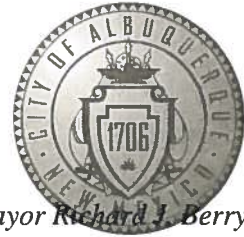


# CITY OF ALBUQUERQUE

Planning Department  
Suzanne Lubar, Director



Mayor Richard J. Berry

October 27, 2015

Levi J. Valdez, PE  
George T Rodriguez-Development Consultant  
12800 San Juan Rd. SE  
Albuquerque, NM 87123

**Re: 413 Harvard Dr. SE  
Grading & Drainage Plan  
Engineer's Stamp dated: 12-17-15 (K16D083)**

Dear Mr. Valdez,

Based on the information provided in your submittal received 12/21/2015, this plan is approved for building Permit.

PO Box 1293

Please attach a copy of this approved plan, dated 10-26-15, to the construction sets in the permitting process prior to sign-off by Hydrology.

Albuquerque

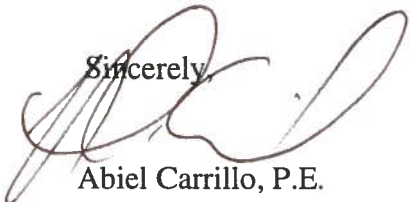
Prior to Certificate of Occupancy release, Engineer Certification per the DPM checklist will be required.

New Mexico 87103

If you have any questions, you can contact me at 924-3695 or Rudy Rael at 924-3977.

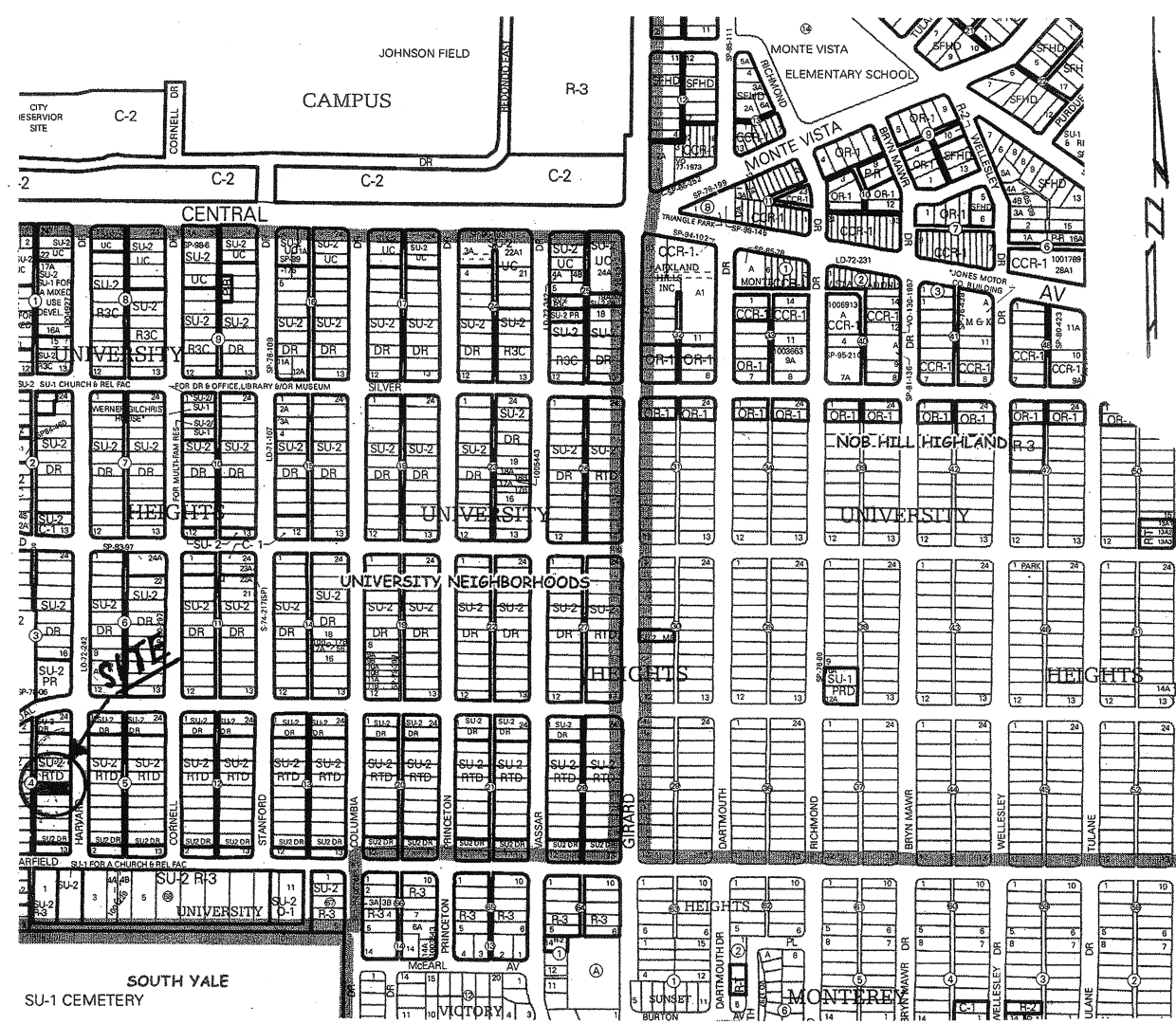
[www.cabq.gov](http://www.cabq.gov)

Sincerely,

  
Abiel Carrillo, P.E.  
Principal Engineer, Hydrology  
Planning Department

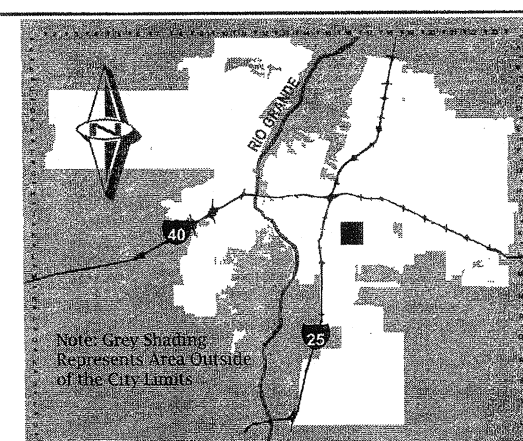
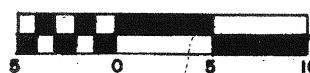
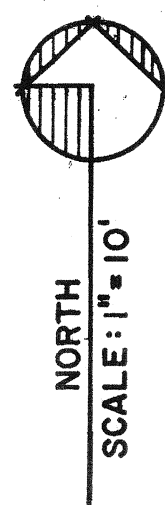
RR/AC  
C: email





VICINITY MAP

Zone Atlas Page:  
K-16-Z



LEGAL DESCRIPTION: LOT EIGHTEEN (18), BLOCK FOUR (4), UNIVERSITY HEIGHTS ADDITION, ALBUQUERQUE, NEW MEXICO.

BENCH MARK REFERENCE: CITY OF ALBUQUERQUE STATION DATUM, ELEVATIONS SHOWN ARE REFERENCED TO NAVD 1988 VALUES; PROJECT T.B.M. AS SHOWN ON THE PLAN HEREON.

#### DRAINAGE COMMENTS:

AS SHOWN ON THE VICINITY MAP HEREON, THE SUBJECT SITE IS LOCATED ON THE WEST SIDE OF HARVARD DRIVE S.E. BETWEEN COAL AVENUE S.E. AND GARFIELD AVENUE S.E., ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

THE SUBJECT SITE IS PRESENTLY A VACANT PROPERTY; THE PROPOSED PLAN AS SHOWN HEREON IS TO CONSTRUCT NEW RESIDENTIAL UNITS AND ASSOCIATED IMPROVEMENTS THEREON.

THE SUBJECT SITE, 1.) DOES NOT LIE WITHIN A DESIGNATED FLOODPLAIN, (RE: F.E.M.A. FIRM PANEL 35001C0353H, EFFECTIVE AUGUST 16, 2012), 2.) DOES NOT ACCEPT OFFSITE FLOWS FROM ADJACENT PROPERTIES, 3.) DOES NOT CONTRIBUTE OFFSITE FLOWS TO ADJACENT PROPERTIES, 4.) WILL PROVIDE A RETENTION POND FOR THE "FIRST FLUSH" STORM VOLUME.

DRAINAGE CALCULATIONS ARE PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL, VOLUME 2, DESIGN CRITERIA FOR THE CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO.

NOTE: "1" FLUSH RETENTION POND VOLUME: (TOTAL REQUIRED)  
0.34" (0.03") x 4,833.0 SQ. FT. = 145.0 CU. FT.

#### RETENTION PONDS PROVIDED:

POND # 1: (MEAN) 11.0' x 19.0' = 209.0 SQ. FT. x 0.50' DEPTH = 104.5 CU. FT.

POND # 2: (MEAN) 12.0' x 13.5' = 162.0 SQ. FT. x 0.50' DEPTH = 81.0 CU. FT.

TOTAL VOLUME = 185.5 CU. FT.

#### A.1 PRECIPITATION ZONES

Bernalillo County's four precipitation zones are indicated in TABLE A-1 and on FIGURE A-1.

TABLE A-1. PRECIPITATION ZONES

ZONE	LOCATION
1	West of the Rio Grande
2	Between the Rio Grande and San Mateo
3	Between San Mateo and Eubank, North of Interstate 40, and between San Mateo and the East boundary of Range 4 East, South of Interstate 40
4	East of Eubank, North of Interstate 40, and East of the East boundary of Range 4 East, South of Interstate 40

TABLE A-10. PEAK INTENSITY (INCH at 1-2.2 hour)

Zone	Intensity 100-YR (2-YR, 10-YR)
1	4.70 (1.84, 3.14)
2	5.05 (2.04, 3.41)
3	5.58 (2.21, 3.65)
4	5.61 (2.34, 3.83)

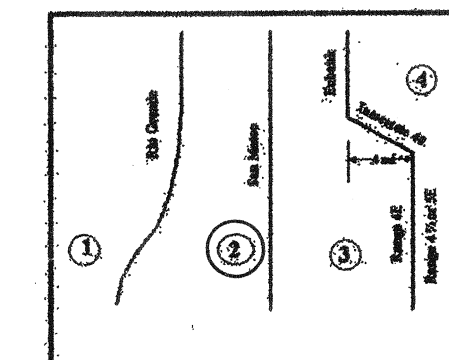


TABLE A-4. LAND TREATMENTS

Treatment	Land Condition
A	Soil uncompacted by human activity with 0 to 10 percent slopes. Native grasses, weeds and shrubs in typical densities with minimal disturbance to grading, groundcover and infiltration capacity. Croplands. (Unirrigated Arroyos)
B	Irrigated lawns, parks and golf courses with 0 to 10 percent slopes. Native grasses, weeds and shrubs, and soil uncompacted by human activity with slopes greater than 10 percent and less than 20 percent.
C	Soil uncompacted by human activity. Minimal vegetation. Unimproved parking roads, trails. Most vacant lots. Gravel or rock on plastic (desert landscaping). Irrigated lawns and parks with slopes greater than 10 percent. Native grasses, weeds, and shrubs, and soil uncompacted by human activity with slopes at 20 percent or greater. Native grass, weed and shrub areas with clay or clay loam soils and other soils of very low permeability as classified by SCS Hydrologic Soil Group D.
D	Impervious areas, pavement and roofs.

Most watersheds contain a mix of land treatments. To determine proportional treatments, measure respective subareas. In lieu of specific measurement for treatment D, the area percentages in TABLE A-5 may be employed.

TABLE A-9. PEAK DISCHARGE (cfs/acre)

Zone	Treatment 100-YR (2-YR, 10-YR)			
	A	B	C	D
1	1.29 (0.00, 0.24)	2.03 (0.33, 0.76)	2.87 (0.47, 1.49)	4.37 (1.69, 2.89)
2	1.56 (0.00, 0.38)	2.28 (0.08, 0.95)	3.14 (0.60, 1.71)	4.70 (1.86, 3.14)
3	1.87 (0.00, 0.58)	2.60 (0.21, 1.19)	3.45 (0.78, 2.009)	5.02 (2.04, 3.39)
4	2.20 (0.05, 0.87)	2.92 (0.38, 1.45)	3.75 (1.00, 2.26)	5.25 (2.17, 3.57)

#### EROSION CONTROL MEASURES:

THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR MANAGEMENT OF STORM RUNOFF DURING CONSTRUCTION; HE SHALL ENSURE THAT THE FOLLOWING MEASURES ARE TAKEN:

- ADJACENT PROPERTY SHALL BE PROTECTED AT ALL TIMES BY CONSTRUCTION OF BERMS, DIKES, SWALES, PONDS, AND OTHER TEMPORARY GRADING AS REQUIRED TO PREVENT STORM RUNOFF FROM LEAVING THE SUBJECT SITE AND ENTERING ADJACENT PROPERTIES.
- ADJACENT PUBLIC RIGHT-OF-WAYS SHALL BE PROTECTED AT ALL TIMES FROM STORM WATER RUNOFF FROM THE SUBJECT SITE. NO SEDIMENT BEARING WATER SHALL BE PERMITTED TO ENTER PUBLIC STREET RIGHT-OF-WAYS.
- THE CONTRACTOR SHALL IMMEDIATELY AND THOROUGHLY REMOVE ANY AND ALL SEDIMENT FROM PUBLIC STREETS THAT HAS BEEN ERODED FROM THE SUBJECT SITE AND DEPOSITED THEREON.

#### CONSTRUCTION NOTES:

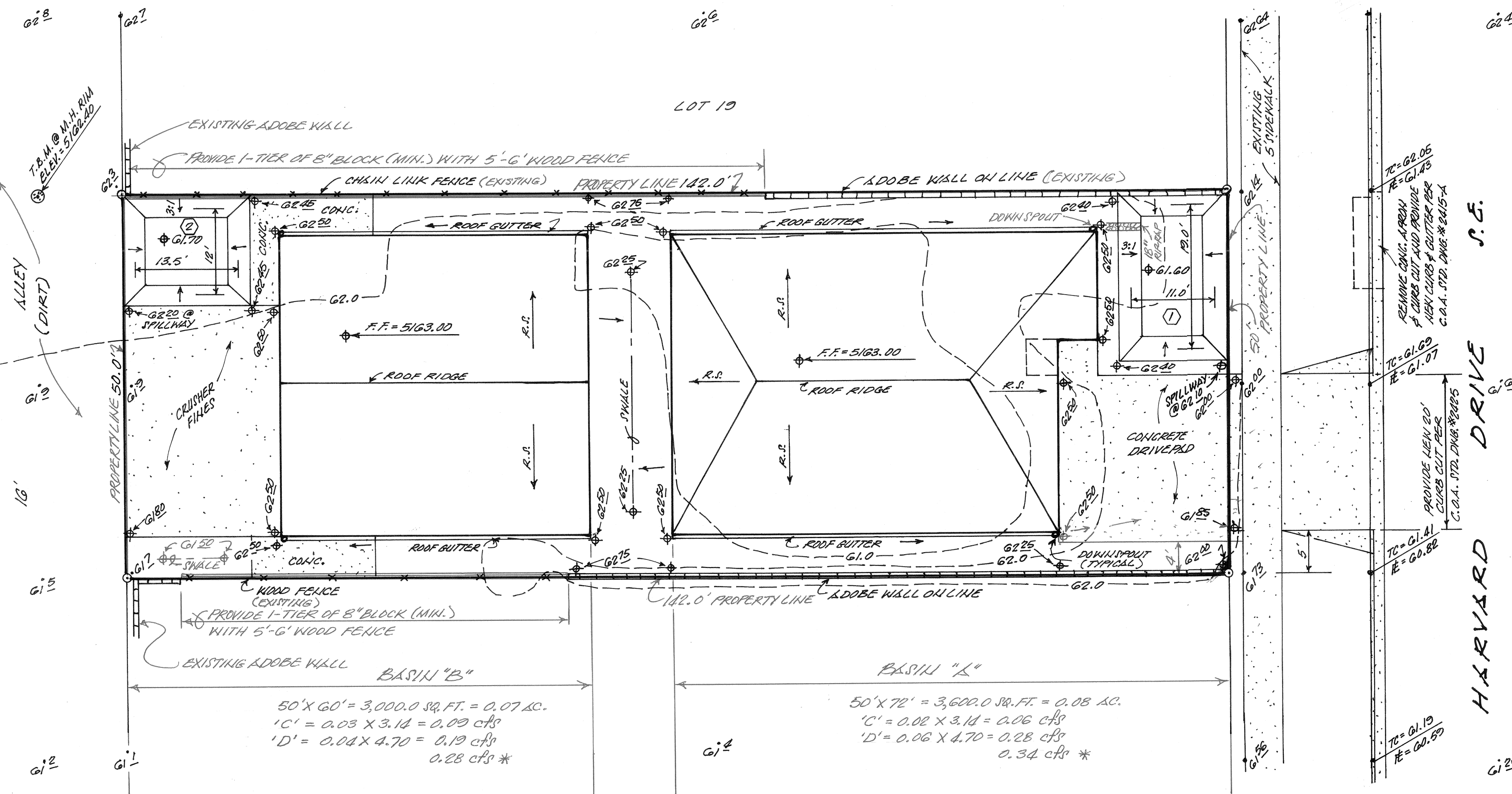
- TWO (2) WORKING DAYS PRIOR TO ANY EXCAVATION, CONTRACTOR MUST CONTACT LINE LOCATING SERVICE AT 260-1590 FOR THE ACTUAL FIELD LOCATION OF THE EXISTING SURFACE OF SUB-SURFACE UTILITIES.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL EXCAVATE AND VERIFY THE HORIZONTAL AND VERTICAL LOCATION(S) OF ALL POTENTIAL OBSTRUCTIONS; SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED WITH A MINIMUM OF DELAY.
- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES AND REGULATIONS CONCERNING CONSTRUCTION SAFETY AND HEALTH.
- ALL CONSTRUCTION WITHIN PUBLIC STREET RIGHT-OF-WAY(S) SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE CITY OF ALBUQUERQUE/BERNALILLO COUNTY STANDARDS AND PROCEDURES.

#### GENERAL NOTES:

- NO PERIMETER BOUNDARY CORNERS HAVE BEEN FIELD ESTABLISHED PER THIS SURVEY OF THE SUBJECT PROPERTY.
- NO SEARCH HAS BEEN MADE FOR EASEMENTS OF RECORD OTHER THAN SHOWN HEREON.

#### LEGEND:

TOP OF CURB ELEVATION = TC = G1.41  
CURB FLOWLINE ELEVATION = FE = G2.02  
EXISTING SPOT ELEVATION = \* G1.6  
EXISTING CONTOUR ELEVATION = - G2.0  
PROPOSED SPOT ELEVATION = + G2.50  
PROPOSED CONTOUR ELEVATION = N/A  
PROPOSED OR EXISTING CONCRETE SURFACE = [Symbol]  
EXISTING FENCE LINE = [Symbol]



SITE AREA = 0.16 ACRE ZONE: TWO (2)  
PRECIPITATION: 360 = 2.35 in.  
1440 = 2.75 in.  
10day = 3.95 in.

EXCESS PRECIPITATION: PEAK DISCHARGE:  
TREATMENT A 0.53 in. 1.56 cfs/ac.  
TREATMENT B 0.78 in. 2.28 cfs/ac.  
TREATMENT C 1.13 in. 3.14 cfs/ac.  
TREATMENT D 2.12 in. 4.70 cfs/ac.

EXISTING CONDITIONS: PROPOSED CONDITIONS:  
TREATMENT A AREA 0.00 ac. AREA 0.00 ac.  
TREATMENT B AREA 0.00 ac. AREA 0.00 ac.  
TREATMENT C AREA 0.16 ac. AREA 0.05 ac.  
TREATMENT D AREA 0.00 ac. AREA 0.11 ac.

#### EXISTING EXCESS PRECIPITATION:

Weighted E = (0.53)x(0.00)+(0.78)x(0.00)+(1.13)x(0.16)+(2.12)x(0.00)/0.16  
= 1.13 in.  
V100-360 = (1.13)x(0.16)/12 = 0.01507 ac-ft = 656.4 cf

#### EXISTING PEAK DISCHARGE:

Q100 = (1.56)x(0.00)+(2.28)x(0.00)+(3.14)x(0.16)+(4.70)x(0.00) = 0.50 cfs

#### PROPOSED EXCESS PRECIPITATION:

Weighted E = (0.53)x(0.00)+(0.78)x(0.00)+(1.13)x(0.05)+(2.12)x(0.11)/0.16  
= 1.81 in.  
V100-360 = (1.81)x(0.16)/12.0 = 0.02413 ac-ft = 1,051.2 cf

V100-1440 = (0.02)+(0.11)x(2.75 - 2.35)/12 = 0.023667 ac-ft = 1,030.9 cf

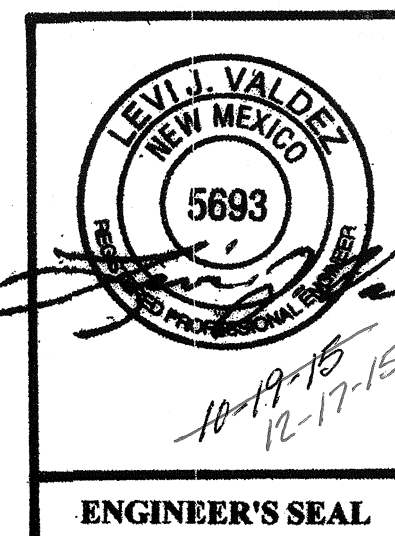
V100-10day = (0.02)+(0.11)x(3.95 - 2.35)/12 = 0.034667 ac-ft = 1,510.1 cf

#### PROPOSED PEAK DISCHARGE:

Q100 = (1.56)x(0.00)+(2.28)x(0.00)+(3.14)x(0.05)+(4.70)x(0.11) = 0.67 cfs

INCREASE: Q100 = 0.17 CFS V100-360 = 394.8 CU. FT.

NOTE: "HISTORICAL" SITE FLOWS ARE WESTERLY TOWARDS THE UNDEVELOPED 16.0' PUBLIC ALLEY AND TO THE SOUTHWEST PROPERTY CORNER; THE SUBJECT SITE PRESENTLY HAS A DEPRESSED GRADED AREA WHERE THE ORIGINAL RESIDENTIAL STRUCTURE WAS. MINIMAL NEW DEVELOPED OFFSITE FLOWS SHOWN ON THE PLAN HEREON ARE TO BE DISCHARGED TO THE UNDEVELOPED 16.0' PUBLIC ALLEY AND HARVARD DRIVE S.E. AND WILL HAVE NO ADVERSE AFFECT TO DOWNSTREAM PROPERTIES.



A PROPOSED  
GRADING AND DRAINAGE PLAN  
FOR RESIDENTIAL UNITS AT  
413 HARVARD DRIVE S.E.  
ALBUQUERQUE, NEW MEXICO  
OCTOBER, 2015