**APPENDIX G:**

**HYDROLOGY/LID REPORT**

DK Engineer, Corporation
Hydrology/LID Report for Juniper Grove,
Division St. & Avenue R, Palmdale, CA 93550,
March 2019.

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# *APPENDIX A*
# *HYDROLOGY CALCULATIONS*
***(Per LA County HydroCalc Program)***

# HYDROLOGY/LID REPORT

**For**

## Juniper Grove
## Division St. & Avenue R
## Palmdale, CA 93550

March 2019

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# A. INTRODUCTION

## Project Description

The proposed project is located at the intersection of Avenue R and Division St. and will be developed into a 3- story, 101-unit affordable housing apartment building.

## Scope and Purpose

The scope of this report is to present the existing drainage characteristics of the proposed site and the post development drainage characteristics. The proposed drainage facilities are evaluated for the 2-year, 10-year, 25-year and 50-year storm frequency and the proposed detention basin is sized based on the 25-year storm event. The rainfall and runoff computations are based on the requirements presented in the Los Angeles County Hydrology Manual.

The purpose of this report is to show that the proposed development will not have any negative effects on the existing hydrologic condition of the site and any downstream facilities.

## Site Location

The site is located at the intersection of Avenue R and Division Street and is currently an undeveloped parcel of approximately 4.75 acres.

## Vicinity Map

# B. DESIGN CRITERIA

Except where specified elsewhere in this report, the procedures, criteria, and standards as set forth in the Los Angeles County Hydrology Manual are utilized to determine the hydrologic features of each site.

## Hydrologic

Due to the relatively small size of the project sites (less than 40 acres), the rational method has been used to compute the peak runoff at pre-determined design points. The runoff analysis is based on the proposed land use, topographic features and proposed grading for the site area. The average land slopes and runoff coefficients were used for computing runoff.

The runoff equation for the Rational Method is as follows:

$$Q = CIA$$

Where:
- Q = Peak runoff rate (CFS)
- C = Runoff coefficient
- I = Average rainfall intensity (in/hr)
- A = Drainage area (acres)

## Mitigation Measures

In accordance with the City of Palmdale's Drainage Management Plan (DMP), peak flow mitigation will be accomplished utilizing an extended detention (ED) basin since all system discharges will be directed to the curb and gutter along Avenue R.

The ED basin will be designed for the 25-year rainfall frequency, 3.25 in. All flows and volumes will be determined using HydroCalc and the post development site characteristics. See Appendix B for hydraulic calculations.

50-year Rainfall Isohyet from LA County GIS

## Storm Drain Connection

Per LA County requirements the overflows from the proposed BMP must connect either to a catch basin or to a storm drain main. Since there is no existing storm drain infrastructure adjacent to the project site, all overflow will be directed to Avenue R via a non-erosive surface.

Per City of Palmdale Design Standards, Section 5 – Drainage Studies and Improvement Plans, the max allowable flow discharged to the street must not exceed 85% of the pre-existing peak flow or 0.364 CFS. Any flow above this value will be be retained onsite and released later to the storm drain system.

See Appendix C for calculations related to the detention basin and storm drain connection.

# C. EXISTING SITE CONDITIONS

## On-Site

The existing onsite conditions can all be considered one sub-area as the entire site slopes towards the northeast corner of the property. The site has no existing drainage structures and all runoff is conveyed via sheet flow. Runoff leaves the site by sheet flowing across an unpaved sidewalk along Avenue R and draining in to an asphalt concrete drainage ditch until it reaches the existing curb and gutter in front of the adjacent property at the northeast corner of the lot.

See Appendix A for HydroCalc results and Exhibit C1.11 in Appendix D for drainage map. Summary of flows shown in table below.

| Existing Site Hydrology Summary | | |
|---|---|---|
| Storm Frequency | Flows (CFS) | Volume (CF) |
| 2 - Year | 0.188 | 2,644 |
| 10 - Year | 0.348 | 4,879 |
| 25 - Year | 0.428 | 6,000 |
| 50 - Year | 0.487 | 6,833 |

## Off-Site

Along Division St. and Avenue R, directly adjacent to the project site, there is no existing storm drain infrastructure. All runoff along Division St. sheet flows across the property, to the low point at the northeast corner of the lot along Avenue R. Along Avenue R, there is an existing asphalt concrete drainage ditch to convey runoff to the east until it reaches the full curb and gutter at the adjacent property.

Additionally, along Avenue R, runoff from the vacant lot and other developments upstream on the north side of the site have lead to flooding in the past. The site lies within Zone “X” and Zone “AO” according to FEMA map number 06037C0659F dated September 26, 2008 with historical flood depths from 1-3 feet.

# D. PROPOSED CONDITIONS

## Onsite-Hydrology

As part of each development landscaping will be added which will help reduce the overall imperviousness and thereby lowering the sites overall runoff. Additionally, the site will no longer convey runoff via sheet flow but rather via non-erosive means to the proposed detention basin.

See Exhibit C1.12 in Appendix D for the post development Drainage Map. All HydroCalc results for each sub area can be found in Appendix A and overall results are shown in the table below.

| Proposed Site Hydrology Summary | | |
|---|---|---|
| Storm Frequency | Flows (CFS) | Volume (CF) |
| 2 - Year | 1.05 | 14,048 |
| 10 - Year | 2.31 | 25,918 |
| 25 - Year | 3.04 | 31,871 |
| 50 - Year | 3.67 | 36,318 |

**Onsite Retention**

In accordance with the latest LA County Hydrology Manual and City of Palmdale's DMP requirements, flows greater than 85% of the existing pre-developed peak flow conditions will be retained onsite. As part of construction, a permanent detention basin will be installed beneath the parking lot in order to meet these requirements.

Based on results from HydroCalc the proposed development has a peak flow of 3.75 and an SWQDv of 41,419 CF. See Appendix B for full HydroCalc results related to the City's DMP requirements.

The table below shows how the sites $Q_{peak}$ and SWQDv are reduced. See Exhibit C1.12 in Appendix D for the location of the retention basin.

| Pre-Development | |
|---|---|
| Q- 25 CFS) | 85% Q-25 (CFS) |
| 0.428 | 0.364 |

| Proposed Retention Volume | |
|---|---|
| SWQDv (CF) | 41,419 |
| Storage Tank Volume CF) | 13,140 |

**Onsite Storm Drain Connection**

As shown in the table above, the max allowable flow from the proposed development is any flow below 85% of the pre-developed peak flow or 0.364 CFS.

## F. IMPACT ON THE EXISTING SYSTEM

| Final Hydrology Results | | Pre | Post | % Change |
|---|---|---|---|---|
| 25 - Year | Q | 0.428 | 0.364 | -15 |
| | V | 6,000 | 18,731 | 212 |

Based on the table above, the proposed development will reduce the overall runoff flow from the 25-year storm event.

While there is a significant increase in the amount of runoff volume, there should be no negative impacts on the storm drain system since the peak flow of the proposed development is 15% lower than the existing condition.

## Peak Flow Hydrologic Analysis

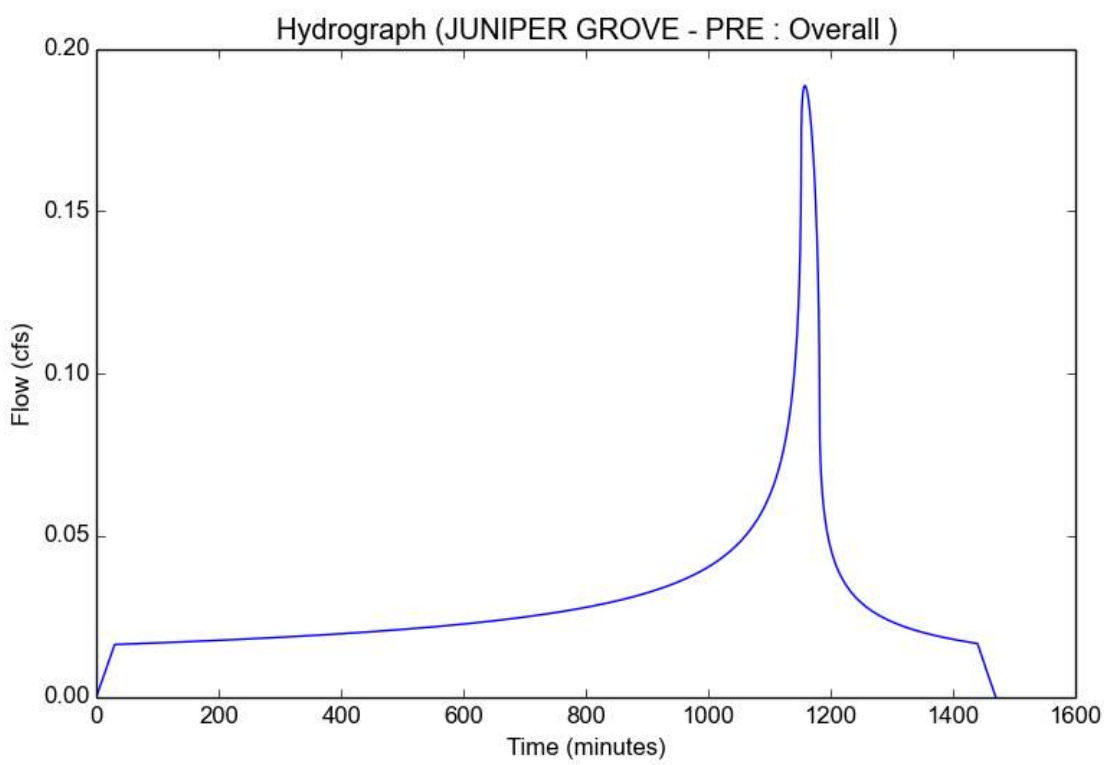
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/PRE CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - PRE |
| Subarea ID | Overall |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.01 |
| Soil Type | 134 |
| Design Storm Frequency | 2-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (2-yr) Rainfall Depth (in) | 1.4319 |
| Peak Intensity (in/hr) | 0.368 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.108 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.1888 |
| Burned Peak Flow Rate (cfs) | 0.1888 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0607 |
| 24-Hr Clear Runoff Volume (cu-ft) | 2644.4633 |



# PRE-DEVELOPMENT: SUBAREA A1 (10 YEAR)

## Peak Flow Hydrologic Analysis

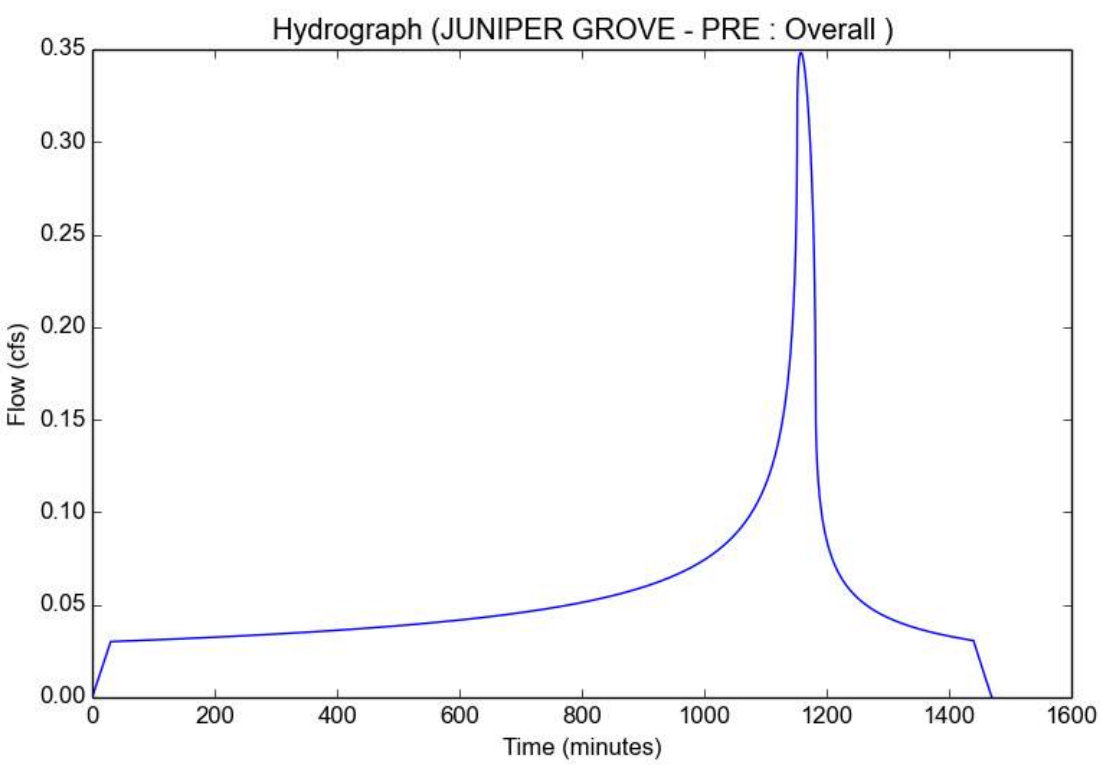
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/PRE CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - PRE |
| Subarea ID | Overall |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.01 |
| Soil Type | 134 |
| Design Storm Frequency | 10-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (10-yr) Rainfall Depth (in) | 2.6418 |
| Peak Intensity (in/hr) | 0.679 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.108 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.3483 |
| Burned Peak Flow Rate (cfs) | 0.3483 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.112 |
| 24-Hr Clear Runoff Volume (cu-ft) | 4878.9323 |



PRE-DEVELOPMENT: SUBAREA A1 (25 YEAR)

## Peak Flow Hydrologic Analysis

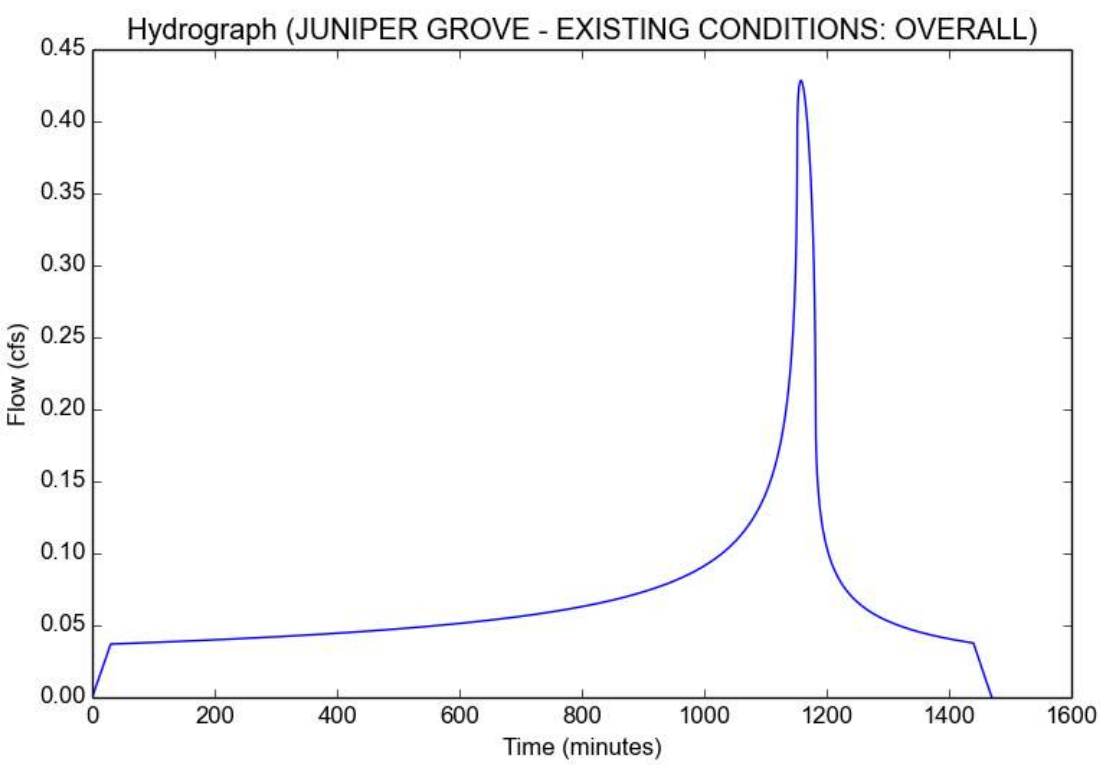
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/JUNIPER GROVE - EXISTING
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - EXISTING CONDITIONS |
| Subarea ID | OVERALL |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.01 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 0.835 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.108 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.4283 |
| Burned Peak Flow Rate (cfs) | 0.4283 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1377 |
| 24-Hr Clear Runoff Volume (cu-ft) | 5999.5834 |



# PRE-DEVELOPMENT: SUBAREA A1 (50 YEAR)

## Peak Flow Hydrologic Analysis

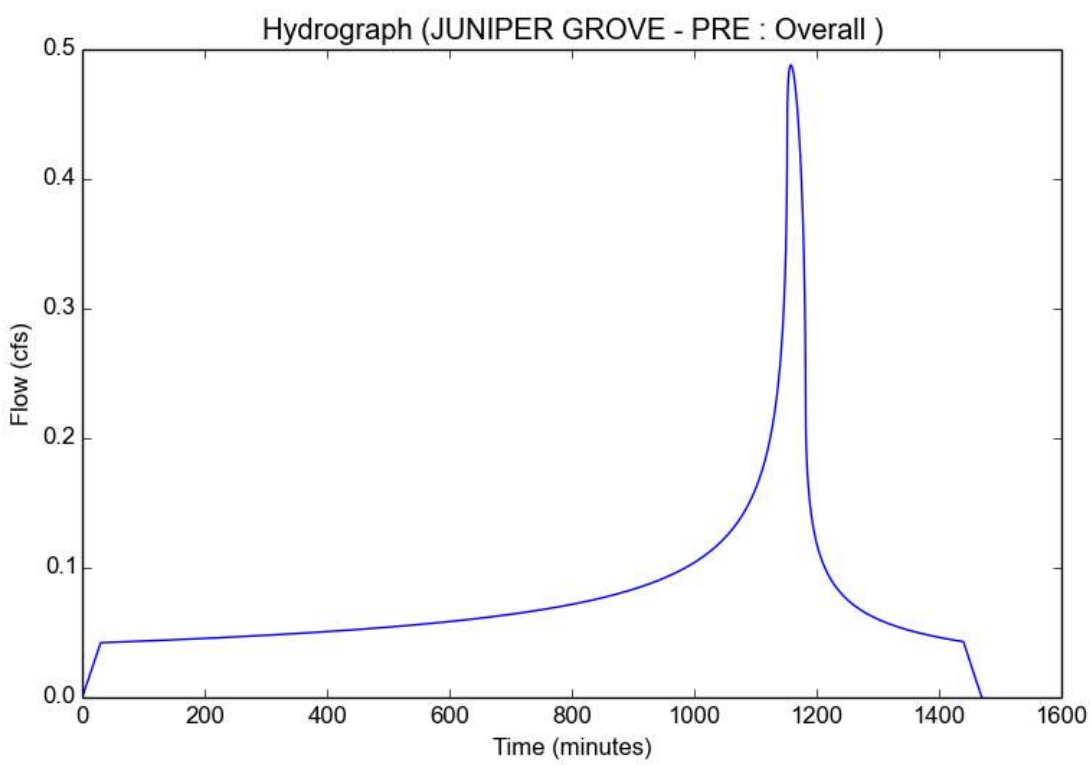
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/PRE CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - PRE |
| Subarea ID | Overall |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.01 |
| Soil Type | 134 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 3.7 |
| Peak Intensity (in/hr) | 0.951 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.108 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.4879 |
| Burned Peak Flow Rate (cfs) | 0.4879 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1569 |
| 24-Hr Clear Runoff Volume (cu-ft) | 6833.2385 |



## Peak Flow Hydrologic Analysis

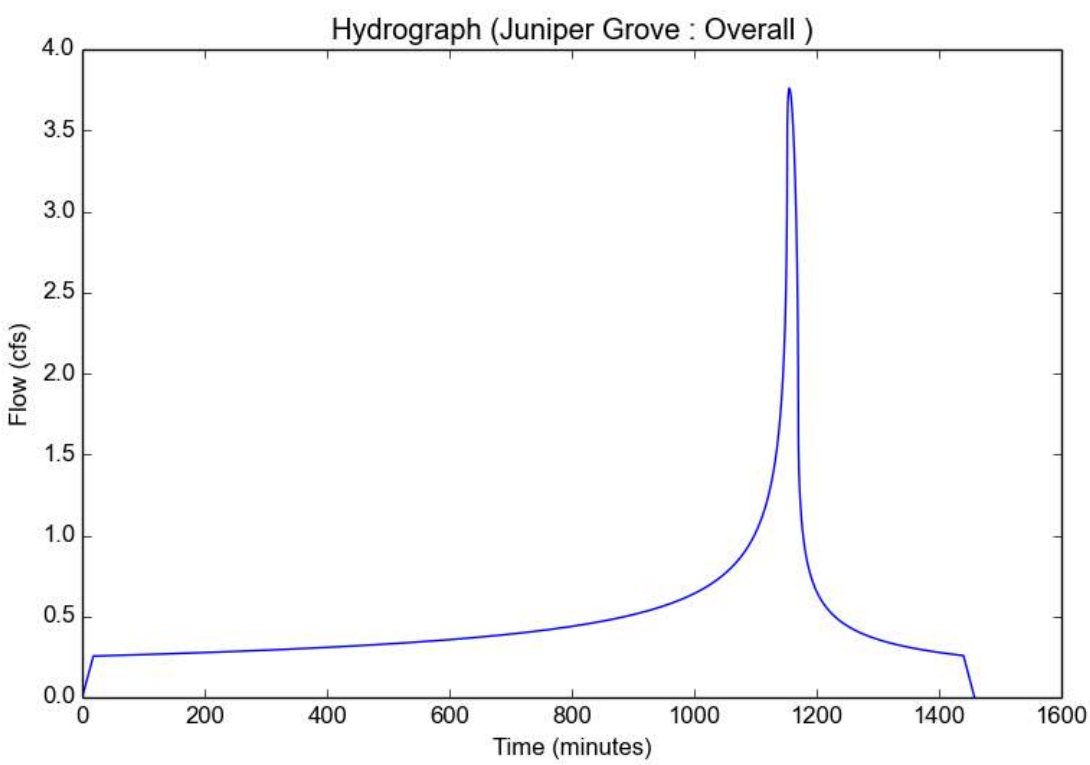
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/Juniper Grove - Overall (post).p
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | Juniper Grove |
| Subarea ID | Overall |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.807 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 1.0615 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.7456 |
| Time of Concentration (min) | 18.0 |
| Clear Peak Flow Rate (cfs) | 3.7596 |
| Burned Peak Flow Rate (cfs) | 3.7596 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.9509 |
| 24-Hr Clear Runoff Volume (cu-ft) | 41419.0402 |



# POST-DEVELOPMENT: SUBAREA A1 (2 YEAR)

## Peak Flow Hydrologic Analysis

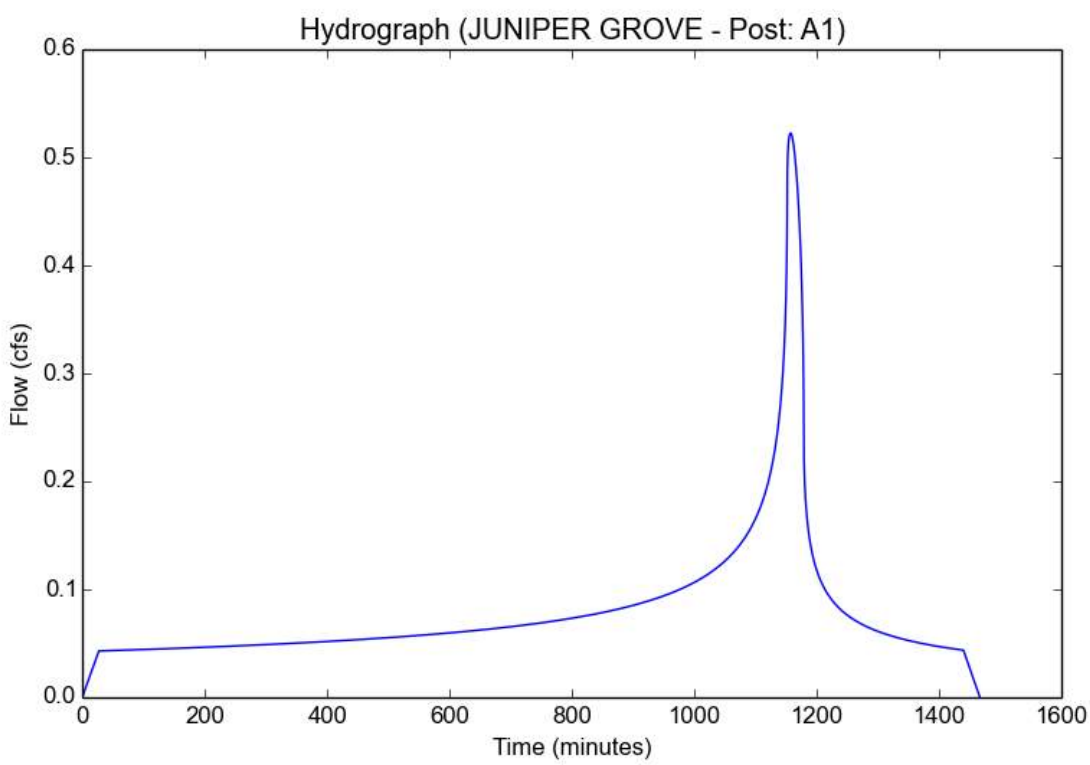
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A1 |
| Area (ac) | 1.75 |
| Flow Path Length (ft) | 800.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.84 |
| Soil Type | 134 |
| Design Storm Frequency | 2-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (2-yr) Rainfall Depth (in) | 1.4319 |
| Peak Intensity (in/hr) | 0.3867 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.772 |
| Time of Concentration (min) | 27.0 |
| Clear Peak Flow Rate (cfs) | 0.5225 |
| Burned Peak Flow Rate (cfs) | 0.5225 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1599 |
| 24-Hr Clear Runoff Volume (cu-ft) | 6964.2535 |



POST-DEVELOPMENT: SUBAREA A1 (10 YEAR)

## Peak Flow Hydrologic Analysis

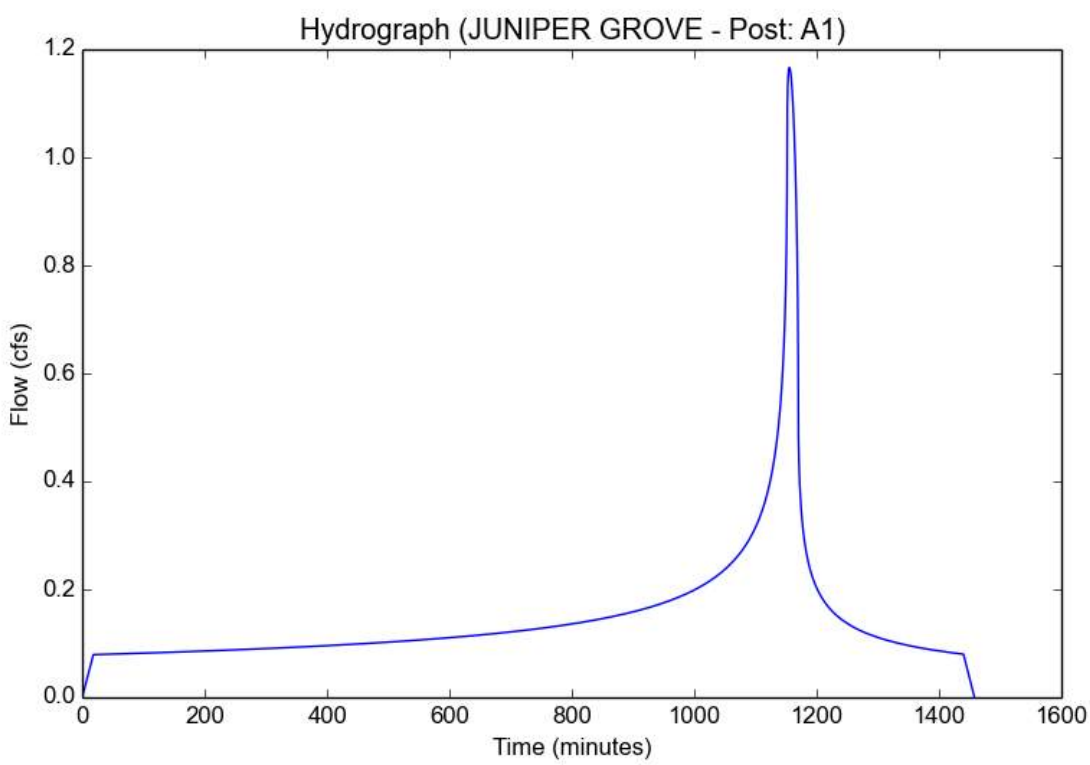
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A1 |
| Area (ac) | 1.75 |
| Flow Path Length (ft) | 800.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.84 |
| Soil Type | 134 |
| Design Storm Frequency | 10-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (10-yr) Rainfall Depth (in) | 2.6418 |
| Peak Intensity (in/hr) | 0.8633 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.772 |
| Time of Concentration (min) | 18.0 |
| Clear Peak Flow Rate (cfs) | 1.1663 |
| Burned Peak Flow Rate (cfs) | 1.1663 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.295 |
| 24-Hr Clear Runoff Volume (cu-ft) | 12848.7112 |



POST-DEVELOPMENT: SUBAREA A1 (25 YEAR)

## Peak Flow Hydrologic Analysis

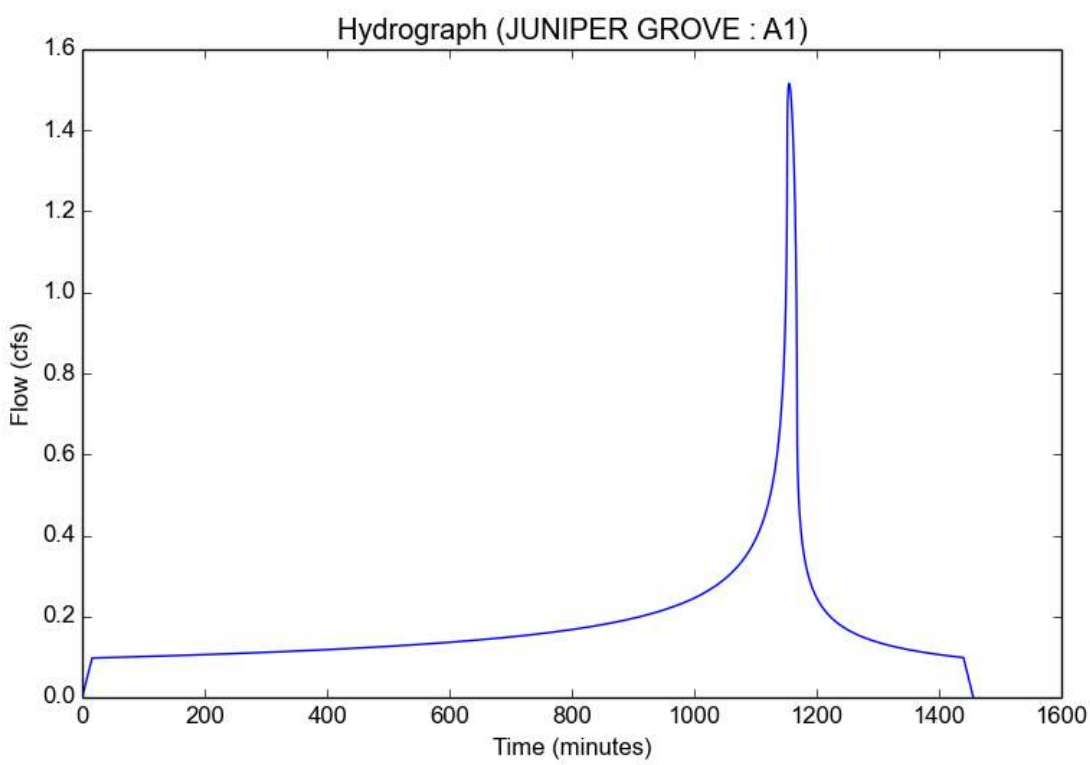
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/JUNIPER GROV
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE |
| Subarea ID | A1 |
| Area (ac) | 1.75 |
| Flow Path Length (ft) | 800.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.84 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 1.122 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.772 |
| Time of Concentration (min) | 16.0 |
| Clear Peak Flow Rate (cfs) | 1.5158 |
| Burned Peak Flow Rate (cfs) | 1.5158 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.3627 |
| 24-Hr Clear Runoff Volume (cu-ft) | 15799.9421 |



## Peak Flow Hydrologic Analysis

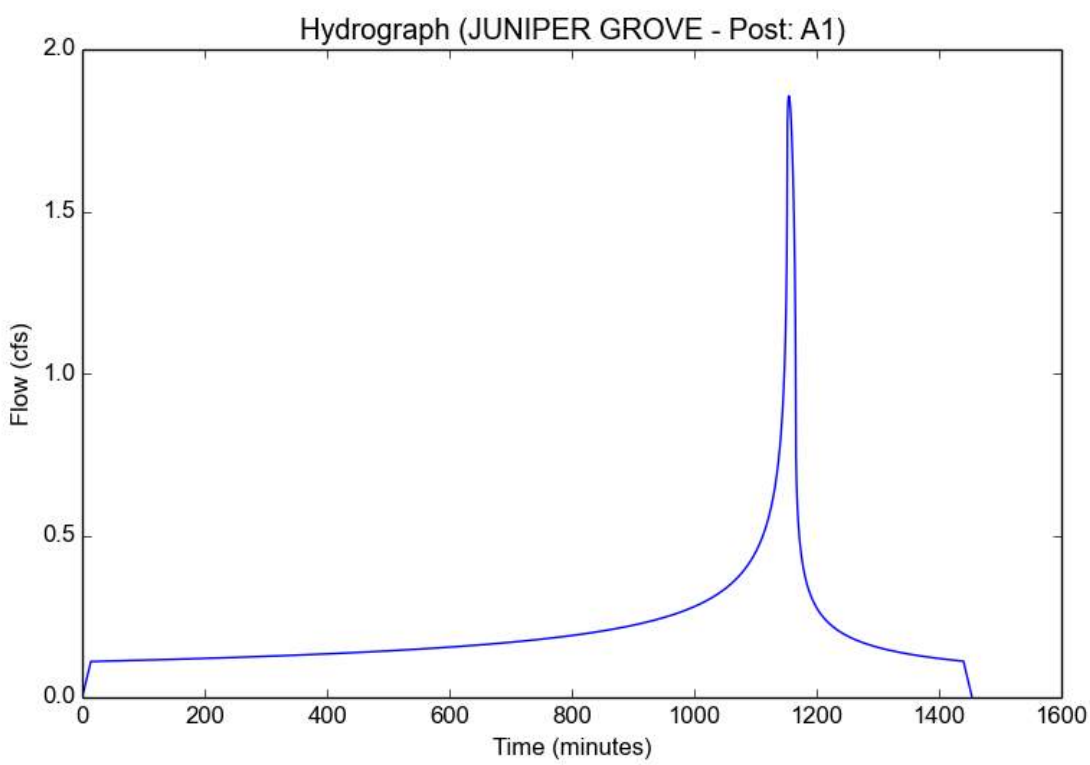
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A1 |
| Area (ac) | 1.75 |
| Flow Path Length (ft) | 800.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.84 |
| Soil Type | 134 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 3.7 |
| Peak Intensity (in/hr) | 1.3606 |
| Undeveloped Runoff Coefficient (Cu) | 0.1481 |
| Developed Runoff Coefficient (Cd) | 0.7797 |
| Time of Concentration (min) | 14.0 |
| Clear Peak Flow Rate (cfs) | 1.8566 |
| Burned Peak Flow Rate (cfs) | 1.8566 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.4133 |
| 24-Hr Clear Runoff Volume (cu-ft) | 18002.5101 |



## Peak Flow Hydrologic Analysis

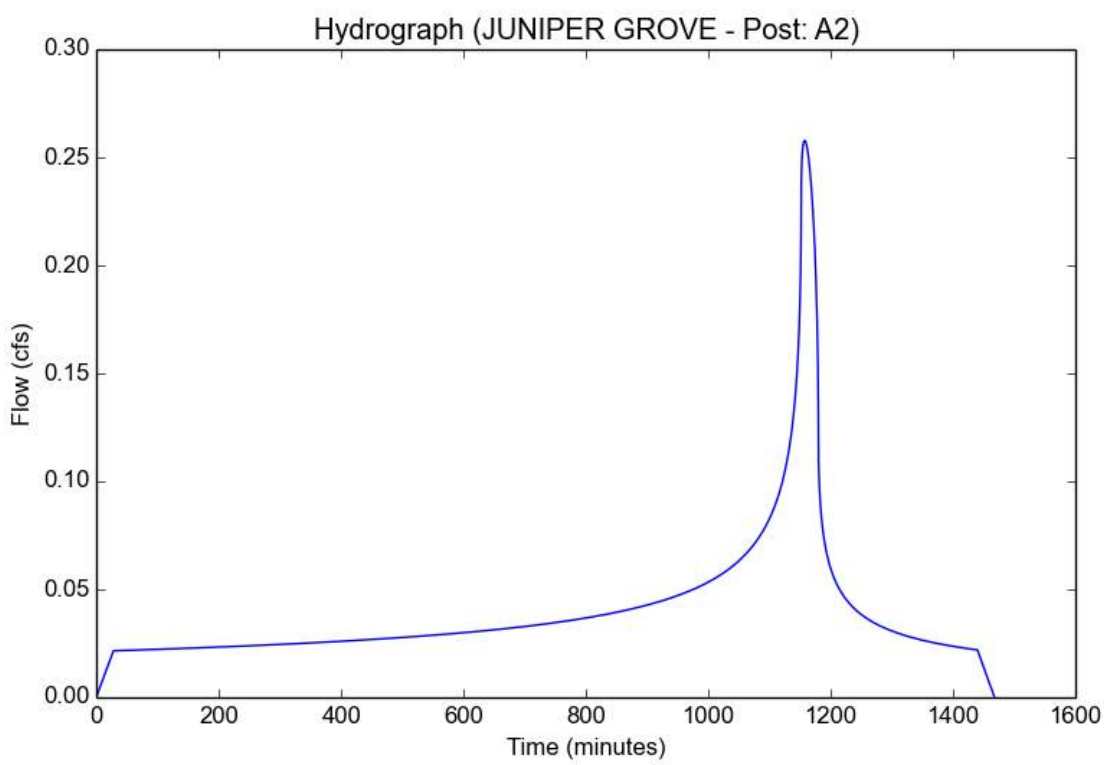
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A2 |
| Area (ac) | 0.98 |
| Flow Path Length (ft) | 750.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.74 |
| Soil Type | 134 |
| Design Storm Frequency | 2-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (2-yr) Rainfall Depth (in) | 1.4319 |
| Peak Intensity (in/hr) | 0.3802 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.692 |
| Time of Concentration (min) | 28.0 |
| Clear Peak Flow Rate (cfs) | 0.2578 |
| Burned Peak Flow Rate (cfs) | 0.2578 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0803 |
| 24-Hr Clear Runoff Volume (cu-ft) | 3495.8412 |



## Peak Flow Hydrologic Analysis

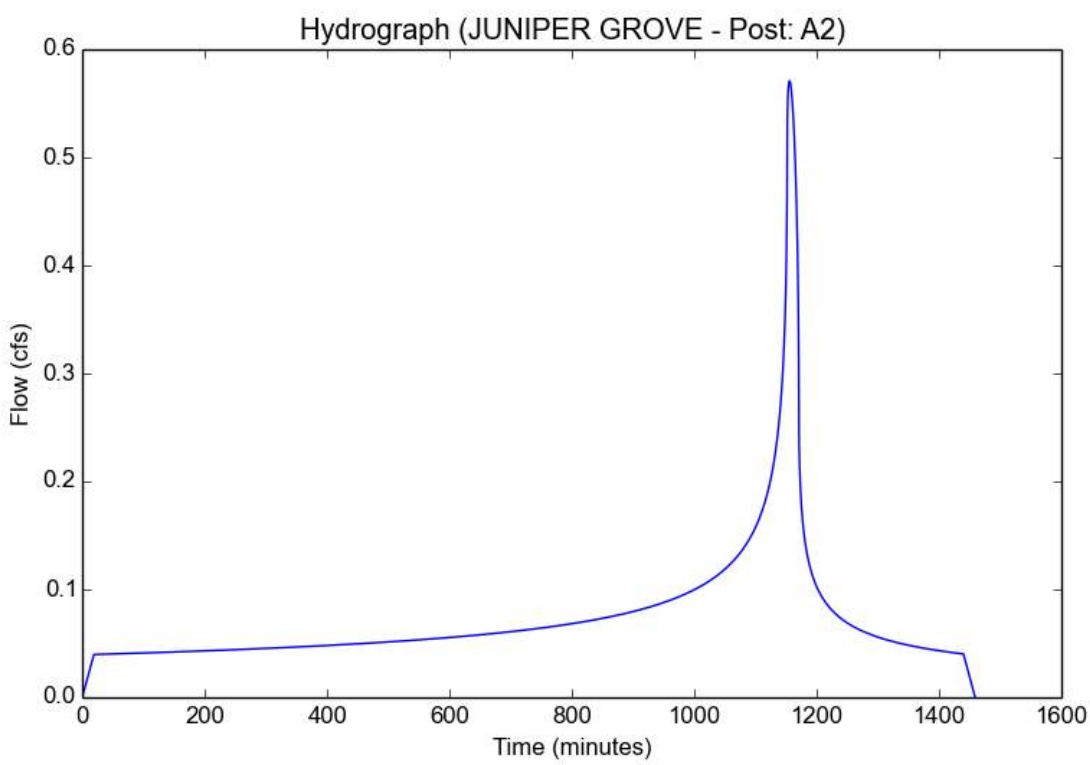
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A2 |
| Area (ac) | 0.98 |
| Flow Path Length (ft) | 750.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.74 |
| Soil Type | 134 |
| Design Storm Frequency | 10-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (10-yr) Rainfall Depth (in) | 2.6418 |
| Peak Intensity (in/hr) | 0.8416 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.692 |
| Time of Concentration (min) | 19.0 |
| Clear Peak Flow Rate (cfs) | 0.5707 |
| Burned Peak Flow Rate (cfs) | 0.5707 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1481 |
| 24-Hr Clear Runoff Volume (cu-ft) | 6449.6566 |



POST-DEVELOPMENT: SUBAREA A2 (25 YEAR)

## Peak Flow Hydrologic Analysis

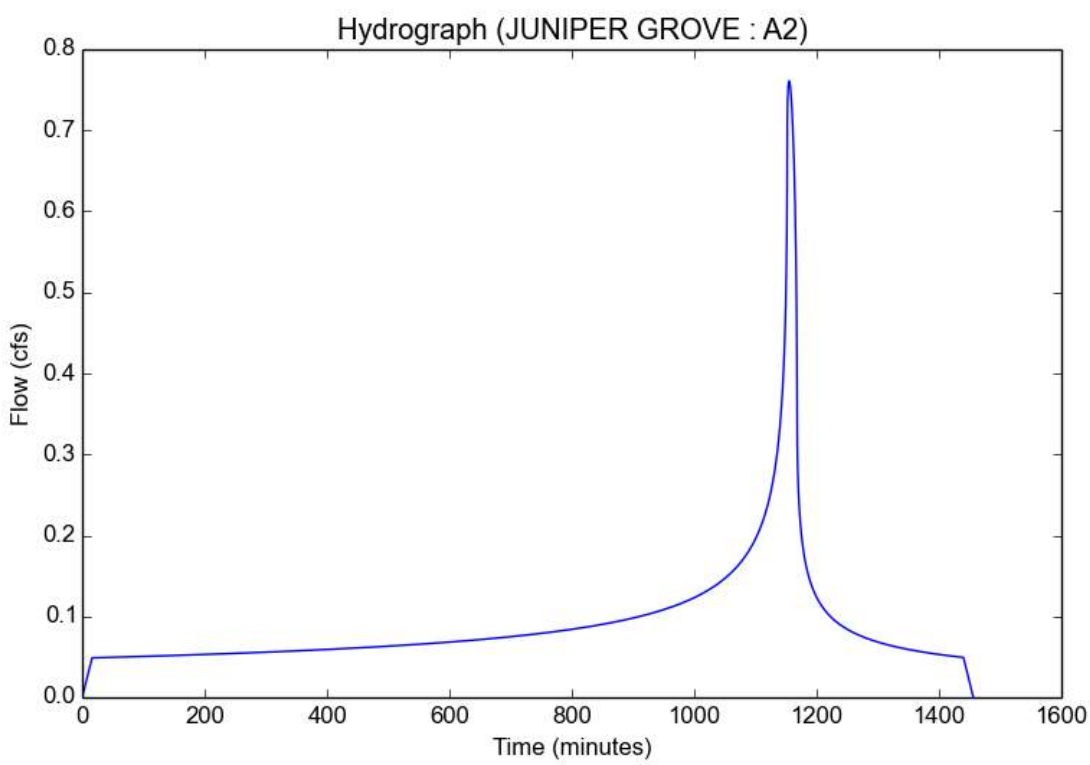
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/JUNIPER GROV
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE |
| Subarea ID | A2 |
| Area (ac) | 0.98 |
| Flow Path Length (ft) | 750.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.74 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 1.122 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.692 |
| Time of Concentration (min) | 16.0 |
| Clear Peak Flow Rate (cfs) | 0.7609 |
| Burned Peak Flow Rate (cfs) | 0.7609 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1821 |
| 24-Hr Clear Runoff Volume (cu-ft) | 7931.0797 |



## Peak Flow Hydrologic Analysis

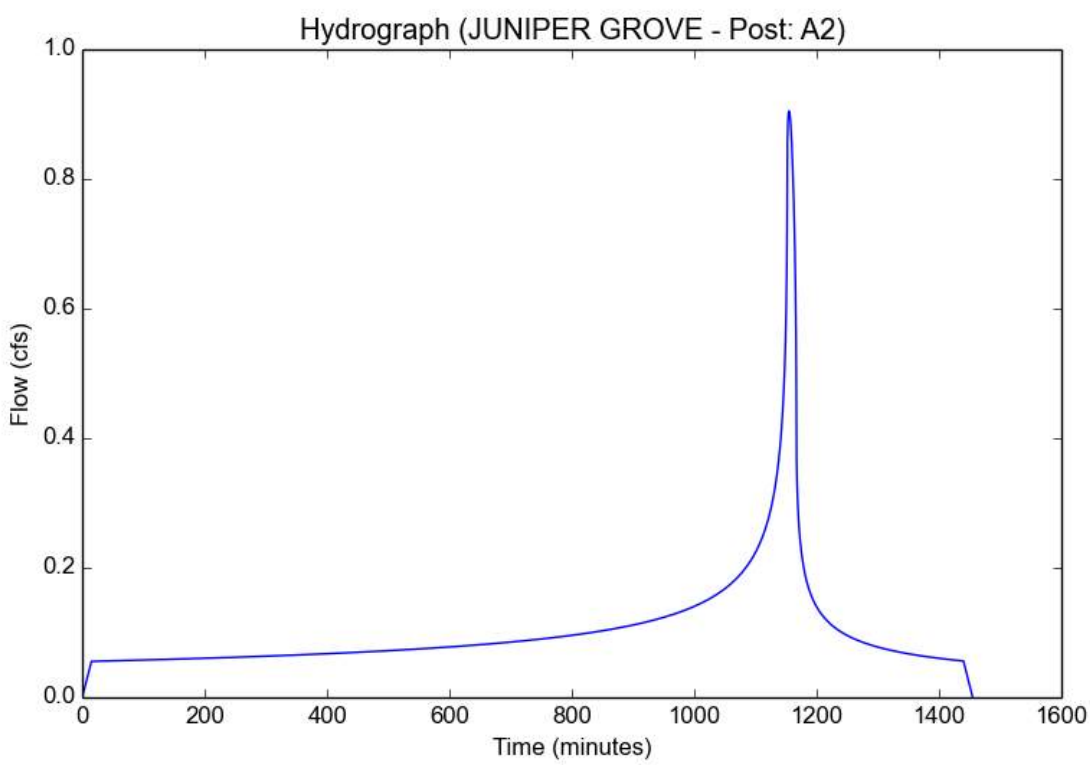
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A2 |
| Area (ac) | 0.98 |
| Flow Path Length (ft) | 750.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.74 |
| Soil Type | 134 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 3.7 |
| Peak Intensity (in/hr) | 1.3172 |
| Undeveloped Runoff Coefficient (Cu) | 0.1351 |
| Developed Runoff Coefficient (Cd) | 0.7011 |
| Time of Concentration (min) | 15.0 |
| Clear Peak Flow Rate (cfs) | 0.9051 |
| Burned Peak Flow Rate (cfs) | 0.9051 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.2075 |
| 24-Hr Clear Runoff Volume (cu-ft) | 9037.5066 |



# POST-DEVELOPMENT: SUBAREA A3 (2 YEAR)

## Peak Flow Hydrologic Analysis

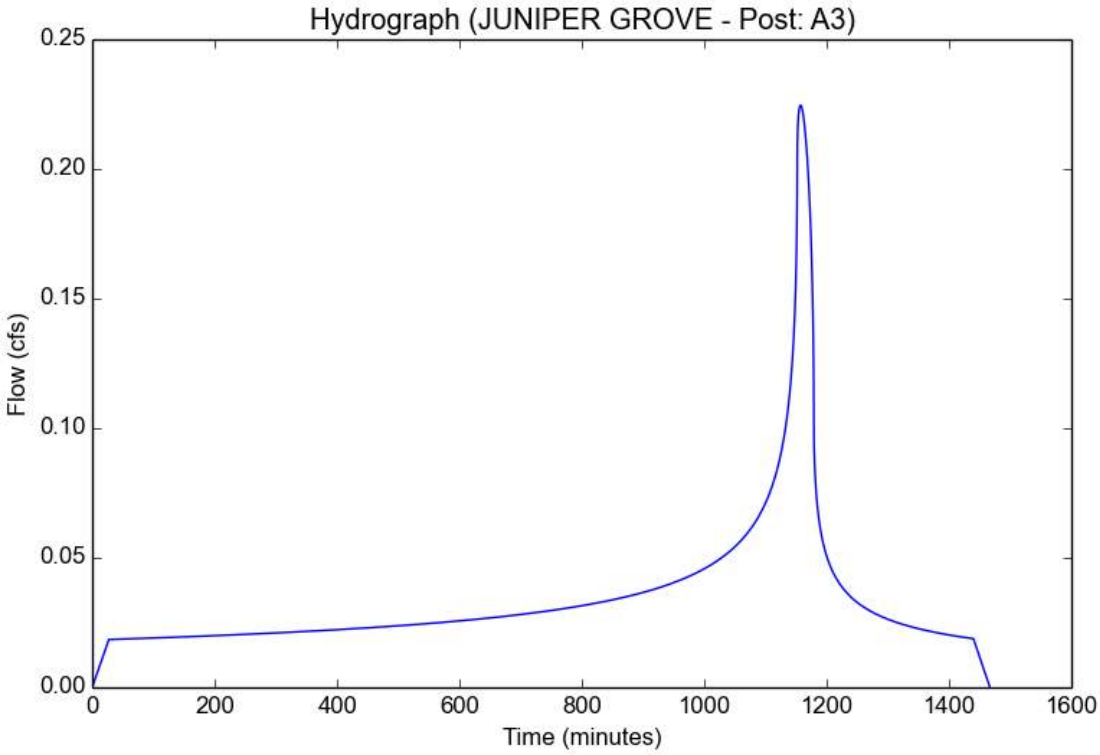
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A3 |
| Area (ac) | 0.88 |
| Flow Path Length (ft) | 650.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.7 |
| Soil Type | 134 |
| Design Storm Frequency | 2-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (2-yr) Rainfall Depth (in) | 1.4319 |
| Peak Intensity (in/hr) | 0.3867 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.66 |
| Time of Concentration (min) | 27.0 |
| Clear Peak Flow Rate (cfs) | 0.2246 |
| Burned Peak Flow Rate (cfs) | 0.2246 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0687 |
| 24-Hr Clear Runoff Volume (cu-ft) | 2993.9589 |



## Peak Flow Hydrologic Analysis

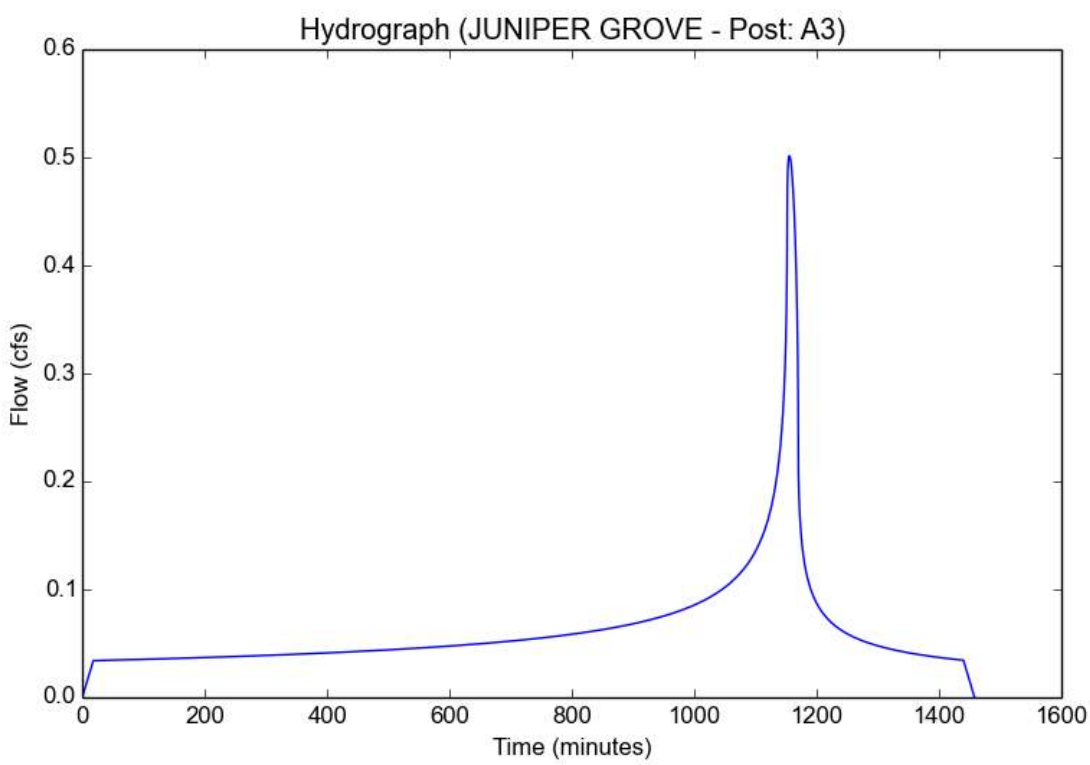
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A3 |
| Area (ac) | 0.88 |
| Flow Path Length (ft) | 650.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.7 |
| Soil Type | 134 |
| Design Storm Frequency | 10-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (10-yr) Rainfall Depth (in) | 2.6418 |
| Peak Intensity (in/hr) | 0.8633 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.66 |
| Time of Concentration (min) | 18.0 |
| Clear Peak Flow Rate (cfs) | 0.5014 |
| Burned Peak Flow Rate (cfs) | 0.5014 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1268 |
| 24-Hr Clear Runoff Volume (cu-ft) | 5523.7094 |



POST-DEVELOPMENT: SUBAREA A3 (25 YEAR)

## Peak Flow Hydrologic Analysis

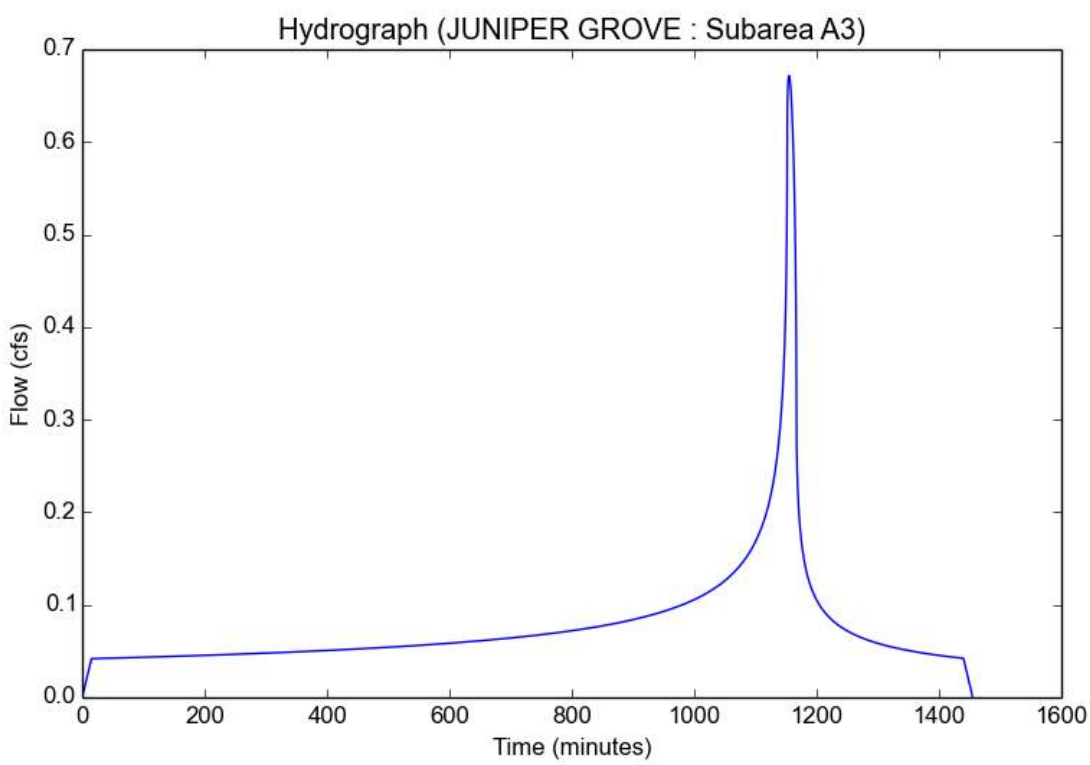
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/JUNIPER GROV
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE |
| Subarea ID | Subarea A3 |
| Area (ac) | 0.88 |
| Flow Path Length (ft) | 650.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.7 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 1.1565 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.66 |
| Time of Concentration (min) | 15.0 |
| Clear Peak Flow Rate (cfs) | 0.6717 |
| Burned Peak Flow Rate (cfs) | 0.6717 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1559 |
| 24-Hr Clear Runoff Volume (cu-ft) | 6792.4521 |



POST-DEVELOPMENT: SUBAREA A3 (50 YEAR)

## Peak Flow Hydrologic Analysis

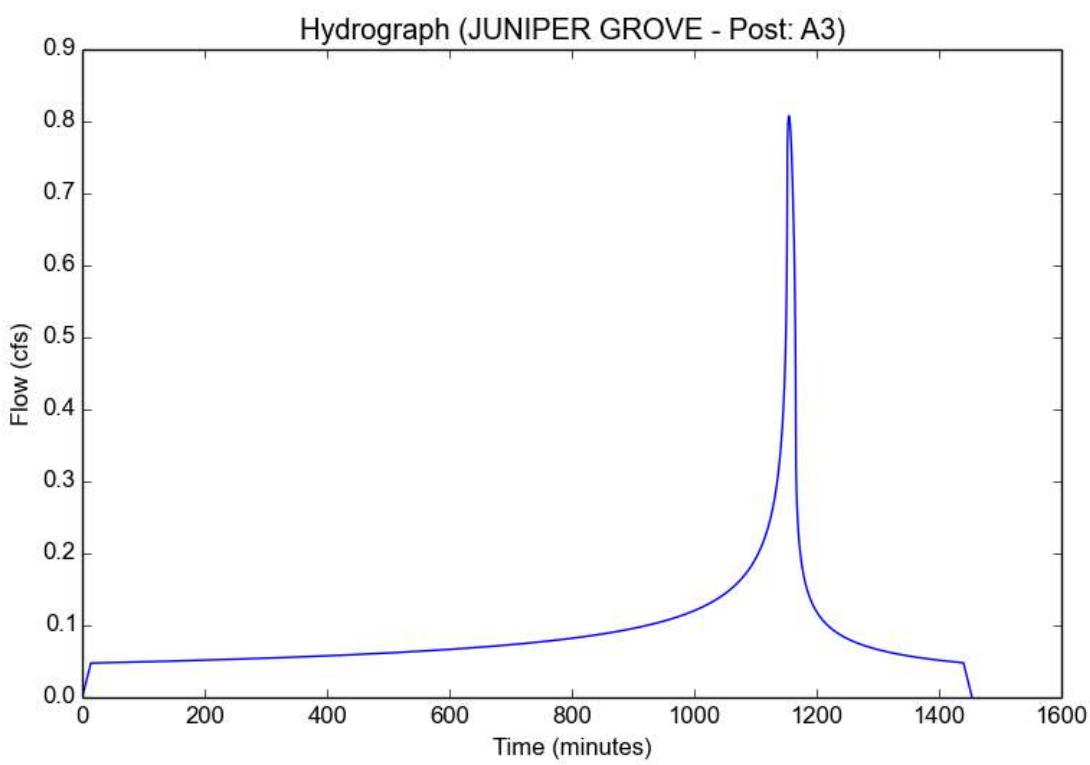
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A3 |
| Area (ac) | 0.88 |
| Flow Path Length (ft) | 650.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.7 |
| Soil Type | 134 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 3.7 |
| Peak Intensity (in/hr) | 1.3606 |
| Undeveloped Runoff Coefficient (Cu) | 0.1481 |
| Developed Runoff Coefficient (Cd) | 0.6744 |
| Time of Concentration (min) | 14.0 |
| Clear Peak Flow Rate (cfs) | 0.8075 |
| Burned Peak Flow Rate (cfs) | 0.8075 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1778 |
| 24-Hr Clear Runoff Volume (cu-ft) | 7743.0124 |



POST-DEVELOPMENT: SUBAREA A4 (2 YEAR)

## Peak Flow Hydrologic Analysis

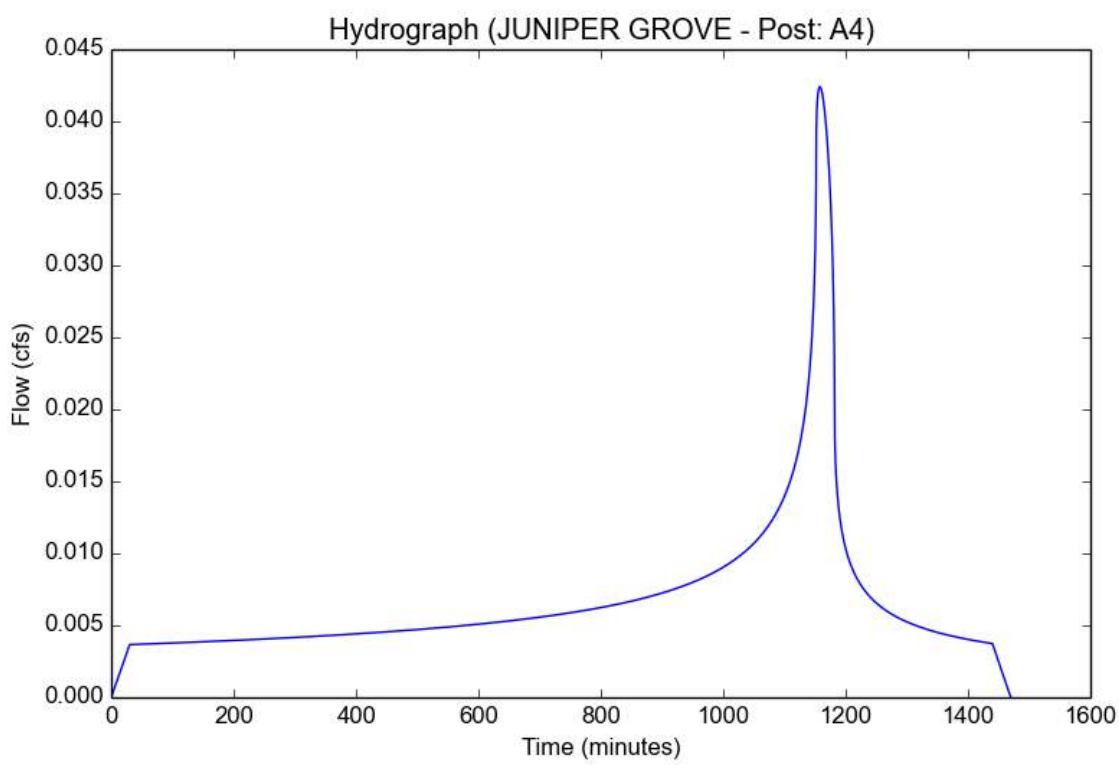
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A4 |
| Area (ac) | 0.64 |
| Flow Path Length (ft) | 880.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.1 |
| Soil Type | 134 |
| Design Storm Frequency | 2-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (2-yr) Rainfall Depth (in) | 1.4319 |
| Peak Intensity (in/hr) | 0.368 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.18 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.0424 |
| Burned Peak Flow Rate (cfs) | 0.0424 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0136 |
| 24-Hr Clear Runoff Volume (cu-ft) | 593.8444 |



POST-DEVELOPMENT: SUBAREA A4 (10 YEAR)

## Peak Flow Hydrologic Analysis

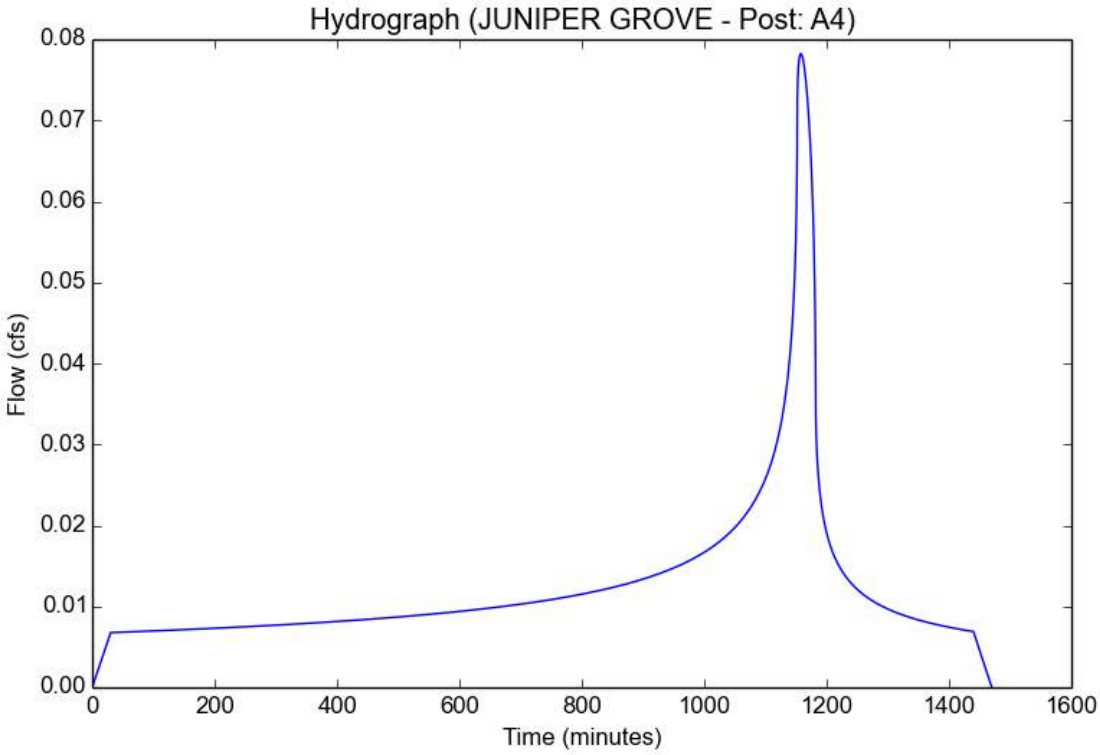
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A4 |
| Area (ac) | 0.64 |
| Flow Path Length (ft) | 880.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.1 |
| Soil Type | 134 |
| Design Storm Frequency | 10-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (10-yr) Rainfall Depth (in) | 2.6418 |
| Peak Intensity (in/hr) | 0.679 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.18 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.0782 |
| Burned Peak Flow Rate (cfs) | 0.0782 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0252 |
| 24-Hr Clear Runoff Volume (cu-ft) | 1095.6199 |



POST-DEVELOPMENT: SUBAREA A4 (25 YEAR)

## Peak Flow Hydrologic Analysis

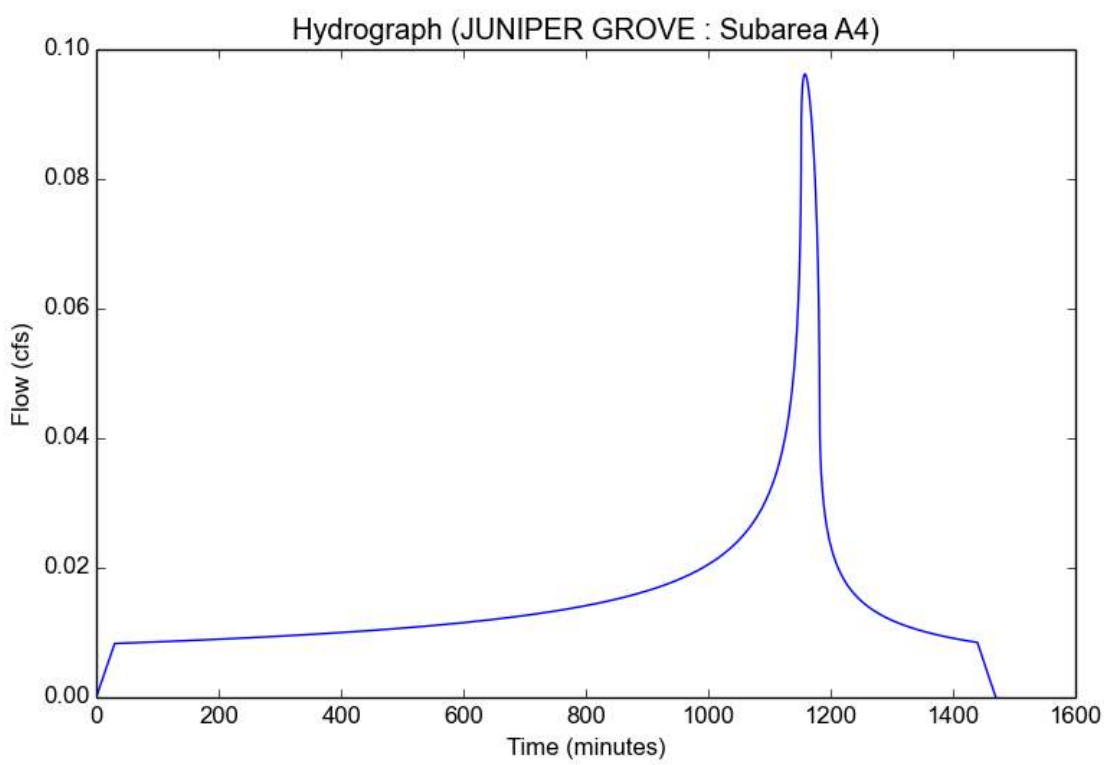
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/JUNIPER GROV
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE |
| Subarea ID | Subarea A4 |
| Area (ac) | 0.64 |
| Flow Path Length (ft) | 880.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.1 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 0.835 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.18 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.0962 |
| Burned Peak Flow Rate (cfs) | 0.0962 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0309 |
| 24-Hr Clear Runoff Volume (cu-ft) | 1347.2749 |



## Peak Flow Hydrologic Analysis

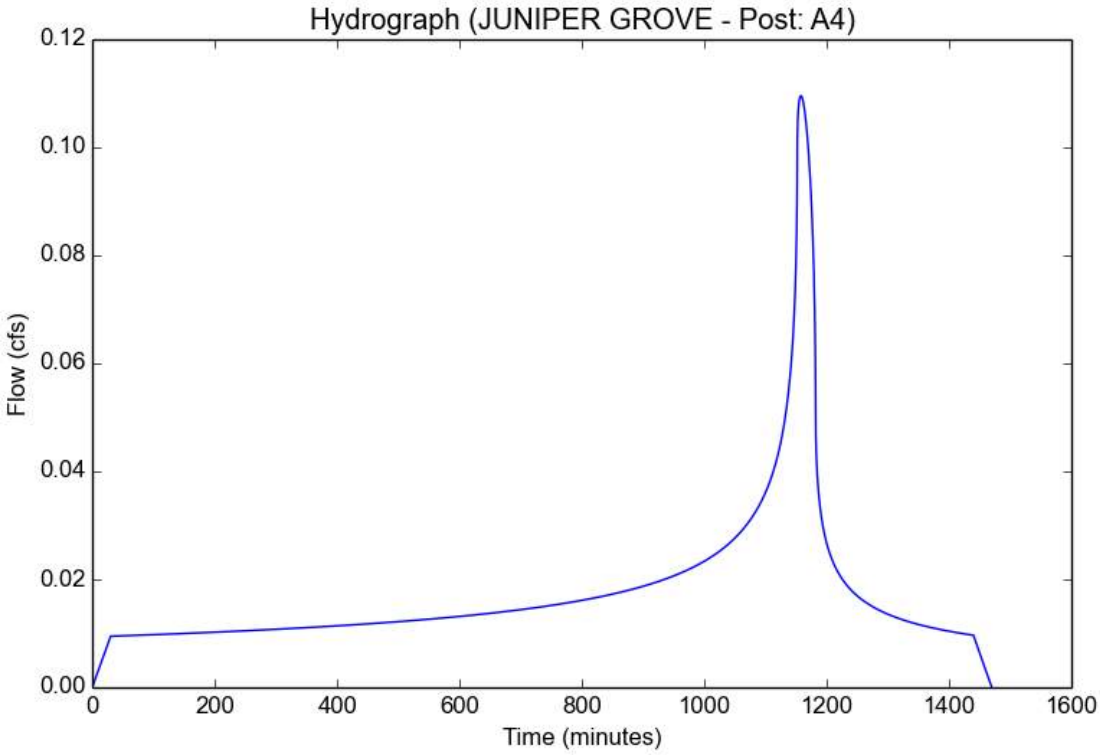
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A4 |
| Area (ac) | 0.64 |
| Flow Path Length (ft) | 880.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.1 |
| Soil Type | 134 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 3.7 |
| Peak Intensity (in/hr) | 0.951 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.18 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.1096 |
| Burned Peak Flow Rate (cfs) | 0.1096 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0352 |
| 24-Hr Clear Runoff Volume (cu-ft) | 1534.4816 |



## Peak Flow Hydrologic Analysis

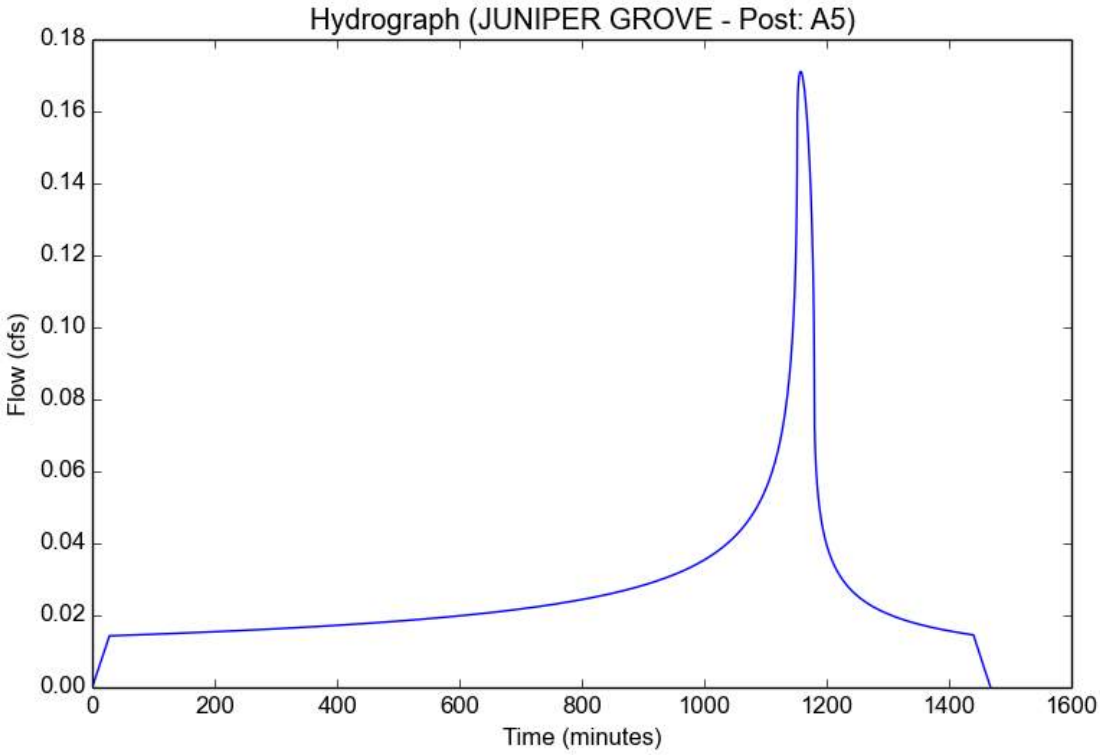
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A5 |
| Area (ac) | 0.5 |
| Flow Path Length (ft) | 950.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 1.0 |
| Soil Type | 134 |
| Design Storm Frequency | 2-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (2-yr) Rainfall Depth (in) | 1.4319 |
| Peak Intensity (in/hr) | 0.3802 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 28.0 |
| Clear Peak Flow Rate (cfs) | 0.1711 |
| Burned Peak Flow Rate (cfs) | 0.1711 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0533 |
| 24-Hr Clear Runoff Volume (cu-ft) | 2319.7012 |



## Peak Flow Hydrologic Analysis

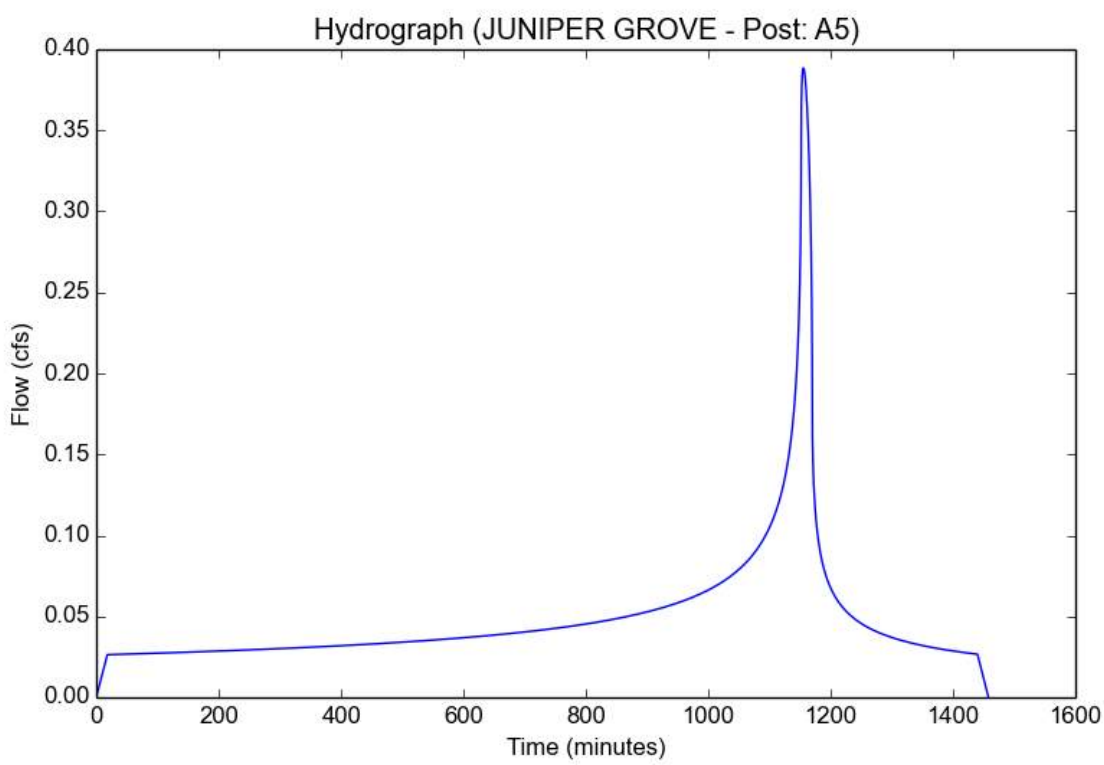
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/POST CONDITIO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - Post |
| Subarea ID | A5 |
| Area (ac) | 0.5 |
| Flow Path Length (ft) | 950.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 1.0 |
| Soil Type | 134 |
| Design Storm Frequency | 10-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (10-yr) Rainfall Depth (in) | 2.6418 |
| Peak Intensity (in/hr) | 0.8633 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 18.0 |
| Clear Peak Flow Rate (cfs) | 0.3885 |
| Burned Peak Flow Rate (cfs) | 0.3885 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.0982 |
| 24-Hr Clear Runoff Volume (cu-ft) | 4279.7336 |



POST-DEVELOPMENT: SUBAREA A5 (25 YEAR)

## Peak Flow Hydrologic Analysis

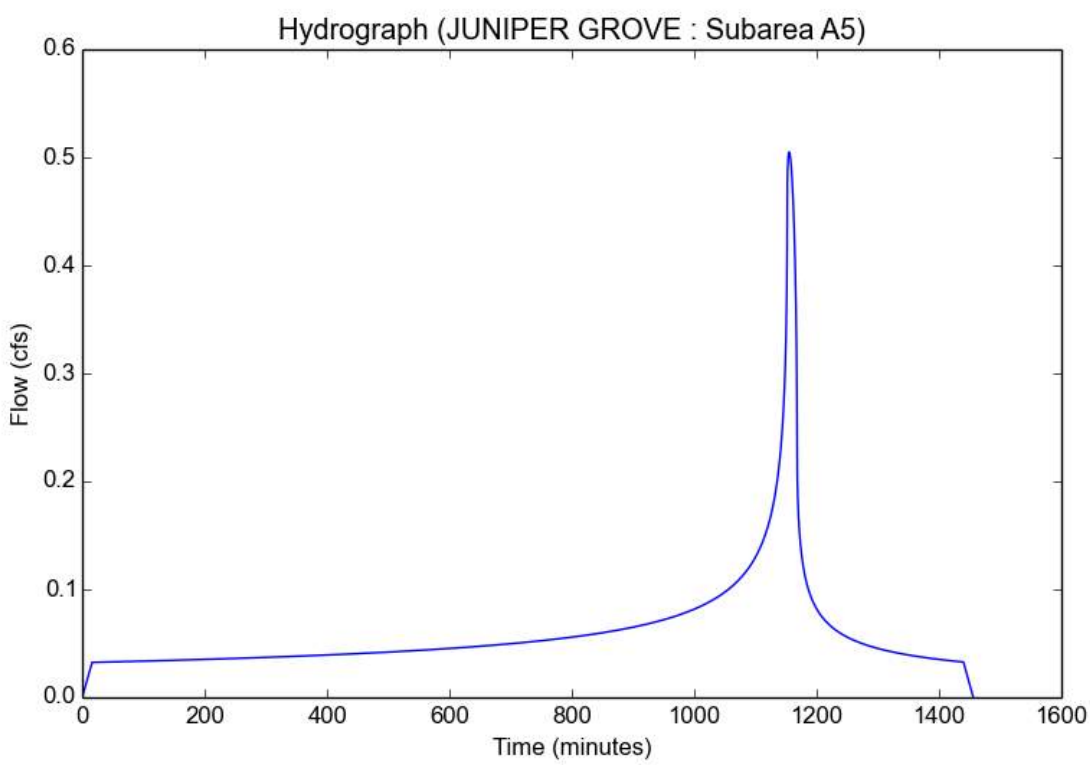
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/JUNIPER GROV
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE |
| Subarea ID | Subarea A5 |
| Area (ac) | 0.5 |
| Flow Path Length (ft) | 950.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 1.0 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 1.122 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 16.0 |
| Clear Peak Flow Rate (cfs) | 0.5049 |
| Burned Peak Flow Rate (cfs) | 0.5049 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1208 |
| 24-Hr Clear Runoff Volume (cu-ft) | 5262.749 |



## Peak Flow Hydrologic Analysis

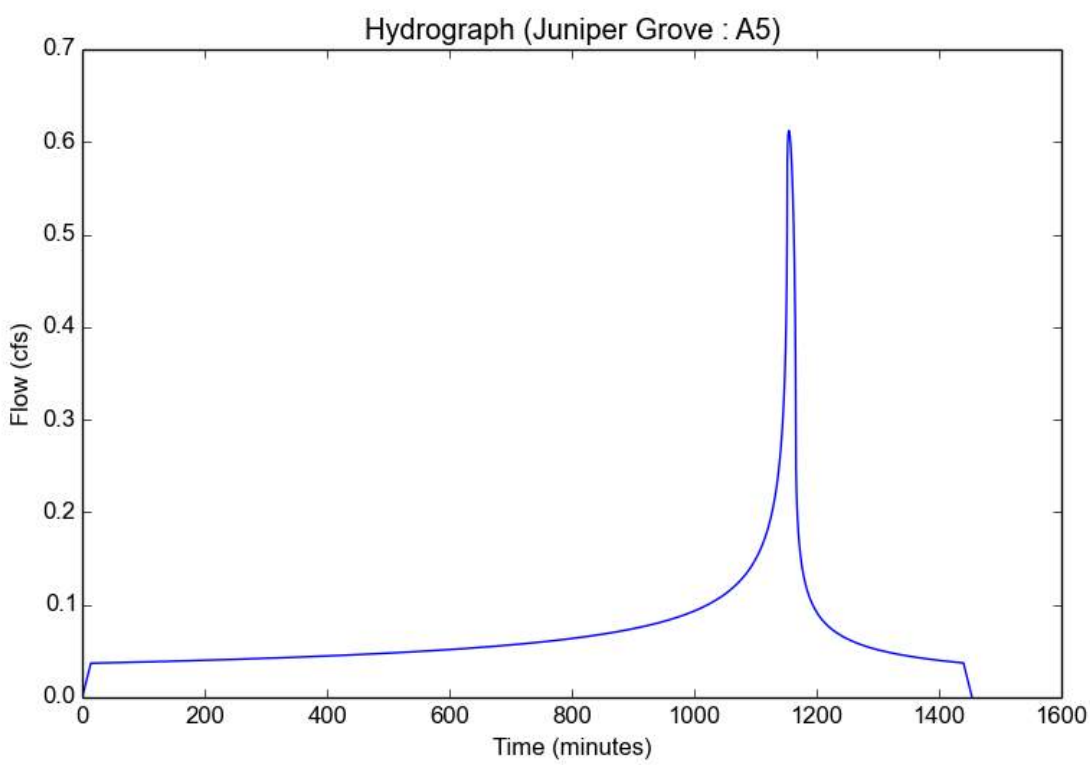
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/APPENDIX A/PO
Version: HydroCalc 1.0.3

### Input Parameters

| | |
|---|---|
| Project Name | Juniper Grove |
| Subarea ID | A5 |
| Area (ac) | 0.5 |
| Flow Path Length (ft) | 950.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 1.0 |
| Soil Type | 134 |
| Design Storm Frequency | 50-yr |
| Fire Factor | 0 |
| LID | False |

### Output Results

| | |
|---|---|
| Modeled (50-yr) Rainfall Depth (in) | 3.7 |
| Peak Intensity (in/hr) | 1.3606 |
| Undeveloped Runoff Coefficient (Cu) | 0.1481 |
| Developed Runoff Coefficient (Cd) | 0.9 |
| Time of Concentration (min) | 14.0 |
| Clear Peak Flow Rate (cfs) | 0.6123 |
| Burned Peak Flow Rate (cfs) | 0.6123 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1376 |
| 24-Hr Clear Runoff Volume (cu-ft) | 5994.0148 |



# *APPENDIX B*

## *Hydraulic Calculations per City of Palmdale Drainage Management Plan*

# Peak Flow Hydrologic Analysis

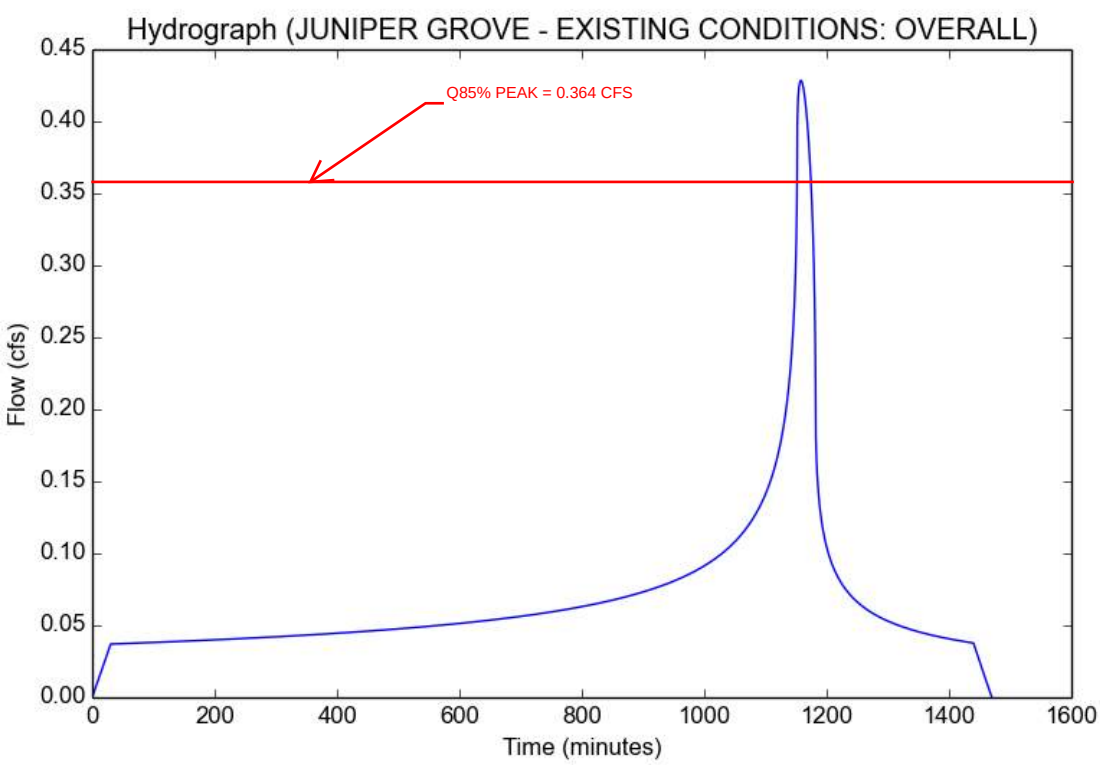
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/JUNIPER GROVE - EXISTING
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE - EXISTING CONDITIONS |
| Subarea ID | OVERALL |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.01 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 0.835 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.108 |
| Time of Concentration (min) | 30.0 |
| Clear Peak Flow Rate (cfs) | 0.4283 |
| Burned Peak Flow Rate (cfs) | 0.4283 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.1377 |
| 24-Hr Clear Runoff Volume (cu-ft) | 5999.5834 |



# Peak Flow Hydrologic Analysis

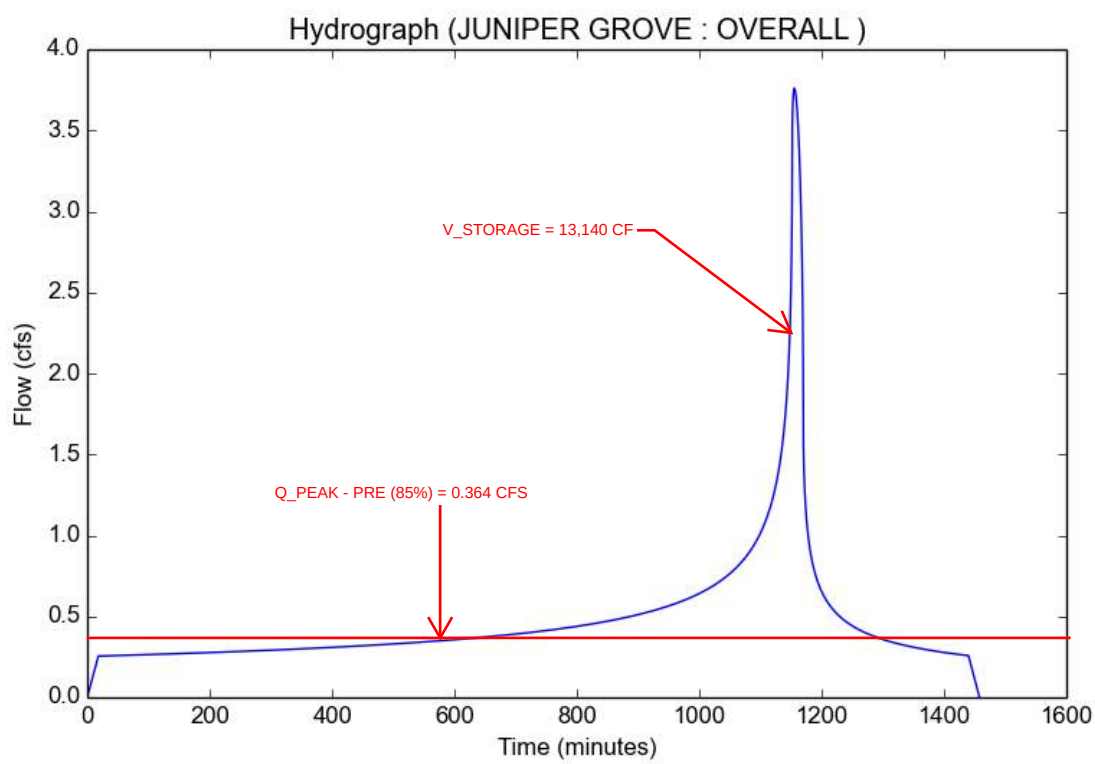
File location: C:/Users/Matt Jimenez/DK Engineer Corp/Dan Krief - PROJECTS/Juniper Grove Meta/ENG/HYDROLOGY/HYDROCALC/APPENDIX A/PC
Version: HydroCalc 1.0.3

## Input Parameters

| | |
|---|---|
| Project Name | JUNIPER GROVE |
| Subarea ID | OVERALL |
| Area (ac) | 4.75 |
| Flow Path Length (ft) | 1000.0 |
| Flow Path Slope (vft/hft) | 0.01 |
| 50-yr Rainfall Depth (in) | 3.7 |
| Percent Impervious | 0.807 |
| Soil Type | 134 |
| Design Storm Frequency | 25-yr |
| Fire Factor | 0 |
| LID | False |

## Output Results

| | |
|---|---|
| Modeled (25-yr) Rainfall Depth (in) | 3.2486 |
| Peak Intensity (in/hr) | 1.0615 |
| Undeveloped Runoff Coefficient (Cu) | 0.1 |
| Developed Runoff Coefficient (Cd) | 0.7456 |
| Time of Concentration (min) | 18.0 |
| Clear Peak Flow Rate (cfs) | 3.7596 |
| Burned Peak Flow Rate (cfs) | 3.7596 |
| 24-Hr Clear Runoff Volume (ac-ft) | 0.9509 |
| 24-Hr Clear Runoff Volume (cu-ft) | 41419.0402 |



# *APPENDIX C*

## *Detention Basin and Storm drain connection Calculations*

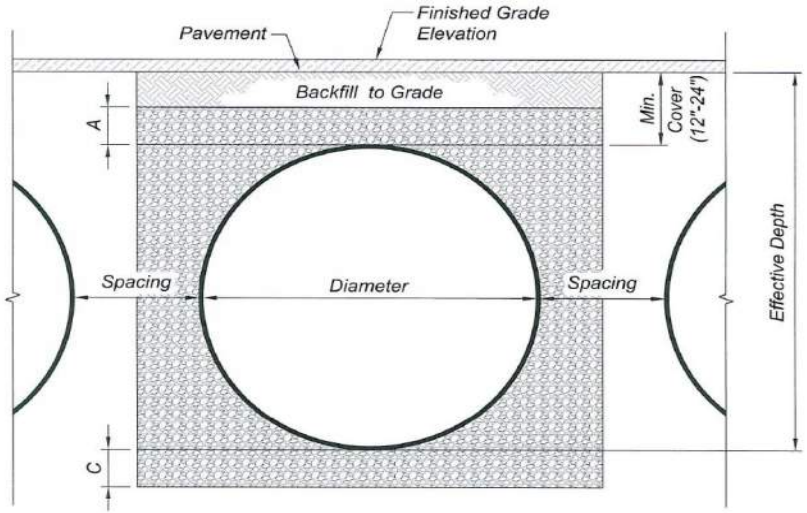
# DETENTION BASIN PRELIMINARY SIZING CALCULATIONS

DYODS™
Design Your Own Detention System

CONTECH
CMP DETENTION SYSTEMS

CONTECH STORMWATER SOLUTIONS INC.

For design assistance, drawings,
and pricing send completed worksheet to:
**dyods@contech-cpi.com**




## Project Summary

| | | |
|---|---|---|
| Date: | 3/1/2019 | |
| Project Name: | Juniper Grove | |
| City / County: | Los Angeles | |
| State: | CA | |
| Designed By: | | |
| Company: | | **Enter Information in Blue Cells** |
| Telephone: | | |

## Corrugated Metal Pipe Calculator

| | | |
|---|---|---|
| Storage Volume Required (cf): | 13,140 | |
| Limiting Width (ft): | 30.00 | |
| Invert Depth Below Asphalt (ft): | 8.00 | |
| Solid or Perforated Pipe: | Solid | |
| Shape Or Diameter (in): | 72 | 28.27 $ft^2$ Pipe Area |
| Number Of Headers: | 0 | |
| Spacing between Barrels (ft): | 3.00 | |
| Stone Width Around Perimeter of System (ft): | 1 | |
| Depth A: Porous Stone Above Pipe (in): | 12 | |
| Depth C: Porous Stone Below Pipe (in): | 12 | |
| Stone Porosity (0 to 40%): | 40 | |

## System Sizing

| | | | |
|---|---|---|---|
| Pipe Storage: | 13,148 | cf | |
| Porous Stone Storage: | 0 | cf | |
| Total Storage Provided: | 13,148 | cf | 100.1% Of Required Storage |
| Number of Barrels: | 3 | barrels | |
| Length per Barrel: | 155.0 | ft | |
| Length Per Header: | 0.0 | ft | |
| Rectangular Footprint (W x L): | 26. ft x 157. ft | | |

## CONTECH Materials

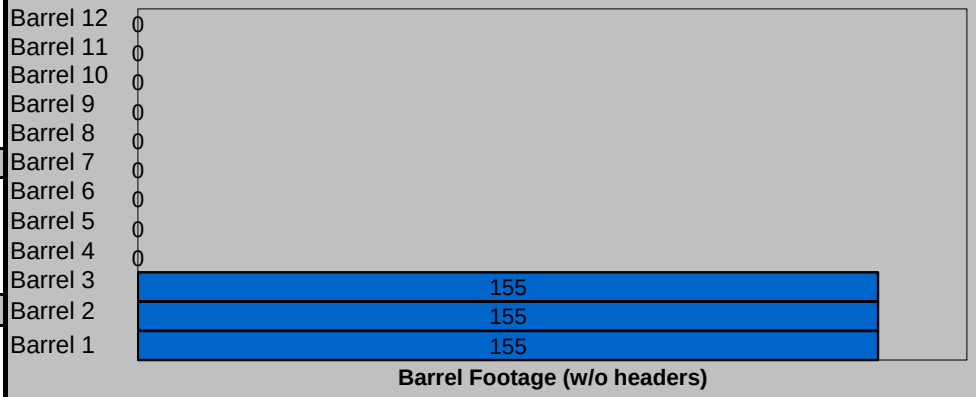
| | | |
|---|---|---|
| Total CMP Footage: | 465 | ft |
| Approximate Total Pieces: | 21 | pcs |
| Approximate Coupling Bands: | 18 | bands |
| Approximate Truckloads: | 11 | trucks |

## Construction Quantities**

| | | |
|---|---|---|
| Total Excavation: | 1210 | cy |
| Porous Stone Backfill For Storage: | 0 | cy stone |
| Backfill to Grade Excluding Stone: | 723 | cy fill |

***Construction quantities are approximate and should be verified upon final design*

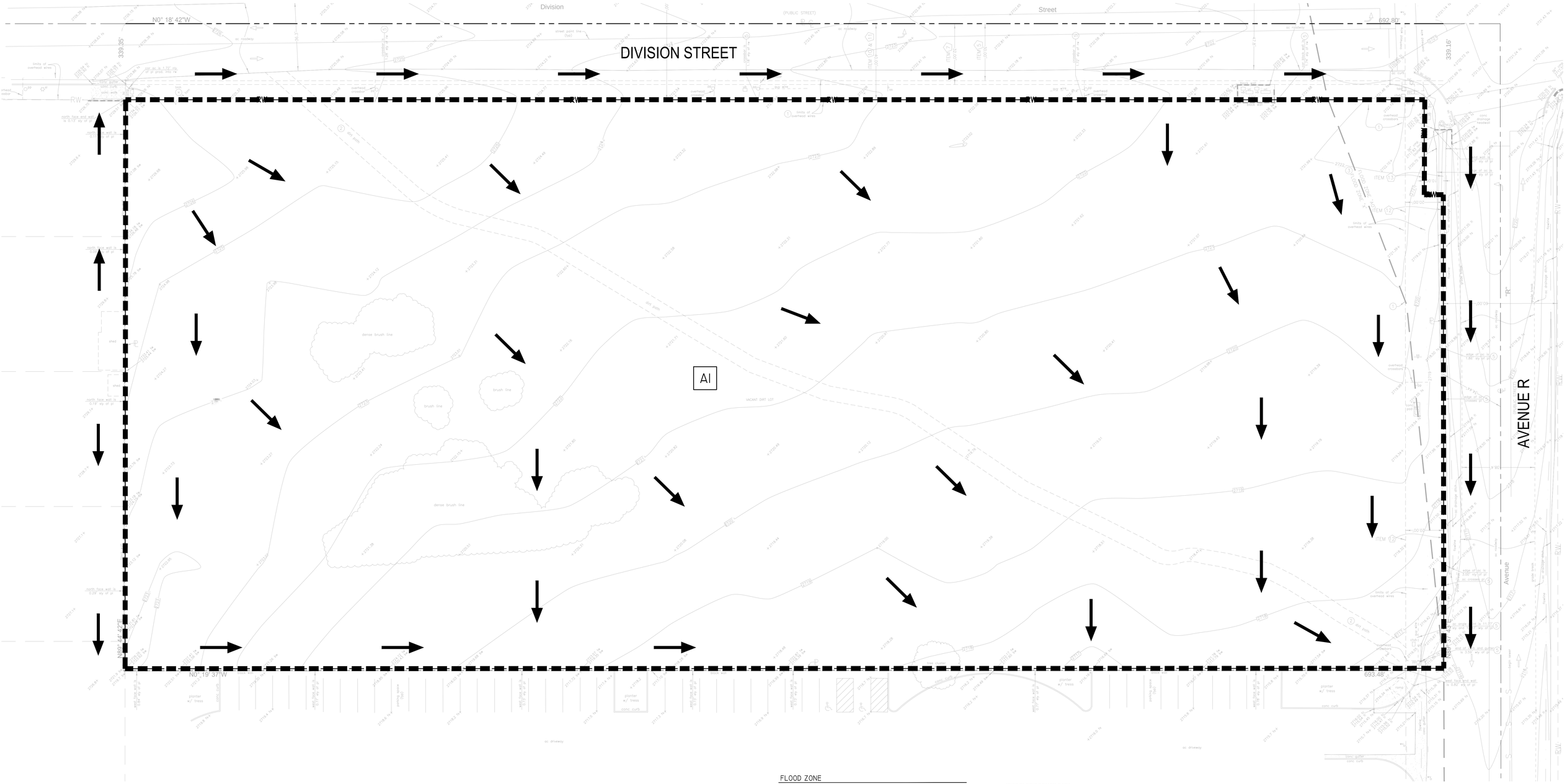
## System Layout




© 2007 CONTECH Stormwater Solutions

# *APPENDIX D*

## *Exhibits*




## FLOOD ZONE

1. PROPERTY NOT LOCATED WITHIN A LA COUNTY FLOOD ZONE.
2. A PORTION OF THE PROPERTY IS LOCATED WITHIN A FEMA FLOOD ZONE PER MAP NO. 06037C0659F.

## OFFSITE FLOW NOTES

OFFSITE FLOWS ARE ANTICIPATED TO DRAIN TOWARDS THE PROPOSED PROPERTY ALONG AVENUE R AS INDICATED IN THE ABOVE MENTIONED FEMA MAP. BOTH AVENUE R AND DIVISION ST WILL HAVE FULL HEIGHT CURB AND GUTTERS.

## MAINTENANCE OF STORM DRAINS

ALL PROPOSED STORM DRAIN LINES AND STORAGE TANKS SHALL BE MAINTAINED BY THE PROPERTY OWNERS.

**HYDROLOGIC DESIGN DATA**

| | |
|---|---|
| STORM FREQUENCY | 2 YR, 10 YR, 25 YR, 50 YR |
| 50 YR RAINFALL DEPTH | 3.7 IN |
| MODELED RAINFALL DEPTH | SEE TABLE BELOW |
| SOIL TYPE | 134 |
| IMPERVIOUSNESS | SEE TABLE BELOW |

**HYDROLOGY SUMMARY - 2 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 4.75 | 0.01 | 1000 | 1 | 30 | 0.1 | 0.368 | 0.188 | 2,644.46 | VACANT UNDEVELOPED LOT |

**HYDROLOGY SUMMARY - 10 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 4.75 | 0.01 | 1000 | 1 | 30 | 0.1 | 0.679 | 0.348 | 4,878.93 | VACANT UNDEVELOPED LOT |

**HYDROLOGY SUMMARY - 25 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 4.75 | 0.01 | 1000 | 1 | 30 | 0.1 | 0.835 | 0.4283 | 5,999.58 | VACANT UNDEVELOPED LOT |

**HYDROLOGY SUMMARY - 50 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 4.75 | 0.01 | 1000 | 1 | 30 | 0.1 | 0.951 | 0.487 | 6,833.23 | VACANT UNDEVELOPED LOT |

N

0 10' 20'
SCALE: 1"=20'

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Y&M Architects

Y&M Architects
724 S. Spring Street #304
Los Angeles, CA 90014
Tel. 213 623 2107 Fax. 213 623 2108
www.ymarch.com

# JUNIPER GROVE - PALMDALE

**Project. AVENUE R AND DIVISION STREET**

DKE
DK ENGINEER, CORP
6420 WILSHIRE BLVD. #1000
LOS ANGELES, CA 90048
310.926.0248

REGISTERED PROFESSIONAL ENGINEER
DAN DOV KO
No. 72694
CIVIL
STATE OF CALIFORNIA

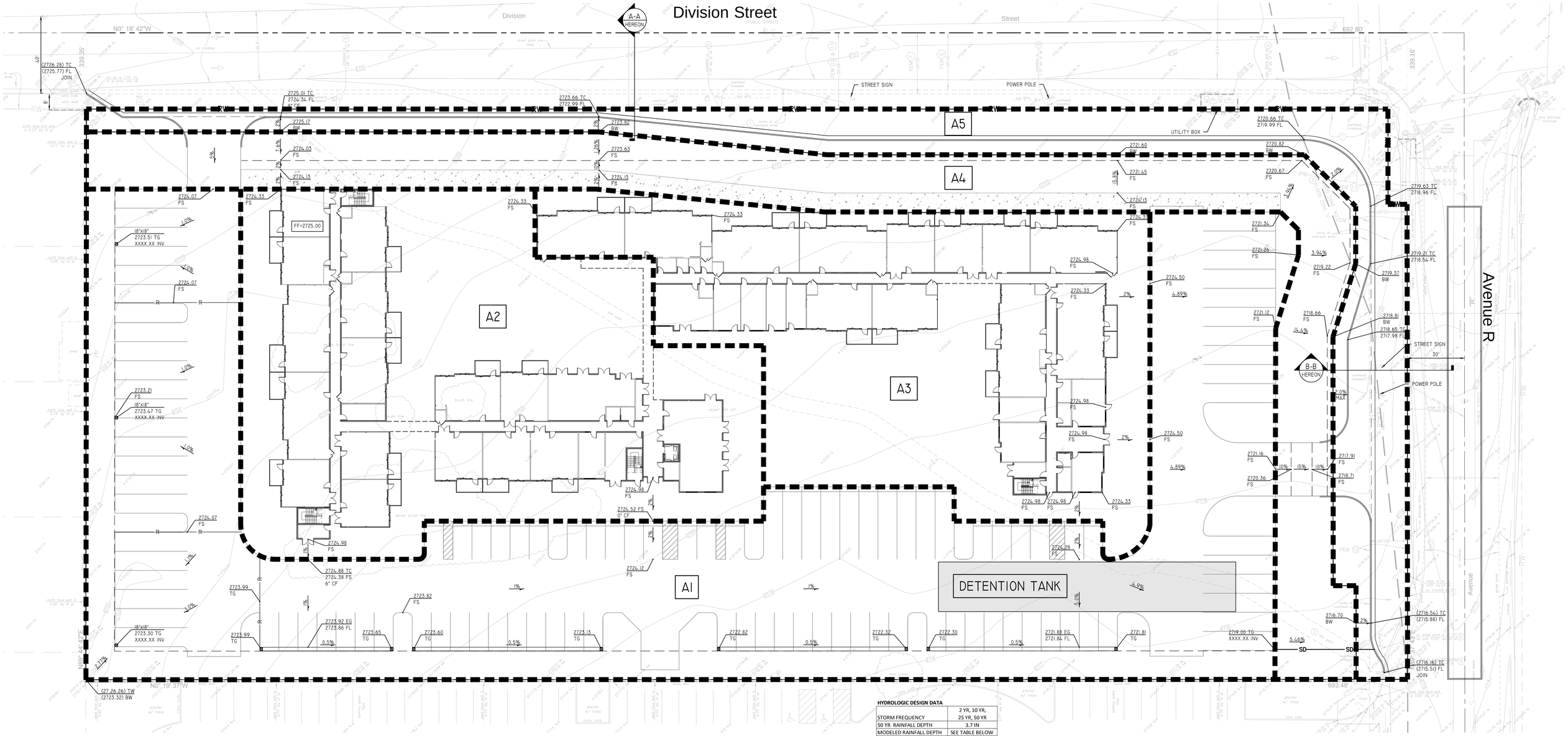
# Meta Housing Corporation

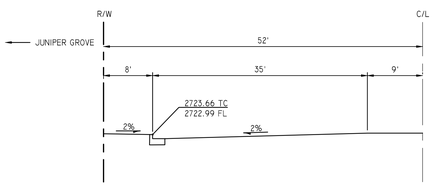
**Developer. 11150 W. Olympic Blvd. Suite #620, Los Angeles, CA 90064**

# EXISTING HYDROLOGY MAP

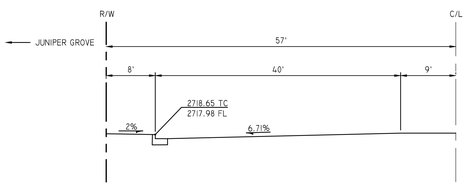
**Date** 11.09.18

**Page** C1.11




A-A HEREON SECTION DETAIL A-A
SCALE: 1"=10'




B-B HEREON SECTION DETAIL B-B
SCALE: 1"=10'

**HYDROLOGIC DESIGN DATA**

| | |
|---|---|
| STORM FREQUENCY | 2 YR, 10 YR, 25 YR, 50 YR |
| 50 YR RAINFALL DEPTH | 3.7 IN |
| MODELED RAINFALL DEPTH | SEE TABLE BELOW |
| SOIL TYPE | 134 |
| IMPERVIOUSNESS | SEE TABLE BELOW |

**HYDROLOGY SUMMARY - 2 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 1.75 | 84 | 800 | 1 | 27 | 0.77 | 0.39 | 0.52 | 6,964 | PARKING LOT |
| A2 | 0.98 | 74 | 750 | 1 | 28 | 0.69 | 0.38 | 0.26 | 3,496 | SOUTHERN BUILDING AND WALKWAYS |
| A3 | 0.88 | 70 | 650 | 1 | 27 | 0.66 | 0.39 | 0.22 | 2,994 | NORTHERN BUILDINGS AND WALKWAYS |
| A4 | 0.64 | 10 | 880 | 1 | 30 | 0.18 | 0.36 | 0.04 | 594 | BUILDING FRONTAGE |
| A5 | 0.5 | 100 | 950 | 1 | 16 | 0.90 | 1.12 | 0.50 | 5,263 | STREET DEDICATION AREA |
| TOTAL | 4.25 | 80 | - | - | | | | 1.05 | 14,048 | SUM OF ALL SUB AREAS EXCEPT A5 |

**HYDROLOGY SUMMARY - 10 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 1.75 | 84 | 800 | 1 | 18 | 0.77 | 0.86 | 1.16 | 12,849 | PARKING LOT |
| A2 | 0.98 | 74 | 750 | 1 | 19 | 0.69 | 0.84 | 0.57 | 6,450 | SOUTHERN BUILDING AND WALKWAYS |
| A3 | 0.88 | 70 | 650 | 1 | 18 | 0.66 | 0.86 | 0.50 | 5,524 | NORTHERN BUILDINGS AND WALKWAYS |
| A4 | 0.64 | 10 | 880 | 1 | 30 | 0.18 | 0.68 | 0.08 | 1,096 | BUILDING FRONTAGE |
| A5 | 0.5 | 100 | 950 | 1 | 18 | 0.90 | 0.86 | 0.39 | 4,280 | STREET DEDICATION AREA |
| TOTAL | 4.25 | 80 | - | - | | | | 2.31 | 25,918 | SUM OF ALL SUB AREAS EXCEPT A5 |

**HYDROLOGY SUMMARY - 25 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 1.75 | 84 | 800 | 1 | 16 | 0.90 | 1.12 | 1.51 | 15,800 | PARKING LOT |
| A2 | 0.98 | 74 | 750 | 1 | 16 | 0.69 | 1.12 | 0.76 | 7,931 | SOUTHERN BUILDING AND WALKWAYS |
| A3 | 0.88 | 70 | 650 | 1 | 15 | 0.66 | 1.15 | 0.67 | 6,792 | NORTHERN BUILDINGS AND WALKWAYS |
| A4 | 0.64 | 10 | 880 | 1 | 30 | 0.18 | 0.83 | 0.10 | 1,347 | BUILDING FRONTAGE |
| A5 | 0.5 | 100 | 950 | 1 | 16 | 0.90 | 1.12 | 0.50 | 5,263 | STREET DEDICATION AREA |
| TOTAL | 4.25 | 80 | - | - | | | | 3.04 | 31,871 | SUM OF ALL SUB AREAS EXCEPT A5 |

**HYDROLOGY SUMMARY - 50 YR**

| DRAINAGE AREA | AREA (AC) | IMP(%) | LENGTH (FT) | SLOPE (%) | $T_C$ | C | I (IN/HR) | Q (CFS) | VOLUME (CF) | DESCRIPTION |
|---|---|---|---|---|---|---|---|---|---|---|
| A1 | 1.75 | 84 | 800 | 1 | 14 | 0.78 | 1.36 | 1.86 | 18,003 | PARKING LOT |
| A2 | 0.98 | 74 | 750 | 1 | 15 | 0.69 | 1.31 | 0.90 | 9,038 | SOUTHERN BUILDING AND WALKWAYS |
| A3 | 0.88 | 70 | 650 | 1 | 14 | 0.67 | 1.36 | 0.81 | 7,743 | NORTHERN BUILDINGS AND WALKWAYS |
| A4 | 0.64 | 10 | 880 | 1 | 30 | 0.18 | 0.95 | 0.11 | 1,534 | BUILDING FRONTAGE |
| A5 | 0.5 | 100 | 950 | 1 | 14 | 0.90 | 1.36 | 0.61 | 5,994 | STREET DEDICATION AREA |
| TOTAL | 4.25 | 80 | - | - | | | | 3.67 | 36,318 | SUM OF ALL SUB AREAS EXCEPT A5 |

## FLOOD ZONE

1. PROPERTY NOT LOCATED WITHIN A LA COUNTY FLOOD ZONE.
2. A PORTION OF THE PROPERTY IS LOCATED WITHIN A FEMA FLOOD ZONE PER MAP NO. 06037C0659F.

## OFFSITE FLOW NOTES

OFFSITE FLOWS ARE ANTICIPATED TO DRAIN TOWARDS THE PROPOSED PROPERTY ALONG AVENUE R AS INDICATED IN THE ABOVE MENTIONED FEMA MAP. BOTH AVENUE R AND DIVISION ST WILL HAVE FULL HEIGHT CURB AND GUTTERS.

## MAINTENANCE OF STORM DRAINS

ALL PROPOSED STORM DRAIN LINES AND STORAGE TANKS SHALL BE MAINTAINED BY THE PROPERTY OWNERS.

N

0 10' 20'
SCALE: 1"=20'

The above drawings, specifications, ideas, designs and arrangements represented thereby are and shall remain property of the Architect (YM Architects), and no part thereof shall be copied, disclosed to others or used in connection with any other project other than the specific project for which they have been prepared and developed, without the written consent of the Architect (YM Architects). Visual contact with these drawings or specifications shall constitute conclusive evidence of acceptance of these restrictions. Written dimensions on these drawings shall have pre-over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and this office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

Y&M Architects
724 S. Spring Street #304
Los Angeles, CA 90014
Tel. 213 623 2107 Fax. 213 623 2108
www.ymarch.com

# JUNIPER GROVE - PALMDALE

Project. AVENUE R AND DIVISION STREET

DKE
DK ENGINEER, CORP
6420 WILSHIRE BLVD. #1000
LOS ANGELES, CA 90048
310.926.0248

REGISTERED PROFESSIONAL ENGINEER DAN DOV KO No. 27694 CIVIL STATE OF CALIFORNIA

Meta Housing Corporation

Developer. 11150 W. Olympic Blvd. Suite #620, Los Angeles, CA 90064

# PROPOSED HYDROLOGY MAP

11.09.18 C1.12

Date Page

## GENERAL NOTES:

1. WORK ON PLANS SHALL BE COMPLETED PER LOCAL BUILDING CODE AND DETAILS AND LATEST "GREENBOOK" STANDARDS
2. GRADING SHALL BE PER LA CITY SOILS APPROVAL LETTER AND PROJECT GEOTECHNICAL REPORT BY BRUIN GEOTECHNICAL SERVICES, INC. DATED DECEMBER 10, 2018.
3. PROJECT TOPOGRAPHY IS PER SURVEY BY HAHN AND ASSOCIATES, INC DATED OCTOBER 30, 2018.
4. PRIOR TO ANY CONTRACTOR CHANGES TO APPROVED CIVIL PLANS, CONTRACTOR SHALL OBTAIN APPROVAL IN WRITING FROM PROJECT ENGINEER OF RECORD.
5. EXISTING UTILITY INFORMATION OBTAINED FROM PROJECT SURVEY AND/OR PUBLIC UTILITY RECORDS. CONTRACTOR SHALL FIELD VERYIFY UTILITY LOCATIONS, SIZES, AND INVERTS.
6. CONTRACTOR SHALL NOTIFY PROJECT GEOTECHNICAL ENGINEER IF UNFAVORABLE GETECHNICAL CONDITIONS ARE DISCOVERED.
7. GRADES SHOWN ON THE FINE GRADING PLAN REPRESENT THE FINAL CONDITIONS. CONTRACTOR TO SUBSTRACT PAVEMENT AND BASE THICKNESS TO OBTAIN ROUGH GRADE ELEVATIONS.
8. WATER LINES SHALL BE INSTALLED A MIN 36" BELOW FINISH GRADE PER LOCAL CODES.

## PROJECT INFORMATION:

LEGAL DESCRIPTION:
APN: 3010-030-023
SUB OF N 1/2 OF SEC 35 T 6N R 12W THAT PART (EX OF STS) N
OF S 60 ACS OF W 1/2 OF W 1/2 OF LOT 2

OWNER:
META HOUSING CORPORATION
11150 WEST OLYMPIC BLVD, SUITE 620
LOS ANGELES, CA 90064

CIVIL ENGINEER:
DK ENGINEER CORP.
6420 WILSHIRE BLVD. #1000
LOS ANGELES, CA 90048
310.926.0248

GEOTECHNICAL ENGINEER:
BRUIN GEOTECHNICAL SERVICES, INC.
44732 YUCCA AVENUE
LANCASTER, CA 93534
661.273.9078

## CIVIL SHEET INDEX:


| | |
|---|---|
| C0.01 | TITLE SHEET |
| C1.00 | SURVEY (FOR REFERENCE ONLY) |
| C1.01 | SURVEY (FOR REFERENCE ONLY) |
| C1.10 | DEMOLITION AND EROSION CONTROL PLAN |
| C1.11 | EXISTING HYDROLOGY MAP |
| C1.12 | PROPOSED HYDROLOGY MAP |
| C1.20 | ROUGH GRADING PLAN |
| C1.30 | GRADING AND PAVING PLAN |
| C1.40 | UTILITY AND LID PLAN |
| C2.00 | DETAIL SHEET |


## CITY OF LA GRADING NOTES:

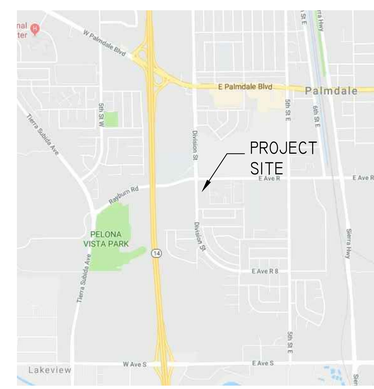
1. ALL GRADING SLOPES SHALL BE PLANTED AND SPRINKLERED. (7012.1)
2. STANDARD 12" HIGH BERM IS REQUIRED AT TOP OF ALL GRADED SLOPES. (7013.3)
3. NO FILL TO BE PLACED, UNTIL THE CITY GRADING INSPECTOR HAS INSPECTED AND APPROVED THE BOTTOM EXCAVATION.
4. MAN-MADE FILL SHALL BE COMPACTED TO A MINIMUM RELATIVE COMPACTION OF 90% MAX. DRY DENSITY WITHIN 40 FEET BELOW FINISH GRADE AND 93% OF MAX. DRY DENSITY DEEPER THAN 40 FEET BELOW FINISH GRADE, UNLESS A LOWER RELATIVE COMPACTION (NOT LESS THAN 90% OF MAX. DRY DENSITY) IS JUSTIFIED BY THE SOILS ENGINEER.
5. TEMPORARY EROSION CONTROL TO BE INSTALLED BETWEEN OCTOBER 1 AND APRIL 15. OBTAIN GRADING INSPECTOR'S AND DEPARTMENT OF PUBLIC WORKS APPROVAL OF PROPOSED PROCEDURES. (>200CY) (7007.1)
6. REGISTERED DEPUTY GRADING INSPECTOR IS REQUIRED ON GRADING AND FOUNDATION EARTHWORK WHERE SITE EXCEEDS 60,000 SF, CUT OR FILL SLOPES EXCEED 2:1, CUTS EXCEED 40FT IN HEIGHT AND WITHIN 20 FT OF A PROPERTY LINE, FOUNDATION EXCAVATION BELOW A 1:1 PLANE FROM PROPERTY LINE, PROJECTS INVOLVE UNUSUAL HAZARDS, OR SHORING WORKING INCLUDING SLOT-CUTS. (1704)
7. RETAINING WALLS LOCATED CLOSER TO THE PROPERTY LINE THAN THE HEIGHT OF WALL SHALL BE BACKFILLED NOT LATER THAN 10 DAYS AFTER CONSTRUCTION OF THE WALL AND NECESSARY STRUCTURAL SUPPORTING MEMBERS UNLESS RECOMMENDED OTHERWISE BY RESPONSIBLE ENGINEER.

THIS PLAN HAS BEEN REVIEWED AND CONFORMS TO RECOMMENDATIONS OF SOILS ENGINEERING/GEOLOGICAL REPORT BY BRUIN GEOTECHNICAL SERVICES, INC. DATED DECEMBER 10, 2018.

SIGNATURE DATE STAMP

1-800-227-2600
**CALL USA/SC FOR UNDERGROUND LOCATING 48 HOURS BEFORE YOU DIG!**

IMPORTANT NOTICE
SECTION 4216/4217 OF THE GOVERNMENT CODE REQUIRES A DIGALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIGALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT TOLL FREE 1-800-227-2600 TWO WORKING DAYS BEFORE YOU DIG




VICINITY MAP
NOT TO SCALE

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Los Angeles, CA 90014
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# JUNIPER GROVE - PALMDALE

**Project. AVENUE R AND DIVISION STREET**

DK ENGINEER, CORP
6420 WILSHIRE BLVD. #1000
LOS ANGELES, CA 90048
310.926.0248

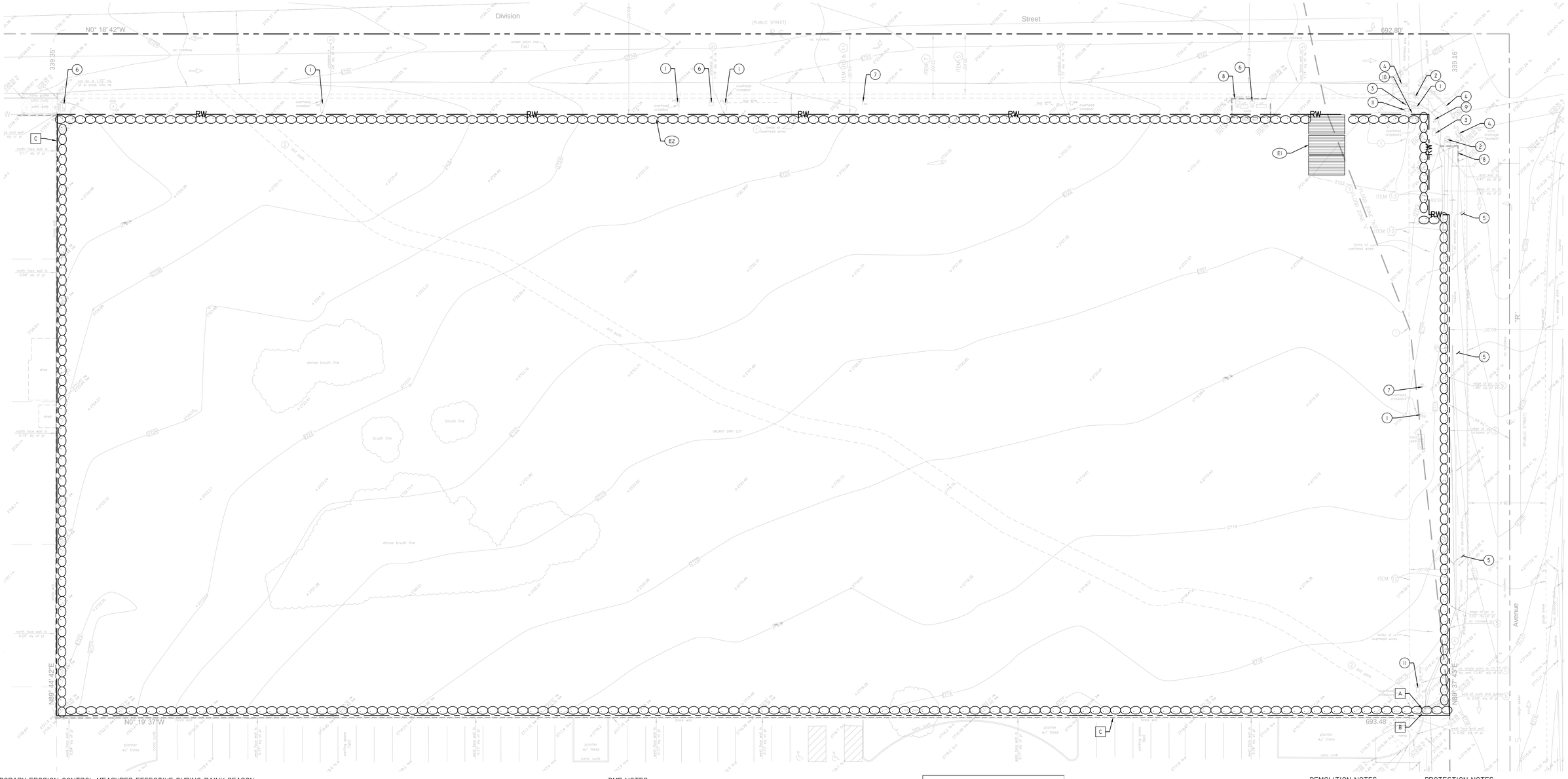
REGISTERED PROFESSIONAL ENGINEER DAN DOV KIRK DOGAN No. C76944 CIVIL STATE OF CALIFORNIA

# Meta Housing Corporation

**Developer. 11150 W. Olympic Blvd. Suite #620, Los Angeles, CA 90064**

# TITLE SHEET

**Date** 11.09.18 **Page** C0.01




## TEMPORARY EROSION CONTROL MEASURES EFFECTIVE DURING RAINY SEASON:

1. TEMPORARY EROSION CONTROL DEVICES SHOWN THE WWECP WHICH INTERFERE WITH THE WORK SHALL BE RELOCATED OR MODIFIED AS AND WHEN THE INSPECTOR SO DIRECTS AS THE WORK PROGRESSES TO MEET "AS GRADED" CONDITIONS.
2. ALL LOOSE SOIL AND DEBRIS SHALL BE REMOVED FROM THE STREET AREAS UPON STARTING OPERATIONS AND PERIODICALLY THEREAFTER AS DIRECTED BY THE INSPECTOR.
3. WHEN DIRECTED BY THE INSPECTOR, A 12-INCH BERM SHALL BE MAINTAINED ALONG THE TOP OF THE SLOPE OF THOSE FILLS ON WHICH GRADING IS NOT IN PROGRESS.
4. PROVIDE VELOCITY CHECK DAMS ACROSS THE OUTLET OF ALL LOTS DRAINING INTO THE STREET.
5. ALL FILLS SHALL BE GRADED TO PROMOTE DRAINAGE AWAY FROM THE EDGES OF THE FILL.
6. ALL UTILITY TRENCHES SHALL BE BLOCKED AT THE PRESCRIBED INTERVALS FROM THE BOTTOM TO TOP WITH A DOUBLE ROW OF SANDBAGS PRIOR TO BACKFILL. STORM AND SEWER TRENCHES SHALL BE BLOCKED AT THE PRESCRIBED INTERVALS WITH A DOUBLE ROW OF SANDBAGS EXTENDING UPWARD, TO WITHIN TWO SANDBAGS FROM THE GRADED SURFACE OF THE STREET. SANDBAGS ARE TO BE PLACED WITH ALTERNATE HEADER AND STRETCHER COURSES. THE INTERVALS PRESCRIBED BETWEEN SANDBAG BLOCKING SHALL DEPEND ON THE SLOPE OF THE GROUND SURFACE, BUT NOT TO EXCEED THE FOLLOWING:

| GRADE OF STREET | INTERVAL |
|---|---|
| LESS THAN 2% | AS REQUIRED |
| 2% TO 4% | 100 FEET |
| 4% TO 10% | 50 FEET |
| OVER 10% | 25 FEET |

7. PROVIDE STANDARD "VELOCITY CHECK DAMS" AT ALL UNPAVED STREET AREAS AT THE INTERVALS INDICATED IN PARAGRAPH 6 ABOVE. VELOCITY CHECK DAMS MAY BE CONSTRUCTED OF SANDBAGS, TIMBER, OR OTHER EROSION RESISTANT MATERIAL APPROVED BY THE INSPECTOR AND SHALL EXTEND COMPLETELY ACROSS THE STREET OR CHANNEL AT RIGHT ANGLES TO THE CENTERLINE. EARTH DAMS MAY NOT BE USED AS "VELOCITY CHECK DAMS".
8. PROVIDE STANDARD "VELOCITY CHECK DAMS" IN ALL UNPAVED GRADED CHANNELS AT THE INTERVALS INDICATED BELOW:

| GRADE OF CHANNEL | INTERVALS BETWEEN CHECK DAMS |
|---|---|
| LESS THAN 3% | 100 FEET |
| 3% TO 6% | 50 FEET |
| OVER 6% | 25 FEET |

9. THE STANDARD "VELOCITY CHECK DAM" SHALL HAVE A MINIMUM HEIGHT OF 12-INCHES. VELOCITY CHECK DAMS ACROSS OUTLETS OF ALL LOTS SHALL HAVE A MINIMUM HEIGHT OF 18-INCHES. VELOCITY CHECK DAMS CONSTRUCTED WITH SANDBAGS THAT ARE 18-INCHES HIGH SHALL BE BUILT WITH A DOUBLE ROW.
10. AFTER SEWER AND UTILITY TRENCHES ARE BACKFILLED AND COMPACTED, THE SURFACES OVER SUCH TRENCHES SHALL BE MOUNDED SLIGHTLY TO PREVENT CHANNELING OF WATER IN THE TRENCH AREA. CARE SHOULD BE EXERCISED TO PROVIDE FOR CROSS FLOW AT FREQUENT INTERVALS WHEN TRENCHES ARE NOT ON THE CENTERLINE OF A CROWNED STREET.
11. EXCEPT AS OTHERWISE DIRECTED BY THE INSPECTOR, ALL DEVISES SHOWN SHALL BE IN PLACE AT THE END OF EACH WORKING DAY WHEN THE FORECAST OF RAIN PROBABILITY EXCEEDS 40% AND MAINTAINED DURING THE RAINY SEASON (OCTOBER 1 TO APRIL 15).
12. AFTER EACH STORM, ALL "DESILTING BASINS" AND "VELOCITY CHECK DAMS" SHALL BE PUMPED DRY AND REMOVED OF ALL DEBRIS AND SILT WITHIN 24 HOURS AND RESTORED TO THEIR ORIGINAL CAPACITY.
13. EROSION CONTROL DEVICES SHALL BE STOCKPILED IN PARKWAYS AT INTERVALS SHOWN ON THE WWECP, READY TO BE PLACED IN POSITION WHEN RAIN IS FORECASTED OR WHEN DIRECTED BY THE INSPECTOR.
14. ALL CUT AND FILL SLOPES GREATER THAN 1 VERTICAL TO 3 HORIZONTAL SHALL BE COVERED WITH 10 MIL PLASTICSHEETING HELD IN PLACE WITH SANDBAGS (UNLESS PLANTED OR HYDRO-SEEDED.
15. BRUSH AND VEGETATIVE GROUND COVER MAY NOT BE REMOVED MORE THAN 10-FEET ABOVE FILLS DURING THE RAINY SEASON WHICH OCCURS BETWEEN OCTOBER 1 AND APRIL 15.
16. A "STANDBY EMERGENCY CREW" SHALL BE ALERTED BY THE DEVELOPER OR THE CONTRACTOR TO PERFORM EMERGENCY WORK DURING RAINSTORMS. THE PARTY TO BE CONTACTED IS:
NAME:
PHONE NUMBER:

## DUST CONTROL NOTES:

1. DUST SHALL BE CONTROLLED BY WATERING AND/OR APPLYING A DUST PALLIATIVE. THE DUST PALLIATIVE SHALL BE APPLIED IN THE AMOUNT AT THE LOCATIONS AS DIRECTED BY THE ENGINEER.
2. WATER FOR DUST CONTROL SHALL BE APPLIED BY MEANS OF PRESSURE TYPE DISTRIBUTORS OR PIPE LINES EQUIPPED WITH A SPAY SYSTEM OR HOSES WITH NOZZLES THAT WILL INSURE A UNIFORM APPLICATION OF WATER.
3. UNLESS WATER IS APPLIED BY MEANS OF PIPE LINES, AT LEAST ONE MOBILE UNIT WITH A MINIMUM CAPACITY OF 100 GALLONS SHALL BE AVAILABLE FOR APPLYING WATER.
4. ALL SOIL MATERIALS OR DEBRIS TRUCKED FROM THE SITE SHALL BE COVERED AND SPRINKLED PRIOR TO ENTERING PUBLIC STREETS.
5. PROVIDE FOR WET SUPPRESSION OR CHEMICAL STABILIZING OF EXPOSED SOILS.
6. PROVIDE FOR RAPID CLEAN-UP OF SEDIMENTS DEPOSITED ON THE PAVED ROADS.
7. LIMIT THE AMOUNT OF AREAS DISTURBED BY CLEARING & EARTH MOVING OPERATIONS BY SCHEDULING THESE ACTIVITIES IN PHASES.

## BMP NOTES:

THE FOLLOWING BMPS AS OUTLINED IN, BUT NOT LIMITED TO, THE BEST MANAGEMENT PRACTICE HANDBOOK, CALIFORNIA STORMWATER QUALITY TASK FORCE, SACRAMENTO, CALIFORNIA, JULY 2012, MAY APPLY DURING THE CONSTRUCTION OF THIS PROJECT (ADDITIONAL MEASURES MAY BE REQUIRED IF DEEMED APPROPRIATE BY CITY INSPECTORS):

EROSION CONTROL

EC1-SCHEDULING
EC2-PRESERVATION OF EXISTING VEGETATION

TEMPORARY SEDIMENT CONTROL

SE7-STREET SWEEPING AND VACUUMING
SE8-SANDBAG BARRIER

EQUIPMENT TRACKING CONTROL

TC1-STABILIZED CONSTRUCTION ENTRANCE/EXIT
TC3-ENTRANCE/OUTLET TIRE WASH

WIND EROSION CONTROL

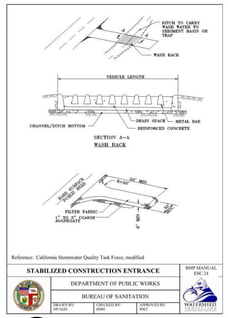
WE1-WIND EROSION CONTROL

NON-STORMWATER MANAGEMENT

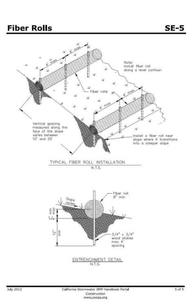
NS1-WATER CONSERVATION PRACTICES
NS3-PAVING AND GRINDING OPERATIONS
NS12-CONCRETE CURING
NS13-CONCRETE FINISHING

WASTE MANAGEMENT & MATERIALS POLLUTION CONTROL

WM1-MATERIAL DELIVERY AND STORAGE
WM2-MATERIAL USE
WM3-STOCKPILE MANAGEMENT
WM4-SPILL PREVENTION AND CONTROL
WM5-SOLID WASTE MANAGEMENT
WM6-HAZARDOUS WASTE MANAGEMENT
WM7-CONTAMINATED SOIL MANAGEMENT
WM8-CONCRETE WASTE MANAGEMENT
WM9-SANITARY/SEPTIC WASTE MANAGEMENT
WM10-LIQUID WASTE MANAGEMENT




1 HEREON STABILIZED CONSTRUCTION ENTRANCE
N.T.S.




2 HEREON FIBER ROLLS
N.T.S.

## DEMOLITION NOTES:

1. POWER POLE
2. TRAFFIC SIGNAL LIGHT
3. TRAFFIC SIGNAL BOX
4. AC CURB
5. AC DRAINAGE DITCH
6. UTILITY BOX/ CABINET
7. STREET SIGN
8. BLOCK WALL
9. WATER VALVE
10. ELECTRICAL BOX
11. CABLE TELEVISION BOX

## PROTECTION NOTES:

A POWER POLE
B STREET LIGHT
C BLOCK WALL

## EROSION CONTROL NOTES:

E1 STABILIZED CONSTRUCTION ENTRANCE PER DETAIL 1, HEREON.
E2 FIBER ROLLS PER DETAIL 2, HEREON.

## PROJECT INFORMATION

| | |
|---|---|
| JOB ADDRESS | VACANT LOT - SOUTHEAST INTERSECTION OF E. AVENUE R AND DIVISION STREET, PALMDALE CA 93550 |
| APN | 3010-030-023 |
| OWNER | META HOUSING CORPORATION 11150 WEST OLYMPIC BLVD, SUITE 620 LOS ANGELES, CA 90064 |
| 24-HR EMERGENCY CONTACT | |
| TOTAL DISTURBANCE | 206,937 SF(4.75 ACRE) |

## LEGEND:

PROPERTY LINE
LIMIT OF WORK
FIBER ROLLS
DIRECTION OF FLOW

The above drawings, specifications, ideas, designs and arrangements represented thereby are and shall remain property of the Architect (YM Architects), and no part thereof shall be copied, disclosed to others or used in connection with any other project other than the specific project for which they have been prepared and developed, without the written consent of the Architect (YM Architects). Visual contact with these drawings or specifications shall constitute conclusive evidence of acceptance of these restrictions. Written dimensions on these drawings shall have pre-over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the job, and this office must be notified of any variations from the dimensions and conditions shown by these drawings. Shop details must be submitted to this office for approval before proceeding with fabrication.

Y&M Architects
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# JUNIPER GROVE - PALMDALE

DK ENGINEER, CORP
6420 WILSHIRE BLVD. #1000
LOS ANGELES, CA 90048
310.926.0248

REGISTERED PROFESSIONAL ENGINEER DAN DOV KRAFT No. C76694 CIVIL STATE OF CALIFORNIA

# EROSION CONTROL AND DEMOLITION

# Meta Housing Corporation

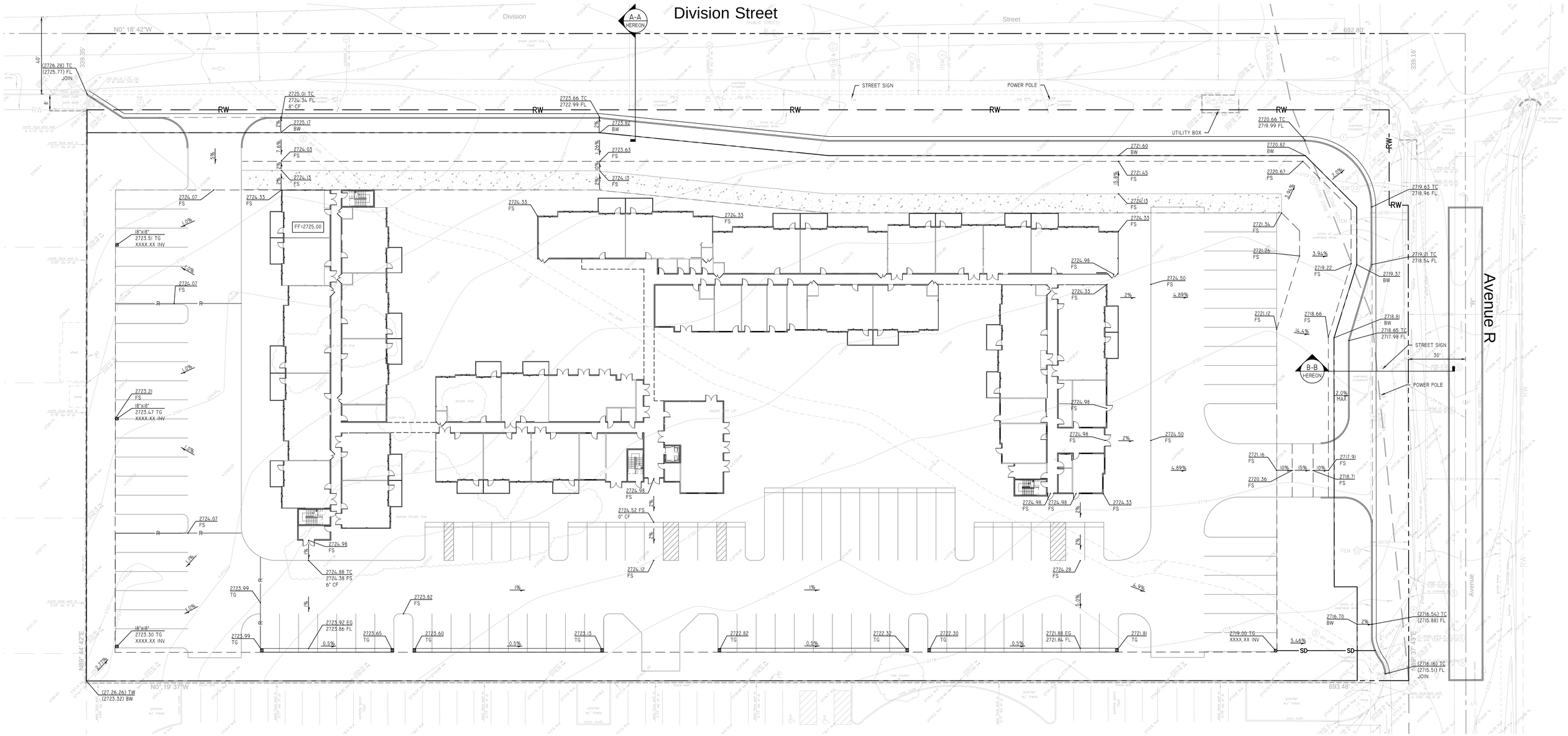
11.09.18 C1.10

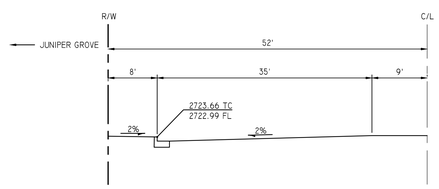
Project. AVENUE R AND DIVISION STREET

Developer. 11150 W. Olympic Blvd. Suite #620, Los Angeles, CA 90064

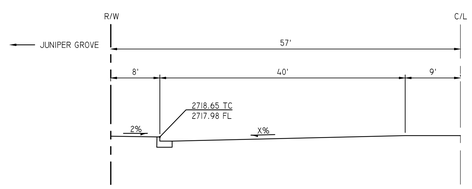
Date

Page




A-A SECTION DETAIL A-A
HEREON SCALE: 1"=10'




B-B SECTION DETAIL B-B
HEREON SCALE: 1"=10'

CONSTRUCTION NOTES:

(P1) ALIGN NOTES WITH ANNOTATION # IN CONSTRUCTION BUBBLE.

LEGEND:

- PROPERTY LINE
- LIMIT OF WORK
- CONCRETE PAVING ON GRADE PER DETAIL 3, C2.01.
- PERMEABLE PAVER PER DETAIL 7, C201.
- CONCRETE OVER STRUCTURE PER STRUCTURAL PLAN. FINISH, COLOR AND SCORING PATTERN PER LANDSCAPE ARCH
- PLANTER AREA PER LANDSCAPE
- GRAVEL PER LANDSCAPING PLANS
- TREE. REFER TO LANDSCAPE FOR DETAILS

N

0 10' 20'
SCALE: 1"=20'

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CIVIL
STATE OF CALIFORNIA

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Developer. 11150 W. Olympic Blvd. Suite #620, Los Angeles, CA 90064

GRADING AND PAVING PLAN
11.09.18 C1.30

Date Page