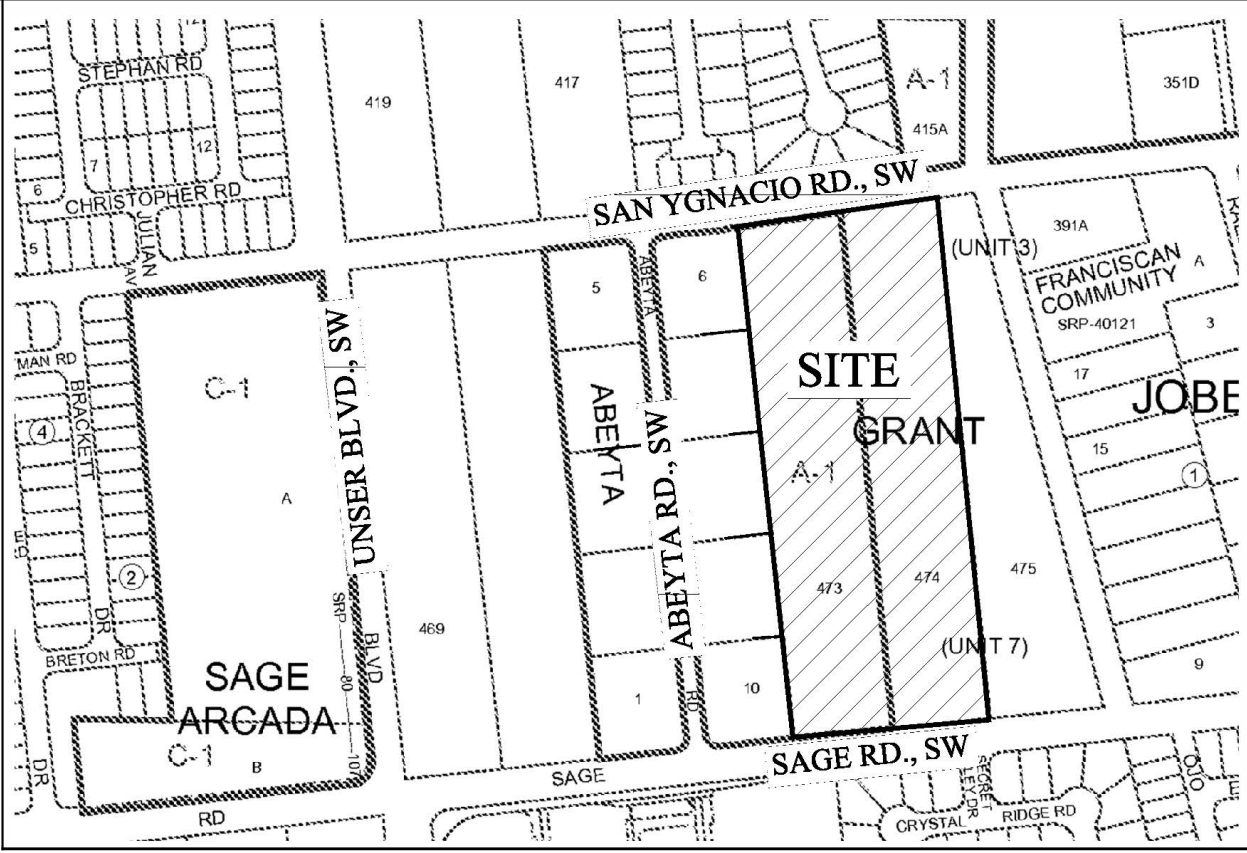
Q = 17.87 cfs > 8.04 cfs

ORIFICE EQUATION
Q = CA(2gH)^0.50

C = 0.6
A = 6.66 SF
g = 32.2
H = 0.92' (Grate to Top of Curb)
Q = 0.60 x 6.66 (2 x 32.2 x 0.92)^0.50
Q = 30.76 cfs > 8.04 cfs

LOT 22 - VOLUME REQUIREMENTS (90TH PERCENTILE RAIN EVENT)

VOLUME REQUIRED = 0.615/12 x 13,370.52 = 685.24 CF
RETENTION VOLUME PROVIDED = 6,484.70 CF

Pond Table

BASIN	AREA SF	LAND TREATMENT B	C	D	POND TOP AREA SF	BOTTOM AREA SF	DEPTH FT	VOL. PROVIDED CF	VOL. REQUIRED CF
Lot 22	44,568.39	50	20	30	5,885.09	1,298.44	1.9	6,824.35	6,484.70
Lot 21	30,732.93	50	20	30	5,109.50	1,184.82	1.5	4,720.74	4,471.64
Lot 20	30,736.60	50	20	30	5,109.50	1,184.82	1.5	4,720.74	4,472.18
Lot 19	21,793.49	40	20	40	3,917.32	863.40	1.7	4,063.61	3,759.38
Lot 18	21,791.28	40	20	40	3,917.32	863.40	1.7	4,063.61	3,759.00
Lor 17	18,975.82	40	20	40	3,917.32	863.40	1.5	3,585.54	3,273.33
Lot 8	19,119.12	40	20	40	3,917.32	863.40	1.7	4,063.61	3,298.05
Lot 7	21,785.16	40	20	40	3,917.32	863.40	1.7	4,063.61	3,757.94
Lot 6	21,782.90	40	20	40	3,917.32	863.40	1.7	4,063.61	3,757.55
Lot 5	21,780.63	40	20	40	3,917.32	863.40	1.7	4,063.61	3,757.16
Lot 4	21,778.36	40	20	40	3,917.32	863.40	1.7	4,063.61	3,756.77
Lot 3	21,778.12	40	20	40	3,917.32	863.40	1.7	4,063.61	3,756.73
Lot 2	21,779.93	40	20	40	3,917.32	863.40	1.7	4,063.61	3,757.04
Lot 1	21,780.35	40	20	40	3,838.75	863.40	1.7	3,996.83	3,757.11

BASIN	AREA	LAND TREATMENT B	C	D	Q-100 CFS
LOTS 9-16	100,659.72	20	20	60	8.04

BASIN MAP
SCALE: 1"=100'

EXISTING CONDITIONS

THE ENGINEER HAS PERSONALLY INSPECTED THE LAND, AND NO GRADING, FILLING, OR EXCAVATION HAS OCCURRED THEREON SINCE THE EXISTING CONTOUR MAP WAS PREPARED.

6-08-2022

LEGAL DESCRIPTION:

TRACTS 473 AND 474, UNIT 7, TOWN OF ATRISCO GRANT, BERNALILLO COUTY, NEW MEXICO, AS THE SAME IS SHOWN AND DESIGNATED ON THE PLAT OF SAID TRACTS FILED IN THE OFFICE OF THE COUNTY CLERK OF BERNALILLO COUNTY, NEW MEXICO, ON SEPTEMBER 9, 1944, CONTAINING 10.1203 ACRES (440,839.16 SF) MORE OR LESS.

LEGEND

Symbol	Description
—5030—	EXISTING CONTOUR (MAJOR)
—5029—	EXISTING CONTOUR (MINOR)
——	BOUNDARY LINE
X 42.70	PROPOSED SPOT ELEVATION
X 5029.16	EXISTING GRADE
X 5075.65 FL	EXISTING FLOWLINE ELEVATION
	PROPOSED RETAINING WALL
BC=41.30	BOTTOM OF CHANEL
TF=42.00	TOP OF FOOTING
TRW=45.12	TOP OF RETAINING WALL
HP	HIGH POINT
42.40	AS-BUILT GRADES
42.45	AS-BUILT SPOT ELEVATIONS

GRAPHIC SCALE
SCALE: 1"=50'

REZA AFAGHPOUR
PE NO. 11814
06/08/2022

SBS CONSTRUCTION AND ENGINEERING, LLC

7632 WILLIAM MOYERS AVE, NE
ALBUQUERQUE, NEW MEXICO 87122
(505) 804-5013
EMAIL: AECLLC@AOL.COM

LOMA ALEGRE SUBDIVISION GRADING PLAN

DRAWING:	DRAWN BY:	DATE:	SHEET #
202106-GD.DWG	SH-B	6-08-2022	1

LAST REVISION 6-08-2022