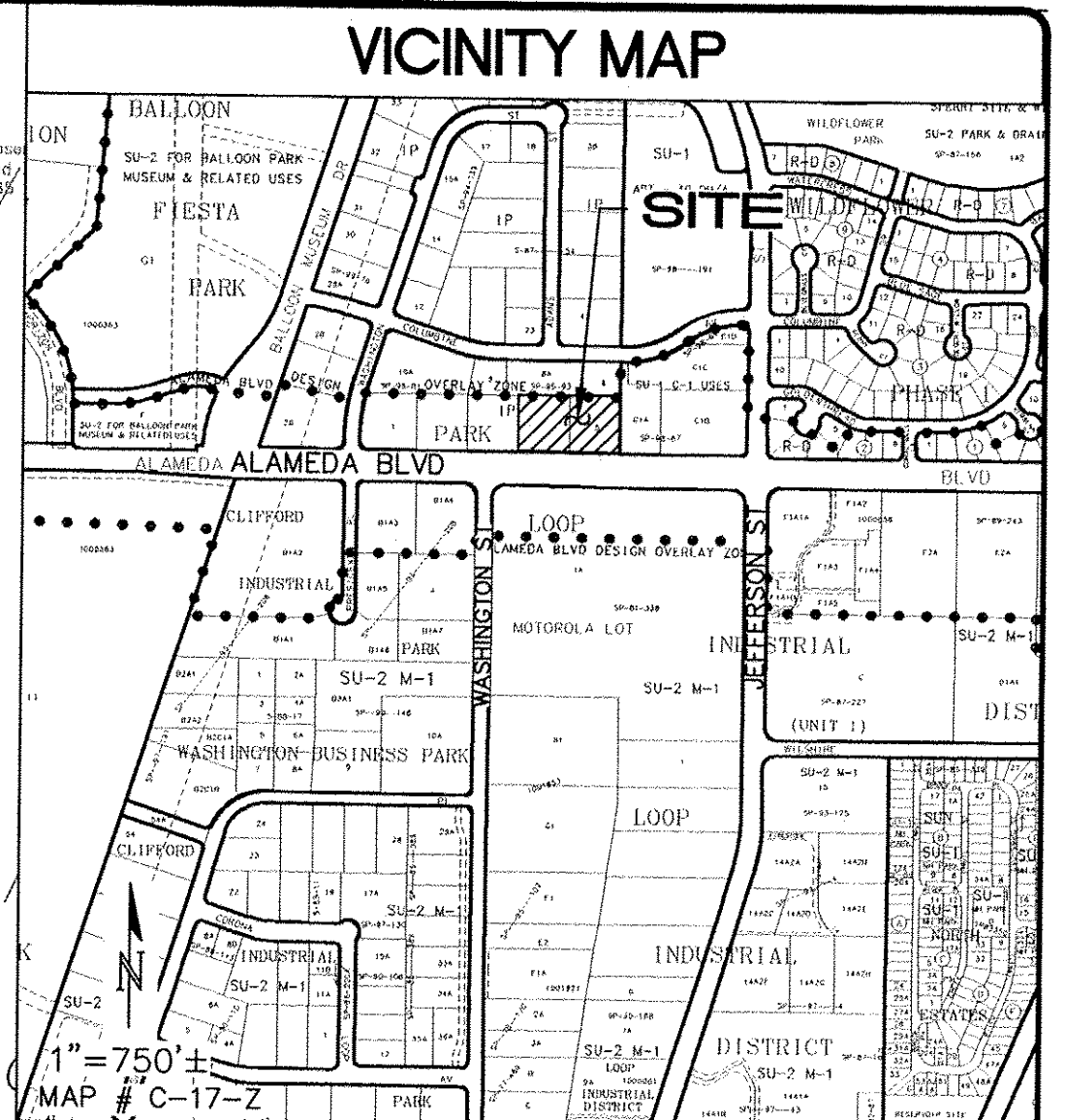




PROJECT DATA

Legal: Lots 5A, Richfield Park Subdivision
Address: 4545 Alameda Blvd. NE
Zone Map: C-17
Flood Zone: Zone X (Outside 500 Year Flood Zone)
FIRM Map #136
Offsite Flow: The property is isolated from off-site flow.

Existing Conditions:

The Property, approximately 2.0 acres, is an undeveloped commercial property located in Albuquerque on the North side of Alameda Blvd. west of Washington St. NE. Alameda Blvd. borders the property to the south, and developed commercial property borders the property to the north, east and west. The property, which slopes to the northwest at approx. 2%, is sparsely covered with native vegetation.

Currently, undeveloped flow drains as sheetflow to the northwest corner and passes into the adjacent developed property via an existing asphalt drainage channel with concrete valley gutter (drainage easement). Flow is then directed west to outlet to Washington Street and passes into existing improved channels which direct flow to an AMAFCA channel.

Proposed Conditions:

The proposed improvements consist of two commercial office buildings with associated paved parking and landscaping. These improvements will increase the amount of impervious area which will result in an increase in peak rate and volume of runoff.

Per the Master Drainage Plan for the Richfield Park Subdivision prepared by Espey, Huston & Assoc. (1986), lots are to free discharge into the public street system which conveys runoff to the existing AMAFCA channel located along the west boundary of Richfield Park, Tract D-1. An exception to the free discharge limits the peak discharge for Lots 4 and 5 to 2.11 cfs per acre (4.22 cfs total allowable discharge) due to the capacity limitations of the existing drainage channel at the northwest corner of the property.

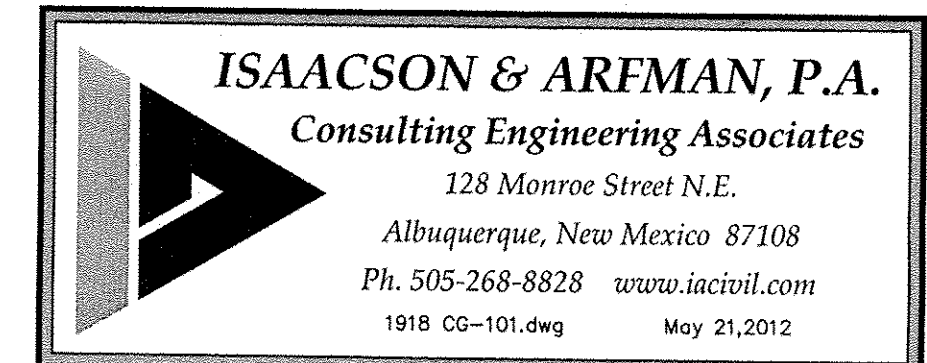
As shown on the basin exhibit this sheet, the property will be divided into three sub-basins:

Sub-basin 1 will be routed through landscaped water harvesting / detention basins bordering Alameda Blvd. and will discharge excess to Alameda Blvd. at a rate not to exceed 2.7 cfs during the 100-year 6-hour storm event.

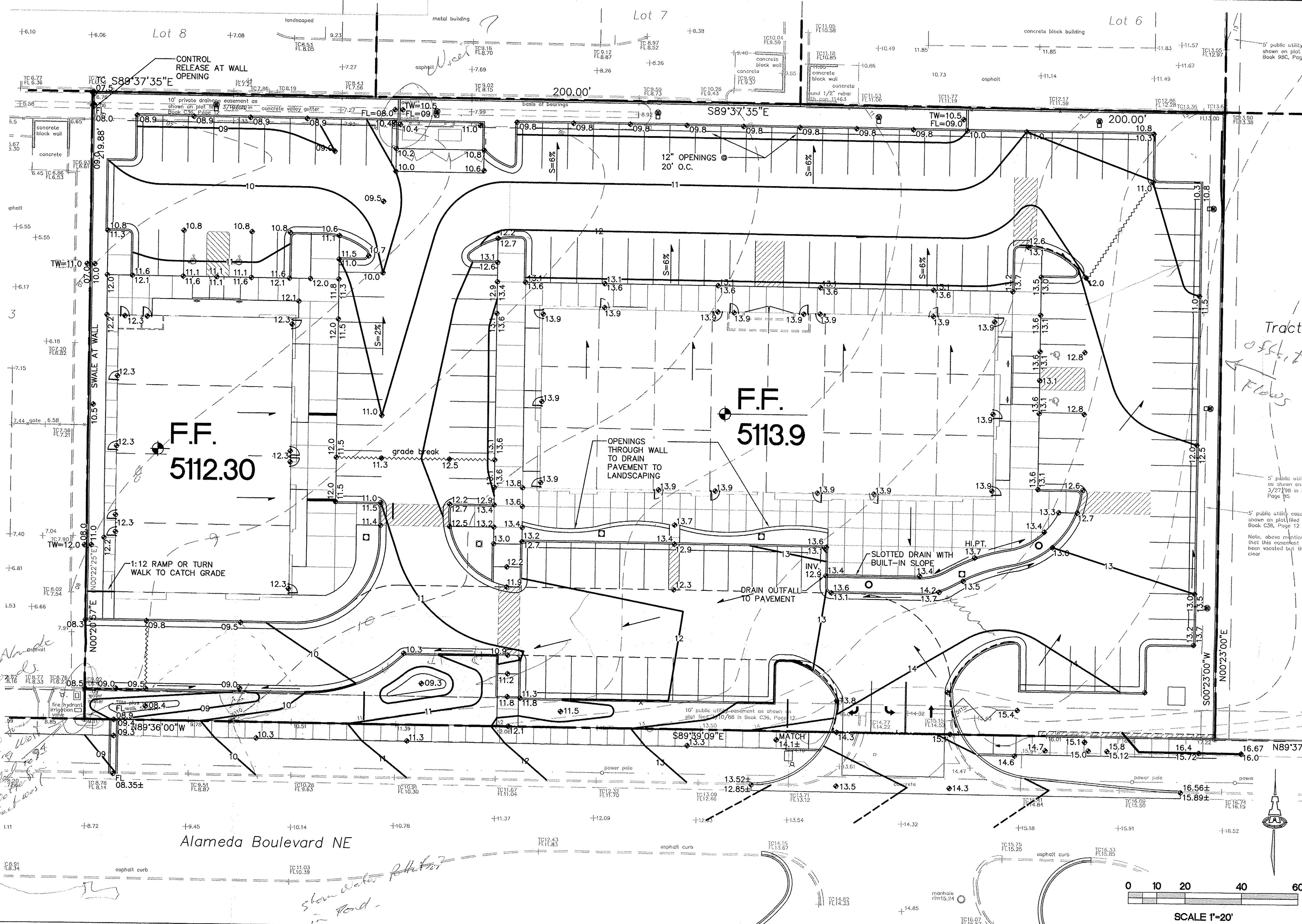
Sub-basins 2 and 3 will be detained within the tiered ponding (including adjacent asphalt paving) to release to the west at a maximum of 4.22 cfs. Calculations will be provided to clarify each basins allowable discharge, required detention volume and orifice size.

LEGEND

- +8.63 EXISTING SPOT ELEVATION
-54.5 EXISTING CONTOUR
54.5 PROPOSED SPOT ELEVATION
55 PROPOSED CONTOUR
FL FLOW LINE
FF FINISHED FLOOR



SHEET NAME

CONCEPTUAL GRADING AND
DRAINAGE PLAN

CALCULATIONS

CALCULATIONS: Richfield Park - Lots 4 & 5 : May 18, 2012

Based on Drainage Design Criteria for City of Albuquerque Section 22.2, DPM, Vol 2, dated Jan., 1993

ON-SITE			
AREA OF SITE:	88004 SF	=	2.0
HISTORIC FLOWS:			
Treatment SF	%	Treatment SF	%
Area A = 0	0%	Area A = 0	0%
Area B = 88004	100%	Area B = 3500	4%
Area C = 0	0%	Area C = 10850	12%
Area D = 0	0%	Area D = 73654	84%
Total Area = 88004	100%	Total Area = 88004	100%

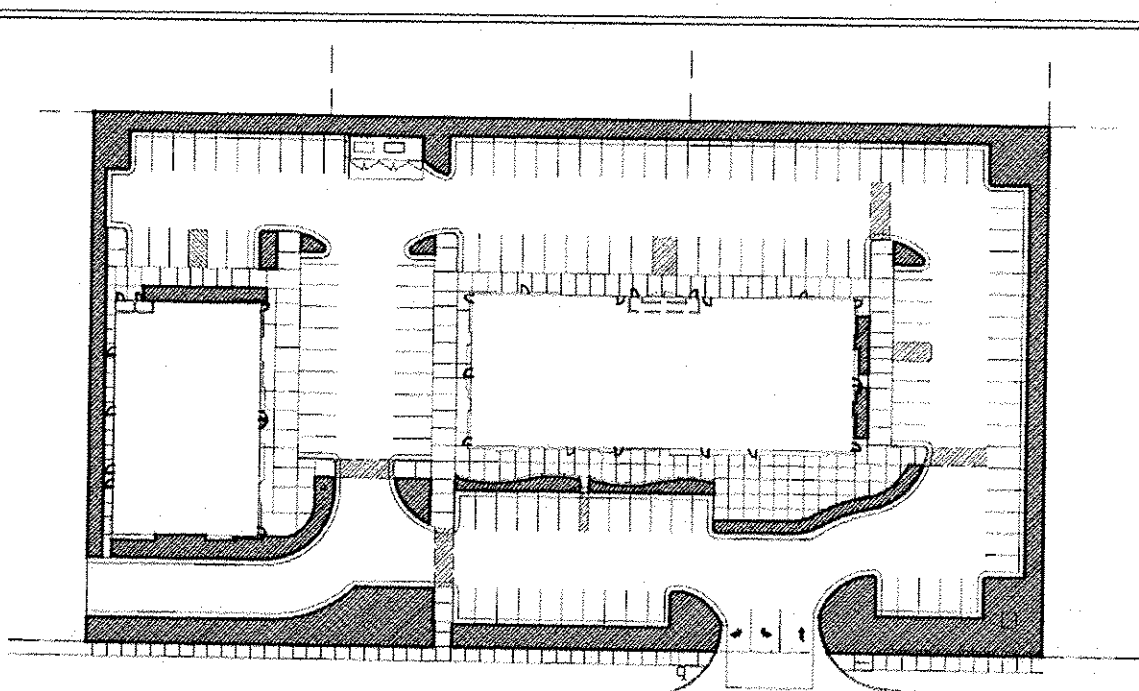
On-Site Weighted Excess Precipitation (100-Year, 6-Hour Storm)
Weighted E = $\frac{E_A A_A + E_B A_B + E_C A_C + E_D A_D}{A_A + A_B + A_C + A_D}$
Historic E = 0.78 in. Developed E = 1.94 in.

On-Site Volume of Runoff: $V_{360} = \frac{E \cdot A}{12}$
Historic $V_{360} = 5720$ CF Developed $V_{360} = 14261$ CF

On-Site Peak Discharge Rate: $Q_p = Q_{pA} + Q_{pB} + Q_{pC} + Q_{pD} / 43,560$

For Precipitation Zone 2
 $Q_{pA} = 1.56$ $Q_{pC} = 3.14$
 $Q_{pB} = 2.28$ $Q_{pD} = 4.70$
Historic $Q_p = 4.6$ CFS Developed $Q_p = 8.9$ CFS

DEVELOPED LAND TREATMENTS

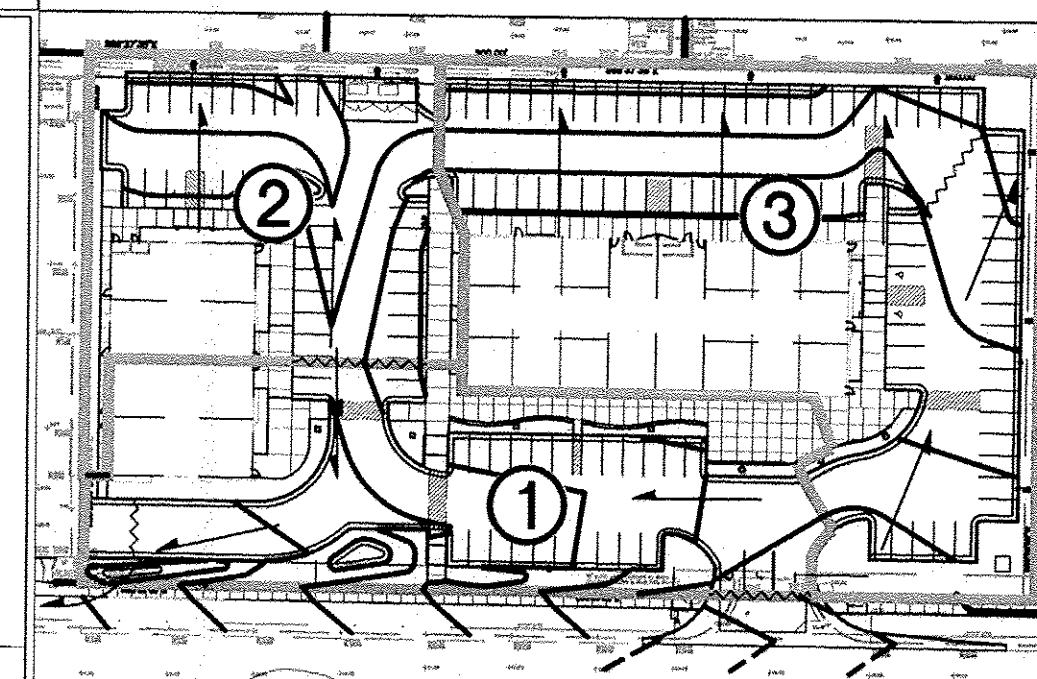


PROPOSED CONDITION:

4% TREATMENT B = 3,500 SF
12.3% TREATMENT C = 10,850 SF
83.7% TREATMENT D = 73,654 SF
TOTAL 88,004 SF = 2.02 ACRES



DEVELOPED SUB-BASINS



BASIN 1: 2.7 CFS to Alameda Blvd. via covered sidewalk culvert.

BASIN 2: 2.0 CFS to northwest detention area.

BASIN 3: 4.2 CFS to northeast detention area.

Basin 2 + Basin 3 shall not discharge more than 4.22 cfs to the existing drainage easement located at the northwest corner of property (per drainage master plan).

SUB-BASIN CALCULATIONS

BASIN NO.	DESCRIPTION	LAND TREATMENT
1	Area of basin flows = 26719 SF 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 = 1.94 in. Sub-basin Volume of Runoff (see formula above) $V_{360} = 4256$ CF Sub-basin Peak Discharge Rate (see formula above) $Q_p = 2.7$ cfs	A = 0% B = 4.8% C = 14.5% D = 80.7%
2	Area of basin flows = 1985 SF 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 = 1.96 in. Sub-basin Volume of Runoff (see formula above) $V_{360} = 3269$ CF Sub-basin Peak Discharge Rate (see formula above) $Q_p = 2.9$ cfs	A = 0% B = 3.6% C = 10.9% D = 85.4%
3	Area of basin flows = 41300 SF 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 = 1.96 in. Sub-basin Volume of Runoff (see formula above) $V_{360} = 6734$ CF Sub-basin Peak Discharge Rate (see formula above) $Q_p = 4.2$ cfs	A = 0% B = 3.8% C = 11.4% D = 84.8%