

# DRAINAGE CALCULATIONS

**DRAINAGE PLAN**  
THIS DRAINAGE PLAN IS FOR TWO NEW TOWNHOUSES ON EL OJITO COURT NW WITHIN LOTS 9 & 10 LAS MIRADAS TOWNHOUSES PROJECTED SECTION 13, TOWNSHIP 11 NORTH, RANGE 2 EAST, N.M.P.M. TOWN OF ALAMEDA GRANT, CITY OF ALBUQUERQUE, BERNALILLO COUNTY, NEW MEXICO, CONTAINING THE FOLLOWING ITEMS FOR THE GRADING AND DRAINAGE PLAN ARE CONTAINED HEREON:

1. DRAINAGE CALCULATIONS
2. VICINITY MAP (C-12)
3. FLOOD INSURANCE RATE MAP 35001 C0116G
4. GRADING PLAN

**EXISTING CONDITIONS**  
AS SHOWN BY THE VICINITY MAP, THE SITE CONTAINS APPROXIMATELY 0.17 ACRES AND IS WITHIN AN EXISTING SUBDIVISION AND THESE 2 LOTS REMAIN UNDEVELOPED. THERE IS AN EXISTING GRADING AND DRAINAGE PLAN (C12D00383) DEVELOPED FOR THE ORIGINAL SUBDIVISION IN 2004 WHICH WAS APPROVED BY THE CITY OF ALBUQUERQUE HYDROLOGY DEPARTMENT.

THE EXISTING TOPOGRAPHY HAS THE WEST HALF SLOPING TOWARDS THE ASPHALT PAVED EL OJITO COURT FOR THE WEST ENTRY AREA AND THE EAST HALF OF THE SITE SLOPES TO A PAVED PRIVATE ACCESS ON THE EAST SIDE OF THE LOTS 9 AND 10. THIS SITE IS LOCATED WITHIN FLOOD ZONE X, AREA OF MINIMAL FLOOD HAZARD AND IS NOT WITHIN A DESIGNATED 100-YEAR FLOODPLAIN. (SEE ATTACHED FIRM MAP 35001 C0116G).

THERE IS AN EXISTING RESIDENCE ON THE NORTH SIDE OF LOT 9 AND AN EXISTING RESIDENCE ON THE SOUTH SIDE OF LOT 10.

**OFFSITE FLOWS**  
BASED ON A FIELD VISIT AND TOPOGRAPHIC CONTOUR INFORMATION ON THE NORTH SIDE OF LOT 9, IT APPEARS THE EXISTING RESIDENCE HAS SOME ROOF DRAINAGE THAT MAY COME INTO THIS SITE, A DRAINAGE SWALE WILL BE PROVIDED TO DIVERT ANY FLOWS AWAY FROM THE PROPOSED RESIDENCE FOR LOT 9.

**PROPOSED CONDITIONS**  
AS SHOWN BY THE PLAN, THE PROJECT CONSISTS OF 2 NEW TOWNHOUSES. THE PLAN IS TO HAVE THE GARAGES FACE THE EAST ALLEY WAY. THE RESIDENCE WILL BE DESIGNED AS A SPLIT LEVEL TO REFLECT THE ORIGINAL GRADING DESIGN INTENT. THE MAIN FINISH FLOOR ELEVATION WILL BE SET BASED AT A ELEVATION ABOVE THE CURB OF EL OJITO COURT NW AND THE GARAGE WILL BE SET AT 4 FEET LOWER IN ORDER FOR EASE OF ACCESS TO THE EXISTING ALLEY ON THE EAST SIDE OF THE PROPERTY. A 4 FOOT RETAINING WALL WILL BE REQUIRED BETWEEN THE MAIN FLOOR AND THE GARAGE AS SHOWN ON THIS PLAN.

THE ROOF DRAINAGE WILL BE DIVERTED TO THE EAST END USING A ROOF DRAIN CANALE AND WILL BE DISCHARGED INTO THE PAVED ALLEY DRIVE ON THE EAST SIDE. THE FRONT PORTION OF THE ENTRY ON THE WEST END WILL BE GRADED TO DRAIN TO THE WEST AND ONTO EL OJITO COURT NW. PER THE ORIGINAL APPROVED GRADING AND DRAINAGE PLAN (C12D00383) FREE DISCHARGE IS APPROPRIATE FOR THESE TWO LOTS.

THE CALCULATIONS WHICH APPEAR HEREON, ANALYZE BOTH THE EXISTING AND DEVELOPED CONDITIONS FOR THE 100-YEAR, 6 HOUR RAINFALL RUNOFF FOR PEAK FLOWS AND STORM DURATION FOR VOLUME REQUIREMENTS. THE PROCEDURE WILL FOLLOW THE DEVELOPMENT PROCESS MANUAL (DPM), CHAPTER 6 (DRAINAGE, FLOOD AND EROSION CONTROL) FOR CALCULATIONS AND DRAINAGE REQUIREMENTS.

## DRAINAGE CALCULATIONS:

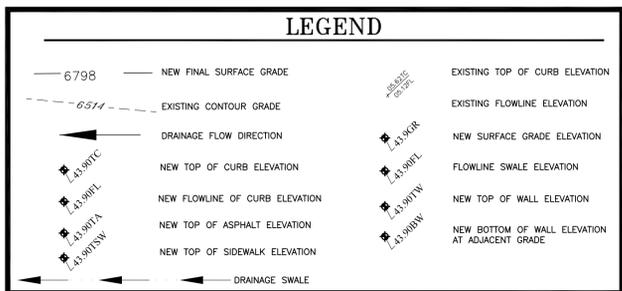
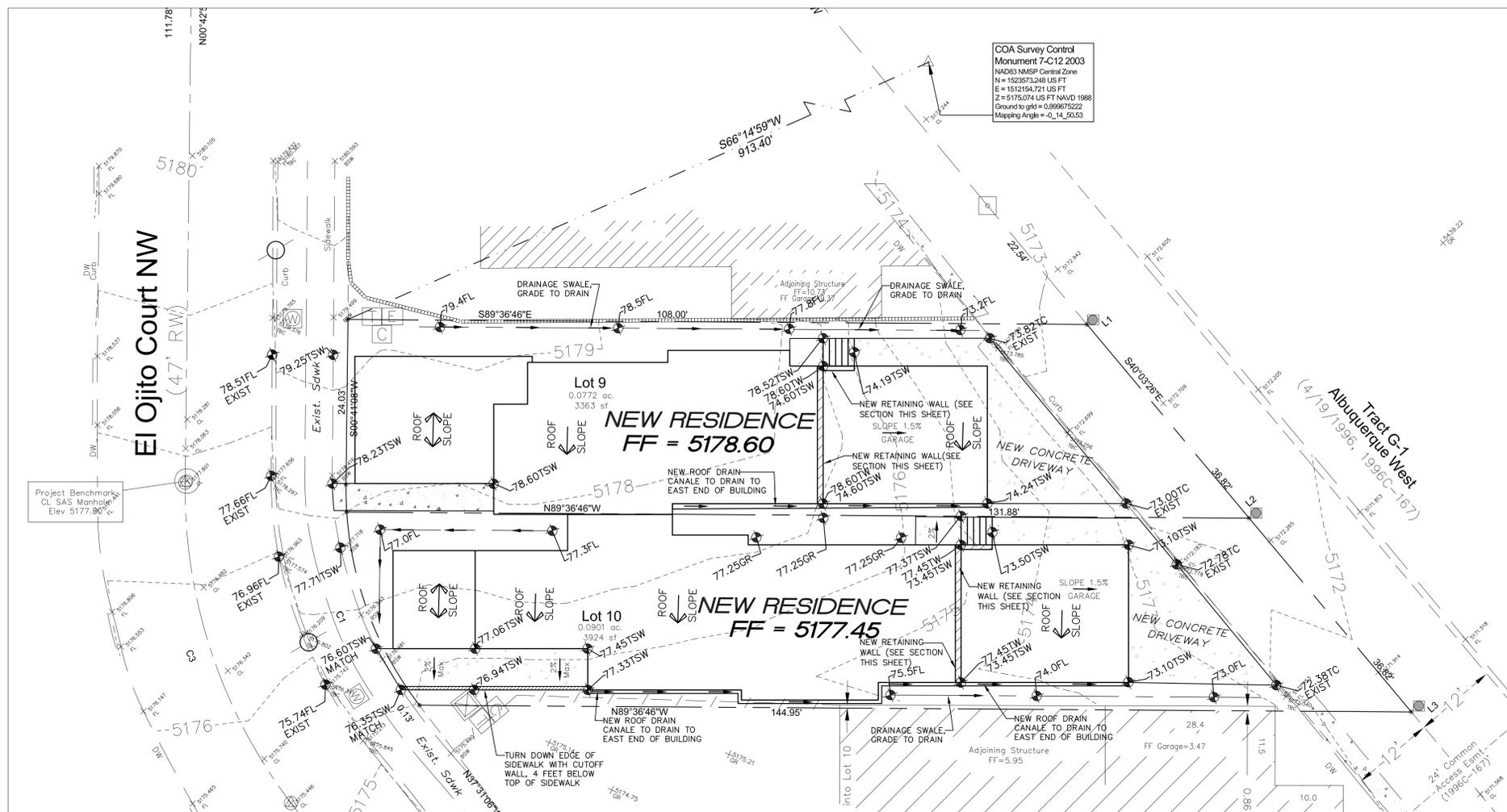
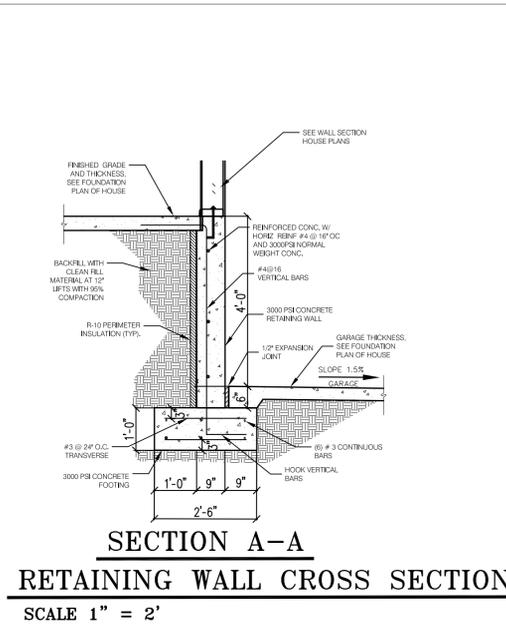
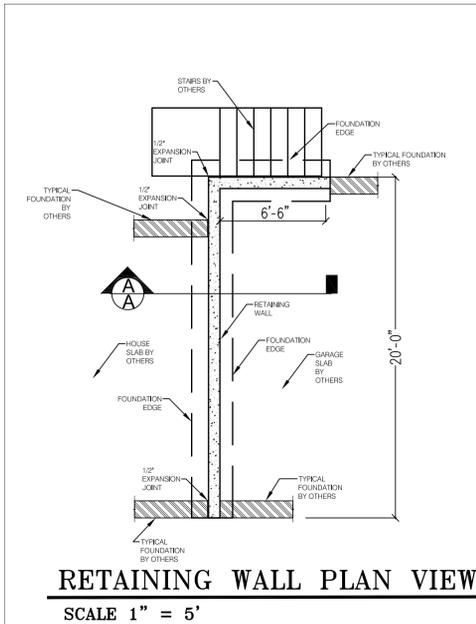
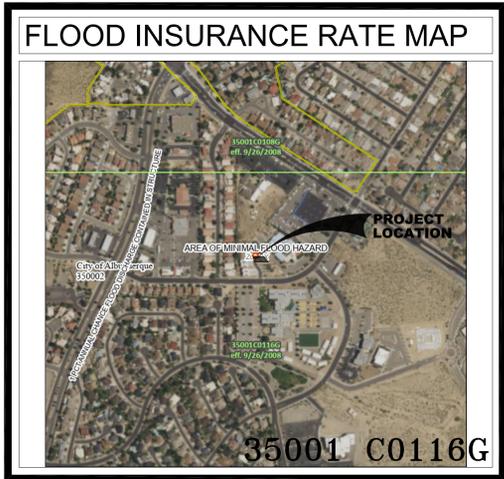
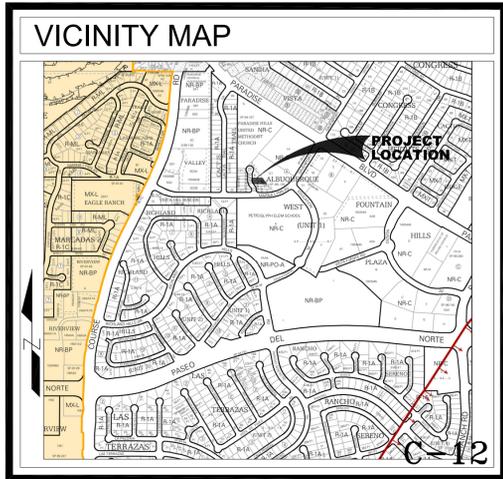
1. PRECIPITATION ZONE = 1
2. DESIGN STORM = DEPTH (INCHES) AT 100-YEAR STORM TABLE 6.2  
6-HOUR = 2.17 INCHES  
24-HOUR = 2.49 INCHES  
10 DAY = 3.90 INCHES
3. PEAK DISCHARGE (CFS/ACRE) FOR 100-YEAR TABLE 6.8  
Q = 1.54 CFS/ACRE SOIL UNCOMPACTED "A"  
Q = 2.16 CFS/ACRE LANDSCAPED "B"  
Q = 2.87 CFS/ACRE COMPACTED SOIL "C"  
Q = 4.12 CFS/ACRE IMPERVIOUS AREA "D"  
FOR WATERSHEDS LESS THAN OR EQUAL TO 40 ACRES
4. EXCESS PRECIPITATION, E (INCHES), FOR 100-YEAR TABLE 6.7  
E = 0.55 INCHES SOIL UNCOMPACTED "A"  
E = 0.73 INCHES LANDSCAPED "B"  
E = 0.95 INCHES COMPACTED SOIL "C"  
E = 2.24 INCHES IMPERVIOUS AREA "D"
5. EXISTING CONDITIONS ONSITE FLOWS  
TOTAL AREA OF SITE = 0.17 ACRES  
IMPERVIOUS AREA "D" = 0 ACRES  
SOIL COMPACTED BY HUMAN ACTIVITY "C" = 0.17 ACRES  
Q (EXISTING-6HR) = (2.87 X 0.17) = 0.49 CFS (6HR) EXISTING 100-YEAR ONSITE FLOW RATE INTO EL OJITO COURT AND PAVED PRIVATE ACCESS  
V (PROPOSED-6HR) = ((0.95 X 0.17) / 12) = 0.0135 AC-FT = 886 CF EXISTING 100-YEAR ONSITE FLOW VOLUME INTO EL OJITO COURT AND PAVED PRIVATE ACCESS
6. PROPOSED CONDITIONS ONSITE FLOWS IN EL OJITO COURT  
DRAINAGE BASIN INTO EL OJITO COURT  
TOTAL AREA = 1.3235 ACRES  
DRIVEWAY AREA, TYPE "D" = 1.0985 ACRES  
SOIL COMPACTED BY HUMAN ACTIVITY "C" = 3375 SF = 0.007 ACRES  

TREATMENT	AREA (ACRES)
A	0
B	0
C	0.005
D	0.025

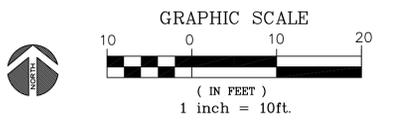
  
 $Q (PROPOSED-6HR) = (2.87 \times 0.005) + (4.12 \times 0.025) = 0.12 \text{ CFS (6HR)}$   
 $V (PROPOSED-6HR) = ((0.95 \times 0.005) + (2.24 \times 0.025)) / 12 = 0.005 \text{ AC-FT} = 220 \text{ CF}$  PROPOSED 100-YEAR ONSITE FLOW VOLUME INTO EL OJITO COURT NW
7. PROPOSED CONDITIONS ONSITE FLOWS IN PAVED PRIVATE DRIVE  
DRAINAGE BASIN INTO PAVED PRIVATE DRIVE  
TOTAL AREA = 6.0305 ACRES  
ROOF, SIDEWALK, ALLEY AND DRIVEWAY AREA, TYPE "D" = 0.0255 ACRES  
SOIL COMPACTED BY HUMAN ACTIVITY "C" = 1.0055 ACRES  

TREATMENT	AREA (ACRES)
A	0
B	0
C	0.023
D	0.115

  
 $Q (PROPOSED-6HR) = (2.87 \times 0.023) + (4.12 \times 0.115) = 0.54 \text{ CFS (6HR)}$   
 $V (PROPOSED-6HR) = ((0.95 \times 0.023) + (2.24 \times 0.115)) / 12 = 0.023 \text{ AC-FT} = 1,014 \text{ CF}$  PROPOSED 100-YEAR ONSITE FLOW VOLUME INTO EL OJITO COURT NW



**EXCAVATION/UTILITY NOTES:**  
IF THE ENGINEER HAS UNDERTAKEN NO FIELD VERIFICATION OF THE LOCATION, DEPTH, SIZE OR TYPE OF EXISTING ABOVE AN UNDERGROUND UTILITIES, OR EXISTING PIPELINES, THE ENGINEER MAKES NO REPRESENTATION PERTAINING THERETO, AND ASSUMES NO RESPONSIBILITY OR LIABILITY THEREFOR. THE CONTRACTOR SHALL INFORM HIMSELF OF THE LOCATION OF ANY EXISTING ABOVE AND UNDERGROUND UTILITIES, AND EXISTING PIPELINES, IN AND NEAR THE AREA OF THE WORK, IN ADVANCE OF AND DURING EXCAVATION WORK. THE CONTRACTOR IS FULLY RESPONSIBLE FOR ANY AND ALL DAMAGE CAUSED BY HIS FAILURE TO LOCATE, IDENTIFY AND PRESERVE ANY AND ALL EXISTING ABOVE AND UNDERGROUND UTILITIES, AND EXISTING PIPELINES. THE CONTRACTOR SHALL COMPLY WITH STATE STATUTES PERTAINING TO THE LOCATION OF THESE LINES IN PLANNING AND CONDUCTING EXCAVATION WORK.



FILE: 240101	DATE/REVISIONS:
<b>DRAINAGE PLAN</b>	
<b>LOTS 9 &amp; 10</b>	
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SHEET NUMBER: <b>1</b>	