

PROJECT TITLE: Berg Residence ZONE ATLAS/DRNG. FILE #: D.23/445  
DRB #: N/A EPC #: \_\_\_\_\_ WORK ORDER #: \_\_\_\_\_  
LEGAL DESCRIPTION: LOT 1516, Unit 15, Sandia Hts. South  
CITY ADDRESS: 1516 Eagle Ridge Terrace  
ENGINEERING FIRM: Clark Consulting Engrs. CONTACT: Phil Clark  
ADDRESS: 19 Ryan Road Edgewood PHONE: 281-2444  
OWNER: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
ARCHITECT: R. Schalk CONTACT: Richard  
ADDRESS: \_\_\_\_\_ PHONE: 843-7227  
SURVEYOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_  
CONTRACTOR: \_\_\_\_\_ CONTACT: \_\_\_\_\_  
ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_

## TYPE OF SUBMITTAL:

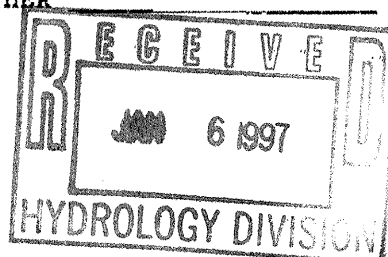
☒ DRAINAGE REPORT  
☒ DRAINAGE PLAN  
☐ CONCEPTUAL GRADING & DRAINAGE PLAN  
☒ GRADING PLAN  
☐ EROSION CONTROL PLAN  
☐ ENGINEER'S CERTIFICATION  
☐ OTHER \_\_\_\_\_

## PRE-DESIGN MEETING:

☐ YES  
☒ NO  
☐ COPY PROVIDED

## CHECK TYPE OF APPROVAL SOUGHT:

☐ SKETCH PLAT APPROVAL  
☐ PRELIMINARY PLAT APPROVAL  
☐ S. DEV. PLAN FOR SUB'D. APPROVAL  
☐ S. DEV. PLAN FOR BLDG. PERMIT APPROVAL  
☐ SECTOR PLAN APPROVAL  
☐ FINAL PLAT APPROVAL  
☐ FOUNDATION PERMIT APPROVAL  
☒ BUILDING PERMIT APPROVAL  
☐ CERTIFICATE OF OCCUPANCY APPROVAL  
☐ GRADING PERMIT APPROVAL  
☐ PAVING PERMIT APPROVAL  
☐ S.A.D. DRAINAGE REPORT  
☐ DRAINAGE REQUIREMENTS  
☐ SUBDIVISION CERTIFICATION  
☐ OTHER \_\_\_\_\_ (SPECIFY)

DATE SUBMITTED: 12/26/96BY: [Signature]

# BERNALILLO COUNTY



## PWD SUBMITTAL

Use for all PWD applications EXCEPT Street Excavation

☒ NEW SUBMITTAL

☐ RESUBMITTAL

☐ FINAL SIGNOFF

TODAY'S DATE: 12/26/96

CASE NO: PWD 96-224

OWNER

OWNER	Berg c/o R. Schalk	PHONE	843-7227
MAILING ADDRESS	Old Town Rd. NW	CITY	ZIP

AGENT

AGENT / CONTRACTOR	Clark Consulting Engrs	PHONE	281-2444
MAILING ADDRESS	19 Ryan Road	Edgewood	ZIP 87015
STATE LICENSE NO.	EXP DATE	VOLUME	CLASS
ARCHITECT	ENGINEER	LICENSE NO.	PHONE

SITE INFORMATION

SITE ADDRESS / DIRECTIONS	1516 Eagle Ridge Terrace	ZONE ATLAS NO.	D.23
LEGAL DESCRIPTION	LOT 1516, Unit 15, Sandia Hts. South		
EXISTING BUILDING(S) AND USE:	No	PROPOSED BUILDING(S):	
UPC #	-	-	-

### TYPE OF SUBMITTAL

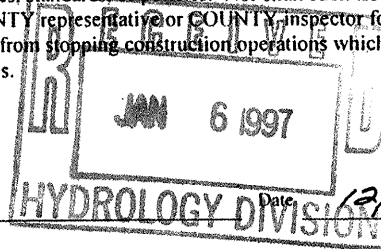
- |   |  |
|---|--|
| <input type="checkbox"/> REPLAT                                 | <input type="checkbox"/> TRAFFIC IMPACT ANALYSIS / TRAFFIC STUDY |
| <input type="checkbox"/> MINOR SUBDIVISION                      | <input type="checkbox"/> INFRASTRUCTURE LIST / DESIGN REVIEW     |
| <input type="checkbox"/> MAJOR SUBDIVISION                      | <input type="checkbox"/> SPECIAL USE PERMIT                      |
| <input type="checkbox"/> CONSTRUCTION DRAWINGS                  | <input type="checkbox"/> BARRICADING PERMIT                      |
| <input checked="" type="checkbox"/> GRADING & DRAINAGE PLAN     | <input type="checkbox"/> BUILDING PERMIT                         |
| <input type="checkbox"/> AS-CONSTRUCTED GRADING & DRAINAGE PLAN | <input type="checkbox"/> INSPECTION                              |
| <input type="checkbox"/> VARIANCE REQUEST                       | <input type="checkbox"/> OTHER (Specify):                        |
| <input type="checkbox"/> LAND DIVISION                          |  |

The issuance of a permit or a review or approval of plan specifications, computations, and shop drawings, shall not be interpreted to be a permit for, or an approval of any variance or violation of any of the provisions of any COUNTY or STATE codes, ordinances, standards, or policies. Nor shall such issuance of a permit or approval of plans, specifications, computations, and shop drawings prevent any authorized COUNTY representative or COUNTY inspector from thereafter requiring the correction of errors in said plans, specifications, computations, or shop drawings or from stopping construction operations which are being carried on thereunder when in violation of any COUNTY or STATE codes, ordinances, standards, or policies.

☐ Owner ☒ Agent ☐ Contractor

Signature

*[Signature]*



12/26/96

BERNALILLO COUNTY USE ONLY

TY

# County of Bernalillo

State of New Mexico

BOARD OF COUNTY COMMISSIONERS

TOM RUTHERFORD, CHAIR

DISTRICT 3

BARBARA J. SEWARD, VICE CHAIR

DISTRICT 4

KEN SANCHEZ, MEMBER

DISTRICT 1

STEVE D. GALLEGOS, MEMBER

DISTRICT 2

LES HOUSTON, MEMBER

DISTRICT 5

JUAN R. VIGIL, COUNTY MANAGER



DAVID K. ANDERSON, ASSESSOR

JUDY D. WOODWARD, CLERK

THOMAS J. MESSALL, PROBATE JUDGE

JOE BOWDICH, SHERIFF

ORLANDO VIGIL, TREASURER

2400 BROADWAY, S.E.  
ALBUQUERQUE, NEW MEXICO 87102  
PUBLIC WORKS (505) 848-1500

February 18, 1997

Phil Clark, P.E.  
Clark Consulting Engineers  
19 Ryan Road  
Edgewood, NM 87015

**RE: GRADING AND DRAINAGE PLAN FOR BERG RESIDENCE, LOT 1516 UNIT 15, SANDIA HEIGHTS SOUTH, (D23/D45) (PWD-96-224), ENGINEER'S STAMP DATED 2/5/97.**

Dear Mr. Clark:

Based on the information provided in the submittal of February 12, 1997, and due to the elevation of the house and the location of the adjacent residences, the above referenced plan is approved for Building Permit release.

Please note that any future development near the limit of the erosion setback will require a detailed analysis.

As you are aware, the Engineer's Certification will be required prior to release of the Certificate of Occupancy for this residence. If you should have any questions, or if I may be of further assistance to you, please call me at 924-3982.

Sincerely,

A handwritten signature in cursive script, reading "Susan Calongne".

Susan M. Calongne, P.E.

City/County Floodplain Administrator

c: Roger Paul, Bernalillo County Public Works Division  
Kurt Browning, Albuquerque Metropolitan Arroyo Flood Control Authority  
File

*Sus on*

CASE #

FP

PWD - 96 - 224

D-23, L.1516, U.15, S.H.S.

DRAN-\_\_\_\_\_

DRE - X

INSP - X

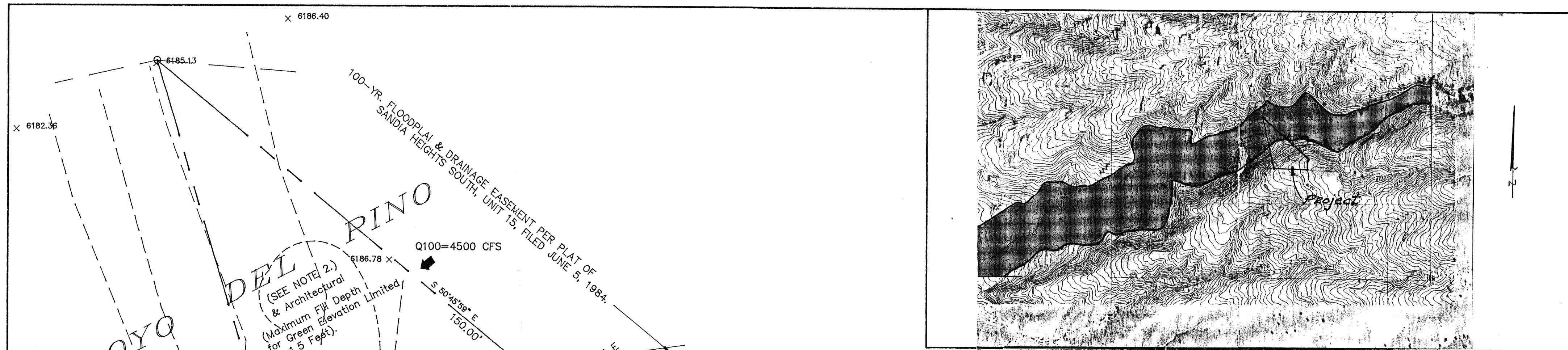
PLAN - X

C.T.A. F.P.A.  
2-12-97 2-12-97

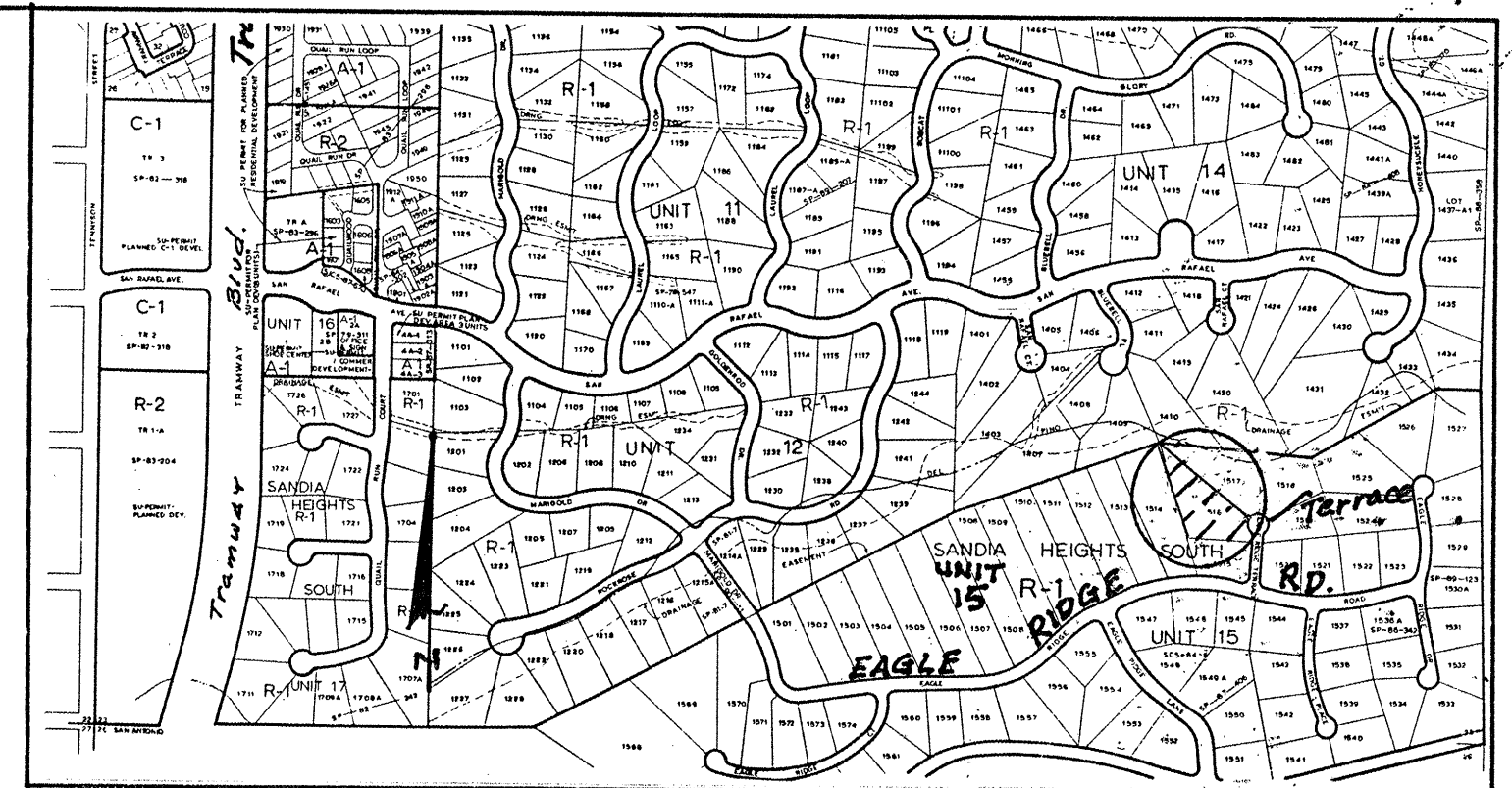
DUE DATE

03 - MAR - 97





FEMA MAP, PANEL 11 @ 1"=500'



VICINITY MAP, ZONE D-23 @ 1"=750'

SCALE: 1"=20'

## NOTES:

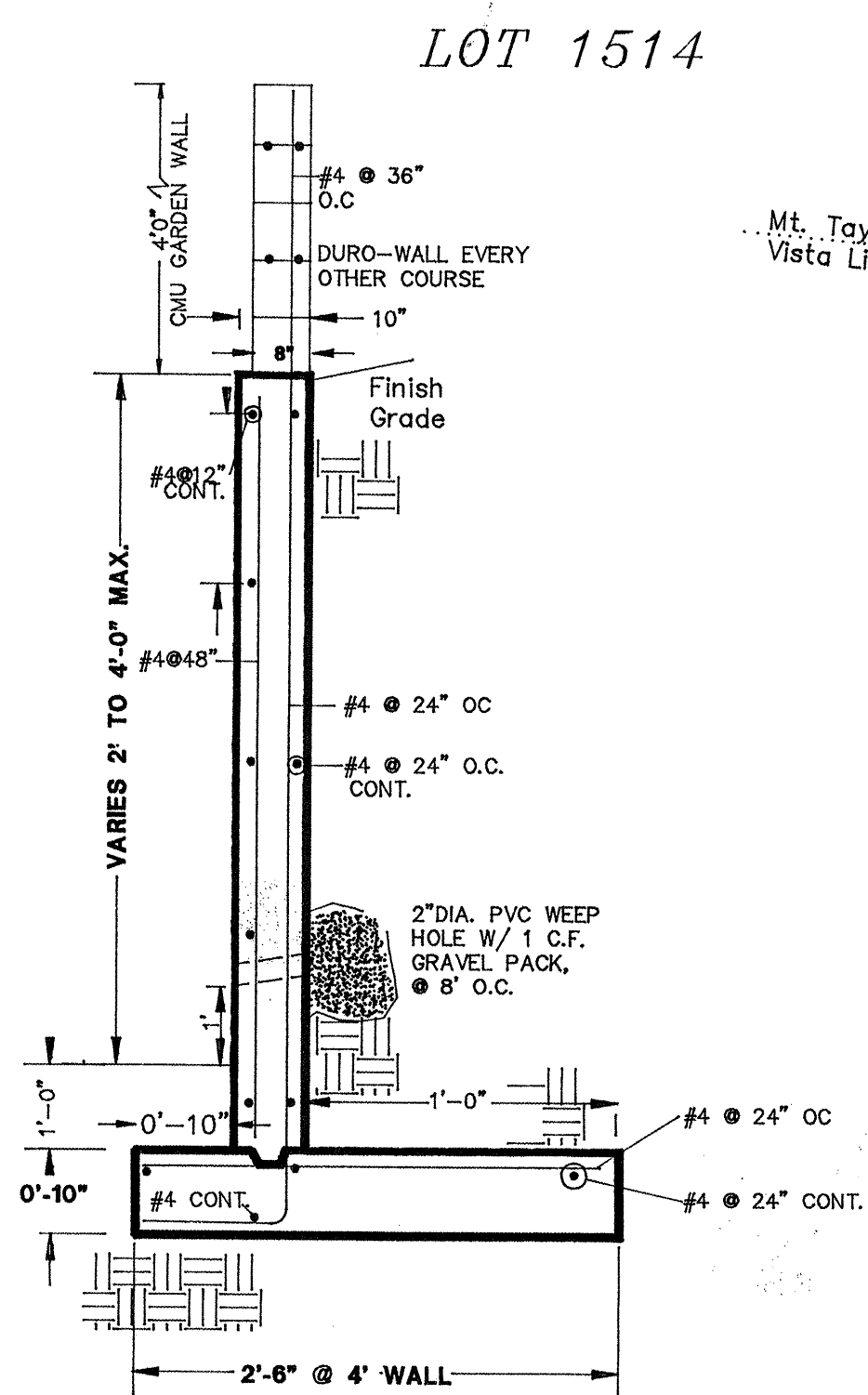
1. AN ENGINEER'S 'AS-BUILT' CERTIFICATION IS REQUIRED TO BE SUBMITTED TO COUNTY PUBLIC WORKS PRIOR TO ISSUANCE OF 'GREEN TAG'.
2. HISTORIC DRAINAGE FLOWS MUST REMAIN UNOBSTRUCTED AND CONTINUE TO DRAIN THROUGH THE PROPERTY AFTER CONSTRUCTION OF IMPROVEMENTS.
3. *Revegetate ALL Disturbed Areas per City of Albug. Spec. 1011.*

## LEGEND

EXIST. SPOT ELEV.	+ 99.6
EXIST. CONTOUR	08
NEW SPOT ELEV.	10.4
NEW CONTOUR	10
NEW STRUCTURE	
NEW CONCRETE	
TOP OF RET. WALL	TW21.8
BOTTOM OF WALL @ GRADE	BW07.5
BOTTOM OF FOOTING	BOF05.5
PRIVACY/OR RETAINING WALL	(SEE ARCHITECTURAL)

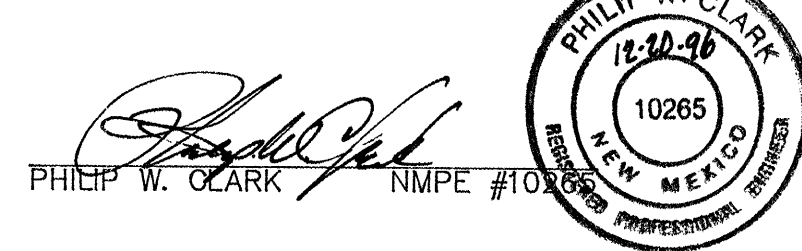
## NOTES

1. ALL REINFORCEMENT SHALL BE GRADE 40
2. ALL P.C.C. 3000 PSI
3. ALLOWABLE BEARINGS: 1500 PSF
4. LATERAL PRESS. 40 PSF
5. BACKFILL COMPACTION TO BE 90% MODIFIED PROCTOR



REINFORCED CONCRETE RETAINING WALL

I, PHILIP W. CLARK, A PROFESSIONAL ENGINEER LICENSED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT I HAVE VISITED THE SITE SHOWN HEREON, AND THAT THE CONTOURS SHOWN REPRESENT THE EXISTING GROUND CONDITIONS, AND DO FURTHER CERTIFY THAT NO EARTHWORK OF ANY KIND, NOR ANY DISTURBANCE OF THE EXISTING GROUND HAS OCCURRED ON THIS SITE SINCE THE CONTOURS WERE DETERMINED.



PROJECT BENCHMARK: TOP OF REBAR/CAP, ELEVATION = 6224.65

CONSTRUCT 16' P.C.C. DRIVEPAD PER COUNTY STD. DWG. #2425  
CONTACT HOSS FOSTER  
848-1523 FOR REQUIRED ACCESS PERMIT.

## CALCULATIONS

### I. DESIGN CRITERIA

HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY, OF THE DEVELOPMENT PROCESS MANUAL (DPM), REVISED CITY OF ALBUQUERQUE AND ADOPTED BY THE COUNTY OF BERNALILLO.  
JANUARY 1993, FOR THE CITY OF ALBUQUERQUE  
DISCHARGE RATE:  $Q = Q_{peak} \times AREA$  PEAK DISCHARGE RATES FOR SMALL WATERSHEDS  
VOLUMETRIC DISCHARGE: VOLUME = EWEIGHTED  $\times AREA$   
SOIL TYPE: "B", EMB SERIES, EMBUDO, A GRAVELLY FINE SANDY LOAM AS CLASSIFIED BY THE SOIL CONS. SERVICE  
P100 = 2.9 INCHES, ZONE 4 TIME OF CONCENTRATION, TC = 10 MINUTES  
DESIGN STORM: 100-year/6-hour, 10-year/6-hour WHERE [ ] = 10 YEAR VALUES

### II. EXISTING CONDITIONS

LOT AREA = 1.29 ACRES, WHERE EXCESS PRECIPITATION 'A' = 0.8 IN. [0.28]  
PEAK DISCHARGE, Q100 = 2.8 CFS [1.1], WHERE UNIT PEAK DISCHARGE 'A' = 2.2 CFS/ACRE [0.87]  
THEREFORE: VOLUME/100 = 3748 C.F. [1311 C.F.]

### III. DEVELOPED CONDITIONS

DETERMINE LAND TREATMENTS, PEAK DISCHARGE & WEIGHTED EXCESS PRECIPITATION

AREA	LAND TREATMENT	UNIT PEAK DISCHARGE	'E'
UNDEVELOPED, 0.34 AC. 27%	A	2.20 [0.87]	0.8 [0.28]
LANDSCAPING, 0.13 AC. 10%	B	2.92 [1.45]	1.08 [0.46]
GRAVEL & COMPACTED SOIL, 0.58 AC. 44%	C	3.73 [2.26]	1.48 [0.73]
ROOF/PAVEMENT, 1.29 ACRES	D	5.25 [3.57]	2.64 [1.69]

EWEIGHTED = 1.5 IN. [0.8]  
Q100 = 4.6 CUBIC FEET PER SECOND (CFS) Q10 = 2.7 CFS; VOL.100 = 7024 CUBIC FEET (CF),  
UNIT DISCHARGE = 4.6 CF/1.29 AC. = 3.6 CFS/ACRE.....OK PER COUNTY CONSULTANT 12/20/96

### IV. QUANTIFY UP-STREAM RUNOFF IMPACTING THE PROPERTY

● NORTH PORTION OF THE SUBJECT PROPERTY - ARROYO DE PINO  
PURSUANT TO DISCUSSION WITH KURT BROWNING, DRAINAGE ENGINEER, ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY: AS PER THE ON-GOING STUDY TO REVISE FEMA MAPPING BY RESOUE TECHNOLOGIES, INC. THE PINO ARROYO DESIGN DISCHARGE IS APPROXIMATELY 4500 CFS AT THIS LOCATION. THEREFORE USE 4500 CFS.  
(& REFERENCE DISCHARGE USED FOR ADJACENT LOT 1517 (PWD95-134))

### V. DETERMINE HYDRAULIC PROPERTIES OF ARROYO IMPACTING THE PROJECT NORTHEAST BOUNDARY

WHERE:  $N = 0.035$ , WIDTH(BOTTOM) = 120' SLOPE = 4% SIDESLOPES 6:1, THEREFORE:  
NORMAL DEPTH = 2.4 FEET PER MANNINGS EQUATION, VEL100 = 13.8 FEET PER SECOND, AREA = 350 S.F.  
W TOP = 151'  
 $F_r = Q / (A \cdot g \cdot W)^{1/2} = 1.66$ , THEREFORE SUPERCRITICAL, USE SEQUENT DEPTH ANALYSIS PER SEDIMENTATION EROSION DESIGN GUIDE, REF. EQ. 3.23 AND 3.24 PP. 3-20  
 $CWSL_{SEQ} = CWSL + 0.5(A/W) \{ (1+8F) \}^{1/2} - 3 \}$   
 $= 2.4 + 1.67 = 4.1$  FEET

THEREFORE COMPARING THE ABOVE COMPUTED DEPTH AND TOP WIDTH WITH EXISTING FEMA MAPPING THE DEDICATED EASEMENT APPEARS REASONABLE. NOTE THAT FEMA INDICATES A FLOODPLAIN WIDTH OF 210 FEET, WHICH WOULD REDUCE ACTUAL DEPTH OF FLOW SLIGHTLY.

## PROJECT INFORMATION

### LEGAL DESCRIPTION:

LOT 1516, UNIT 15, SANDIA HEIGHTS SOUTH, BERNALILLO COUNTY, NEW MEXICO

### PROJECT BENCHMARK

TOP OF REBAR AT THE NORTHEAST PROPERTY CORNER, ELEVATION = 6224.65, AS TIED FROM ALBUQUERQUE CONTROL SURVEY, 1-D24

### PROPERTY ADDRESS:

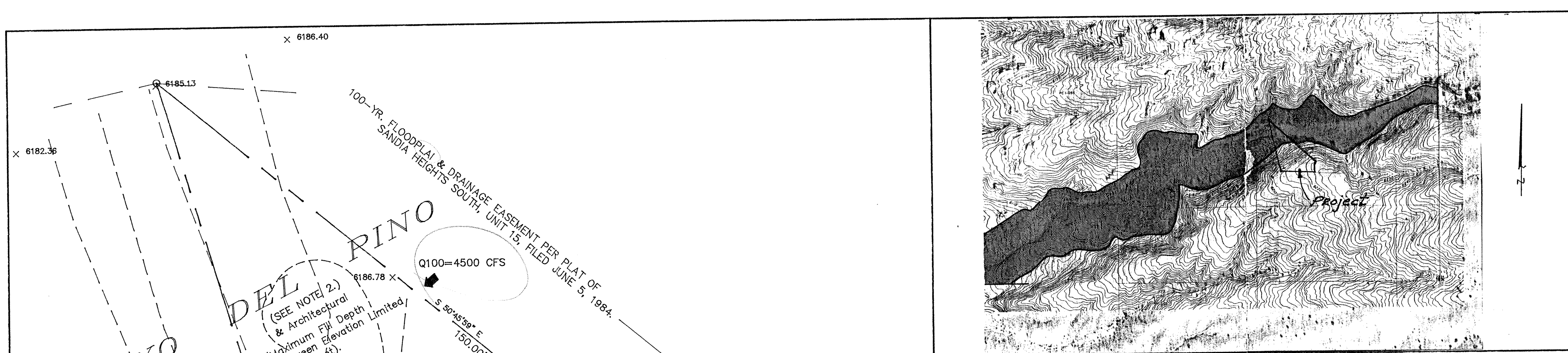
1516 EAGLE RIDGE TERRACE, NE, ALBUQUERQUE, NM 87122

### TOPOGRAPHIC SURVEY:

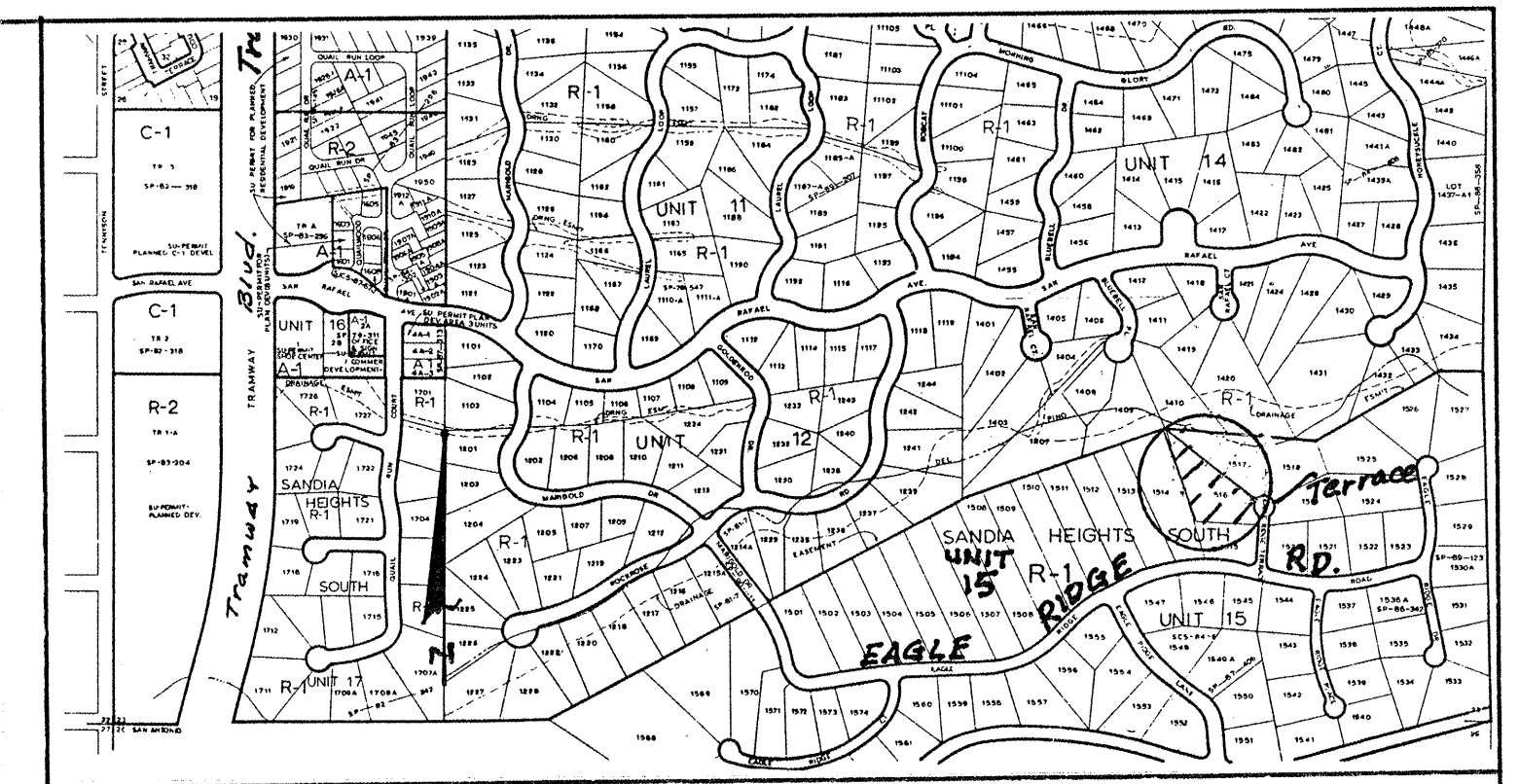
COMPILED FROM FIELD SURVEY PERFORMED BY ALPHA PROFESSIONAL SURVEYING, INC., OCTOBER 1996

19 Ryan Road Edgewood, New Mexico 87015			
TELE: (505) 281-2444 FAX: (505) 281-2444			
DATE	REVISION	LOT 1516	UNIT 15
8-5-97	Add Note 5	SANDIA HEIGHTS SOUTH	BERG RESIDENCE
		<b>GRADING &amp; DRAINAGE PLAN</b>	
DESIGNED BY: PWC	DRAWN BY: CCE	JOB No: SCHALK1	SHEET No.
CHECKED BY: PWC	DATE: 11/20/96	FILE No: G&D	1 of 1





FEMA MAP, PANEL 11 @ 1"=500'



VICINITY MAP, ZONE D-23 @ 1"=750'

SCALE: 1"=20'

## NOTES:

1. AN ENGINEER'S 'AS-BUILT' CERTIFICATION IS REQUIRED TO BE SUBMITTED TO COUNTY PUBLIC WORKS PRIOR TO ISSUANCE OF 'GREEN TAG'.
2. HISTORIC DRAINAGE FLOWS MUST REMAIN UNOBSTRUCTED AND CONTINUE TO DRAIN THROUGH THE PROPERTY AFTER CONSTRUCTION OF IMPROVEMENTS.

## LEGEND

- EXIST. SPOT ELEV. + 99.6
- EXIST. CONTOUR 08
- NEW SPOT ELEV. 10.40
- NEW CONTOUR 10
- NEW STRUCTURE
- NEW CONCRETE
- TOP OF RET. WALL @ GRADE TW21.8  
BOTTOM OF WALL @ GRADE BW07.5  
BOTTOM OF FOOTING BOF05.5
- PRIVACY OR RETAINING WALL (SEE ARCHITECTURAL)

## CALCULATIONS

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### II. EXISTING CONDITIONS

LOT AREA = 1.29 ACRES, WHERE EXCESS PRECIPITATION 'A' = 0.8 IN. [0.28] PEAK DISCHARGE,  $Q_{100} = 2.8$  CFS [1.1], WHERE UNIT PEAK DISCHARGE 'A' = 2.2 CFS/ACRE [0.87] THEREFORE:  $VOLUME_{100} = 3746$  C.F. [1311 C.F.]

### III. DEVELOPED CONDITIONS

DETERMINE LAND TREATMENTS, PEAK DISCHARGE & WEIGHTED EXCESS PRECIPITATION

AREA	LAND TREATMENT	UNIT PEAK DISCHARGE	'E'
UNDEVELOPED, 0.60 AC (47%)	A	2.20 [0.87]	0.8 [0.28]
LANDSCAPING, 0.13 AC (10%)	B	2.92 [1.45]	1.08 [0.46]
GRAVEL & COMPACTED SOIL, 0.26 AC (20%)	C	3.73 [2.26]	1.48 [0.73]
ROOF/PAVEMENT, 0.30 AC (23%)	D	5.25 [3.57]	2.64 [1.69]
1.29 ACRES			

$E_{weighted} = 1.38$  IN. [0.72]  
 $Q_{100} = 4.2$  CUBIC FEET PER SECOND (CFS)  $Q_{10} = 2.4$  CFS;  $VOL_{100} = 6462$  CUBIC FEET (CF),  
UNIT DISCHARGE = 4.2 CF/1.29 AC. = 3.26 CFS/ACRE.....OK PER COUNTY CONSULTANT 12/20/96

### IV. QUANTIFY UP-STREAM RUNOFF IMPACTING THE PROPERTY

● NORTH PORTION OF THE SUBJECT PROPERTY - ARROYO DEL PINO  
PURSUANT TO DISCUSSION WITH KURT BROWNING, DRAINAGE ENGINEER, ALBUQUERQUE METROPOLITAN ARROYO FLOOD CONTROL AUTHORITY: AS PER THE ON-GOING STUDY TO REVISE FEMA MAPPING BY RESOURCE TECHNOLOGIES, INC. THE PINO ARROYO DESIGN DISCHARGE IS APPROXIMATELY 4500 CFS AT THIS LOCATION. THEREFORE USE 4500 CFS. (& REFERENCE DISCHARGE USED FOR ADJACENT LOT 1517 (PWD95-134))

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WHERE:  $N = 0.035$ , WIDTH(BOTTOM) = 120' SLOPE = 4% SIDESLOPES 6:1, THEREFORE:  
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W TOP = 150'

$$F_r = Q/(A \cdot g \cdot W)^{1/2} = 1.66, \text{ THEREFORE SUPERCRITICAL, USE SEQUENT DEPTH ANALYSIS PER SEDIMENTATION EROSION DESIGN GUIDE, REF. EQ. 3.23 AND 3.24 PP. 3-20}$$

$$CWSEL_{SEQ} = CWSEL + 0.5(A/W) \{ (1+8F) \}^{1/2} - 3 \}$$

$$= 2.4 + 1.67 = 4.1 \text{ FEET}$$

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LOT 1516, UNIT 15, SANDIA HEIGHTS SOUTH, BERNALILLO COUNTY, NEW MEXICO

### PROJECT BENCHMARK

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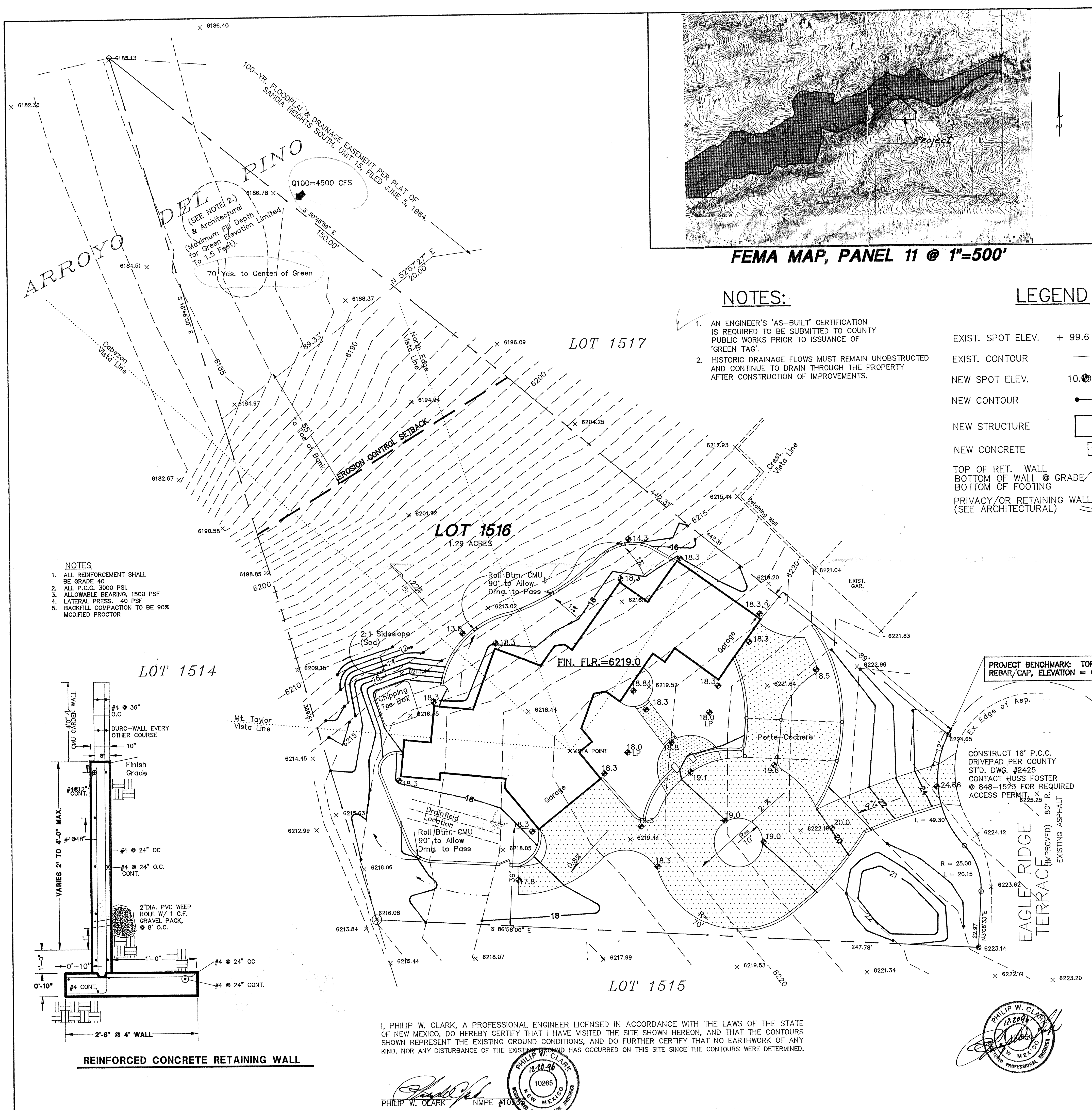
### PROPERTY ADDRESS:

1516 EAGLE RIDGE TERRACE, NE, ALBUQUERQUE, NM 87122

### TOPOGRAPHIC SURVEY:

COMPILED FROM FIELD SURVEY PERFORMED BY ALPHA PROFESSIONAL SURVEYING, INC., OCTOBER 1996

		19 Ryan Road Edgewood, New Mexico 87015 TELE: (505) 281-2444 FAX: (505) 281-2444	
DATE	REVISION	LOT 1516	UNIT 15
		SANDIA HEIGHTS SOUTH	
		BERG RESIDENCE	
		<b>GRADING &amp; DRAINAGE PLAN</b>	
DESIGNED BY: PWC	DRAWN BY: CCE	JOB No: SCHALKI	SHEET No.
CHECKED BY: PWC	DATE: 11/20/96	FILE No: G&D	1 of 1



I, PHILIP W. CLARK, A PROFESSIONAL ENGINEER LICENSED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW MEXICO, DO HEREBY CERTIFY THAT I HAVE VISITED THE SITE SHOWN HEREON, AND THAT THE CONTOURS SHOWN REPRESENT THE EXISTING GROUND CONDITIONS, AND DO FURTHER CERTIFY THAT NO EARTHWORK OF ANY KIND, NOR ANY DISTURBANCE OF THE EXISTING GROUND HAS OCCURRED ON THIS SITE SINCE THE CONTOURS WERE DETERMINED.

PHILIP W. CLARK  
NMPE #10265  
10265  
NEW MEXICO  
PROFESSIONAL ENGINEER