CITY OF ALBUQUERQUE

Planning Department
David Campbell, Director

Mayor Timothy M. Keller

August 13, 2018

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

RE: Hope Plaza, Lots 7 & 8
Hope in the Desert Episcopal Church
Conceptual Grading and Drainage Plan
Engineer's Stamp Date: 08/10/18
Hydrology File: C20D064A

Dear Mr. Arfman:

Based upon the information provided in your resubmittal received 08/13/18, the Conceptual Grading and Drainage Plan is approved for action by the DRB on the Final Plat.

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

PO Box 1293

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City of Albuquerque

Planning Department

Development & Building Services Division

DRAINAGE AND TRANSPORTATION INFORMATION SHEET (REV 6/2018)

Hope Plaza

Project Title: Lots 7 and 8 Building Permit #: _____ Hydrology File #: C20

DRB#: 1006520 EPC#: _____ Work Order#: _____

Legal Description: A Portion of Tract B-1-A, Hope Plaza (to be replatted to Lots 7 and 8, Hope Plaza)

City Address: 8700 Alameda Blvd. NW

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

Address: 128 Monroe Street NE - Albuquerque, NM 87108

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

Other Contact: _____ Contact: _____

Address: _____

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

TYPE OF DEVELOPMENT: _X_ PLAT ____ RESIDENCE ____ DRB SITE ___ ADMIN SITE

Check all that Apply:

DEPARTMENT:

_X_ HYDROLOGY/ DRAINAGE

____ TRAFFIC/ TRANSPORTATION

TYPE OF SUBMITTAL:

____ ENGINEER/ARCHITECT CERTIFICATION

____ PAD CERTIFICATION

_X_ CONCEPTUAL G & D PLAN

____ 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?

IS THIS A RESUBMITTAL?: ____ Yes _X_ No

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

_X_ 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: August 10, 2018 By: Fred C. Arfman

COA STAFF: ELECTRONIC SUBMITTAL RECEIVED: _____

FEE PAID: _____

CALCULATIONS: 2274 Hope Highlands Residential Lots 7 and 8 : July 30, 2018

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

ON-SITE

AREA OF SITE: 11844 SF = 0.27

100-year, 6-hour

PREVIOUS DEVELOPED FLOWS:		Treatment SF	%	DEVELOPED FLOWS:		Treatment SF	%	EXCESS PRECIP: Precip. Zone 3
Area A	=	0	0%	Area A	=	0	0%	E_A = 0.66
Area B	=	0.0	0%	Area B	=	2369	20%	E_B = 0.92
Area C	=	11844.0	100%	Area C	=	2369	20%	E_C = 1.29
Area D	=	0.0	0%	Area D	=	7106	60%	E_D = 2.36
Total Area	=	11843.964	100%	Total Area	=	11843.964	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	=	1.29 in.	Developed E	=	1.86 in.	

On-Site Volume of Runoff: V360 = E*A / 12

Historic V_{360}	=	1273 CF	Developed V_{360}	=	1834 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 3

Q_{pA}	=	1.87	Q_{pC}	=	3.45	
Q_{pB}	=	2.60	Q_{pD}	=	5.02	
Historic Q_p	=	0.9 CFS	Developed Q_p	=	1.1 CFS	

BASIN NO. O1 **DESCRIPTION** NORTH BASIN DRAINING TO CHURCH PROPERTY

Area of basin flows = 5535 SF = 0.13 Ac

The following calculations are based on Treatment areas as shown in table to the right

Sub-basin Weighted Excess Precipitation (see formula above)

Weighted E = 1.29 in.

Sub-basin Volume of Runoff (see formula above)

V_{360} = 595 CF

Sub-basin Peak Discharge Rate: (see formula above)

Q_p = 0.4 cfs

LAND TREATMENT	
A =	0%
B =	0%
C =	100%
D =	0%
FIRST FLUSH VOL	
	0 CF

A SHALLOW SEDIMENT CONTROL BASIN WILL BE CONSTRUCTED ON THE NORTH SIDE OF THE PROPERTY WALL BEFORE PASSING THE MINOR OFFSITE BASIN THROUGH A NEW WALL OPENING INTO THE CHURCH PROPERTY (SEE KEYED NOTE 5)

Channel Report

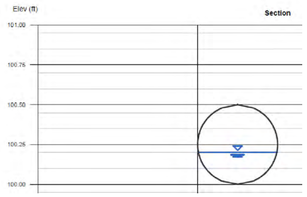
HydraFlow Express Extension for Autodesk® AutoCAD® Civil 3D® by Autodesk, Inc. Thursday, Aug 9 2018

6 Dia. Pipes through wall

Circular		Highlighted	
Diameter (ft)	= 0.50	Depth (ft)	= 0.20
		Q (cfs)	= 0.290
		Area (sqft)	= 0.07
Invert Elev (ft)	= 100.00	Velocity (ft/s)	= 3.95
Slope (%)	= 2.00	Wetted Perim (ft)	= 0.68
N-Value	= 0.012	Crit Depth, Yc (ft)	= 0.28
		Top Width (ft)	= 0.49
Calculations		EGL (ft)	= 0.44
Compute by:	Q vs Depth		
No. Increments	= 10		

EACH 6" PIPE PASSES 0.3 CFS AT A DEPTH OF 0.2'. THEREFORE, THREE 6" PIPES CAN PASS 0.9 CFS AT A DEPTH OF 0.2'. OFFSITE BASIN O1 GENERATES 0.4 CFS DURING THE 100-YEAR 6-HOUR STORM.

0.9 > 0.4 OK



GENERAL NOTES

A. FINAL GRADES 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. CONTRACTOR SHALL CONTACT NM-811 FOR UTILITY LINE SPOTS TWO WORKING DAYS PRIOR TO CONDUCTING SITE FIELD WORK. CONTRACTOR SHALL FIELD VERIFY AND LOCATE ALL UTILITIES PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION.

C. THE ENVIRONMENTAL PROTECTION AGENCY (EPA) AND BERNALILLO COUNTY MAY REQUIRE AN EROSION AND SEDIMENT CONTROL (ESC) PERMIT FOR PROJECTS WHERE CONSTRUCTION ACTIVITIES MEET THE EPA THRESHOLD. IF REQUIRED, CONTRACTOR SHALL OBTAIN AND PROVIDE.

D. ALL COBBLE EROSION PROTECTION TO BE 3" AVG. DIA. (2"-4") ANGULAR FACED ROCK PLACED OVER GEOTEX C501 NON-WOVEN GEOTEXTILE (O.E.).

E. ALL AREAS DISTURBED BY CONSTRUCTION SHALL BE RESEEDED WITH NATIVE GRASS PER C.O.A. SPECIFICATIONS SECTION 1012 (FOR SANDY SOILS).

F. ENGINEER RECOMMENDS THAT OWNER MAINTAIN EROSION PROTECTION ELEMENTS. 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.

STORMWATER QUALITY

STORMWATER QUALITY CONTROL MEASURES ARE REQUIRED TO PROVIDE MANAGEMENT OF 'FIRST FLUSH'. COA HYDROLOGY CURRENTLY HAS THREE CATEGORIES RELATING TO STORMWATER QUALITY VOLUME REQUIREMENTS:

NEW CONSTRUCTION: STORMWATER QUALITY VOLUME BASED ON THE 90TH PERCENTILE STORM EVENT OR 0.34" [0.44" LESS 0.1" FOR INITIAL ABSTRACTION] OF STORMWATER WHICH DISCHARGES DIRECTLY TO A PUBLIC STORM DRAINAGE SYSTEM).

THE ESTIMATED IMPERVIOUS AREA FOR THIS PROPERTY IS CALCULATED AS 60% OF TOTAL AREA. (0.60 * 11,844) = 7,107 SF.

TOTAL STORMWATER QUALITY VOLUME = 0.34" X 7107 SF = 201 CF.

PRIOR TO BUILDING PERMIT APPROVAL, A "PAYMENT IN-LIEU FOR STORMWATER QUALITY VOLUME REQUIREMENT" TREASURY DEPOSIT SLIP WILL BE PROVIDED BY C.O.A. HYDROLOGY. THIS WILL BE BASED ON THE PORTION OF FIRST FLUSH VOLUME (@ RESIDENTAL RATE OF $6.00 PER CF) THAT IS NOT RETAINED ON-SITE. A COPY OF THE PAID RECEIPT WILL BE REQUIRED PRIOR TO BUILDING PERMIT APPROVAL.

201 CF X $6.00 / CF = $1,206.00 (TOTAL FOR BOTH LOTS).

PROJECT SCOPE

PROPERTY: THE SITE IS AN UNDEVELOPED PORTION OF AN EXISTING CHURCH PROPERTY LOCATED WITHIN C.O.A. VICINITY MAP C-20. THE SITE IS BOUND TO THE EAST AND NORTH BY UNDEVELOPED PROPERTY, TO THE WEST BY HOPE IN THE DESERT EPISCOPAL CHURCH (SAME OWNER), AND TO THE SOUTH BY SIGNAL AVE. NE.

PROPOSED IMPROVEMENTS: TWO RESIDENTIAL PROPERTIES.

LEGAL: LOTS 7 AND 8, HOPE PLAZA (PREVIOUSLY A PORTION OF TRACT B-1-A, HOPE PLAZA) CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO

BENCHMARK: VERTICAL DATUM IS BASED UPON THE ALBUQUERQUE CONTROL SURVEY MONUMENT "7-C19", ELEVATION = 5485.723 FEET (NAVD 1988).

OFF-SITE: NO OFF-SITE DRAINAGE AFFECTS THIS PROPERTY. A MINOR BASIN WILL CONTINUE TO BE ROUTED THROUGH THE CHURCH PROPERTY.

FLOOD HAZARD: PER BERNALILLO COUNTY FIRM MAP #C5001, THE SITE IS LOCATED WITHIN FLOODZONE 'X' DESIGNATED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOODPLAIN.

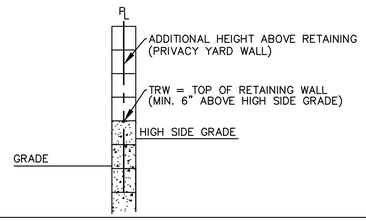
DRAINAGE PLAN CONCEPT:

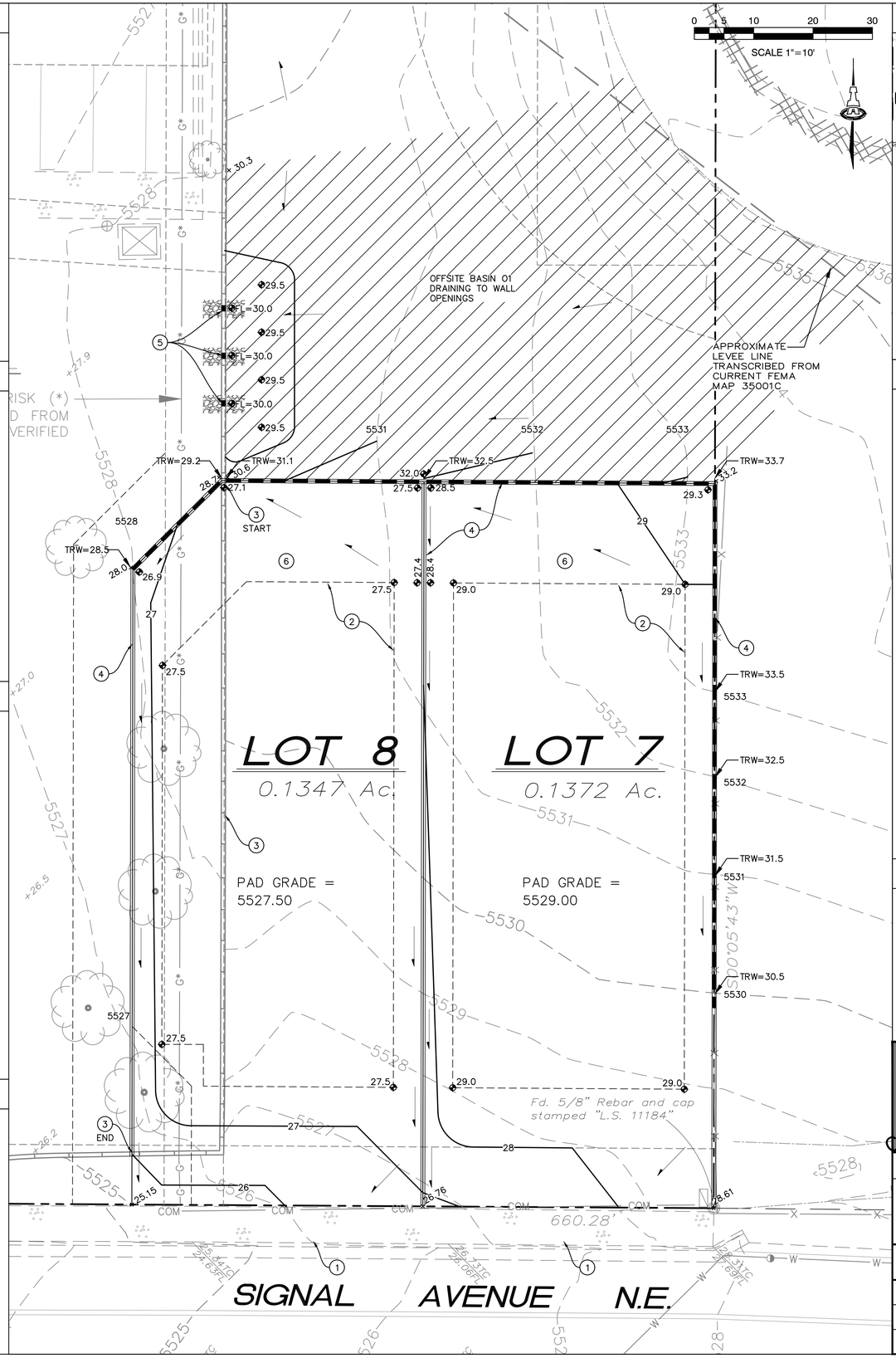
THIS PROPERTY WAS LAST ADDRESSED AS PART OF THE 2014 APPROVED, AMENDED PRELIMINARY GRADING PLAN (REV.2).

THE PROPOSED RESIDENTIAL SITE DRAINAGE WILL FREE DISCHARGE TO SIGNAL AVE. VIA THE SITE DRIVES. BASED ON THE 100-YEAR 5-HOUR CALCULATIONS, THE DEVELOPED SITE WILL GENERATE APPROXIMATELY 1.1. CFS (AN INCREASE OF 0.2 CFS). SEE CALCULATIONS THIS SHEET.

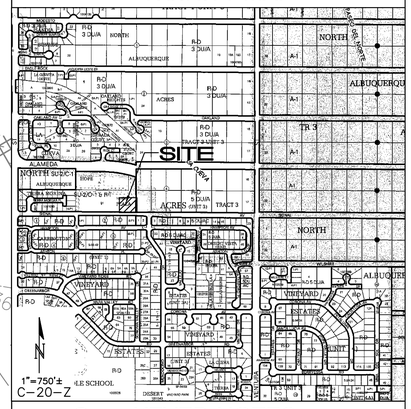
RETAINING WALL

PER THE DPM CH 22.5 B, GRADING AND CONSTRUCTION OF RETAINING WALLS AT OR NEAR THE PROPERTY LINE REQUIRE WRITTEN PERMISSION, FROM ALL LANDOWNERS AFFECTED, TO GRADE AND TO ENCROACH INTO THE ADJACENT PROPERTY WITH THE WALL FOOTING. PERMISSION LETTERS SHALL BE PROVIDED TO COA HYDROLOGY FOR THEIR FILES.





VICINITY MAP



KEYED NOTES

1. FUTURE CONCRETE DRIVEPAD LOCATION TO BE FINALIZED AS PART OF BUILDING PERMIT PLANS.
2. LIMITS OF BUILDING PAD.
3. DEMO AND REMOVE EXISTING CHURCH PERIMETER WALL TO EXTENTS SHOWN.
4. CONSTRUCT SITE RETAINING WALL / PRIVACY WALL ALONG WEST, NORTH AND EAST PROPERTY LINES. TOP OF RETAINING PORTION TO BE 6" ABOVE HIGH SIDE GRADE TYPICAL. DESIGN OF WALL FOOTINGS, REINFORCEMENT, WEEP HOLES, ETC. TO BE PROVIDED BY WALL CONTRACTOR.
5. MINOR DRAINAGE BASIN IMPACTED BY THIS DEVELOPMENT SHOWN HATCHED (SAME OWNER). INSTALL THREE 6" DIA. PIPES THROUGH WALL (8' O.C.) AT FLOWLINE ELEVATION SHOWN TO PASS MINOR DISCHARGE TO CHURCH PROPERTY FOR LANDSCAPING AND ROUTING. INSTALL 3'X3'X12" DEEP COBBLE EROSION PROTECTION TO DEFINE AND PROTECT OPENINGS (BOTH SIDES). SEE BASIN CALCULATIONS THIS SHEET.
6. YARD GRADING IS SHOWN CONCEPTUALLY. PROVIDE POSITIVE DRAINAGE AWAY FROM RESIDENCE AND INSTALL EROSION PROTECTION AS REQUIRED.

LEGEND

- PROPERTY LINE
- EXISTING SPOT ELEVATION (+60.9)
- EXISTING CONTOUR (5531)
- PROPOSED SPOT ELEVATION (29.0)
- PROPOSED CONTOUR (29)
- SURFACE FLOW DIRECTION
- EROSION CONTROL
- PERIMETER RETAINING WALL (>12" RETAINING)
- PERIMETER WALL (<12" RETAINING)

NOT FOR CONSTRUCTION 08-10-18

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2274 CG-101.dwg Aug 10,2018

LOTS 7 AND 8
HOPE PLAZA

HOPE IN THE DESERT EPISCOPAL CHURCH

GRADING AND DRAINAGE PLAN

Date:	No.	Revision:	Date:	Job No.
07-30-18				2274
Drawn By: BJB				CG101
Ckd By: FCA				SH. OF