BOLTON ENGINEERING CORPORATION
25834 Narbonne Avenue, #210
Lomita, CA. 90717
(310) 325-5580

job title: **New Mixed Use Development Via Valmonte and Hawthorne Blvd. Torrance, CA**

job no.: 16132
date: 6/26/20
by: JM
sheet of 11

Hydrology Report

FOR

Undeveloped Property

AT

Via Valmonte and Hawthorne Blvd. Torrance, CA

prepared for:

Blue Dot Real Estate

prepared by:

Bolton Engineering Corp.

1st Submittal: 03/03/17
2nd Submittal: 12/11/17
3rd Sumbittal: 6/26/20

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TABLE OF CONTENTS:

Report:

Plates:

1. HYDROLOGY

1.0 Site Description

The existing site is a triangular-shaped undeveloped parcel and is bounded by Via Valmonte to the south, Hawthorne Blvd to the east and an existing gas station to the north. The onsite watershed splits, with a portion flowing northerly toward the gas station, and a portion flowing south and east toward Hawthorne Blvd. A small portion of the Via Valmonte public right of way is unimproved and flows onto the subject site, joining the flow that discharges to the gas station property. The gas station property is improved with a concrete swale and inlet/underground drainage system that conveys this runoff to Hawthorne Blvd.

The proposed condition includes a residential apartment and commercial building, and associated site improvements. A new drainage system would direct runoff through a curb culvert to Via Valmonte; in the proposed condition a majority of site runoff would be conveyed directly to the public right of way, as opposed to flowing onto the neighboring property.

1.1 50 Year Storm Analysis:

Watershed Information:
Soil Type: 010
Zone: K
Rainfall Isoheyt: 6.6" (50 Year, 24 Hour)
Storm Type: 25 year storm for underground gravity piping in gravity flow (non-sump) conditions.

See attached Hydrology Map and Hydrocalc computations for 25 year storm runoff.

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2. HYDRAULICS

For 50 year storm:

2.1 Flow Through Pipe:

From Manning's Equation, for a circular plastic pipe (n=0.010) flowing full:

Dia = 3"	S = 0.02 ft/ft	Qcap = 0.17 cfs
Dia = 4"	S = 0.01 ft/ft min	Qcap = 0.25 cfs
Dia = 6"	S = 0.01 ft/ft min	Qcap = 0.73 cfs
Dia = 8"	S = 0.01 ft/ft min	Qcap = 1.57 cfs

Therefore, use 6" pipe @ S=0.01 to carry site runoff. Use a 12" curb culvert to carry site runoff.