CITY OF ALBUQUERQUE

Planning Department
Brennon Williams, Director

Mayor Timothy M. Keller

June 29, 2021

Fred C. Arfman, P.E.
Isaacson & Arfman, P.A.
128 Monroe St. N.E
Albuquerque, NM 87108

RE: 8715 Mesa Rain Rd. NW
Grading and Drainage Plan
Engineer's Stamp Date: 06/08/21
Hydrology File: H09D017A2

Dear Mr. Arfman:

PO Box 1293

Albuquerque

NM 87103

www.cabq.gov

Based upon the information provided in your submittal received 06/08/2021, the Grading and Drainage Plan is approved for Grading Permit (earthwork can get started for the earth pad on the house).

Once the grading is complete, a pad certification (meaning that the earthwork is complete) will be required prior to release from Hydrology during the Building Permit process. Also, at the time of pad certification approval, Hydrology will concurrently approve the Grading & Drainage Plan for Building Permit.

Prior to approval in support of Permanent Release of Occupancy by Hydrology, Engineer Certification per the DPM checklist will be required.

If you have any questions, please contact me at 924-3995 or rbrissette@cabq.gov.

Sincerely,

Renée C. Brissette

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

City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 11/2018)

Project Title: Lot 47, Watershed Subdivsion Building Permit #:_____ Hydrology File #: H9

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

Legal Description: Lot 47, Watershed Subdivision

City Address: 8715 Mesa Rain Road NW - Albuquerque, NM 87120

Applicant: Isaacson & Arfman, Inc. Contact: Fred C. Arfman, Bryan J. Bobrick

Address: 128 Monroe Street NE - Albuquerque, NM 87108

Phone#: (505) 268-8828 Fax#: _____ E-mail: freda@iacivil.com bryanb@iacivil.com

Owner: _____ Contact: _____

Address: _____

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

TYPE OF SUBMITTAL:_____ PLAT (___# OF LOTS) _X_ RESIDENCE ____ DRB SITE ____ ADMIN SITE

IS THIS A RESUBMITTAL?: _____ Yes ____X____ No

DEPARTMENT: _____ TRAFFIC/ TRANSPORTATION _X_ HYDROLOGY/ DRAINAGE

Check all that Apply:

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION
____ PAD CERTIFICATION
____ CONCEPTUAL G & D PLAN
_X_ GRADING PLAN & Drainage Plan
____ DRAINAGE MASTER PLAN
____ DRAINAGE REPORT
____ FLOODPLAIN DEVELOPMENT PERMIT APPLIC
____ ELEVATION CERTIFICATE
____ CLOMR/LOMR
____ TRAFFIC CIRCULATION LAYOUT (TCL)
____ TRAFFIC IMPACT STUDY (TIS)
____ OTHER (SPECIFY) _____
____ PRE-DESIGN MEETING?

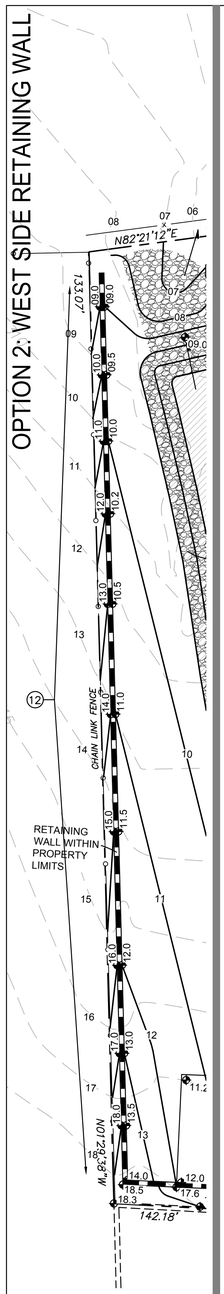
TYPE OF APPROVAL/ACCEPTANCE SOUGHT:

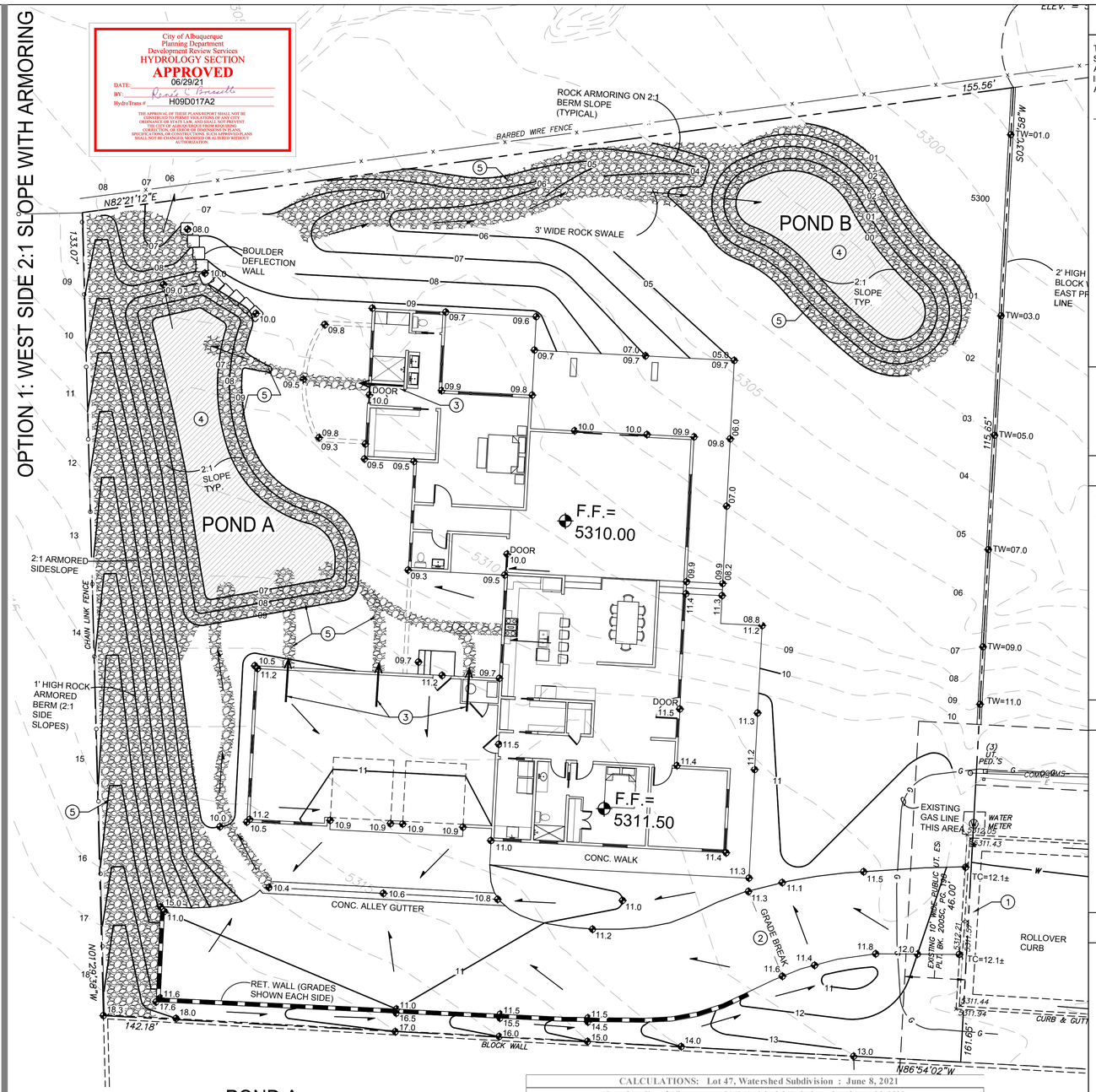
_X_ BUILDING PERMIT APPROVAL
____ CERTIFICATE OF OCCUPANCY
____ PRELIMINARY PLAT APPROVAL
____ SITE PLAN FOR SUB'D APPROVAL
____ SITE PLAN FOR BLDG. PERMIT APPROVAL
____ FINAL PLAT APPROVAL
____ SIA/ RELEASE OF FINANCIAL GUARANTEE
____ FOUNDATION PERMIT APPROVAL
____ GRADING PERMIT APPROVAL
____ SO-19 APPROVAL
____ PAVING PERMIT APPROVAL
____ GRADING/ PAD CERTIFICATION
____ WORK ORDER APPROVAL
____ CLOMR/LOMR
____ FLOODPLAIN DEVELOPMENT PERMIT
____ OTHER (SPECIFY) _____

DATE SUBMITTED: June 8, 2021 By: Isaacson & Arfman, Inc.

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED:_____

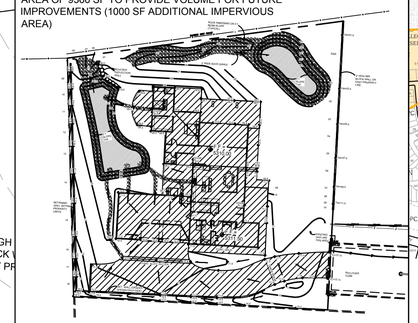
FEE PAID:_____





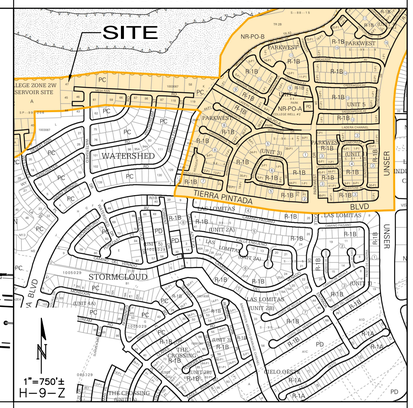
IMPERVIOUS AREA

TOTAL IMPERVIOUS AREA (SHOWN HATCHED) = 8359 SF. POND VOLUME BASED ON TOTAL IMPERVIOUS AREA OF 9366 SF TO PROVIDE VOLUME FOR FUTURE IMPROVEMENTS (1000 SF ADDITIONAL IMPERVIOUS AREA)



SCALE: 1" = 40'

VICINITY MAP H-9

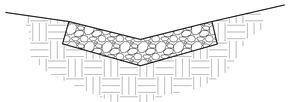


EROSION PROTECTION NOTES

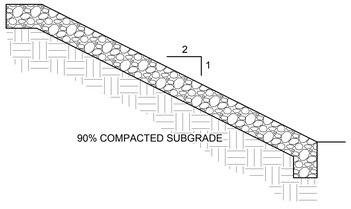
ALL ROCK EROSION PROTECTION (SLOPES > 3:1 AND SWALES TO EXTENTS SHOWN) SHALL BE CLEAN AND ANGULAR. THE ROCK SHALL BE PROVIDED AS A GRADATION OF LARGER AND SMALLER ROCK WITH A MEDIAN DIAMETER (D50) OF 4".

- PLACE GEOTEX 501 NON-WOVEN GEOTEXTILE (O.E.) BENEATH ALL EROSION PROTECTION
- INSTALL ALL EROSION PROTECTION INTEGRATED WITH ADJACENT GRADES TO ENSURE RUNOFF CAN BE CAPTURED AND CONVEYED PROPERLY.
- EROSION PROTECTION THICKNESS = 2 X D50
- SWALE INVERTS TO BE DEPRESSED 1.5" PER FOOT OF WIDTH.
  - 2' WIDE = 3" DEPRESSED
  - 3' WIDE = 4.5" DEPRESSED

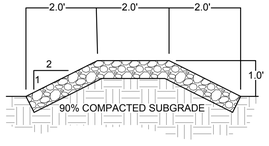
ROCK LINED SWALE



SLOPE ARMORING



PROPERTY LINE BERM



PROJECT SCOPE

PROPERTY: THE SITE IS AN UNDEVELOPED RESIDENTIAL PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP H-9. THE SITE IS BOUND TO THE WEST BY AN ABCWUA RESERVOIR SITE, TO THE EAST BY UNDEVELOPED RESIDENTIAL PROPERTY, TO THE NORTH BY THE NORTHWEST MESA ESCARPMENT AND TO THE SOUTH BY DEVELOPED RESIDENTIAL AND MESA RAIN ROAD.

PROPOSED IMPROVEMENTS: THE PROPOSED IMPROVEMENTS INCLUDE A NEW PRIVATE RESIDENCE WITH ASSOCIATED PAVED ACCESS DRIVE, AND LANDSCAPING.

LEGAL: LOT 47, PLAT OF WATERSHED SUBDIVISION, ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

ADDRESS: 8715 MESA RAIN RD NW ALBUQUERQUE NM 87120

BENCHMARK: DESCRIPTION, ELEVATION = XXX FEET (NAVD 1988)

LOT SIZE: 0.5 ACRE

OFF-SITE: MINOR FLOW FROM THE WEST DEVELOPED PROPERTY WILL BE ROUTED ALONG THE WEST PORTION OF THE PROPERTY.

FLOOD HAZARD: PER BERNALILLO COUNTY FIRM MAP #35001C03261, EFF. 11/4/2016, THE SITE IS LOCATED WITHIN FLOODZONE 'X' DESIGNATED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.

DRAINAGE PLAN CONCEPT:

THE EXISTING PROPERTY DRAINS VIA SHEET FLOW FROM SOUTHWEST TO NORTHEAST INTO THE LADERA ARROYO. THE HISTORIC RUNOFF, BASED ON 100% LAND TREATMENT 'A' = 0.77 CFS.

PER THE APPROVED DRAINAGE REPORT FOR WATERSHED SUBDIVISION DATED APRIL, 2004 BY BOHANNAN HUSTON, LOT 47 FALLS WITHIN PROPOSED DRAINAGE BASIN H (TOTAL 6.13 ACRES). AS DIRECTED ON PAGE 5 'BASIN H CONTAINS TWELVE (12) LOTS, #47-58.

THE APPROVED DRAINAGE MASTER PLAN NOTES THAT 'EACH INDIVIDUAL LOT (LOTS 47-58) ... SHALL PROVIDE AN ONSITE RETENTION POND DESIGNED FOR THE 100-YEAR 6-HOUR STORM EVENT AND MAY NOT DISCHARGE STORMWATER TO THE PETROGLYPH NATIONAL PARK. THE 100-YEAR 6-HOUR REQUIREMENT WAS CONFIRMED WITH COA HYDROLOGY AS PART OF A PRE-DESIGN CONSULTATION.

THIS PLAN PROPOSES ON-SITE RUNOFF FROM THE DISTURBED / DEVELOPED PORTION OF THE PROPERTY WILL BE ROUTED TO RETENTION PONDS SIZED TO STORE THE 100-YEAR 6-HOUR STORM EVENT.

KEYED NOTES

1. NO WORK SHALL BE PERFORMED IN THE PUBLIC ROW WITHOUT AN APPROVED WORK ORDER OR EXCAVATION PERMIT.
2. HIGH POINT / GRADE BREAK LOCATION.
3. ROOF DISCHARGE TO BE RELEASED AT GRADE TO PRECAST CONCRETE SPLASHBLOCK O.E.
4. CONSTRUCT 24" DEPTH STORMWATER QUALITY RETENTION POND AT ELEVATIONS AND VOLUMES SHOWN. PONDING VOLUMES WILL BE VERIFIED AS PART OF AS-BUILT CERTIFICATION. PONDS WHICH DO NOT PROVIDE THE REQUIRED VOLUME WILL BE CORRECTED AT CONTRACTOR'S EXPENSE.
5. INSTALL ANGULAR ROCK EROSION PROTECTION ON ALL SLOPES > 3:1.
6. CONSTRUCT STEPS TO ACHIEVE REQUIRED GRADE DIFFERENCE. SEE ARCHITECTURAL FOR DETAILS.
7. INSTALL 8" DEEP X 4" AVG. DIA. ROCK EROSION PROTECTION (OR APPROVED EQUAL) TO EXTENTS SHOWN HATCHED.
- TRANSITION SLOPES > 3:1
- AT CONCENTRATED FLOW TRANSITIONS
- WITHIN DRAINAGE SWALES
8. CONSTRUCT GARDEN WALL ALONG EAST PROPERTY LINE TO PREVENT STORMWATER FROM PASSING TO ADJACENT PROPERTY.
9. CONSTRUCT SITE RETAINING WALL(S) (RETAINING >30") TO ACHIEVE GRADE DIFFERENCE SHOWN. GRADES ON HIGH SIDE OF WALL AND LOW SIDE OF WALL SHOWN. DETAILS INCLUDING TOTAL HEIGHT, FOOTING, GUARDRAIL, REINFORCING, WEEPHOLES, ETC. BY OTHERS.
10. BUILDING RETAINING STEMWALL REQUIRED TO ACHIEVE GRADES SHOWN. SEE ARCHITECTURAL / STRUCTURAL PLANS.
11. BUILDING EXTENDED STEMWALL REQUIRED TO ACHIEVE GRADES SHOWN. SEE ARCHITECTURAL / STRUCTURAL PLANS.
12. OWNER'S OPTION: IN LIEU OF WEST SIDE 2:1 SLOPE WITH ARMORING, CONSTRUCT RETAINING WALL ALONG WEST PROPERTY LINE. LOCATE WALL SUCH THAT FOOTING IS COMPLETELY WITHIN PROPERTY LIMITS. DETAILS INCLUDING HEIGHT, FOOTING, REINFORCING, WEEPHOLES, ETC. BY OTHERS.

POND A

STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
5,307.00	578.61	N/A	N/A	0.00	N/A	0.00
5,308.00	861.50	1.00	720.05	720.05	715.38	715.38
5,309.00	1,169.52	1.00	1015.51	1735.56	1011.59	1726.97

POND B

STAGE STORAGE TABLE

ELEV	AREA (sq. ft.)	DEPTH (ft)	AVG END INC. VOL. (cu. ft.)	AVG END TOTAL VOL. (cu. ft.)	CONIC INC. VOL. (cu. ft.)	CONIC TOTAL VOL. (cu. ft.)
5,300.00	383.18	N/A	N/A	0.00	N/A	0.00
5,301.00	572.91	1.00	478.05	478.05	474.88	474.88
5,302.00	787.77	1.00	680.34	1158.38	677.49	1152.37

CALCULATIONS: Lot 47, Watershed Subdivision : June 8, 2021

Based on City of Albuquerque DMP, Article 6-2 Hydrology dated June 26, 2020

100-YEAR, 6-HOUR CALCULATIONS

AREA OF SITE: 21782 SF = 0.50 ACRE

100-year, 6-hour

HISTORIC FLOWS:		Treatment SF	%	DEVELOPED FLOWS:		Treatment SF	%	EXCESS PRECIP: Precip. Zone 1
Area A	=	21782	100%	Area A	=	0	0%	E_A = 0.55
Area B	=	0	0%	Area B	=	10891	50%	E_B = 0.73
Area C	=	0	0%	Area C	=	1525	7%	E_C = 0.95
Area D	=	0	0%	Area D	=	9366	43%	E_D = 2.24
Total Area	=	21782	100%	Total Area	=	21782	100%	

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

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

Historic E	= 0.55 in.	Developed E	= 1.39 in.
On-Site Volume of Runoff: V360 =		E*A / 12	
Historic V_{360}	= 998 CF	Developed V_{360}	= 2532 CF

On-Site Peak Discharge Rate: $Qp = Q_{pA}A_A + Q_{pB}A_B + Q_{pC}A_C + Q_{pD}A_D$ / 43,560

For Precipitation Zone 1

Q_{pA}	= 1.54	Q_{pC}	= 2.87
Q_{pB}	= 2.16	Q_{pD}	= 4.12
Historic Q_p	= 0.77 CFS	Developed Q_p	= 1.53 CFS

Isaacson & Arfman, Inc.
Civil Engineering Consultants
128 Monroe Street NE
Albuquerque, NM 87108
505-268-8828 | www.iacivil.com

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2400 CG-101.dwg 8 June 2021

FRED C. ARFMAN NEW MEXICO 7322 LICENSED PROFESSIONAL ENGINEER 06-08-21

Engineer

Lot 47, Watershed Subdivision
8715 Mesa Rain Road NW

Via Residence

DESIGN DEVELOPMENT

ISSUE:	
PROJECT NUMBER:	IA 2400
FILE:	-
DRAWN BY:	BJB
CHECKED BY:	FCA
DATE:	03-25-2021

No	Date	Description

SHEET TITLE

Grading & Drainage Plan

SHEET NUMBER

CG-101