

**PRELIMINARY DRAINAGE REPORT**

**MONTECITO COUNTY CLUB**

Santa Barbara, California

October 31, 2008

CLIENT: Ty Warner Hotels and Resort

PREPARED BY: Penfield & Smith  
111 East Victoria Street  
Santa Barbara, California 93101  
(805) 963-9532

WORK ORDER NO.: 18058.01

PROJECT MANAGER: Jeremy Salts, P.E.

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CITY OF SANTA BARBARA  
PLANNING DIVISION

**EXHIBIT I**

## INTRODUCTION

The Montecito Country Club and Golf Course (MCC) is located in the City of Santa Barbara, north of Highway 101 and the Andree Clark Bird Refuge. It is bordered on the south by Old Coast Highway, on the east by Hot Springs Road, and by existing residential development on the north and west.

The property consists of approximately 112 acres and is located within the Andree Clark Bird Refuge watershed. The MCC has an off-site tributary area of approximately 258 acres of primarily residential property.

MCC owners are proposing a project to redesign of the golf course, which will require site grading and associated drainage improvements. Other improvements included in the proposed project include the demolition and relocation of four tennis courts, the golf course maintenance building and golf cart barn building, as well as removal and construction of various driveway and parking lot facilities.

## PURPOSE OF REPORT

The purpose of this report is to calculate the existing drainage conditions of the site and present a description of the post-project drainage conditions and drainage improvement recommendations.

A separate Storm Water Quality Report has been prepared for this project; therefore storm water quality and proposed Best Management Practices are not addressed within this report.

## METHOD OF ANALYSIS

Existing drainage facilities and tributary areas were mapped based on aerial topography, field topography and City and County records. Preliminary Grading and Drainage Plans were used as the basis for the proposed condition analysis.

The computer program HydroCAD v.8.0, which utilizes the Santa Barbara Urban Hydrograph model, as described in the Santa Barbara County Engineering Design Manual, was used to calculate 25-year and 100-year peak flows for the existing and proposed storm drain collection systems. A storm event equal to one inch of precipitation on the project site was also modeled for the purpose of water quality treatment facility sizing.

Proposed tributary area boundaries will match existing conditions to the extent practical, therefore, proposed areas have been assumed to be the same as existing areas. This assumption will be verified during final design.

## FINDINGS

### Existing Condition

The MCC property slopes generally to the south with typical gradients between 3% and 15%. Seven collection points along the southerly border of the property convey runoff in subsurface public storm drainage culverts under Old Coast Highway and eventually to the Andree Clark Bird Refuge.

The majority of the property is pervious, open grassy area. ImperVIOUS areas consist of parking lots and buildings.

### Proposed Condition

The proposed project will not significantly alter the existing tributary area boundaries. ImperVIOUS area is reduced from 8.7% to 5.2% which will cause a slight decrease in peak flows which has been ignored here but will be calculated during final design. The existing public storm drain culverts under Old Coast Highway will continue to be utilized to convey storm water off-site.

**TABLE 1: SUMMARY OF PEAK FLOWS**

Tributary Area	25-Year Event (cfs)		100-Year Event (cfs)	
	Existing	Proposed	Existing	Proposed
A	0.7	0.7	1.0	1.0
B	0.8	0.8	1.1	1.1
C	26.8	26.8	36.4	36.4
D	159.2	159.2	215.1	215.1
E	32.7	32.7	46.1	46.1
F	10.9	10.9	15.4	15.4
G	19.5	19.5	26.9	26.9
H	21.2	21.2	28.9	28.9
J	7.8	7.8	11.0	11.0
K	197.4	197.4	267.4	267.4
Total	477.0	477.0	649.3	649.3

## CONCLUSIONS AND RECOMMENDATIONS

The MCC improvement project can be constructed as proposed without increasing storm water runoff from the site or negatively affecting adjacent properties. The proposed storm water quality improvements should have a significant positive impact on the watershed.

The final engineering design of the project should include the following:

- Compliance with the City of Santa Barbara Engineering Design Standards.
- Compliance with the City of Santa Barbara Storm Water Management Program
- Storm drain pipes should be sized to accommodate the 25-year peak flow rate.
- Grated inlets should be sized to accommodate twice the 100-year peak flow rate. (To account for partial blockage)
- Stormwater quality treatment facilities should treat as much runoff as is practical.

## CALCULATIONS AND ATTACHMENTS

Page 1	Sub-Area Diagram
Page 2	25-Year Storm Event Calculations
Page 14	100-Year Storm Event Calculations
Page 26	1" Storm Event Over Project Site
Page 27	Input Data
Map Insert	EXISTING HYDROLOGY MAP
Map Insert	PRELIMINARY GRADING AND DRAINAGE PLANS