
P S O M A S

**WILSHIRE COMSTOCK
HYDROLOGY STUDY**

December 7, 2004

**WILSHIRE COMSTOCK
HYDROLOGY STUDY**

Psomas Project No: 1FRC01020
Prepared: 12-07-04

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12-17-04

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1.0 Introduction

Project Background

Proposed development is on Tract 27025 located at 10250 Wilshire Boulevard in the City of Los Angeles, California (See location and vicinity map in *Appendix 1*). The existing site contains an undeveloped parcel of land approximately 0.57 acres in size and lies at the western boundary of the Los Angeles Country Club. The site fronts the intersection of Wilshire Boulevard, Comstock Ave and Club View Drive. The proposed development for the 0.57 acre lot is a 21-story, 32-unit condominium building containing an approximate gross square footage of 202,616 ft². The building also has three-level of underground parking.

Most on-site storm water currently sheet flows in the southeasterly direction. The on-site storm drain water drains into the curb & gutter of Club View Drive. A catch basin approximately 150-feet south of the project on Club View Drive discharges into an existing 33" RCP storm drain line. This existing City of Los Angeles 33" storm drain line originates on Wilshire Boulevard and enters the country club via a public storm drain easement. The 33" storm drain line discharges onto the golf course and the runoff flows south along an existing grass drainage swale. The discharge is collected again into a public storm drain system at Santa Monica Boulevard. The two existing catch basins on Comstock Ave south of Wilshire Boulevard also connect into the 33" storm drain line.

Purpose and Scope

The project falls under the jurisdiction of the City of Los Angeles Department of Public Works. The purpose of this drainage concept report is:

- To determine the proposed development's impact (increase peak flow rates) on existing hydrologic conditions;

It should be noted that detailed hydraulic analysis that size storm drain and determine hydraulic grade line is beyond the scope of this drainage study. This report only calculates the existing and proposed storm water runoff of the project site.

2.0 Hydrology

General Approach

The watershed of the project was identified and characterized for both existing and proposed conditions. The Los Angeles County Modified Rational Method was used to estimate the runoff flowrate for the 10-year and 25-year storm events. The site is broken down into watershed areas and the most hydraulically remote point is found within these areas. Length and relative slope of travel is used with rainfall intensity and runoff coefficient values to estimate the time required to travel across the watershed (time of concentration). The flow rate for the watershed is obtained by performing a regression analysis on the time of concentration for a 24-hour storm event. The watershed for this project is the 0.57 acre on-site area.

Data Sources

The primary source of data was the *LACDPW Hydrology / Sedimentation Manual and Appendices* (LACDPW 1991, 1992, 1993, 2002).

Watershed Characteristics

The Wilshire Comstock project is located in Los Angeles County and in the Beverly Hills quadrant as shown on figure LACDPW 1-H1.17, in Appendix 1. The 25-year 24-hour rainfall Isohyet nearest the project area is 6.0, while the 50-year 24-hour rainfall Isohyet is 6.8. The soil of the watershed is classified as Type 013, as shown on figure LACDPW 1-H1.17, in Appendix 1.

The *LACDPW TC (TC_calc_depth.xls, June2002)* program was used to calculate the time of concentration and peak runoff flow rate. The Tc calculation is provided in Appendix 3. The 10-year and 25-year storm events were used as the main design storms in this analysis.

Existing Condition Results

Existing condition hydrology results for the 10-year and 25-year storm events are summarized in Table 1 below.

Table 1: Existing Condition Hydrology Summary

Drainage Area	Area (Ac)	Storm Data		
		Time of Conc. (min)	Q ₁₀ (cfs)	Q ₂₅ (cfs)
1	0.57	5	1.31	1.61

Proposed Condition Results

Proposed condition hydrologic analysis was based on the Conceptual Grading Plan prepared by Psomas, included in Appendix 2. Runoff for the site flows away from the building, which changes the existing drainage path of the site. This change diverts a portion of the total flow to the existing catch basin adjacent to the project on Comstock Ave.

As with the existing condition analysis, the *LACDPW TC* program was used to calculate the time of concentration and peak runoff flow rate. The Tc calculation is provided in Appendix 3. The 10-year and 25-year storm events were used as the design storms in this analysis. The imperviousness percentage, based on proposed site conditions for multi-family development, was determined to be 68%.

Proposed condition hydrology results for the 10-year and 25-year storm events are summarized in Table 2 below.

Table 2: Proposed Condition Hydrology Summary

Drainage Area	Area (Ac)	Storm Data		
		Time of Conc. (min)	Q ₁₀ (cfs)	Q ₂₅ (cfs)
1	0.57	5	1.31	1.61

Baseline Hydrology Comparison

A comparison of existing and proposed peak flow rates is provided in Table 3 below. The peak flow rates during the 10-year and 25-year storms between the existing and proposed condition have no net change in flows. Therefore, there are zero impacts to the surrounding public storm drain systems.

Table 3: Existing vs. Proposed Condition Hydrology Comparison Summary

Drainage area	Storm Events					
	Q ₁₀ (cfs)			Q ₂₅ (cfs)		
	Exist.	Prop.	Diff.	Exist.	Prop.	Diff.
1	1.31	1.31	0	1.61	1.61	0

As there would be no increase in runoff from the existing to proposed condition, there will be no significant impact or offsite drainage. No further analysis is necessary.

3.0 Appendices

Appendices

3.0 Appendices

**Appendix 1
LACDPW Hydrology Data**

34° 07' 30"

VAN NUYS 1-H1.27



TOPANGA 1-H1.16

HOLLYWOOD 1-H1.18

VENICE 1-H1.7

34° 00'

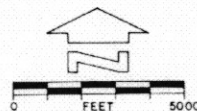
118° 22' 30"

LEGEND

- SOIL CLASSIFICATION AREA
- DEBRIS POTENTIAL AREA

- RAINFALL ZONE
- 12— 50-YEAR ISOHYET (MAX. 24-HOUR AMOUNT)

L A C D P W



BEVERLY HILLS

1981

hydrologic map

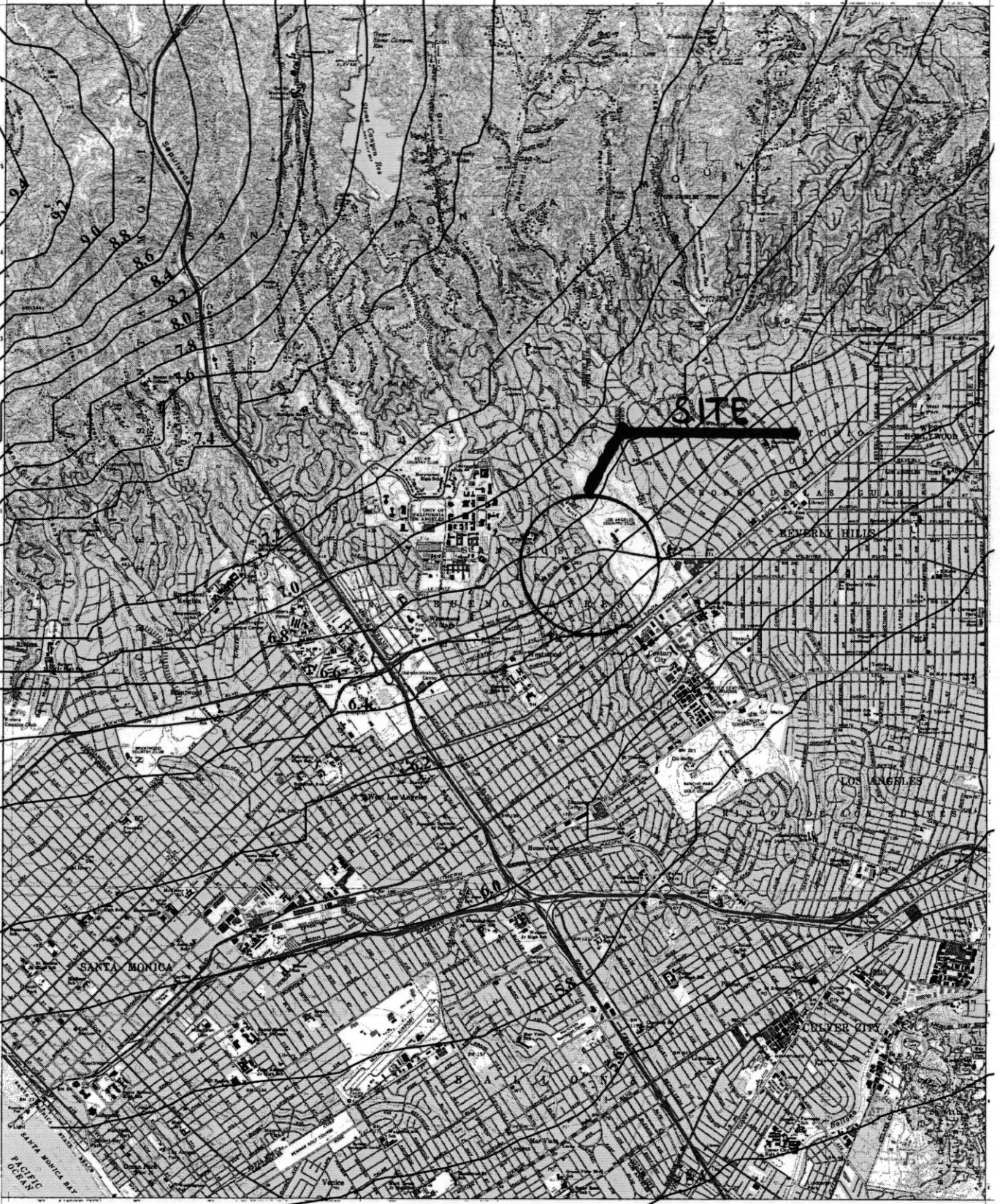
34° 07' 30"

VAN NUYS 1-HI.27

-118° 30' 00"

TOPANGA 1-HI.16

HOLLYWOOD 1-HI.18



VENICE 1-HI.7

34° 00' 00"

1 0 1 2 Miles

25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714

BEVERLY HILLS 50-YEAR 24-HOUR ISOHYET

1-HI.17



7.2 INCHES OF RAINFALL



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3.0 Appendices

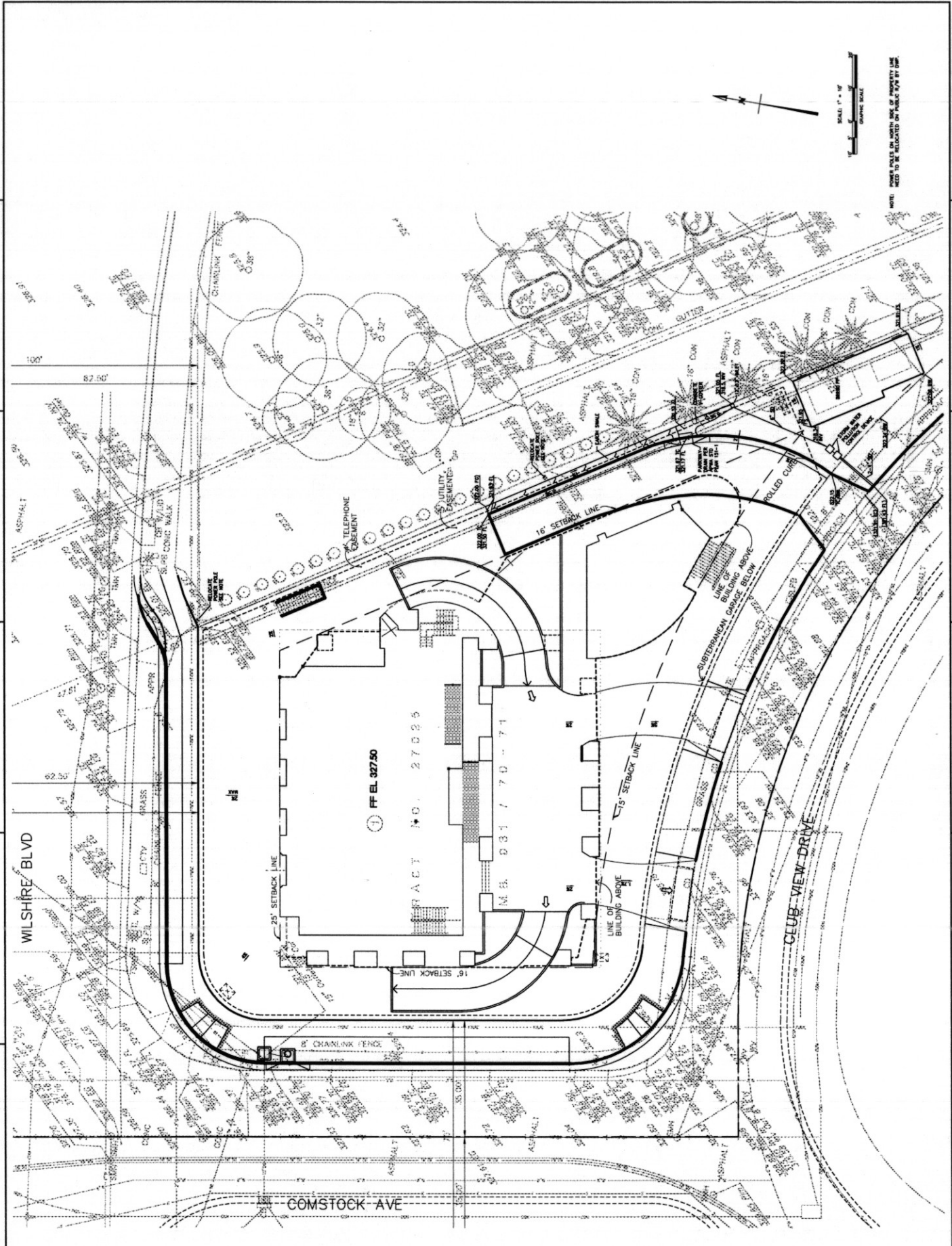
**Appendix 2
Conceptual Grading Plan**

WILSHIRE COMSTOCK
10250 WEST WILSHIRE BLVD.
LOS ANGELES, CALIF. 90024
C/O FIFIELD REALTY CORPORATION
WILSHIRE CLUB VIEW L.L.C.

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**Appendix 3
Tc Calculations**

EXISTING & PROPOSED HYDROLOGY STUDY / WILSHIRE COMSTOCK

Project	Subarea	Area (acres)	%imp	Frequency	Soil Type	Length (ft)	Slope (ft/ft)	Isolyet (in.)	Tc-calculated (min.)	Intensity (in/hr)	Cu	Cd	Flowrate (cfs)	Tc Equation
Comstock	1e	0.5	0.10	10	13	290	0.014	4.90	5	2.92	0.90	0.90	1.31	$T_c=(10)^{-0.5077}(Cd)^{1.94} \times 0.519(L)^{0.483}(S)^{-0.135}$
Comstock	2e	0.5	0.10	25	13	290	0.014	6.00	5	3.58	0.94	0.90	1.61	$T_c=(10)^{-0.5077}(Cd)^{1.94} \times 0.519(L)^{0.483}(S)^{-0.135}$
Comstock	1p	0.5	0.68	10	13	290	0.014	4.90	5	2.92	0.90	0.90	1.31	$T_c=(10)^{-0.5077}(Cd)^{1.94} \times 0.519(L)^{0.483}(S)^{-0.135}$
Comstock	2p	0.5	0.68	25	13	290	0.014	6.00	5	3.58	0.94	0.90	1.61	$T_c=(10)^{-0.5077}(Cd)^{1.94} \times 0.519(L)^{0.483}(S)^{-0.135}$