# Appendix I-1

Drainage Concept Summary

ALLIANCE
LAND PLANNING & ENGINEERING INC.

CIVIL ENGINEERING • LAND PLANNING • HILLSIDE DESIGN • SURVEYING

# MEMORANDUM

**Date:** August 29, 2023

**To:** City of Santa Clarita
23920 Valencia Boulevard
Santa Clarita, CA 91355

**Subject:** Wiley Canyon Drainage Concept Summary

## Project Description

The Wiley Canyon project is an approximately 32 ac mixed use project located off Wiley Canyon Road just north of Calgrove Blvd in the City of Santa Clarita. The project is directly bordered on the west by the I-5 Freeway and on the east by a large main drainage that is tributary to the Sant Clara River some 6 miles away. The proposed project includes a senior living facility, retail center, multi-family residential, drive aisles, parking, landscaped areas, and a park. The project site is currently an undeveloped field.

## Existing Drainage Pattern

The existing project site drains in a northeast direction until reaches the main drainage channel along the east boundary of the project. An existing 54" RCP storm drain pipe that is owned by Los Angeles County receives flow from the undeveloped field after it sheets off and then concentrates at the northeast corner of the site. The 54" pipe feeds into an underground box culvert that runs north below Wiley Canyon Road. Upstream of the underground box culvert, the drainage is a natural section of Creek that runs parallel to Wiley Canyon Road and extends up to a 2nd existing box culvert that is below the I-5 freeway.

Along the westerly edge of the project, and within the CalTrans R/W, there exists a smaller open box channel that run north and parallel to the freeway. This smaller channel ends at the northwest half of the project site where runoff then sheet flows west across the project site and towards the 54" outlet pipe discussed above. This smaller channel is fed by an existing 48" CMP drain line which conveys flows from offsite area that is west of the I-5 freeway.



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**Proposed Drainage Pattern**

Runoff in the developed condition will continue to flow to the northeast and discharge into the existing 54" outlet pipe. A system of onsite catch basins, grated inlets, and area drains will capture surface flows and route them in underground pipes toward the existing 54" outlet. The onsite system will directly connect to the existing 54" pipe.

**Detention Basin**

Per LA County hydrology requirements, developed condition flows will be mitigated back down to existing condition levels by using a large detention basin located at southeast corner of the site. The detention basin is located adjacent to the natural Creek segment of the drainage. Because the basin is located upstream of the project site's discharge location at the 54" outlet, the basin will syphon off a volume of runoff from the Creek that is equal to the excess runoff volume that the developed condition site produces. As volume is remove upstream at the basin, the project site can discharge developed flows at downstream location and the net change within the drainage channel will remain at zero. The basin will be equipped with a main outlet, an emergency outlet, and an access ramp for maintenance.

**Water Quality**

Water quality treatment as required by LA County and State of California standards will be achieved using a system of two separate above ground biofiltration basins. Low flow runoff will be treated prior to discharge to the offsite public system.

**Offsite Flows**

There will also be a desilting basin located where the offsite area that is west of the I-5 freeway drains onto the site. The offsite flows will settle out and deposit sediment before entering into an underground pipe and being conveyed through the project site. These offsite flows will be routed separately in a dedicated pipe and will also be discharged to the existing 54" outlet at northeast corner.

This concludes the high-level drainage concept summary for the Wiley Canyon project.

Sincerely,

Chet Van Horn, PE

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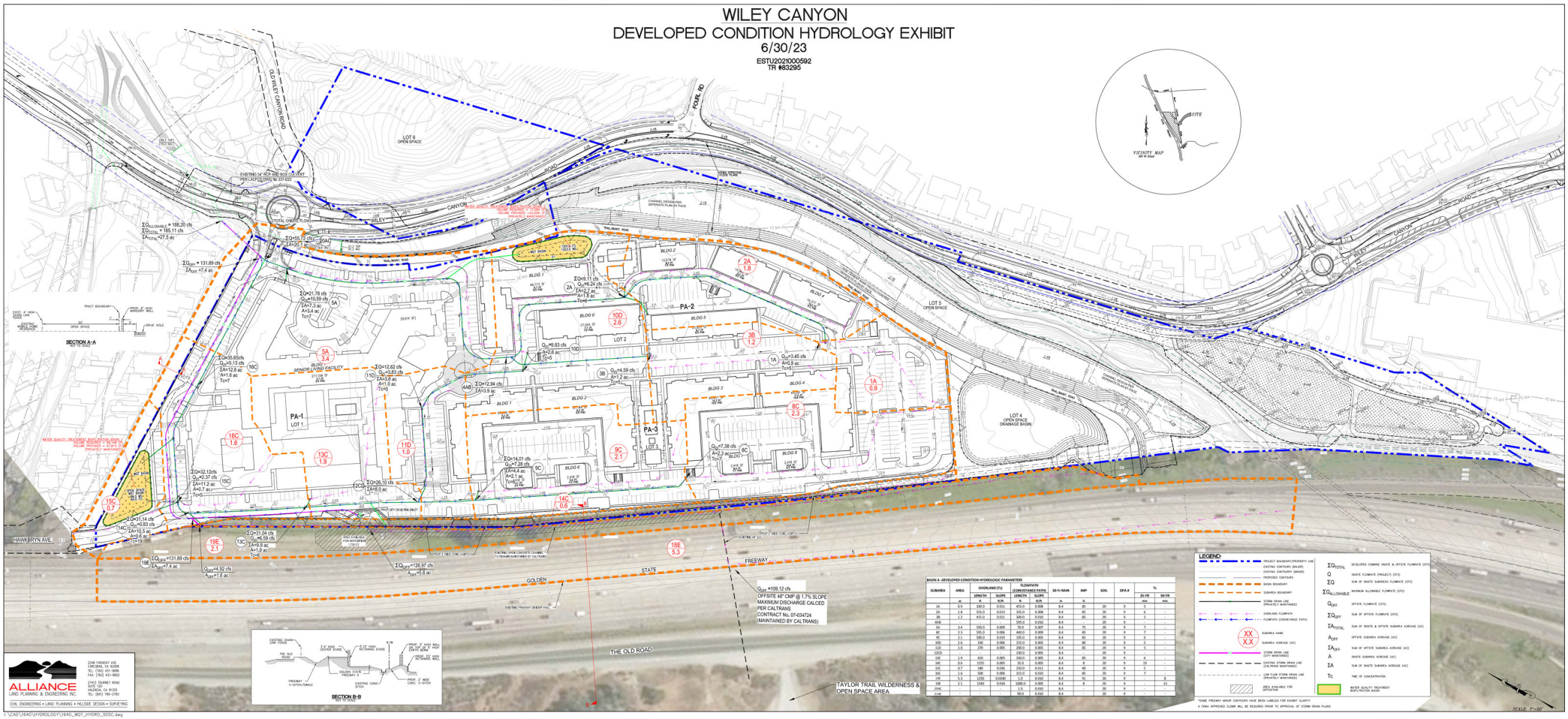
# WILEY CANYON
## DEVELOPED CONDITION HYDROLOGY EXHIBIT
6/30/23

ESTU2021000592
TR #83295




BASIN A -DEVELOPED CONDITION HYDROLOGIC PARAMETERS

| SUBAREA | AREA | OVERLAND (Tc) | | FLOWPATH (CONVEYANCE PATH) | | SO-YU RAIN | IMP | SOIL | DPA # | Tc | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | LENGTH | SLOPE | LENGTH | SLOPE | | | | | 25-YR | 50-YR |
| | ac | ft | ft/ft | ft | ft/ft | ta | % | | | min | min |
| 1A | 0.9 | 330.0 | 0.011 | 410.0 | 0.008 | 8.4 | 85 | 20 | 9 | 5 | - |
| 2A | 1.8 | 555.0 | 0.015 | 335.0 | 0.008 | 8.4 | 85 | 20 | 9 | 6 | - |
| 3B | 1.2 | 415.0 | 0.011 | 300.0 | 0.010 | 8.4 | 85 | 20 | 9 | 5 | - |
| 4AB | | | | 595.0 | 0.035 | 8.4 | | 20 | 9 | - | - |
| 5A | 3.4 | 550.0 | 0.009 | 70.0 | 0.007 | 8.4 | 75 | 20 | 9 | 7 | - |
| 8C | 2.3 | 595.0 | 0.006 | 440.0 | 0.006 | 8.4 | 85 | 20 | 9 | 7 | - |
| 9C | 2.1 | 560.0 | 0.010 | 105.0 | 0.005 | 8.4 | 85 | 20 | 9 | 6 | - |
| 10D | 2.6 | 330 | 0.006 | 225.0 | 0.005 | 8.4 | 80 | 20 | 9 | 5 | - |
| 11D | 1.0 | 270 | 0.005 | 200.0 | 0.005 | 8.4 | 85 | 20 | 9 | 5 | - |
| 12CD | | | | 230.0 | 0.005 | 8.4 | | 20 | 9 | - | - |
| 13C | 1.9 | 410 | 0.005 | 240.0 | 0.005 | 8.4 | 85 | 20 | 9 | 6 | - |
| 14C | 0.6 | 1555 | 0.005 | 35.0 | 0.005 | 8.4 | 8 | 20 | 9 | 19 | - |
| 15C | 0.7 | 180 | 0.036 | 250.0 | 0.011 | 8.4 | 40 | 20 | 9 | 5 | - |
| 16C | 1.6 | 590 | 0.006 | 315.0 | 0.010 | 8.4 | 85 | 20 | 9 | 7 | - |
| 19E | 5.3 | 1250 | 0.0240 | 1.0 | 0.010 | 8.4 | 91 | 20 | 9 | - | 8 |
| 19E | 2.1 | 1540 | 0.018 | 3080.0 | 0.005 | 8.4 | 8 | 20 | 9 | - | 13 |
| 20AC | - | - | - | 1.0 | 0.010 | 8.4 | - | 20 | 9 | - | - |
| 21AE | - | - | - | 90.0 | 0.010 | 8.4 | - | 20 | 9 | - | - |

LEGEND

- PROJECT BOUNDARY/PROPERTY LINE
- EXISTING CONTOURS (MAJOR)
- EXISTING CONTOURS (MINOR)
- PROPOSED CONTOURS
- BASIN BOUNDARY
- SUBAREA BOUNDARY
- STORM DRAIN LINE (PRIVATELY MAINTAINED)
- OVERLAND FLOWPATH
- FLOWPATH (CONVEYANCE PATH)
- XX / X.X — SUBAREA NAME / SUBAREA ACREAGE (AC)
- STORM DRAIN LINE (CITY MAINTAINED)
- EXISTING STORM DRAIN LINE (CALTRANS MAINTAINED)
- LOW FLOW STORM DRAIN LINE (PRIVATELY MAINTAINED)
- AREA AVAILABLE FOR DETENTION
- WATER QUALITY TREATMENT BIOFILTRATION BASIN

$\Sigma Q_{TOTAL}$ — DEVELOPED CONDITIONS ONSITE & OFFSITE FLOWRATE (CFS)
Q — ONSITE FLOWRATE (PROJECT) (CFS)
$\Sigma Q$ — SUM OF ONSITE SUBAREAS FLOWRATE (CFS)
$\Sigma Q_{ALLOWABLE}$ — MAXIMUM ALLOWABLE FLOWRATE (CFS)
$Q_{OFF}$ — OFFSITE FLOWRATE (CFS)
$\Sigma Q_{OFF}$ — SUM OF OFFSITE FLOWRATE (CFS)
$\Sigma A_{TOTAL}$ — SUM OF ONSITE & OFFSITE SUBAREA ACREAGE (AC)
$A_{OFF}$ — OFFSITE SUBAREA ACREAGE (AC)
$\Sigma A_{OFF}$ — SUM OF OFFSITE SUBAREA ACREAGE (AC)
A — ONSITE SUBAREA ACREAGE (AC)
$\Sigma A$ — SUM OF ONSITE SUBAREA ACREAGE (AC)
Tc — TIME OF CONCENTRATION

*SOME FREEWAY MINOR CONTOURS HAVE BEEN LABELED FOR EXHIBIT CLARITY
A FEMA APPROVED CLOMR WILL BE REQUIRED PRIOR TO APPROVAL OF STORM DRAIN PLANS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