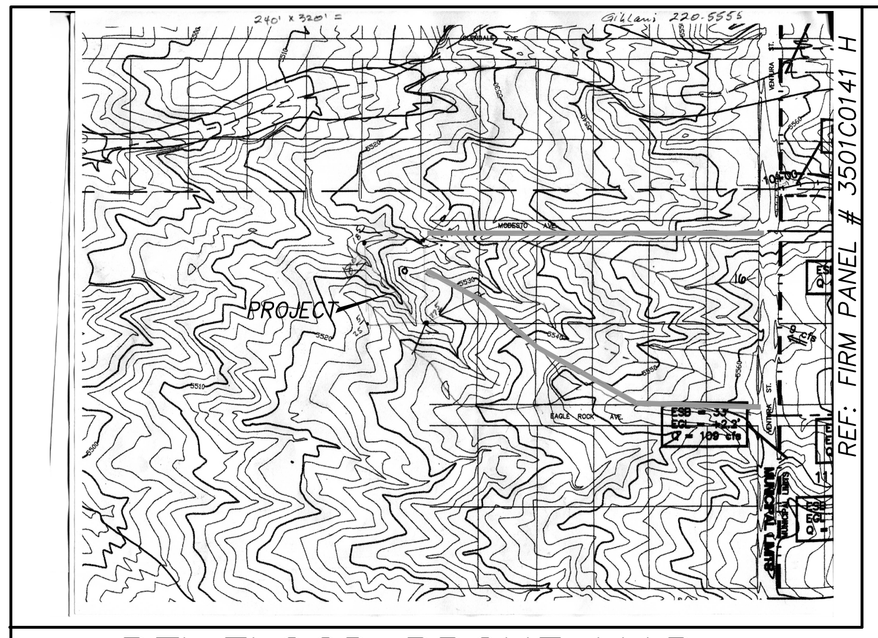


RTI FLOOD PRONE MAP

GRADING & DRAINAGE PLAN

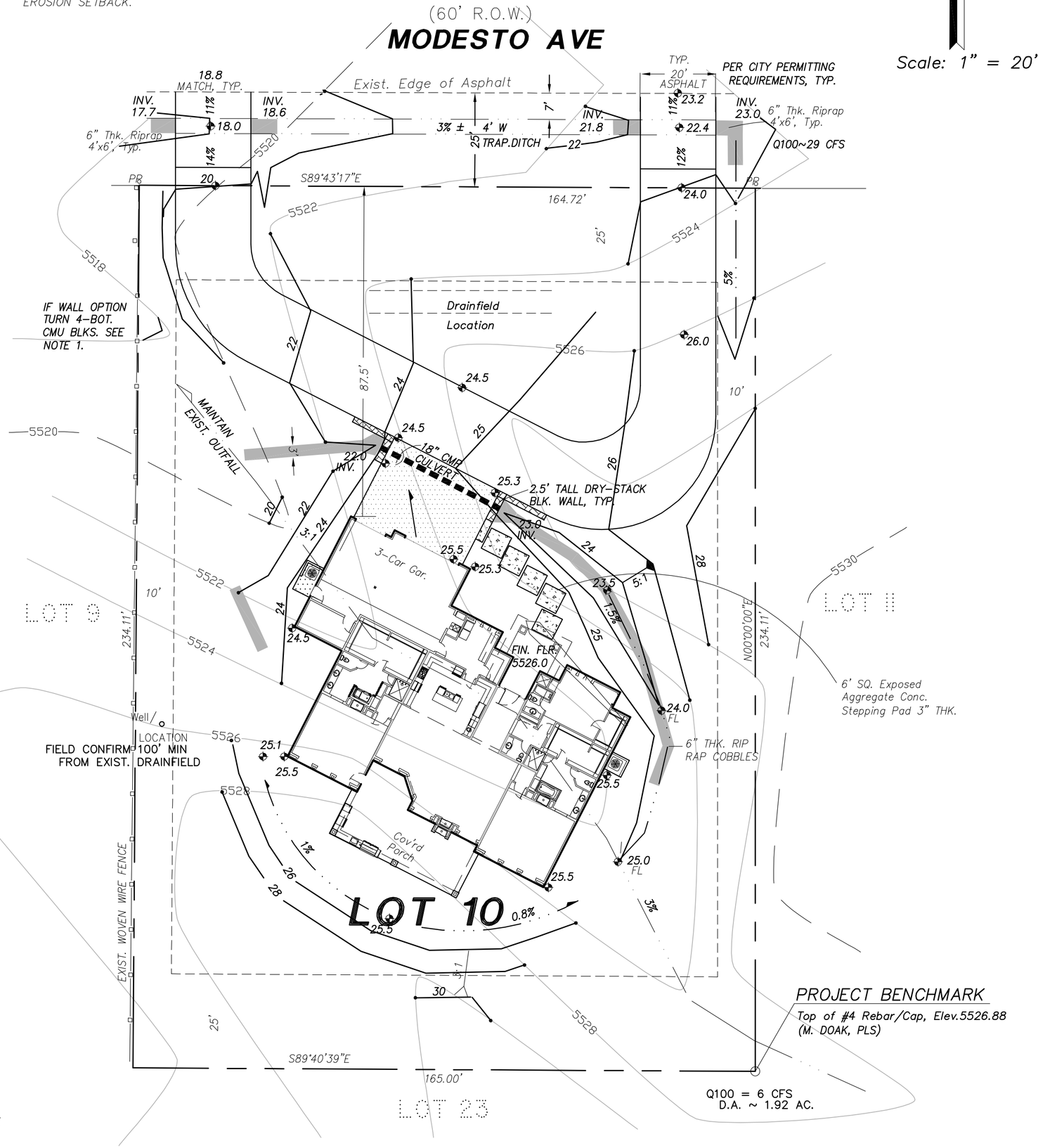
THE RESIDENTIAL HOME PROJECT IS LOCATED IN UNIT 3 OF NORTH ALBUQUERQUE ACRES APPROXIMATELY 9 MILES NE FROM THE DOWNTOWN CORE OF ALBUQUERQUE, NM. THE GRADING & DRAINAGE SCHEME HEREON IS IN COMPLIANCE WITH THE BERNALILLO COUNTY FLOOD HAZARD ORDINANCE, NO.88-46, AND CITY STORM DRAINAGE ORD. THE PLAN IS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

1. EXISITNG 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 EXSTING 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.

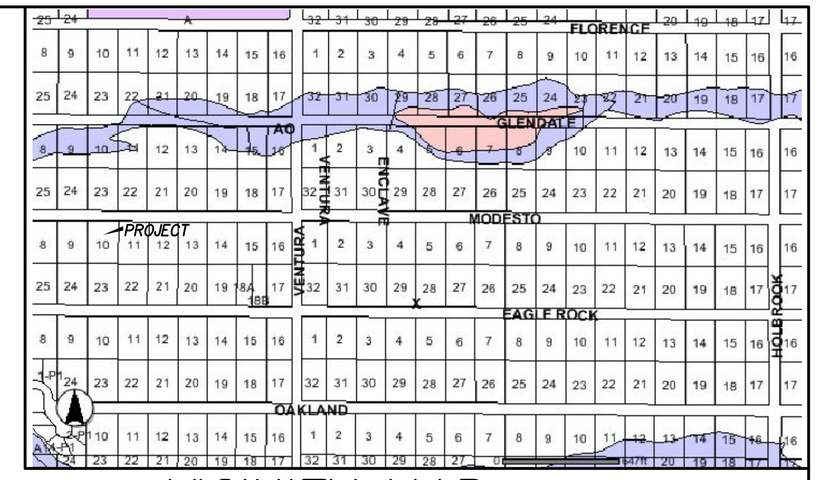
THE PURPOSE OF THE PLAN IS TO ESTABLISH CRITERIA FOR CONTROLLING STORM RUNOFF AND EROSION, AND ESSENTIALLY ALLOWING HISTORIC FLOWS TO CONTINUE TO DRAIN THROUGH THE PROPERTY. PRESENTLY, THE SITE IS BOUNDED ON THE WEST AND EAST BY DEVELOPED PROPERTY. PROPERTY ADJACENT ON THE SOUTH IS UNDEVELOPED. MODESTO 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.

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.



Scale: 1" = 20'



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 x AREA.."Peak Discharge Rates For Small Watersheds"
VOLUMETRIC DISCHARGE: VOLUME = EWeighted x 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 TREATM'T	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 In.[0.60] &
Q100 = 2.76 CFS VOLUME 100 = 3974 CF
Q10 = 1.48 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

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

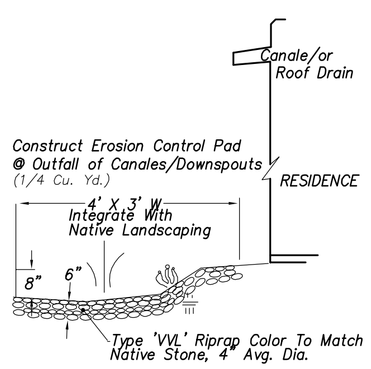
CHANNEL CALCULATOR

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 (V/H)
RIGHT SLOPE	0.1100 FT/FT (V/H)

COMPUTED RESULTS:

FLOWRATE	34.5734 CFS
VELOCITY	3.9881 FPS
FULL FLOWRATE	56.8849 CFS
FLOW AREA	8.6691 FT2
FLOW PERIMETER	17.7664 FT
HYDRAULIC RADIUS	0.4879 FT
TOP WIDTH	17.6727 FT
AREA	12.5455 FT2
PERIMETER	21.2080 FT
PERCENT FULL	80.0000 %



EROSION CONTROL PAD
NO SCALE

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. NATIVE STONE, AND 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	PP
New Concrete	
New Structure	

PROJECT DATA

LEGAL DESCRIPTION

Lot 10, Block 1, Tract 3, Unit 3 North Albuq. 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.

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

11/2/13

PHILIP W. CLARK NEW MEXICO 10265 REGISTERED PROFESSIONAL ENGINEER

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

DATE	REVISION
11.1.13	ADDR. COA

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	1 OF 1
CHECKED BY: PWC	DATE: JUNE 2013	FILE #: G/D	