

County of Bernalillo

State of New Mexico

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ALBUQUERQUE, NEW MEXICO 87102
PUBLIC WORKS (505) 848-1500

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December 16, 1998

Chris Weiss, P.E.
C. L. Weiss Engineering, Inc.
P. O. Box 97
Sandia Park, New Mexico 87047

RE: *Grading and Drainage Plan for Lot 558, Unit 5, Sandia Heights South (C23/D57)*
(PWD-98-204) Submitted for Building Permit Approval, Engineer's Stamp Dated
12/8/98.

Dear Mr. Weiss:

Based on the information provided, the above referenced plan is approved for Building Permit release.

As you are aware, the Engineer's Certification is required prior to release of the Certificate of Occupancy for this addition.

If you have any questions, or if I may be of further assistance to you, please call me at 924-3982, or contact Brad Catanach at the County.

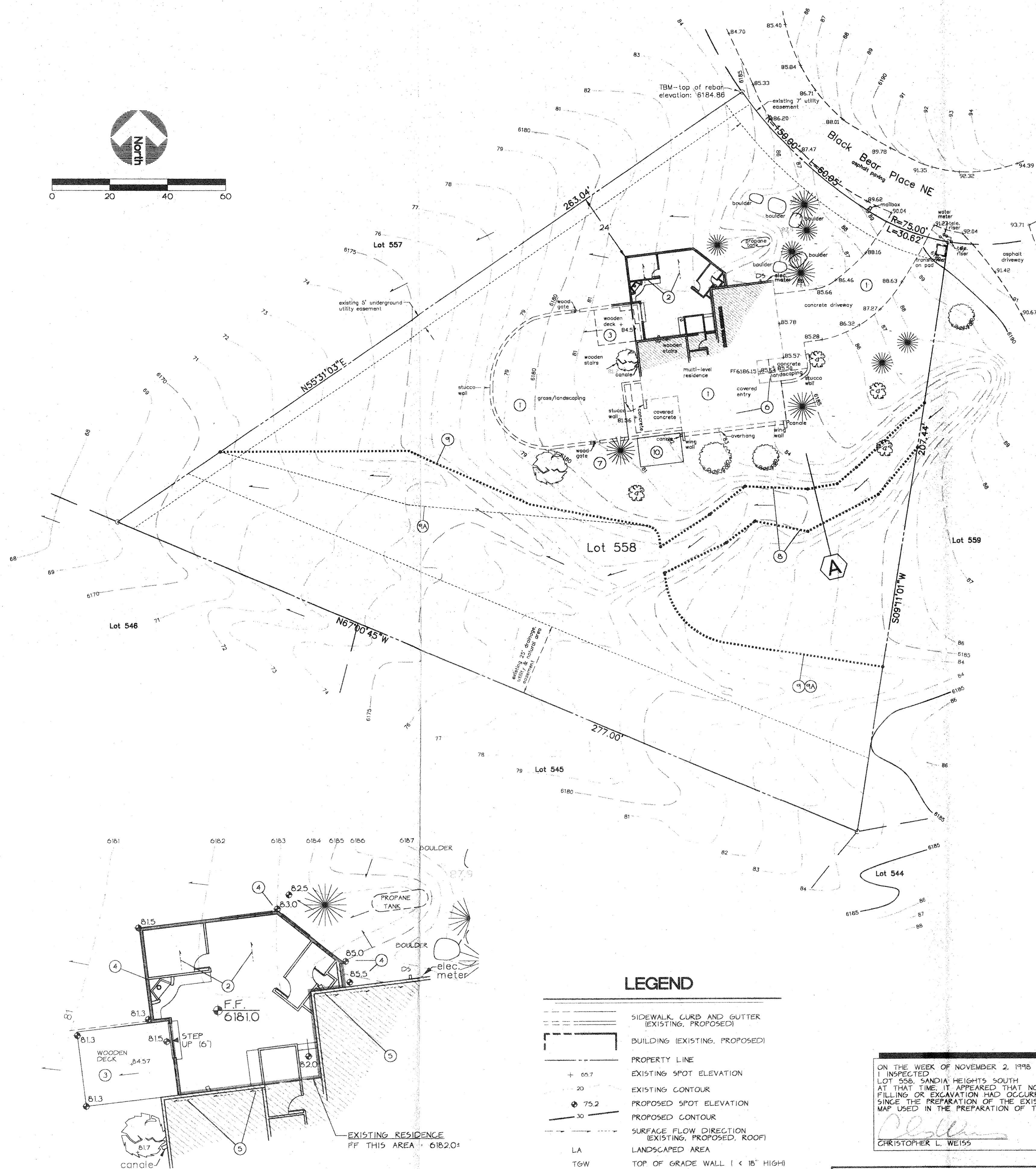
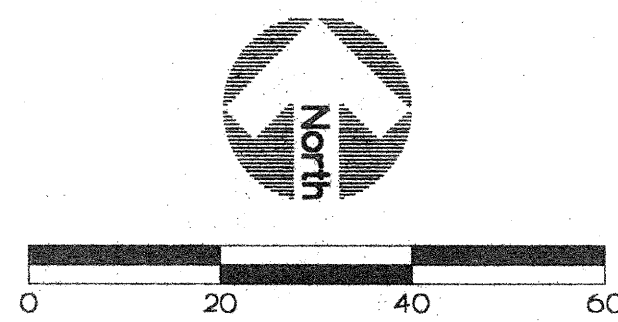
Sincerely,

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

Susan M. Calongne, P.E.

City/County Floodplain Administrator

c: Brad Catanach, P.E., Bernalillo County Public Works Division
 Lisa Ann Manwill, P.E., Albuquerque Metropolitan Arroyo Flood Control Authority
 Andrew Garcia, City Hydrology
 File



LEGEND

---	SIDEWALK, CURB AND GUTTER (EXISTING, PROPOSED)
---	BUILDING (EXISTING, PROPOSED)
---	PROPERTY LINE
+ 65.7	EXISTING SPOT ELEVATION
- 20	EXISTING CONTOUR
+ 75.2	PROPOSED SPOT ELEVATION
- 30	PROPOSED CONTOUR
---	SURFACE FLOW DIRECTION (EXISTING, PROPOSED, ROOF)
LA	LANDSCAPED AREA
T&W	TOP OF GRADE WALL (< 15' HIGH)
TRW	TOP OF RETAINING WALL (> 15' HIGH)
TA	TOP OF ASPHALT
TC	TOP OF CURB
FL	FLOW LINE
FF	FINISHED FLOOR
R/W	RIGHT OF WAY
PL	PROPERTY LINE
PP	POWER POLE
▲	ENTRY / EXIT LOCATION

ON THE WEEK OF NOVEMBER 2, 1998
I, INSPECTED
LOT 558, SANDIA HEIGHTS SOUTH
AT THAT TIME, IT APPEARED THAT NO GRADING,
FILLING OR EXCAVATION HAD OCCURRED THEREON
SINCE THE PREPARATION OF THE EXISTING CONTOUR
MAP USED IN THE PREPARATION OF THIS PLAN.
Christopher L. Weiss
CHRISTOPHER L. WEISS
12-8-98
DATE

GENERAL NOTES

- THE FOLLOWING APPLIES TO ALL RIP-RAP - PERCENT PASSING
5" - 100% PASSING
6" - 50% PASSING
4" - 0% PASSING
- DUE TO EXISTING OFFSITE FLOWS WHICH DRAIN THROUGH THIS PROPERTY, NO EXTERNAL PROPERTY LINE WALLS OR FENCES, WHICH INCLUDES CHAIN LINK FENCING WILL BE CONSTRUCTED WITHOUT OBTAINING APPROVAL FROM BERNALILLO COUNTY PUBLIC WORKS DEPARTMENT.
- PROVIDE EROSION PROTECTION AS REQUIRED (RESEEDING AND / OR 6" AVG. DIA. COBBLES)

CALCULATIONS:

Calculations are based on the Drainage Design Criteria for Bernalillo County Section 22.2, DPM, Vol. 2, dated Jan., 1993

ON-SITE	
AREA OF SITE:	38373 SF = 0.881 Ac.

HISTORIC FLOWS:

On-Site Historic Land Condition

Area a	0 SF
Area b	26242.5 SF
Area c	8747.5 SF
Area d	3383 SF
Total Area	38373 SF

DEVELOPED FLOWS:

On-Site Developed Land Condition

Area a	0 SF
Area b	25180 SF
Area c	8748 SF
Area d	4246 SF
Total Area	38373 SF

EXCESS PRECIPITATION:

Precip. Zone 4

Ea	= 0.80
Eb	= 1.08
Ec	= 1.46
Ed	= 2.64

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

Weighted E = $EaAa + EbAb + EcAc + EdAd$

Historic E = 1.30 in. Developed E = 1.34 in.

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

Historic V360 = 4170 CF Developed V360 = 4283 CF

On-Site Peak Discharge Rate: $Qp = QpaAa + QpbAb + QpcAc + QpdAd / 43,560$

For Precipitation Zone 4

$Qpa = 2.20$ $Qpb = 2.92$ $Qpc = 3.73$ $Qpd = 5.25$

Historic Qp = 2.92 CFS Developed Qp = 2.96 CFS

OFFSITE FLOWS

Area of off-site flows = 210000 SF = 4.8 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 = 1.30 in.

Sub-basin Volume of Runoff (see formula above)

V360 = 22764 CF

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

Qp = 15.3 cfs

TREATMENT

A = 43%

B = 20%

C = 20%

D = 17%

Based on Mannings formula for a typical cross section (see plan) A taken at a point nearest the existing residence:

Mannings Coefficient 0.045 Discharge 15300 cfs

Channel Slope 0.050 "/ Depth 0.55 ft.

Left Side Slope 0.400 "/ Velocity 4.49 ft./s

Right Side Slope 0.400 "/ Specific Energy 0.86 ft.

Bottom Width 6.000 ft.

Based on the above information, the Energy Grade depth for a 100 year, 24 hour storm event is 0.86 ft. An easement has been provided to AMAFCA concurrent with this submittal and is based on a standard depth of 1.0'.

SCOPE

The proposed improvements include an approximately 863 SF (approximate footprint) two story residential addition, with minor rear yard site improvements.

The present site is a developed residential property which slopes at 7% to the southwest. Black Bear Place NE borders the property to the north, the properties to the east, west and south are developed residential properties.

The intent of this plan is to show:

- Grading relationships between the existing ground elevations and proposed finished elevations in order to facilitate positive drainage to designated discharge points.

- The extent of proposed site improvements, including buildings, walks and pavement.

- The flow rate/volume of rainfall runoff across or around these improvements and methods of handling these flows to meet Bernalillo County requirements for drainage management.

- The relationship of on-site improvements with existing neighboring property to insure an orderly transition between proposed and surrounding grades.

DRAINAGE PLAN CONCEPT: The proposed addition will increase flows to the North Arroyo de Domingo Baca (easement provided to AMAFCA concurrent with this submittal). This increase will have no significant effect on the existing flows within the arroyo.

GENERAL NOTES

LEGAL: Lot 558, Unit 5, Sandia Heights South, Bernalillo County, New Mexico.

SURVEYOR: Forsbauer Surveying Co., - Ron Forsbauer - 268-2112

B.M.: City of Albuquerque 1-C24, a brass cap located approximately 0.9 miles east and 0.4 miles south of the intersection of Tramway Boulevard & Live Oaks Road NE Elevation: 6353.00. (M.S.L.D.)

FLOOD HAZARD: Per FEMA Boundary Map #11 and FIRM Map #161 (see insert on plan), the site is located within the North Arroyo de Domingo Baca floodzone. An easement for this floodplain is provided to AMAFCA concurrent with this submittal.

OFF-SITE DRAINAGE: Per FEMA Map #11 analysis, approximately 4.8 acres of off-site flows impact this property. The basin passes through the property south of the existing residence and merges with the Arroyo de Domingo Baca at the west property corner. The proposed construction has no effect on and is not impacted by this off-site drainage. The easement provided to AMAFCA also accounts for this drainage path.

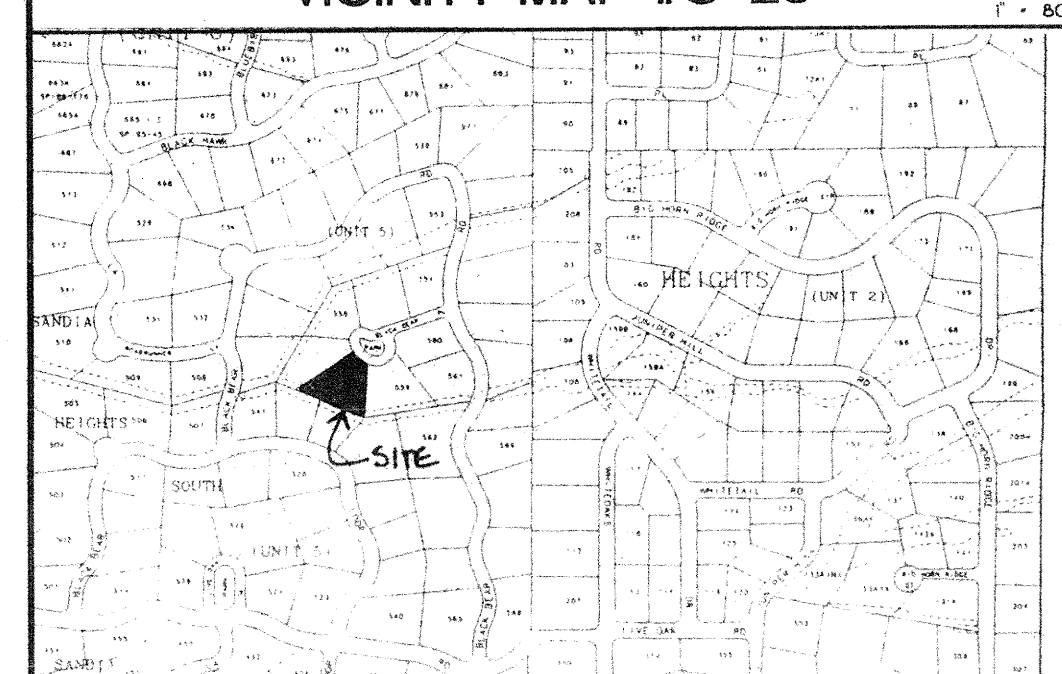
EROSION CONTROL: The contractor is responsible for retaining on-site all sediment generated during construction by means of temporary earth berms or silt fences at the low points on the west property line.

KEYNOTES

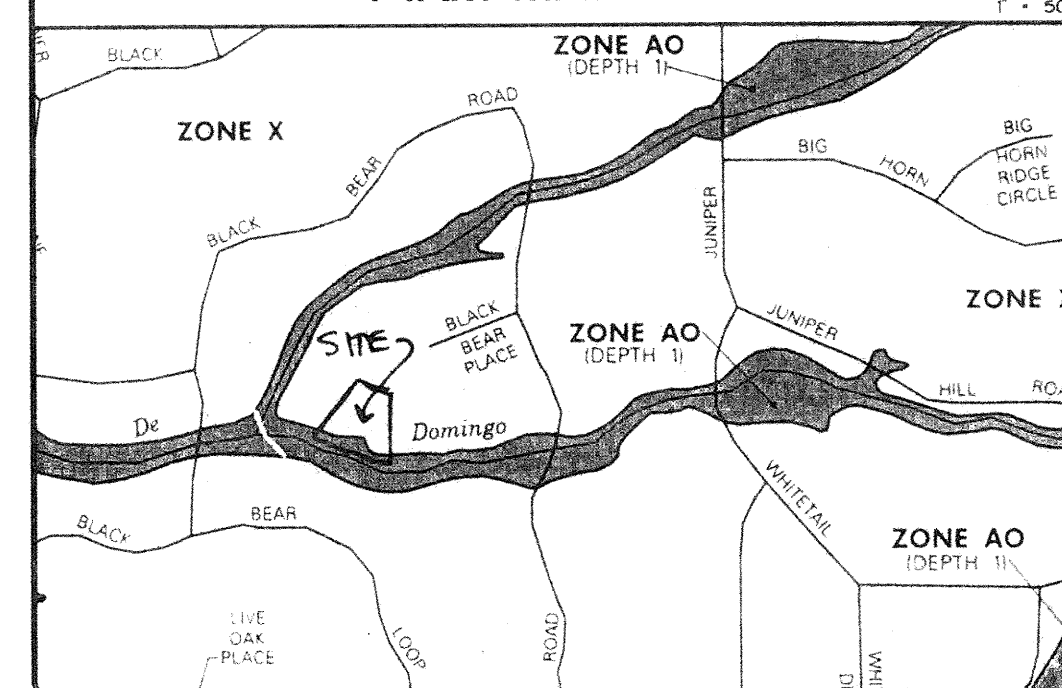
GENERAL NOTE: SEE DETAIL OF BUILDING ADDITION THIS SHEET FOR ENLARGED VIEW OF PROPOSED CONSTRUCTION / GRADES.

- DASHED LINES REPRESENT EXTENT OF EXISTING RESIDENCE / DRIVES / WALKS / ETC. SEE ARCHITECTURAL FOR INFORMATION REGARDING DEMOLITION / RELOCATION OF EXISTING SITE FEATURES IN CONJUNCTION WITH THIS PROPOSED ADDITION.
- DASHED ARROWS REPRESENT ROOF CANALE DISCHARGE POINTS. CONTRACTOR TO PROVIDE 3' DIA. X 2' DEEP COBBLE PAD FOR EROSION PROTECTION BENEATH ALL CANALES. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION.
- EXISTING WOOD DECK TO BE LOWERED TO ELEVATIONS SHOWN. SLOPE DECK TO DRAIN TO THE WEST. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION.
- CONSTRUCT RETAINING WALL AS PART OF BUILDING ADDITION TO MAINTAIN EXISTING GRADES AS SHOWN. FINE GRADE AS REQUIRED TO DIRECT FLOWS AWAY FROM ADDITION TOWARDS EXISTING FLOWPATHS.
- REDIRECT ROOF FLOWS TO PROVIDE ADEQUATE ROOF DRAINAGE. SEE ARCHITECTURAL FOR ADDITIONAL INFORMATION.
- SEE ARCHITECTURAL PLANS FOR INTERIOR ONLY RENOVATION THIS AREA DOES NOT AFFECT DRAINAGE / GRADING PLAN.
- LOCAL WATER UTILITY COMPANY PROVIDES WATER TO SITE. (NO WELL). EXISTING SEPTIC SYSTEM THIS AREA TO REMAIN.
- EASEMENT PROVIDED TO AMAFCA FOR OFF-SITE FLOWS TO CROSS PROPERTY TO THE NORTH ARROYO DE DOMINGO BACA AMAFCA EASEMENT. SEE CALCULATIONS (ANALYSIS SECTION A) FOR ADDITIONAL INFORMATION. NOTE: EASEMENTS TO AMAFCA PROVIDED IN CONJUNCTION WITH THIS SUBMITTAL.
- EASEMENT FOR THE NORTH ARROYO DE DOMINGO BACA PROVIDED IN CONJUNCTION WITH THIS SUBMITTAL.
- EXISTING FLOODPLAIN BOUNDARY. NOTE: AMAFCA EASEMENT FOLLOWS EXISTING FLOODPLAIN BOUNDARY ON EAST SIDE OF PROPERTY. ON WEST SIDE OF PROPERTY, EASEMENT FOLLOWS EXISTING CONTOURS REPRESENTING ACTUAL FLOWPATH.
- CONTRACTOR TO CONSTRUCT UPPER LEVEL DECK ADDITION THIS AREA FLOWS WILL PASS THROUGH DECKING TO NATURAL GROUND BELOW. PROVIDE EROSION PROTECTION AS NECESSARY.

VICINITY MAP #C-23



FIRM MAP #161



CHRISTOPHER L. WEISS
NEW MEXICO
REGISTERED PROFESSIONAL ENGINEER
12-8-98

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Revisions

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PARKWEST CONSTRUCTION RESIDENTIAL ADDITION SHS Lot 558 - Black Bear Place

Scale: 1" = 20' Drawn By: BJB Checked By: CLW Job Number: Date: NOV. 1998

**Drainage and
Grading Plan**

**C-1
SH. 1 OF 1**