Preliminary Drainage Letter
For the
Harper Residence
8455 El Paseo Grande
La Jolla, CA

Prepared: April 20, 2021

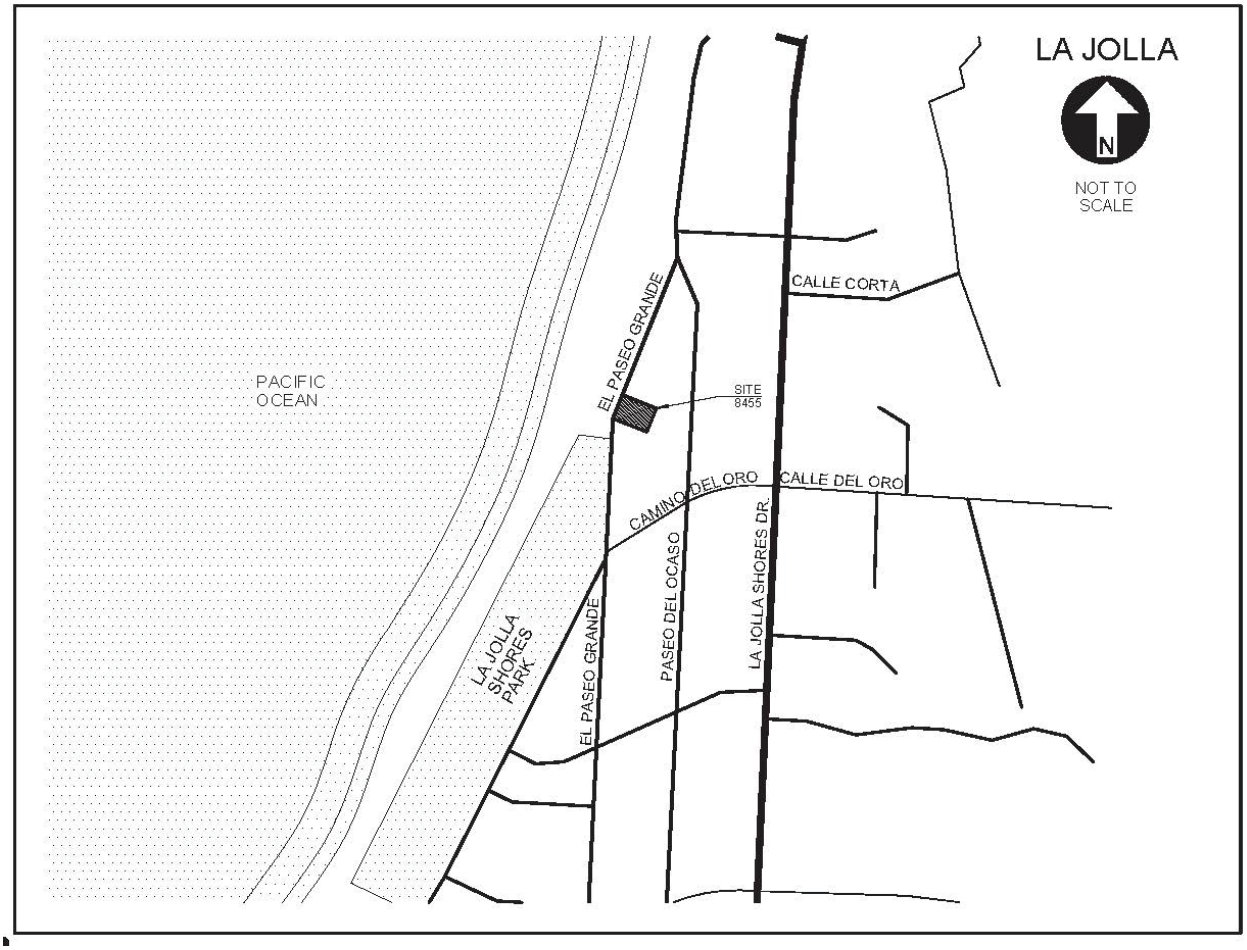
Prepared by:

7910 Convoy Court
San Diego, CA 92111
(858) 715-1420

R.C.E. # 58619
Exp: December 31, 2022

Project Name:	Harper Residence
Project Location/Address:	8455 El Paseo Grande, La Jolla , CA 92037
IO Number	24008635
D-Sheet Number	N/A
Project Tracking Number	665412
APN	346-050-10-00
Applicant:	Design Lead Architects

1 Vicinity Map



The Harper Residence Project Site is a 6,194 sq.ft. (0.141-acre) single family residential parcel located at 8455 El Paseo Grande in the La Jolla Community Plan area of the City of San Diego. The property has been assigned assessor's parcel number 346-050-10-00 and can be found on page 1227 H4 of the Thomas Guide for San Diego County.

Approximately 0.14 acres, is expected to be disturbed due to the proposed construction activities; coverage under the Construction Activities Storm Water General Permit is not required. The proposed project does not propose to dredge or fill materials in Waters of the U.S. and is not subject to Clean Water Act Sections 401 and 404 requirements.

This parcel currently contains a two-story single-family residence with a 2,044 sq. ft. building footprint and subterranean car port along the south side the property. The site currently drains from the rear to front (east to west) by way of surface/sheet flows across the grass lawn and landscaping and onto the El Paseo Grande parkway, and by

gravity pipe and sump pump pipe flows via two existing under-sidewalk drain pipes into the El Paseo Grande curb & gutter.

The proposed project drainage will be a small diameter private drainage system, including a series of area drains, which will collect and convey runoff to be discharged into the curb and gutter on El Paseo Grande. Discharge points include three proposed double under-sidewalk drain pipes (standard D-27) located along the frontage of the property.

Attached are exhibits delineating the pre-project and post-project drainage conditions.

The hydrologic method and criteria include the following:

Rational Method Criteria and Methodology:

The rational formula was used for the hydrology computations depicted in this report.

RATIONAL EQUATION

Q = **CIA** where:

Q = Peak discharge in cubic feet per second

C = Coefficient of runoff

I = Rainfall intensity in inches/hour

A = Area in acres

Information obtained from the County of San Diego Hydrology Manual including land use, soil type, runoff coefficients, and rainfall intensity is used to perform the hydrologic analysis.

Design Storm	100-year 6-hour storm
Runoff Coefficients	County of San Diego Hydrology Manual, Section 3.1.2

Based on the limited analysis we expect negligible changes, in comparing the pre-project vs. post-project drainage conditions from the site. The total estimated Q's (0.63 cfs vs 0.64 cfs) are practically equal, with only a slight increase showing (2.81 fps vs 3.12 fps) in the maximum discharge velocity when comparing the pre project vs post project calculated values.

In conclusion, there are no negative drainage impacts to the adjacent properties or receiving public storm drain system anticipated with this proposed development.

Appendix A

Pre-Project

Drainage Map

HARPER RESIDENCE

PRE-PROJECT HYDROLOGY MAP

LEGEND

DRAINAGE BASIN AREA..... BASIN A

DRAINAGE BASIN AREA BOUNDARY.....

RUNOFF FLOW DIRECTION .....

EXISTING IMPERVIOUS AREAS.....

I. 100–YEAR 6–HOUR STORM PEAK FLOW CALCULATIONS:

PER THE RATIONAL METHOD OUTLINED IN THE COUNTY OF SAN DIEGO HYDROLOGY MANUAL:

Q = CIA

WHERE

Q = PEAK FLOW RATE; (CFS)
C = COMPOSITE 'C' VALUE
I = PEAK RAINFALL INTENSITY; IN/HR
A = TRIBUTARY AREA; (ACRES)

$$C(\text{COMPOSITE}) = \frac{\Sigma C*A}{\Sigma A}$$

WHERE

C=RUNOFF FACTORS
A=TRIBUTARY AREA (ACRES)

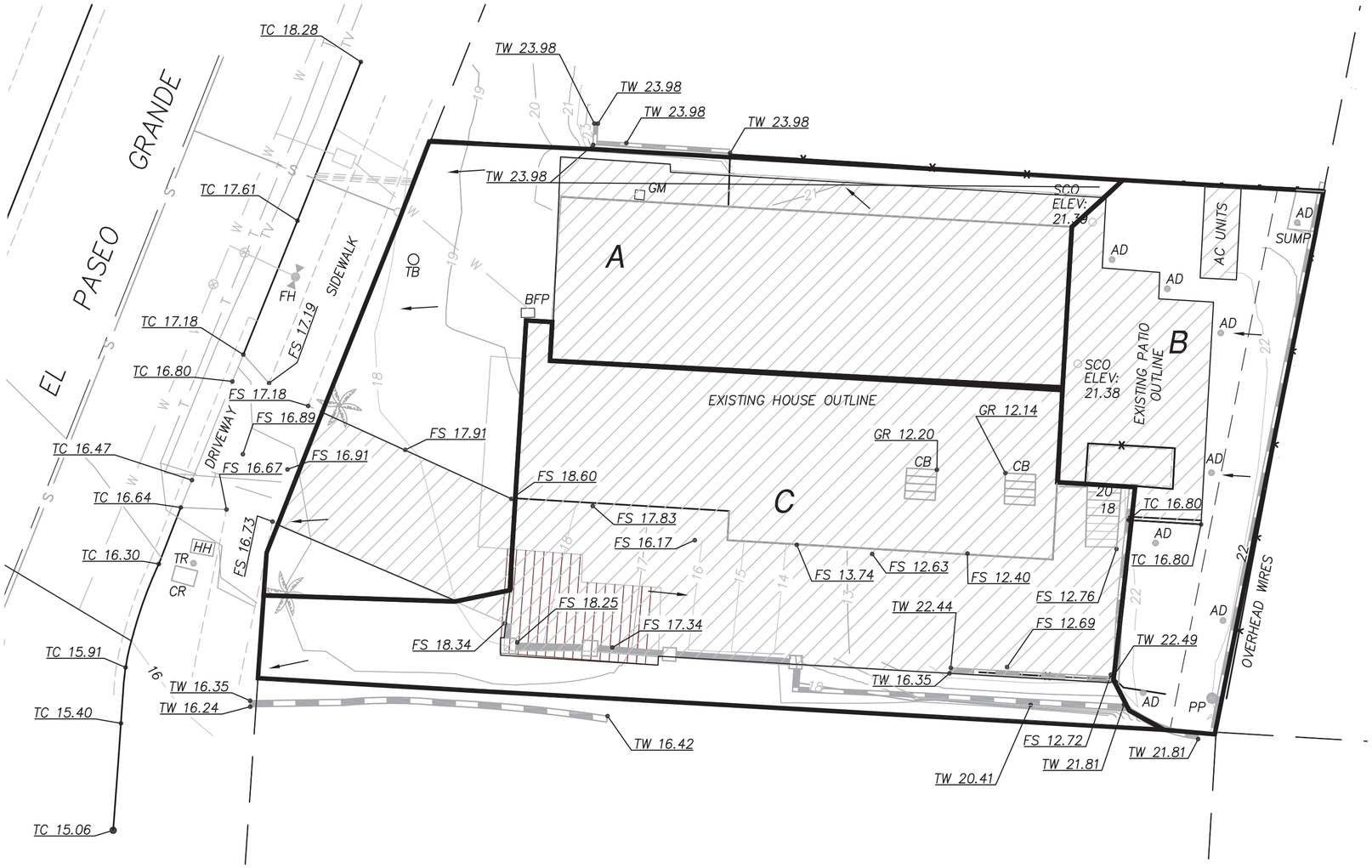
II. HYDROLOGIC DATA

GIVEN:

- Tc = 5 MINUTES

PER THE COUNTY OF SAN DIEGO HYDROLOGY MANUAL:

- SOILS TYPE 'D'
- INTENSITY FACTORS BASED ON STORM EVENT
  I100 = 5.8 IN/HR FOR 100–YEAR STORM
- RUNOFF FACTORS BASED ON SURFACE TYPE
  C = 0.9; CONCRETE/HOUSE
  C = 0.5; LANDSCAPE



PLAN VIEW: EXISTING CONDITION

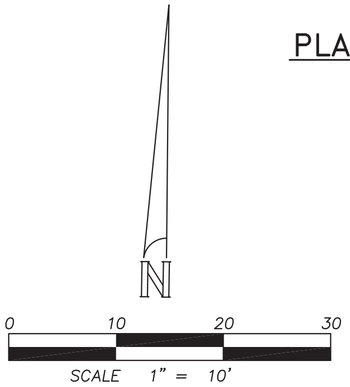
SCALE 1" = 10'

IMPERVIOUS/PERVIOUS SURFACE TABLE

BASIN NAME	TOTAL AREA (AC)	TOTAL IMPERVIOUS AREA (AC)	% TOTAL IMPERVIOUS	TOTAL PERVIOUS AREA (AC)	% TOTAL PERVIOUS
BASIN A	0.055	0.035	64	0.020	36
BASIN B	0.025	0.009	39	0.016	61
BASIN C	0.061	0.048	78	0.013	22
TOTAL	0.141	0.093		0.049	

DRAINAGE BASIN TABLE

BASIN NAME	TOTAL AREA (AC)	AVG. COEF. (C)	Q100 (CFS)	V100(FPS)	DISCHARGE LOCATION
BASIN A	0.055	0.76	0.24	0.07	EX. PARKWAY VIA SHEET FLOW
BASIN B	0.025	0.66	0.10	2.81	EX. GUTTER VIA EX 2X3" S/W UNDER DRAIN
BASIN C	0.061	0.81	0.29	0.08	EX. PARKWAY VIA SHEET FLOW
TOTAL	0.141		0.63		



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HARPER RESIDENCE
8445 EL PASEO GRADE
LA JOLLA, CA
PRE–PROJECT HYDROLOGY MAP

H.E. JOB NO. 19039

Appendix B

Post-Project

Drainage Map

HARPER RESIDENCE

POST-PROJECT HYDROLOGY MAP

LEGEND

DRAINAGE BASIN AREA..... **BASIN A**

DRAINAGE BASIN AREA BOUNDARY.....

RUNOFF FLOW DIRECTION .....

EXISTING IMPERVIOUS AREAS.....

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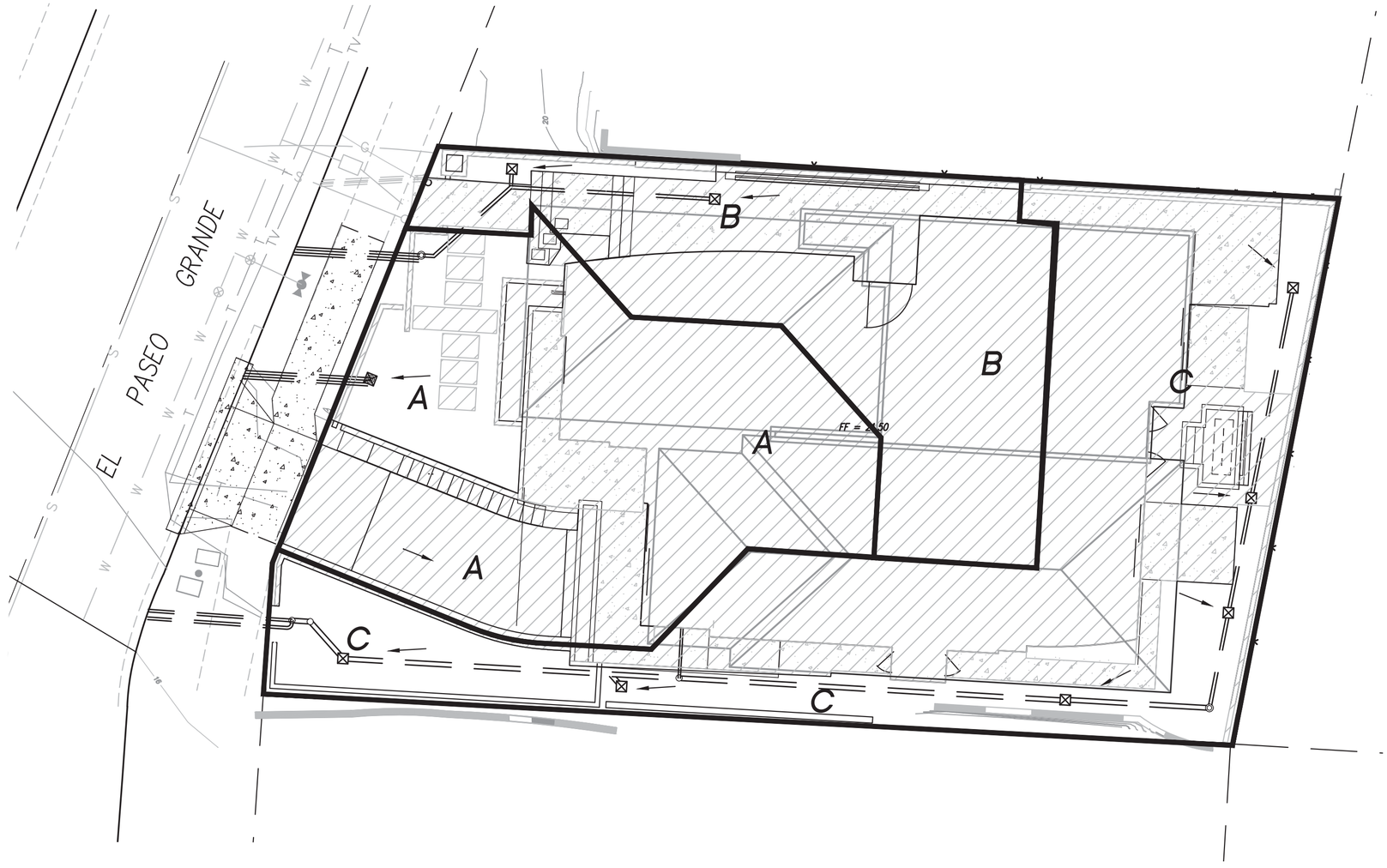
IMPERVIOUS/PERVIOUS SURFACE TABLE

BASIN NAME	TOTAL AREA (AC)	TOTAL IPERVIOUS AREA (AC)	% TOTAL PERVIOUS	TOTAL IMPERVIOUS AREA (AC)	% TOTAL IMPERVIOUS
BASIN A	0.045	0.010	22	0.035	78
BASIN B	0.035	0.002	6	0.033	94
BASIN C	0.061	0.002	19	0.022	81
TOTAL	0.141	0.027		0.114	

DRAINAGE BASIN TABLE

BASIN NAME	TOTAL AREA (AC)	AVG. COEF. (C)	Q_{100} (CFS)	V_{MAX}(FPS)*
BASIN A	0.045	0.81	0.21	3.09
BASIN B	0.035	0.88	0.18	2.92
BASIN C	0.061	0.72	0.25	3.12
TOTAL	0.141		0.64	

* – VELOCITY COMPUTED ASSUMING DOUBLE 3" UNDER SIDEWALK DRAIN PIPES



PLAN VIEW: PROPOSED CONDITION

SCALE 1" = 10'

N

0 10 20 30

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POST-PROJECT HYDROLOGY MAP

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