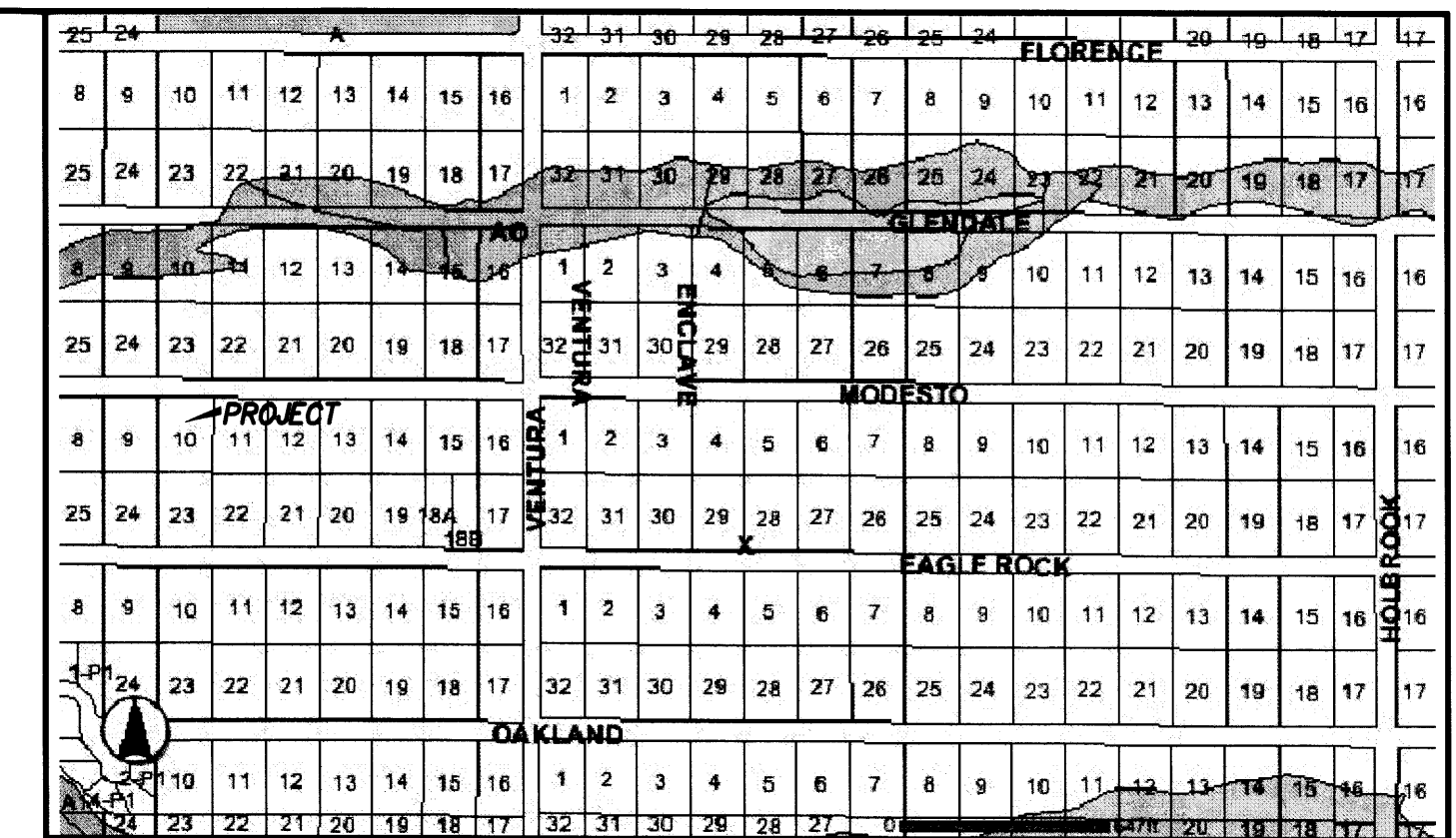


THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR CONTROLLING STORM RUNOFF AND EROSION, AND ESSENTIALLY ALLOWING HISTORIC FLOWS TO CONTINUE TO FLOW THROUGH THE PRESENTLY DEVELOPED SITE. THE MOST WEST AND EASYLY DEVELOPED PROPERTY, PROPERTY ADJACENT ON THE SOUTH IS UNDEVELOPED. MODESTO AVE ON THE NORTH IS AN IMPROVED 26' WIDE CITY MAINTAINED ASPHALT ROADWAY. THE SITE GENERALLY SLOPES FROM EAST TO WEST AT 4% TO 6% (A MINOR DRAINAGE BASIN ENTERS THE SITE FROM THE NORTH CONVEYS WATER TO THE ALL OFF-SITE FLOWS ARE QUANTIFIED ON THE PLAN/CALCULATIONS.

THE SITE IS NOT ENCUMBERED BY A DESIGNATED FEMA FLOODPLAIN.

HISTORICAL SITE RUNOFF OUTFALL LOCATIONS WILL REMAIN UNCHANGED. SINCE THE STREET IS IMPROVED ONLY MINIMAL GRADING IS PROPOSED WITHIN THE PUBLIC R.O.W. FREE DISCHARGE OF DEVELOPED FLOWS IS ACCEPTABLE SINCE THE PROJECT IS WITHIN THE ALLOWABLE RUNOFF ESTABLISHED FOR NORTH ALBUQUERQUE ACRES...see RTI STUDY



VICINITY MAP

W/CURRENT FLOODPLAINS

ZONE C-20
1" = 750'

CALCULATIONS

DESIGN CRITERIA

HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPM)
REVISED JANUARY 1993 FOR CITY OF ALBUQUERQUE ADOPTED BY THE COUNTY OF BERNALILLO
DISCHARGE RATE: $Q = QPEAK \times AREA$, "Peak Discharge Rates For Small Watersheds"
VOLUMETRIC DISCHARGE: $VOLUME = E \times WEIGHTED \times AREA$
 $P100 = 2.60$ Inches, Zone 3 Time of Concentration, $TC = 10$ Minutes
DESIGN STORM: 100-YEAR/6-HOUR, 10-YEAR/6-HOUR [] = 10 YEAR VALUES

EXISTING CONDITIONS

LOT AREA = 0.89 ACRES, WHERE EXCESS PRECIP. 'A' = 0.66 In. [0.19]
PEAK DISCHARGE, Q100 = 1.4 CFS [0.4], WHERE UNIT PEAK DISCHARGE 'A' = 1.9 CFS/AC. [0.6]
THEREFORE: VOLUME 100 = 1749 CF [503]

DEVELOPED CONDITIONS -

DETERMINE LAND TREATMENTS, PEAK DISCHARGE AND VOLUMETRIC DISCHARGE

	AREA	LAND TREATMENT	Q Peak	E
UNDEVELOPED	0.19 Ac.(21%)	A	1.87[0.58]	0.66[0.19]
LANDSCAPING	0.27 Ac.(30%)	B	2.60[1.19]	0.92[0.36]
GRAVEL & COMPACTED SOIL	0.29 Ac.(33%)	C	3.45[2.00]	1.29[0.62]
ROOF - PAVEMENT	0.14 Ac.(16%)	D	5.02[3.39]	2.36[1.50]
	0.89 Ac.			

THEREFORE: $E_{Weighted} = 1.23 \ln[0.60]$ &
 $Q_{100} = 2.76 \text{ CFS}$ VOLUME 100 = 3974 CF
 $Q_{10} = 1.48 \text{ CFS}$ VOLUME 10 = 1938 CF

QUANTIFY UPSTREAM RUNOFF IMPACTING THE PROPERTY

Using Similar Unit Discharge Obtained Above
2.9 CFS / Ac.

See Plan @ EAST BDRY & RTI STUDY - 500' x 150'

CHECK/SIZE OPENINGS USING ORIFACE EQ. - IF WALL

$$\begin{aligned} Q &= CA(2gH)^{1/2} & g &= 32.2 \text{ FT PER S}^2 \\ &= 0.7(0.35)8 & H &= 1' \text{ (ASSUME)} \\ &= 2 \text{ CFS / BLK} & C &= 0.7 \\ & & & 1\text{'-}5\text{' X } 10\text{'}/144 = 0.35 \text{ SF (1-STD CMU BLK} \\ & & & \text{W/ 2 OPENINGS)} \end{aligned}$$

CHANNEL CALCULATOR

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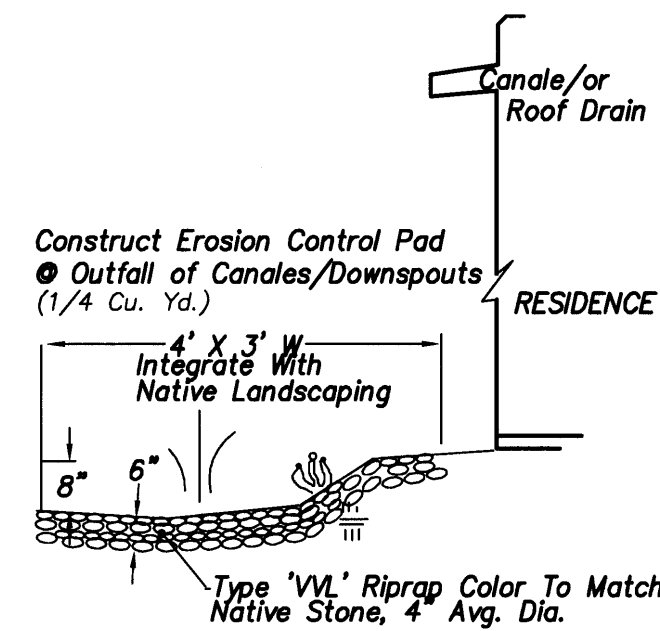
GIVEN INPUT DATA:
SHAPE ..... TRAPEZOIDAL
SOLVING FOR ..... FLOWRATE
SLOPE ..... 0.0300 FT/FT
MANNING'S N ..... 0.0400
DEPTH ..... 0.8000 FT
HEIGHT ..... 1.0000 FT
BOTTOM WIDTH ..... 4.0000 FT
LEFT SLOPE ..... 0.1250 FT/FT (✓)
RIGHT SLOPE ..... 0.1100 FT/FT (✓)

```

```

COMPUTED RESULTS:
FLOWRATE ..... 34.5734 CFS
VELOCITY ..... 3.9881 FPS
FULL FLOWRATE ..... 56.8849 CFS
FLOW AREA ..... 8.6691 FT2
FLOW PERIMETER ..... 17.7654 FT
HYDRAULIC RADIUS ..... 0.4879 FT
TOP WIDTH ..... 17.6727 FT
AREA ..... 12.5455 FT2
PERIMETER ..... 21.2080 FT
PERCENT FULL ..... 80.0000 %

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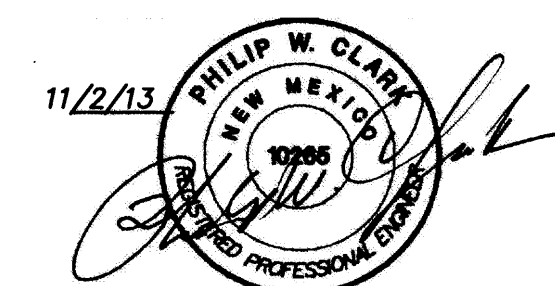
EROSION CONTROL PAD

NO SCALE

PHILIP W. CLARK NMPE #10265

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 #4 Rebar/Cap, Elev.5526.88
(M. DOAK, PLS)



NOTES

1. PERIMETER FENCING AROUND THE PROPERTY IS NOT PROPOSED. CONSTRUCTION OF FUTURE FENCING SHALL PERMIT THE PASSING OF DRAINAGE TO AND FROM HISTORIC OUTFALL AND ENTRANCE LOCATIONS. OWNER SHALL MAINTAIN FENCING AND KEEP FREE OF ALL DEBRIS, WEEDS, AND/OR OBSTRUCTIONS.
2. THIS PLAN SHOWS A FIXED PERCENTAGE OF LAND TREATMENT A REMAINING IN AN UNDISTURBED CONDITION. IF A GREATER AREA IS DISTURBED A REVISED PLAN MAY BE REQUIRED PER COUNTY PUBLIC WORKS DEPARTMENT (UNLESS THE COMPOSITE TREATMENT IS < ALLOWABLE).
3. CONTACT THE CITY OF ALBUQUERQUE PLANNING FOR ACCESS PERMIT @ PLAZA DEL SOL . 924-3991
4. REVEGETATE ALL AREAS DISTURBED DUE TO CONSTRUCTION PER CITY OF ALBUQ. SPEC. 1011, NATIVE SEED MIX.
5. MAXIMUM SITE GRADING WITHOUT EROSION PROTECTION: 3 HORIZONTAL TO 1 VERTICAL, 3:1.
6. RIPRAP STONE SHOWN ON THIS PLAN IS SMOOTH RIVER-RUN COBBLES, TYPE VVL IN COMPLIANCE WITH AMAFCA GUIDELINES, 4" AVERAGE DIA. NAT. STONE BURIED TO 6" DEPTH. SEE EROSION CONTROL PAD, THIS SHEET. SEE ROOF PLAN FOR CANALE LOCATIONS.

LEGEND

Exist. Spot Elevation +24.0
Exist. Contour 10
New Spot Elevation 24.0
New Contour 12
Exist. Edge of Road
New Swale
Drainage Direction
Edge of Gravel EG
Edge of Asphalt EA
Existing Power Pole OPP
New Concrete
New Structure

PROJECT DATA

LEGAL DESCRIPTION


*Lot 10, Block 1, Tract 3, Unit 3 North Albuquerque Acres
Bernalillo County, New Mexico*

PROJECT BENCHMARK

Top of Rebar and Cap at Lot 10 SouthEast Corner
MSL Elevation = 5526.88 (NAVD88)

TOPOGRAPHIC SURVEY

Compiled From GIS, and Field SUPPLEMENTED By
/Confirmed by Clark Consulting Engineers.

 Clark Consulting Engineers		19 Ryan Road Edgewood, New Mexico 87015	
Tele: (505) 281-2444		Fax: (505) 281-2444	
DATE	REVISION	LOT 10, BLOCK 1, TRACT 3, UNIT 3 NORTH ALBUQUERQUE ACRES A TAJDIN GILLANI HOME Grading & Drainage Plan	
11.1.13	ADDR. COA		
DESIGNED BY: PWC	DRAWN BY: CCE	JOB #:	Gillani_T
CHECKED BY: PWC	DATE: JUNE 2013	FILE #:	c/c
		1 OF 1	

GRADING & DRAINAGE PLAN

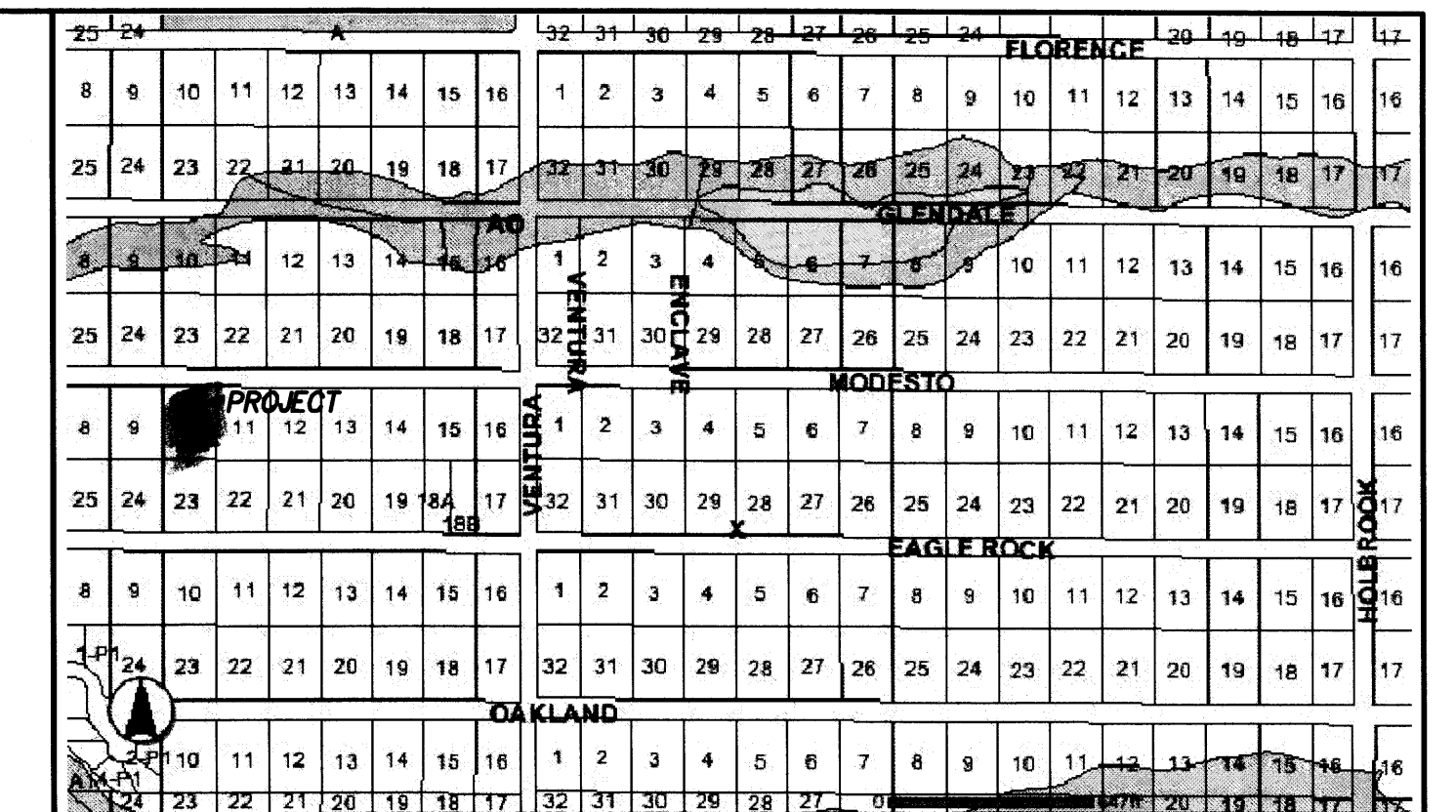
THE RESIDENTIAL HOME PROJECT IS LOCATED IN UNIT 3 OF NORTH ALBUQUERQUE ACRES APPROXIMATELY 9 MILES NE FROM THE DOWNTOWN CORE OF ALBUQUERQUE, NM. THE GRADING & DRAINAGE SCHEME HEREON IS IN COMPLIANCE WITH THE BERNALILLO COUNTY FLOOD HAZARD ORDINANCE, NO.88-46, AND CITY STORM DRAINAGE ORD. THE PLAN IS REQUIRED IN ORDER TO FACILITATE THE OWNER'S REQUEST FOR BUILDING PERMIT. THE PLAN SHOWS:

1. EXISTING CONTOURS, AND SPOT ELEVATIONS AND EXISTING DRAINAGE PATTERNS & DRAINAGE EASEMENTS (IF KNOWN)
2. PROPOSED IMPROVEMENTS: RESIDENCE(S), WELL AND SEPTIC SYSTEM, ASPHALT/CONCRETE DRIVEWAY, FLATWORK AND NEW GRADE ELEVATIONS
3. CONTINUITY BETWEEN EXISTING AND PROPOSED ELEVATIONS.
4. QUANTIFICATION AND ACCEPTANCE OF UPSTREAM OFF-SITE FLOWS WHICH CONTRIBUTE TO THE DEVELOPED FLOWS GENERATED BY THE IMPROVEMENTS.
5. UPSTREAM ANALYSIS AS TO WATER SURFACE MODEL AND EROSION SETBACK.

THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR CONTROLLING STORM RUNOFF AND EROSION, AND ESSENTIALLY ALLOWING HISTORIC FLOWS TO CONTINUE TO DRAIN THROUGH THE PROPERTY. PRESENTLY, THE SITE IS BOUNDED ON THE WEST AND EAST BY DEVELOPED PROPERTY. PROPERTY ADJACENT ON THE SOUTH IS UNDEVELOPED. MODESTO AVE ON THE NORTH IS AN IMPROVED 26' WIDE CITY MAINTAINED ASPHALT ROADWAY. THE SITE GENERALLY SLOPES FROM EAST TO WEST AT 4%. A 2-ACRE MINOR DRAINAGE BASIN ENTERS ON THE SOUTHEAST AND CONVEYS WEST THRU THE SITE. ALL OFF-SITE FLOWS ARE QUANTIFIED ON THE PLAN/CALCULATIONS.

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VICINITY MAP
W/CURRENT FLOODPLAINS
ZONE C-20
1" = 750'

RTI FLOOD PRONE MAP

CALCULATIONS

DESIGN CRITERIA

HYDROLOGIC METHODS PER SECTION 22.2, HYDROLOGY OF THE DEVELOPMENT PROCESS MANUAL (DPM) REVISED JANUARY 1993 FOR CITY OF ALBUQUERQUE ADOPTED BY THE COUNTY OF BERNALILLO
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EXISTING CONDITIONS

LOT AREA = 0.89 ACRES, WHERE EXCESS PRECIP. 'A' = 0.66 in. [0.19]
PEAK DISCHARGE, $Q100 = 1.4$ CFS [0.4] WHERE UNIT PEAK DISCHARGE 'A' = 1.9 CFS/AC. [0.6]
THEREFORE: $VOLUME 100 = 1749$ CF [503]

DEVELOPED CONDITIONS - MAX Per RTI Study

DEVELOPED LAND TREATMENTS, PEAK DISCHARGE AND VOLUMETRIC DISCHARGE	AREA	LAND TREATMENT	Q Peak	E
UNDEVELOPED	0.31 Ac. (43%)	A	1.87[0.58]	0.66[0.19]
LANDSCAPING	0.15 Ac. (20%)	B	2.60[1.19]	0.92[0.36]
GRAVEL & COMPACTED SOIL	0.15 Ac. (20%)	C	3.45[2.00]	1.29[0.62]
ROOF - PAVEMENT	0.15 Ac. (17%)	D	5.02[3.39]	2.36[1.50]
	0.89 Ac.			

THEREFORE: $E_{Weighted} = 1.12$ in. [0.53] &
 $Q100 = 2.14$ CFS VOLUME 100 = 2968 CF
 $Q10 = 1.10$ CFS VOLUME 10 = 1404 CF

QUANTIFY UPSTREAM RUNOFF IMPACTING THE PROPERTY

Using Similar Unit Discharge Obtained Above

See Plan @ EAST BDRY & RTI STUDY - 500' x 150'

CHECK/SIZE OPENINGS USING ORIFACE EQ. - IF WALL

$$Q = CA(2gh)^{1/2}$$

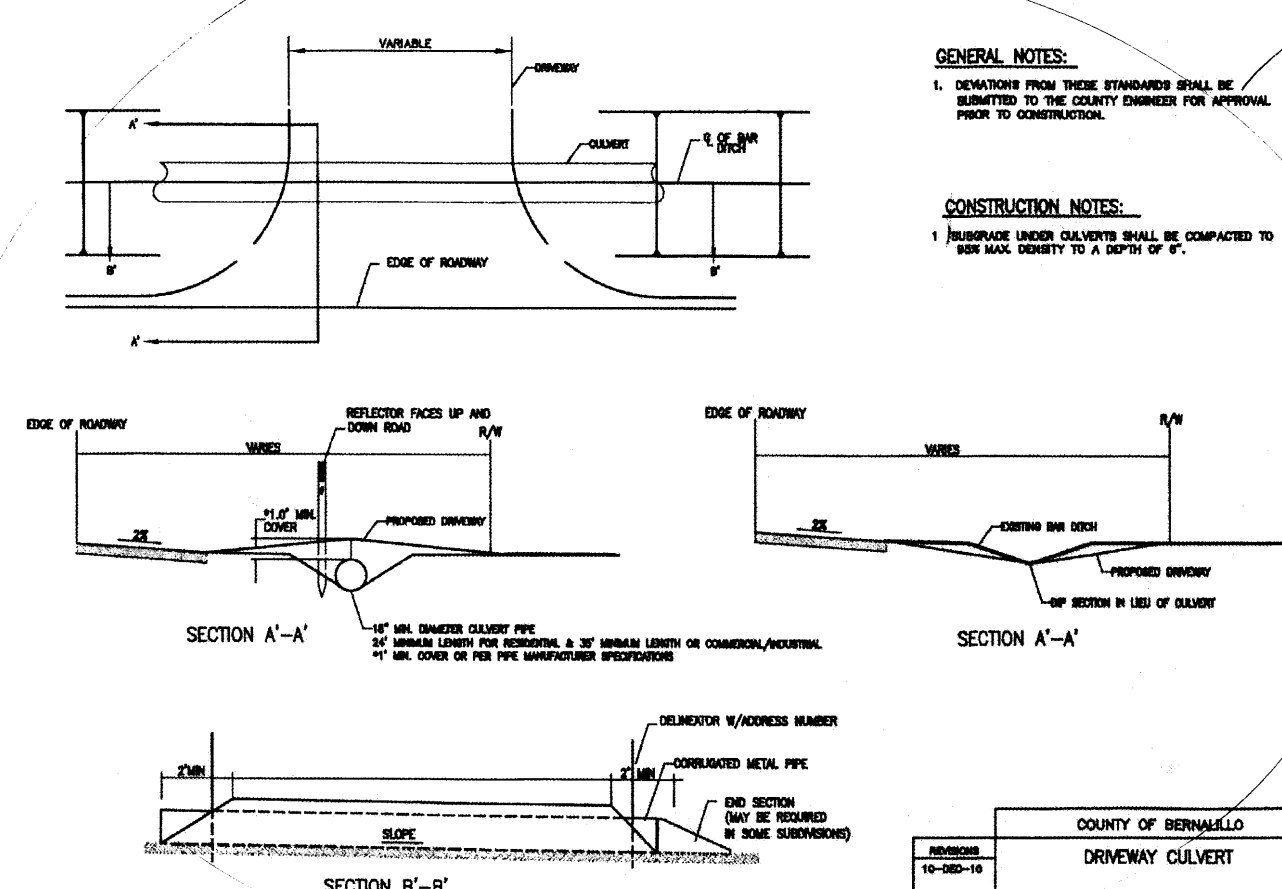
$$g = 32.2 \text{ FT PER } S^2$$

$$= 0.7(0.35)8$$

$$C = 0.7$$

$$= 2 \text{ CFS / BLK}$$

$$1-5" \times 10" / 144 = 0.35 \text{ SF (1-STD CMU BLK W/ 2 OPENINGS)}$$

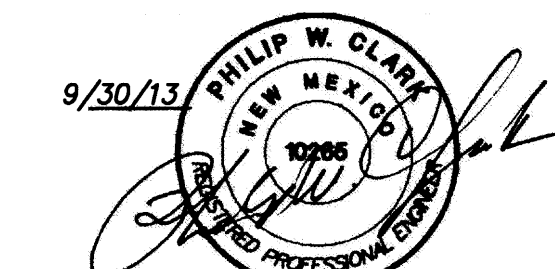


EROSION CONTROL PAD

NO SCALE

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PHILIP W. CLARK NMPE #10265



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LEGEND

Exist. Spot Elevation	+24.0
Exist. Contour	-10
New Spot Elevation	+24.0
New Contour	-12
Exist. Edge of Road	-
New Swale	-
Drainage Direction	-
Edge of Gravel	EG
Edge of Asphalt	EA
Existing Power Pole	PP
New Concrete	-
New Structure	-

PROJECT DATA

LEGAL DESCRIPTION

Lot 10, Block 1, Tract 3, Unit 3 North Albuquerque Acres Bernalillo County, New Mexico

PROJECT BENCHMARK

Top of Rebar and Cap at Lot 10 SouthEast Corner
MSL Elevation = 5526.88 (NAVD88)

TOPOGRAPHIC SURVEY

Compiled From GIS, and Field SUPPLEMENTED By
/Confirmed by Clark Consulting Engineers.

Clark Consulting Engineers
19 Ryan Road
Edgewood, New Mexico 87015
Tel: (505) 281-2444 Fax: (505) 281-2444

DATE	REVISION	LOT 10, BLOCK 1, TRACT 3, UNIT 3 NORTH ALBUQUERQUE ACRES A TAJDIN GILLANI HOME
		Grading & Drainage Plan
DESIGNED BY: PWC	DRAWN BY: CCE	JOB #: Gillani_T
CHECKED BY: PWC	DATE: JUNE 2013	FILE #: G/D

