**Appendix J:**

**Water System Study for the VTTM No. 5928 – River Rock**
**1226 Ojai Road, Santa Paula, California, 93060,**
**Southland Civil Engineering & Survey, LLP, July 22, 2014**

**SOUTHLAND CIVIL ENGINEERING & SURVEY, LLP**

ENGINEERING DONE RIGHT ... FROM THE START

# WATER SYSTEM STUDY

*for the*

## VTTM NO. 5928 – RIVER ROCK
## 1226 Ojai Road
## Santa Paula, California 93060
**(City Project 2014-CDP-02)**

*Prepared for:*

WILLIAMS HOMES, INC.
21080 Centre Point Parkway, Suite 101
Santa Clarita, CA 91350

July 22, 2014

REGISTERED PROFESSIONAL ENGINEER
STEPHEN H. LEWIS
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*Prepared by:*

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Project No. 600-13010

# 1. INTRODUCTION

## 1.1 Project Description

The proposed VTTM 5928 is located at 1226 Ojai Road within the City of Santa Paula, County of Ventura, State of California. It lies north of Marigold Lane, Poppy Lane, and Fuchsia Lane; and is directly adjacent to Ojai Road (on the east) within the northern portion of the City of Santa Paula, California. The existing site is classified as "hillside residential" zoning, and is currently developed with the historic Wallace L. Hardison residence, guest house, garage, and barn. The proposed development of this 19.28-acre parcel (known as the "River Rock" project) is a residential subdivision consisting of the following:

- A 9.1-acre development consisting of a 12' wide street dedication along Ojai Road, fifty-four (54) single family residential lots, three (3) landscape lots (Lots B, C and D), and a 0.42-acre lot for the existing historic residence to remain;
- A 9.18-acre open space lot (Lot A) with proposed private hiking trails and debris basin.

This Water System Study was prepared in support of the development's tentative tract map completeness requirements. The Study determines the existing water pressure for current conditions and analyzes the available pressures for the proposed development during the Peak Hour Demand and Fire Flow conditions.

### 1.2 Existing water system

The proposed development site lies at the northern portion of the city. There are two water mains (one 6" main and one 8" main) along Ojai Road. On the south of the property, there is the Tract 2128 served by 6" mains on Fuchsia Lane, Marigold Lane and Oakdale Place with connection to the 8" main at Ojai Road and Oakdale Place intersection. There are 34 existing homes within the Tract 2128 that are connected to these 6" mains. At present, the 6" mains are terminated at the end of cul-de-sac on both the Fuchsia Lane and the Marigold Lane.

### 1.3 Existing available water pressure and flow

A fire hydrant flow test was conducted at the northwestern corner of Ojai Road and Oakdale Place to verify the existing water flow availability and pressure condition.

**Table 1 – "Fire Flow Test Results"**

| | | |
|---|---|---|
| Static pressure, Ps | 90 | psi |
| Flow residual pressure (PSI), Pf at $Q_F$ | 65 | psi |
| $Q_F$ (Flow from hydrant) | 1,548 | gpm |
| 20 psi flow | 2,697 | gpm |

See Exhibit 'B' for the Fire Hydrant Flow Test Report.

See Exhibit 'C' for Residual Pressure-Flow Calculations.

## 2. PROPOSED WATER SYSTEM

### 2.1 Point of Connections

For completeness requirements, two point of connections are needed. One connection shall be at the end of 6" line on Fuchsia Lane with another connection to the 8" main at intersection of Ojai Road and Royal Oak Place. This will provide a loop for the proposed development and Tract 2128 off the 8" main on Ojai Road.

See Exhibit 'A'-Water System Map; for the looped water system for the study.

### 2.2 Water Usage Demand per capita

Throughout the years, the city has update reports on the water usage demand. From the Reference No. 1, there is the 132 gpcd based on actual measurement of residential uses and the 166 gpcd based on the average city consumption. With the current UWMP, the city has the 152 gpcd as the interim 2015 per capita Base Line water use target and this is the design average daily demand (ADD) used for the proposed water system of this project.

### 2.3 Design water demand for Peak Hour Design

As the pressure of a water distribution system varies with the flow, peak factors are used in order to account for the maximum daily demand and peak hour flow conditions in the system. From Reference # 1, the following factors are used:

**Table 2 – "Peak Factors for Maximum Day Demand and Peak Hour Demand"**

| | | |
|---|---|---|
| Average Day Demand (ADD) | 152 gpcd | Baseline reference |
| Maximum Day Demand (MDD) | 1.5 x ADD | For water storage design |
| Peak Hour Demand (PHD) | 2.7 x MDD | For pipe system design |

From Reference # 1, for Single Family Detached Residence (SFR), 3.5 residence/SFR is used,

The proposed loop will include the existing 34 SFR from Tract 2128 and the 55 SFR from TTM 5928 for a total of 89 SFR.

The resulting total increase in domestic usage at the Peak Hour Demand is 133 gpm.

### 2.4 Fire Flow Requirement

The city has required a fire flow rate of 1,500 gpm to be used for the proposed water system. Scenario #2 (Fire flow condition) is the worst cast scenario that accounts for the PHD flow and the fire flow concurrently.

### 2.5 Water System Modeling Scenarios

The 'WaterCAD' software is used for the water system modeling. Two scenarios are analyses for this study.

First scenario is for the Base Peak Hour Demand from the residential homes connected to the loop. This is to check on the maximum pipe velocity.

The second scenario is the combine Base Peak Hour Demand with the 1,500 gpm fire flow to the proposed loop system. This is to check on the minimum water pressure available during the fire flow.

See Exhibit 'D' for 'WaterCAD' modeling results: Scenario #1 and #2.

**Table 3 – "Water Demands AND Residual Pressures @ Highest Fire Hydrant (H-2) near Lot 11"**

| | Scenario | Domestic Flow (gpm) | Fire Flow (gpm) | Total Design Flow (gpm) | Node R-1 Residual Press. (psi) |
|---|---|---|---|---|---|
| 1 | Base Peak Hour Demand (PHD) | 133 | 0 | 133 | 89.73 |
| 2 | Base PHD w/ Fire Flow | 133 | 1,500 | 1,633 | 62.00 |

Residual pressures at Node R-1 are the estimated pressures for each of the design flow scenario, based on the fire hydrant flow test report and residual pressure-flow calculations. See Exhibit 'B' and 'C'.

| | Scenario | Junction Label | Junction Elevation | Pressure (psi) | Highest FH Location | FH Elevation | Pressure (psi) |
|---|---|---|---|---|---|---|---|
| 1 | Base Peak Hour Demand (PHD) | J-54 | 490.5 | 68 | H-2 (Off) | 483.0 | 71 |
| 2 | Base PHD w/ Fire Flow | J-54 | 490.5 | 29 | H-2 (On) | 483.0 | 29 |

Notes:

1. Node: R-1 is the modeled reservoir, being the Point of Connection for the proposed water system.
2. J-54 is the highest junction at Lot 13.
3. H-2 is the highest fire hydrant at the sidewalk area of Lot 11.
4. For Scenario# 1, the velocities for the system pipes are around 1 fps or below.

## 3. CONCLUSION

In this support for the River Rock Tentative Tract Map, the modeling of the proposed water system show that the existing residual pressures and flow rate available for connection can support the additional water demand as proposed.

The existing 6" main at Tract 2128 and the proposed new 8" main at TTM 5928; are well below the allowable pipe velocity for the Peak Hour Demand flow rate while having good residual pressures over 68 psi.

As for the combined PHD and fire flow, the residual pressures at the highest junction and fire hydrant are at 29 psi which are greater than the allowable minimum 20 psi.

## 4. REFERENCE

1. Final Urban Water Management Plan (UWMP) 2010 Update,

   City of Santa Paula, prepared by: Milner-Villa Consulting, 7-26-2011

2. 2005 City of Santa Pula Potable Water MASTER Plan

   Prepared by Boyle Engineering Corp., October, 2005

3. 2005 City of Santa Pula Potable Water MASTER Plan Amendment

   Prepared by Boyle Engineering Corp., June, 2012

4. 2005 City of Santa Pula Potable Water MASTER Plan Amendment

   Prepared by Boyle Engineering Corp., June, 2012

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## 5. EXHIBIT

A. Water System Map

B. Fire Hydrant Flow Test Report (Permit No. 21789)

C. Residual Pressure–Flow Calculations

D. 'WaterCAD' Modeling Results: Scenario #1 and #2

# Exhibit B

**CITY OF SANTA PAULA • PUBLIC WORKS DEPARTMENT**
P.O. Box 569 • 113 North Mill Street • Santa Paula, CA 93060
(805) 933-4212 • (805) 525-3742 Fax

## FIRE HYDRANT FLOW TESTING

**INTRODUCTION**
The development of residential or commercial property may on occasion require fire flow information for the design of domestic water systems and fire sprinkler systems. The City of Santa Paula has *record* information available per request. Engineers and developers may want *current* fire flow available from the nearest water mainline in the public right of way. The City of Santa Paula now requires engineers and developers to hire a qualified fire hydrant flow testing Contractor / Consultant to perform the hydrant test.

**CONTRACTOR QUALIFICATIONS**
The qualified Contractor must be (1) familiar with hydrant flow testing procedures and equipment, (2) hold a current City business license, and (3) meet all city insurance and endorsement requirements. The qualified Contractor must register with the Public Works Department to be referred to interested parties.

**CITY TO PROVIDE**
Prior to the test the City will provide the Contractor with information about the water system at the time of the test.

**TESTING, PERMITTING, AND CERTIFICATION OF TEST RESULTS**
Prior to the test the Contractor shall obtain a $60 encroachment permit for the test. An annual encroachment permit is available. The Contractor shall perform the test with certified equipment, perform the test with pedestrian and traffic control per the WATCH manual, and provide the City with the test results in a City approved format (below).

The Contractor shall notify the City at least 24-hours in advance of the flow test. Please provide the City with the date and time of the flow test. The City will view the flow test. The flow test shall be conducted no longer than three minutes. The Contractor shall open and close the fire hydrant slowly to mitigate the effects of water hammer in the water system.

## TEST RESULTS

**Contractor Information**

| | |
|---|---|
| Contact Name | Mark Kaduk |
| Firm Name | AQUA-Tech |
| Address | PO Box 3171 |
| City/State/Zip | Ventura CA 93006 |
| Phone | 340-0374 |
| Fax | 323-5718 |
| Email | |
| Years Testing | 8 yrs. |

Signature Certifying Test Results

**Flow Testing Results**

| | |
|---|---|
| Permit Date | 6-19-14 |
| Permit Paid | 60.00 |
| Permit Number | 27189 |
| Hydrant ID Tested | 357 |
| Location | OAKdale & Ogai Rd |
| Hyd ID Residual Obsv | 360 |
| Test Date/Time | 6-19-14 11:00 |
| Static (PSI) | 90 |
| Residual (PSI) | 65 |
| Pitot (PSI) | 85 |
| Orifice Size (in) | 2.5 |
| Observe GPM | 1548 |
| 20 PSI GPM | 2697.43 |
| Permit Date | 6-19-14 |
| Permit Paid & Amount | 60.00 |

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P.O. Box 569 • 113 North Mill Street • Santa Paula, CA 93060
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# FIRE HYDRANT FLOW TESTING

## CONTRACTOR'S LIST

| Contact | Firm | Address | City/State/Zip | Phone | Fax |
|---|---|---|---|---|---|
| Mark Kahl | AQUA-Tech | PO Box 3171 | Ventura 93006 | 340-0374 | 323-3718 |
| | | | | | |
| | | | | | |

## DISCLAIMER

The City of Santa Paula does not endorse any Contractor. The Contractor is responsible for the performance and certification of the test results. All correspondence to the City may be deemed public record. No confidentiality can be assured.

# Exhibit C

## Residual Pressure / Flow Calculations

**for TTM 5928 - River Rock - 1226 Ojai Road, Santa Paula, CA**

**Fire Hydrant Flow Data (Permit No. 27189; Test Date: 6-19-2014)**
**Fire Hydrant Location: NW corner of Oakdale Place and Ojai Road**

| | | |
|---|---|---|
| Static pressure, Ps | 90 | psi |
| Flow residual pressure (PSI), Pf at $Q_F$ | 65 | psi |
| $Q_F$ (Flow from hydrant) | 1,548 | gpm |
| 20 psi flow | 2,697 | gpm |

**Flow at a specified Pressure**

$Q_R = Q_F \times (h_r/h_f)^{0.54}$

$Q_F$ is flow at hydrant

$h_r$ is the expected head loss to residual pressure (static less expected residual) = Ps-$P_R$ @ $Q_R$

$h_f$ is the measured head loss to residual pressure during flow (static less flow residual) = Ps-Pf @ $Q_R$

| | Residual Pressure / Flow Tabulation | | | | | |
|---|---|---|---|---|---|---|
| Residual pressure, $P_R$ | 90 | 89.73 | 65 | 62 | 20 | psi |
| $Q_R$ @ Expected $P_R$ | 0 | 133 | 1,548 | 1,633 | 2,699 | gpm |
| | Per Test | Scenario #1 | Per Test | Scenario #2 | Per Test | |

| | Scenario #1, $P_R$ (89.73 psi) | Scenario #2, $P_R$ (62 psi) |
|---|---|---|
| Test Fire Hydrant El.= 440.6 | Equivalent Reservoir El. | Equivalent Reservoir El. |
| | 647.68 | 584.58 |

Scenario #1 (Base Peak Hour Demand)

VTTM 5928 – River Rock (1226 Ojai Road)
Santa Paula, CA
Base Scenario: Domestic water demand only.
(Residual pressure @ 89.73 psi for 133 gpm flow)

| ID | Label | Elevation (ft) | Zone | Flow (Out net) (gpm) | Hydraulic Grade (ft) |
|---|---|---|---|---|---|
| 29 | R-1 | 647.68 | <None> | 133.17 | 647.68 |

El. 440.6 @ FH
89.73 psi @ 133 gpm

Exhibit D

VTTM 5928 – River Rock (1226 Ojai Road)
Santa Paula, CA
Fire Hydrant Flow Scenario: (Residual pressure @ 62 psi for 1,633 gpm flow)
133 gpm Domestic water demand + 1,500 GPM fire hydrant flow @ high point.

| ID | Label | Elevation (ft) | Zone | Demand Collection | Demand (gpm) | Hydraulic Grade (ft) | Pressure (psi) |
|---|---|---|---|---|---|---|---|
| 30 | J-1 | 440.74 | <None> | <Collection: 0 items> | 0 | 582.87 | 61 |
| 32 | J-2 | 439.41 | <None> | <Collection: 0 items> | 0 | 580.85 | 61 |
| 34 | J-3 | 443.86 | <None> | <Collection: 0 items> | 0 | 575.87 | 57 |
| 36 | J-4 | 463.62 | <None> | <Collection: 0 items> | 0 | 565.23 | 44 |
| 38 | J-5 | 467.31 | <None> | <Collection: 0 items> | 0 | 562.34 | 41 |
| 40 | J-6 | 444.54 | <None> | <Collection: 0 items> | 0 | 582.86 | 60 |
| 42 | J-7 | 447.27 | <None> | <Collection: 0 items> | 0 | 582.86 | 59 |
| 44 | J-8 | 444.54 | <None> | <Collection: 1 item> | 5.99 | 582.82 | 60 |
| 46 | J-9 | 444.54 | <None> | <Collection: 1 item> | 5.99 | 582.84 | 60 |
| 48 | J-10 | 439.41 | <None> | <Collection: 1 item> | 4.49 | 580.82 | 61 |
| 50 | J-11 | 439.41 | <None> | <Collection: 1 item> | 4.49 | 580.83 | 61 |
| 52 | J-12 | 443.86 | <None> | <Collection: 1 item> | 8.98 | 575.82 | 57 |
| 54 | J-13 | 463.62 | <None> | <Collection: 1 item> | 10.47 | 565.09 | 44 |
| 56 | J-14 | 463.62 | <None> | <Collection: 1 item> | 10.47 | 565.16 | 44 |
| 58 | J-15 | 463.4 | <None> | <Collection: 0 items> | 0 | 567.69 | 45 |
| 60 | J-16 | 475.5 | <None> | <Collection: 0 items> | 0 | 567.69 | 40 |
| 62 | J-17 | 466.5 | <None> | <Collection: 0 items> | 0 | 561.73 | 41 |
| 64 | J-18 | 466.5 | <None> | <Collection: 0 items> | 0 | 561.7 | 41 |
| 66 | J-19 | 466 | <None> | <Collection: 0 items> | 0 | 561.45 | 41 |
| 68 | J-20 | 464 | <None> | <Collection: 0 items> | 0 | 561.46 | 42 |
| 70 | J-21 | 465 | <None> | <Collection: 0 items> | 0 | 561.48 | 42 |
| 72 | J-22 | 461 | <None> | <Collection: 0 items> | 0 | 561.52 | 43 |
| 74 | J-23 | 459 | <None> | <Collection: 0 items> | 0 | 561.56 | 44 |
| 76 | J-24 | 458.5 | <None> | <Collection: 0 items> | 0 | 561.57 | 45 |
| 78 | J-25 | 458.5 | <None> | <Collection: 0 items> | 0 | 561.57 | 45 |
| 80 | J-26 | 456 | <None> | <Collection: 0 items> | 0 | 561.57 | 46 |
| 82 | J-27 | 454 | <None> | <Collection: 0 items> | 0 | 561.57 | 47 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 84 | J-28 | 453 | <None> | <Collection: 0 items> | 0 | 561.57 | 47 |
| 86 | J-29 | 453 | <None> | <Collection: 0 items> | 0 | 561.57 | 47 |
| 88 | J-30 | 465 | <None> | <Collection: 0 items> | 0 | 565.9 | 44 |
| 90 | J-31 | 465 | <None> | <Collection: 0 items> | 0 | 565.72 | 44 |
| 92 | J-32 | 470 | <None> | <Collection: 0 items> | 0 | 564.46 | 41 |
| 94 | J-33 | 472 | <None> | <Collection: 0 items> | 0 | 562.88 | 39 |
| 96 | J-34 | 472 | <None> | <Collection: 0 items> | 0 | 562.82 | 39 |
| 98 | J-35 | 472 | <None> | <Collection: 0 items> | 0 | 562.75 | 39 |
| 100 | J-36 | 474 | <None> | <Collection: 0 items> | 0 | 561.81 | 38 |
| 102 | J-37 | 476 | <None> | <Collection: 0 items> | 0 | 561.12 | 37 |
| 104 | J-38 | 480 | <None> | <Collection: 0 items> | 0 | 559.7 | 34 |
| 121 | J-45 | 483 | <None> | <Collection: 0 items> | 0 | 558.34 | 33 |
| 123 | J-46 | 483 | <None> | <Collection: 0 items> | 0 | 558.3 | 33 |
| 125 | J-47 | 483 | <None> | <Collection: 0 items> | 0 | 558.32 | 33 |
| 127 | J-48 | 484.5 | <None> | <Collection: 0 items> | 0 | 558.44 | 32 |
| 131 | J-50 | 489 | <None> | <Collection: 0 items> | 0 | 558.44 | 30 |
| 133 | J-51 | 489 | <None> | <Collection: 0 items> | 0 | 558.44 | 30 |
| 135 | J-52 | 490 | <None> | <Collection: 0 items> | 0 | 558.44 | 30 |
| 137 | J-53 | 488.5 | <None> | <Collection: 1 item> | 1.5 | 558.44 | 30 |
| 139 | J-54 | 490.5 | <None> | <Collection: 1 item> | 1.5 | 558.44 | 29 |
| 141 | J-55 | 485 | <None> | <Collection: 1 item> | 1.5 | 558.24 | 32 |
| 145 | J-57 | 486 | <None> | <Collection: 1 item> | 1.5 | 558.22 | 31 |
| 147 | J-58 | 482 | <None> | <Collection: 1 item> | 2.99 | 559.69 | 34 |
| 149 | J-59 | 469.5 | <None> | <Collection: 1 item> | 1.5 | 565.89 | 42 |
| 151 | J-60 | 474 | <None> | <Collection: 1 item> | 2.99 | 564.45 | 39 |
| 153 | J-61 | 474 | <None> | <Collection: 1 item> | 1.5 | 562.79 | 38 |
| 157 | J-63 | 476 | <None> | <Collection: 1 item> | 1.5 | 562.67 | 37 |
| 159 | J-64 | 469 | <None> | <Collection: 1 item> | 2.99 | 565.72 | 42 |
| 161 | J-65 | 479 | <None> | <Collection: 1 item> | 2.99 | 561.11 | 36 |
| 163 | J-66 | 471 | <None> | <Collection: 0 items> | 0 | 561.76 | 39 |
| 165 | J-67 | 471 | <None> | <Collection: 0 items> | 0 | 561.72 | 39 |
| 167 | J-68 | 465 | <None> | <Collection: 0 items> | 0 | 561.67 | 42 |
| 169 | J-69 | 461 | <None> | <Collection: 0 items> | 0 | 561.61 | 44 |
| 172 | J-70 | 474 | <None> | <Collection: 1 item> | 1.5 | 561.67 | 38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 174 | J-71 | 474 | <None> | <Collection: 1 item> | 1.5 | 561.69 | 38 |
| 176 | J-72 | 472 | <None> | <Collection: 1 item> | 2.99 | 561.71 | 39 |
| 178 | J-73 | 472 | <None> | <Collection: 1 item> | 2.99 | 561.72 | 39 |
| 180 | J-74 | 468 | <None> | <Collection: 1 item> | 2.99 | 561.67 | 41 |
| 182 | J-75 | 464.5 | <None> | <Collection: 1 item> | 2.99 | 561.6 | 42 |
| 184 | J-76 | 456 | <None> | <Collection: 1 item> | 2.99 | 561.56 | 46 |
| 186 | J-77 | 457 | <None> | <Collection: 1 item> | 2.99 | 561.55 | 45 |
| 188 | J-78 | 458.5 | <None> | <Collection: 1 item> | 2.99 | 561.56 | 45 |
| 190 | J-79 | 460 | <None> | <Collection: 1 item> | 1.5 | 561.48 | 44 |
| 192 | J-80 | 461.3 | <None> | <Collection: 1 item> | 1.5 | 561.47 | 43 |
| 194 | J-81 | 464 | <None> | <Collection: 1 item> | 2.99 | 561.51 | 42 |
| 196 | J-82 | 466.5 | <None> | <Collection: 1 item> | 2.99 | 561.47 | 41 |
| 198 | J-83 | 468 | <None> | <Collection: 1 item> | 1.5 | 561.35 | 40 |
| 200 | J-84 | 468 | <None> | <Collection: 0 items> | 0 | 561.7 | 41 |
| 202 | J-85 | 469.34 | <None> | <Collection: 0 items> | 0 | 561.7 | 40 |
| 204 | J-86 | 470.5 | <None> | <Collection: 1 item> | 2.99 | 561.7 | 39 |
| 206 | J-87 | 482 | <None> | <Collection: 0 items> | 0 | 558.87 | 33 |
| 208 | J-88 | 481 | <None> | <Collection: 0 items> | 0 | 558.99 | 34 |
| 210 | J-89 | 479 | <None> | <Collection: 0 items> | 0 | 559.37 | 35 |
| 212 | J-90 | 477 | <None> | <Collection: 0 items> | 0 | 559.58 | 36 |
| 214 | J-91 | 474 | <None> | <Collection: 0 items> | 0 | 560.08 | 37 |
| 216 | J-92 | 472 | <None> | <Collection: 0 items> | 0 | 560.3 | 38 |
| 218 | J-93 | 469 | <None> | <Collection: 0 items> | 0 | 560.81 | 40 |
| 220 | J-94 | 468 | <None> | <Collection: 0 items> | 0 | 561.03 | 40 |
| 223 | J-95 | 485 | <None> | <Collection: 1 item> | 2.99 | 558.86 | 32 |
| 225 | J-96 | 483.5 | <None> | <Collection: 1 item> | 1.5 | 558.89 | 33 |
| 227 | J-97 | 481.5 | <None> | <Collection: 1 item> | 2.99 | 559.35 | 34 |
| 229 | J-98 | 480 | <None> | <Collection: 1 item> | 2.99 | 559.57 | 34 |
| 231 | J-99 | 477 | <None> | <Collection: 1 item> | 2.99 | 560.07 | 36 |
| 233 | J-100 | 475.5 | <None> | <Collection: 1 item> | 2.99 | 560.29 | 37 |
| 235 | J-101 | 472.5 | <None> | <Collection: 1 item> | 2.99 | 560.81 | 38 |
| 237 | J-102 | 471 | <None> | <Collection: 1 item> | 2.99 | 561.03 | 39 |

VTTM 5928 – River Rock (1226 Ojai Road)
Santa Paula, CA
Fire Hydrant Flow Scenario: (Residual pressure @ 62 psi for 1,633 gpm flow)
133 gpm Domestic water demand + 1,500 GPM fire hydrant flow @ high point.

| ID | Label | Length (Scaled) (ft) | Start Node | Stop Node | Diameter (in) | Material | Hazen-Williams C | Has Check Valve? | Minor Loss Coefficient (Local) | Flow (gpm) | Velocity (ft/s) | Headloss Gradient (ft/ft) | Has User Defined Length? | Length (User Defined) (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | P-1 | 281 | R-1 | J-1 | 8 | Ductile Iron | 130 | FALSE | 0 | 556.21 | 3.55 | 0.006 | FALSE | 0 |
| 59 | P-15 | 807 | R-1 | J-15 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,076.96 | 6.87 | 0.021 | FALSE | 0 |
| 63 | P-17 | 119 | J-5 | J-17 | 8 | Ductile Iron | 130 | FALSE | 0 | 505.33 | 3.23 | 0.005 | FALSE | 0 |
| 65 | P-18 | 5 | J-17 | J-18 | 8 | Ductile Iron | 130 | FALSE | 0 | 505.33 | 3.23 | 0.005 | FALSE | 0 |
| 67 | P-19 | 50 | J-18 | J-19 | 8 | Ductile Iron | 130 | FALSE | 0 | 502.34 | 3.21 | 0.005 | FALSE | 0 |
| 69 | P-20 | 21 | J-19 | J-20 | 8 | Ductile Iron | 130 | FALSE | 0 | -133.37 | 0.85 | 0 | FALSE | 0 |
| 71 | P-21 | 50 | J-20 | J-21 | 8 | Ductile Iron | 130 | FALSE | 0 | -134.86 | 0.86 | 0 | FALSE | 0 |
| 73 | P-22 | 94 | J-21 | J-22 | 8 | Ductile Iron | 130 | FALSE | 0 | -137.86 | 0.88 | 0 | FALSE | 0 |
| 75 | P-23 | 66 | J-22 | J-23 | 8 | Ductile Iron | 130 | FALSE | 0 | -140.85 | 0.9 | 0 | FALSE | 0 |
| 77 | P-24 | 25 | J-23 | J-24 | 8 | Ductile Iron | 130 | FALSE | 0 | -142.34 | 0.91 | 0 | FALSE | 0 |
| 79 | P-25 | 6 | J-24 | J-25 | 8 | Ductile Iron | 130 | FALSE | 0 | 10.47 | 0.07 | 0 | FALSE | 0 |
| 81 | P-26 | 91 | J-25 | J-26 | 8 | Ductile Iron | 130 | FALSE | 0 | 8.98 | 0.06 | 0 | FALSE | 0 |
| 83 | P-27 | 59 | J-26 | J-27 | 8 | Ductile Iron | 130 | FALSE | 0 | 5.99 | 0.04 | 0 | FALSE | 0 |
| 85 | P-28 | 35 | J-27 | J-28 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 87 | P-29 | 18 | J-28 | J-29 | 8 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 89 | P-30 | 86 | J-15 | J-30 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,076.96 | 6.87 | 0.021 | FALSE | 0 |
| 91 | P-31 | 8 | J-30 | J-31 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,075.47 | 6.86 | 0.021 | FALSE | 0 |
| 93 | P-32 | 61 | J-31 | J-32 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,072.47 | 6.85 | 0.021 | FALSE | 0 |
| 95 | P-33 | 76 | J-32 | J-33 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,069.48 | 6.83 | 0.021 | FALSE | 0 |
| 97 | P-34 | 3 | J-33 | J-34 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,067.98 | 6.82 | 0.021 | FALSE | 0 |
| 99 | P-35 | 3 | J-34 | J-35 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,067.98 | 6.82 | 0.021 | FALSE | 0 |
| 101 | P-36 | 46 | J-35 | J-36 | 8 | Ductile Iron | 130 | FALSE | 0 | 1,066.49 | 6.81 | 0.021 | FALSE | 0 |
| 103 | P-37 | 46 | J-36 | J-37 | 8 | Ductile Iron | 130 | FALSE | 0 | 898.71 | 5.74 | 0.015 | FALSE | 0 |
| 105 | P-38 | 95 | J-37 | J-38 | 8 | Ductile Iron | 130 | FALSE | 0 | 895.71 | 5.72 | 0.015 | FALSE | 0 |
| 122 | P-46 | 92 | J-38 | J-45 | 8 | Ductile Iron | 130 | FALSE | 0 | 892.72 | 5.7 | 0.015 | FALSE | 0 |
| 124 | P-47 | 3 | J-45 | J-46 | 8 | Ductile Iron | 130 | FALSE | 0 | 891.22 | 5.69 | 0.015 | FALSE | 0 |
| 126 | P-48 | 3 | J-46 | J-47 | 8 | Ductile Iron | 130 | FALSE | 0 | -608.78 | 3.89 | 0.007 | FALSE | 0 |
| 128 | P-49 | 17 | J-47 | J-48 | 8 | Ductile Iron | 130 | FALSE | 0 | -610.27 | 3.9 | 0.007 | FALSE | 0 |
| 132 | P-51 | 106 | J-48 | J-50 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 134 | P-52 | 6 | J-50 | J-51 | 8 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.01 | 0 | FALSE | 0 |
| 136 | P-53 | 27 | J-51 | J-52 | 8 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 164 | P-67 | 79 | J-36 | J-66 | 8 | Ductile Iron | 130 | FALSE | 0 | 167.78 | 1.07 | 0.001 | FALSE | 0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 166 | P-68 | 50 | J-66 | J-67 | 8 | Ductile Iron | 130 | FALSE | 0 | 164.79 | 1.05 | 0.001 | FALSE | 0 |
| 168 | P-69 | 94 | J-67 | J-68 | 8 | Ductile Iron | 130 | FALSE | 0 | 158.8 | 1.01 | 0.001 | FALSE | 0 |
| 170 | P-70 | 94 | J-68 | J-69 | 8 | Ductile Iron | 130 | FALSE | 0 | 155.81 | 0.99 | 0.001 | FALSE | 0 |
| 171 | P-71 | 76 | J-69 | J-24 | 8 | Ductile Iron | 130 | FALSE | 0 | 152.82 | 0.98 | 0.001 | FALSE | 0 |
| 181 | P-76 | 22 | J-68 | J-74 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 201 | P-86 | 52 | J-18 | J-84 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 203 | P-87 | 26 | J-84 | J-85 | 8 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 207 | P-89 | 58 | J-48 | J-87 | 8 | Ductile Iron | 130 | FALSE | 0 | -613.26 | 3.91 | 0.007 | FALSE | 0 |
| 209 | P-90 | 16 | J-87 | J-88 | 8 | Ductile Iron | 130 | FALSE | 0 | -616.26 | 3.93 | 0.007 | FALSE | 0 |
| 211 | P-91 | 50 | J-88 | J-89 | 8 | Ductile Iron | 130 | FALSE | 0 | -617.75 | 3.94 | 0.007 | FALSE | 0 |
| 213 | P-92 | 28 | J-89 | J-90 | 8 | Ductile Iron | 130 | FALSE | 0 | -620.75 | 3.96 | 0.008 | FALSE | 0 |
| 215 | P-93 | 66 | J-90 | J-91 | 8 | Ductile Iron | 130 | FALSE | 0 | -623.74 | 3.98 | 0.008 | FALSE | 0 |
| 217 | P-94 | 28 | J-91 | J-92 | 8 | Ductile Iron | 130 | FALSE | 0 | -626.73 | 4 | 0.008 | FALSE | 0 |
| 219 | P-95 | 66 | J-92 | J-93 | 8 | Ductile Iron | 130 | FALSE | 0 | -629.72 | 4.02 | 0.008 | FALSE | 0 |
| 221 | P-96 | 28 | J-93 | J-94 | 8 | Ductile Iron | 130 | FALSE | 0 | -632.72 | 4.04 | 0.008 | FALSE | 0 |
| 222 | P-97 | 54 | J-94 | J-19 | 8 | Ductile Iron | 130 | FALSE | 0 | -635.71 | 4.06 | 0.008 | FALSE | 0 |
| 236 | P-104 | 34 | J-93 | J-101 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 238 | P-105 | 22 | J-94 | J-102 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 33 | P-2 | 84 | J-1 | J-2 | 6 | Ductile Iron | 130 | FALSE | 0 | 544.24 | 6.18 | 0.024 | FALSE | 0 |
| 35 | P-3 | 214 | J-2 | J-3 | 6 | Ductile Iron | 130 | FALSE | 0 | 535.26 | 6.07 | 0.023 | FALSE | 0 |
| 37 | P-4 | 471 | J-3 | J-4 | 6 | Ductile Iron | 130 | FALSE | 0 | 526.28 | 5.97 | 0.023 | FALSE | 0 |
| 39 | P-5 | 138 | J-4 | J-5 | 6 | Ductile Iron | 130 | FALSE | 0 | 505.33 | 5.73 | 0.021 | FALSE | 0 |
| 41 | P-6 | 141 | J-1 | J-6 | 6 | Ductile Iron | 130 | FALSE | 0 | 11.97 | 0.14 | 0 | FALSE | 0 |
| 43 | P-7 | 173 | J-6 | J-7 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 61 | P-16 | 433 | J-15 | J-16 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 144 | P-57 | 23 | J-46 | H-2 | 6 | Ductile Iron | 130 | FALSE | 0 | 1,500.00 | 17.02 | 0.157 | FALSE | 0 |
| 156 | P-63 | 23 | J-34 | H-3 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 240 | P-106 | 9 | J-17 | H-1 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 248 | P-108 | 18 | J-24 | H-4 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 45 | P-8 | 40 | J-6 | J-8 | 2 | Ductile Iron | 130 | FALSE | 0 | 5.99 | 0.61 | 0.001 | FALSE | 0 |
| 47 | P-9 | 20 | J-6 | J-9 | 2 | Ductile Iron | 130 | FALSE | 0 | 5.99 | 0.61 | 0.001 | FALSE | 0 |
| 49 | P-10 | 40 | J-2 | J-10 | 2 | Ductile Iron | 130 | FALSE | 0 | 4.49 | 0.46 | 0.001 | FALSE | 0 |
| 51 | P-11 | 20 | J-2 | J-11 | 2 | Ductile Iron | 130 | FALSE | 0 | 4.49 | 0.46 | 0.001 | FALSE | 0 |
| 53 | P-12 | 20 | J-3 | J-12 | 2 | Ductile Iron | 130 | FALSE | 0 | 8.98 | 0.92 | 0.003 | FALSE | 0 |
| 55 | P-13 | 40 | J-4 | J-13 | 2 | Ductile Iron | 130 | FALSE | 0 | 10.47 | 1.07 | 0.003 | FALSE | 0 |
| 57 | P-14 | 20 | J-4 | J-14 | 2 | Ductile Iron | 130 | FALSE | 0 | 10.47 | 1.07 | 0.003 | FALSE | 0 |
| 148 | P-59 | 33 | J-38 | J-58 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 150 | P-60 | 34 | J-30 | J-59 | 2 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.15 | 0 | FALSE | 0 |
| 152 | P-61 | 33 | J-32 | J-60 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 160 | P-65 | 21 | J-31 | J-64 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 162 | P-66 | 33 | J-37 | J-65 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 177 | P-74 | 34 | J-67 | J-72 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 179 | P-75 | 22 | J-67 | J-73 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 183 | P-77 | 22 | J-69 | J-75 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 185 | P-78 | 33 | J-28 | J-76 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 187 | P-79 | 39 | J-27 | J-77 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 189 | P-80 | 34 | J-26 | J-78 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 195 | P-83 | 34 | J-22 | J-81 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 197 | P-84 | 38 | J-21 | J-82 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 205 | P-88 | 12 | J-84 | J-86 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 224 | P-98 | 23 | J-87 | J-95 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 228 | P-100 | 34 | J-89 | J-97 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 230 | P-101 | 22 | J-90 | J-98 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 232 | P-102 | 34 | J-91 | J-99 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 234 | P-103 | 23 | J-92 | J-100 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 138 | P-54 | 3 | J-50 | J-53 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 140 | P-55 | 3 | J-51 | J-54 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 142 | P-56 | 36 | J-45 | J-55 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 146 | P-58 | 36 | J-47 | J-57 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 154 | P-62 | 33 | J-33 | J-61 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 158 | P-64 | 33 | J-35 | J-63 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 173 | P-72 | 33 | J-66 | J-70 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 175 | P-73 | 22 | J-66 | J-71 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 191 | P-81 | 33 | J-25 | J-79 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 193 | P-82 | 34 | J-23 | J-80 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 199 | P-85 | 39 | J-20 | J-83 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 226 | P-99 | 36 | J-88 | J-96 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |

Scenario #2 (Base Peak Hour Demand + 1,500 gpm Fire Flow)

VTTM 5928 – River Rock (1226 Ojai Road)

Santa Paula, CA

Fire Hydrant Flow Scenario: (Residual pressure @ 62 psi for 1,633 gpm flow)

133 gpm Domestic water demand + 1,500 GPM fire hydrant flow @ high point.

| ID | Label | Elevation (ft) | Zone | Flow (Out net) (gpm) | Hydraulic Grade (ft) |
|---|---|---|---|---|---|
| 29 | R-1 | 584.6 | <None> | 1,633.17 | 584.6 |

El. 440.6 @ FH

62 psi @ 1,633 gpm

VTTM 5928 – River Rock (1226 Ojai Road)
Santa Paula, CA
Base Scenario: Domestic water demand only.
(Residual pressure @ 89.73 psi for 133 gpm flow)

| ID | Label | Elevation (ft) | Zone | Demand Collection | Demand (gpm) | Hydraulic Grade (ft) | Pressure (psi) |
|---|---|---|---|---|---|---|---|
| 30 | J-1 | 440.74 | <None> | <Collection: 0 items> | 0 | 647.65 | 90 |
| 32 | J-2 | 439.41 | <None> | <Collection: 0 items> | 0 | 647.63 | 90 |
| 34 | J-3 | 443.86 | <None> | <Collection: 0 items> | 0 | 647.59 | 88 |
| 36 | J-4 | 463.62 | <None> | <Collection: 0 items> | 0 | 647.53 | 80 |
| 38 | J-5 | 467.31 | <None> | <Collection: 0 items> | 0 | 647.53 | 78 |
| 40 | J-6 | 444.54 | <None> | <Collection: 0 items> | 0 | 647.65 | 88 |
| 42 | J-7 | 447.27 | <None> | <Collection: 0 items> | 0 | 647.65 | 87 |
| 44 | J-8 | 444.54 | <None> | <Collection: 1 item> | 5.99 | 647.6 | 88 |
| 46 | J-9 | 444.54 | <None> | <Collection: 1 item> | 5.99 | 647.62 | 88 |
| 48 | J-10 | 439.41 | <None> | <Collection: 1 item> | 4.49 | 647.6 | 90 |
| 50 | J-11 | 439.41 | <None> | <Collection: 1 item> | 4.49 | 647.61 | 90 |
| 52 | J-12 | 443.86 | <None> | <Collection: 1 item> | 8.98 | 647.54 | 88 |
| 54 | J-13 | 463.62 | <None> | <Collection: 1 item> | 10.47 | 647.39 | 80 |
| 56 | J-14 | 463.62 | <None> | <Collection: 1 item> | 10.47 | 647.46 | 80 |
| 58 | J-15 | 463.4 | <None> | <Collection: 0 items> | 0 | 647.57 | 80 |
| 60 | J-16 | 475.5 | <None> | <Collection: 0 items> | 0 | 647.57 | 74 |
| 62 | J-17 | 466.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 78 |
| 64 | J-18 | 466.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 78 |
| 66 | J-19 | 466 | <None> | <Collection: 0 items> | 0 | 647.53 | 79 |
| 68 | J-20 | 464 | <None> | <Collection: 0 items> | 0 | 647.53 | 79 |
| 70 | J-21 | 465 | <None> | <Collection: 0 items> | 0 | 647.53 | 79 |
| 72 | J-22 | 461 | <None> | <Collection: 0 items> | 0 | 647.53 | 81 |
| 74 | J-23 | 459 | <None> | <Collection: 0 items> | 0 | 647.53 | 82 |
| 76 | J-24 | 458.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 82 |
| 78 | J-25 | 458.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 82 |
| 80 | J-26 | 456 | <None> | <Collection: 0 items> | 0 | 647.53 | 83 |
| 82 | J-27 | 454 | <None> | <Collection: 0 items> | 0 | 647.53 | 84 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 84 | J-28 | 453 | <None> | <Collection: 0 items> | 0 | 647.53 | 84 |
| 86 | J-29 | 453 | <None> | <Collection: 0 items> | 0 | 647.53 | 84 |
| 88 | J-30 | 465 | <None> | <Collection: 0 items> | 0 | 647.56 | 79 |
| 90 | J-31 | 465 | <None> | <Collection: 0 items> | 0 | 647.55 | 79 |
| 92 | J-32 | 470 | <None> | <Collection: 0 items> | 0 | 647.55 | 77 |
| 94 | J-33 | 472 | <None> | <Collection: 0 items> | 0 | 647.54 | 76 |
| 96 | J-34 | 472 | <None> | <Collection: 0 items> | 0 | 647.54 | 76 |
| 98 | J-35 | 472 | <None> | <Collection: 0 items> | 0 | 647.54 | 76 |
| 100 | J-36 | 474 | <None> | <Collection: 0 items> | 0 | 647.53 | 75 |
| 102 | J-37 | 476 | <None> | <Collection: 0 items> | 0 | 647.53 | 74 |
| 104 | J-38 | 480 | <None> | <Collection: 0 items> | 0 | 647.53 | 72 |
| 121 | J-45 | 483 | <None> | <Collection: 0 items> | 0 | 647.53 | 71 |
| 123 | J-46 | 483 | <None> | <Collection: 0 items> | 0 | 647.53 | 71 |
| 125 | J-47 | 483 | <None> | <Collection: 0 items> | 0 | 647.53 | 71 |
| 127 | J-48 | 484.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 71 |
| 131 | J-50 | 489 | <None> | <Collection: 0 items> | 0 | 647.53 | 69 |
| 133 | J-51 | 489 | <None> | <Collection: 0 items> | 0 | 647.53 | 69 |
| 135 | J-52 | 490 | <None> | <Collection: 0 items> | 0 | 647.53 | 68 |
| 137 | J-53 | 488.5 | <None> | <Collection: 1 item> | 1.5 | 647.52 | 69 |
| 139 | J-54 | 490.5 | <None> | <Collection: 1 item> | 1.5 | 647.52 | 68 |
| 141 | J-55 | 485 | <None> | <Collection: 1 item> | 1.5 | 647.43 | 70 |
| 145 | J-57 | 486 | <None> | <Collection: 1 item> | 1.5 | 647.43 | 70 |
| 147 | J-58 | 482 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 72 |
| 149 | J-59 | 469.5 | <None> | <Collection: 1 item> | 1.5 | 647.55 | 77 |
| 151 | J-60 | 474 | <None> | <Collection: 1 item> | 2.99 | 647.54 | 75 |
| 153 | J-61 | 474 | <None> | <Collection: 1 item> | 1.5 | 647.45 | 75 |
| 157 | J-63 | 476 | <None> | <Collection: 1 item> | 1.5 | 647.45 | 74 |
| 159 | J-64 | 469 | <None> | <Collection: 1 item> | 2.99 | 647.55 | 77 |
| 161 | J-65 | 479 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 73 |
| 163 | J-66 | 471 | <None> | <Collection: 0 items> | 0 | 647.53 | 76 |
| 165 | J-67 | 471 | <None> | <Collection: 0 items> | 0 | 647.53 | 76 |
| 167 | J-68 | 465 | <None> | <Collection: 0 items> | 0 | 647.53 | 79 |
| 169 | J-69 | 461 | <None> | <Collection: 0 items> | 0 | 647.53 | 81 |
| 172 | J-70 | 474 | <None> | <Collection: 1 item> | 1.5 | 647.44 | 75 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 174 | J-71 | 474 | <None> | <Collection: 1 item> | 1.5 | 647.47 | 75 |
| 176 | J-72 | 472 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 76 |
| 178 | J-73 | 472 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 76 |
| 180 | J-74 | 468 | <None> | <Collection: 1 item> | 2.99 | 647.53 | 78 |
| 182 | J-75 | 464.5 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 79 |
| 184 | J-76 | 456 | <None> | <Collection: 1 item> | 2.99 | 647.51 | 83 |
| 186 | J-77 | 457 | <None> | <Collection: 1 item> | 2.99 | 647.51 | 82 |
| 188 | J-78 | 458.5 | <None> | <Collection: 1 item> | 2.99 | 647.51 | 82 |
| 190 | J-79 | 460 | <None> | <Collection: 1 item> | 1.5 | 647.44 | 81 |
| 192 | J-80 | 461.3 | <None> | <Collection: 1 item> | 1.5 | 647.44 | 81 |
| 194 | J-81 | 464 | <None> | <Collection: 1 item> | 2.99 | 647.51 | 79 |
| 196 | J-82 | 466.5 | <None> | <Collection: 1 item> | 2.99 | 647.51 | 78 |
| 198 | J-83 | 468 | <None> | <Collection: 1 item> | 1.5 | 647.42 | 78 |
| 200 | J-84 | 468 | <None> | <Collection: 0 items> | 0 | 647.53 | 78 |
| 202 | J-85 | 469.34 | <None> | <Collection: 0 items> | 0 | 647.53 | 77 |
| 204 | J-86 | 470.5 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 77 |
| 206 | J-87 | 482 | <None> | <Collection: 0 items> | 0 | 647.53 | 72 |
| 208 | J-88 | 481 | <None> | <Collection: 0 items> | 0 | 647.53 | 72 |
| 210 | J-89 | 479 | <None> | <Collection: 0 items> | 0 | 647.53 | 73 |
| 212 | J-90 | 477 | <None> | <Collection: 0 items> | 0 | 647.53 | 74 |
| 214 | J-91 | 474 | <None> | <Collection: 0 items> | 0 | 647.53 | 75 |
| 216 | J-92 | 472 | <None> | <Collection: 0 items> | 0 | 647.53 | 76 |
| 218 | J-93 | 469 | <None> | <Collection: 0 items> | 0 | 647.53 | 77 |
| 220 | J-94 | 468 | <None> | <Collection: 0 items> | 0 | 647.53 | 78 |
| 223 | J-95 | 485 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 70 |
| 225 | J-96 | 483.5 | <None> | <Collection: 1 item> | 1.5 | 647.43 | 71 |
| 227 | J-97 | 481.5 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 72 |
| 229 | J-98 | 480 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 72 |
| 231 | J-99 | 477 | <None> | <Collection: 1 item> | 2.99 | 647.51 | 74 |
| 233 | J-100 | 475.5 | <None> | <Collection: 1 item> | 2.99 | 647.52 | 74 |
| 235 | J-101 | 472.5 | <None> | <Collection: 1 item> | 2.99 | 647.53 | 76 |
| 237 | J-102 | 471 | <None> | <Collection: 1 item> | 2.99 | 647.53 | 76 |

VTTM 5928 – River Rock (1226 Ojai Road)
Santa Paula, CA
Base Scenario: Domestic water demand only.
(Residual pressure @ 89.73 psi for 133 gpm flow)

| ID | Label | Length (Scaled) (ft) | Start Node | Stop Node | Diameter (in) | Material | Hazen-Williams C | Has Check Valve? | Minor Loss Coefficient (Local) | Flow (gpm) | Velocity (ft/s) | Headloss Gradient (ft/ft) | Has User Defined Length? | Length (User Defined) (ft) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | P-1 | 281 | R-1 | J-1 | 8 | Ductile Iron | 130 | FALSE | 0 | 61.26 | 0.39 | 0 | FALSE | 0 |
| 59 | P-15 | 807 | R-1 | J-15 | 8 | Ductile Iron | 130 | FALSE | 0 | 71.91 | 0.46 | 0 | FALSE | 0 |
| 63 | P-17 | 119 | J-5 | J-17 | 8 | Ductile Iron | 130 | FALSE | 0 | 10.38 | 0.07 | 0 | FALSE | 0 |
| 65 | P-18 | 5 | J-17 | J-18 | 8 | Ductile Iron | 130 | FALSE | 0 | 10.38 | 0.07 | 0 | FALSE | 0 |
| 67 | P-19 | 50 | J-18 | J-19 | 8 | Ductile Iron | 130 | FALSE | 0 | 7.39 | 0.05 | 0 | FALSE | 0 |
| 69 | P-20 | 21 | J-19 | J-20 | 8 | Ductile Iron | 130 | FALSE | 0 | 3.26 | 0.02 | 0 | FALSE | 0 |
| 71 | P-21 | 50 | J-20 | J-21 | 8 | Ductile Iron | 130 | FALSE | 0 | 1.77 | 0.01 | 0 | FALSE | 0 |
| 73 | P-22 | 94 | J-21 | J-22 | 8 | Ductile Iron | 130 | FALSE | 0 | -1.23 | 0.01 | 0 | FALSE | 0 |
| 75 | P-23 | 66 | J-22 | J-23 | 8 | Ductile Iron | 130 | FALSE | 0 | -4.22 | 0.03 | 0 | FALSE | 0 |
| 77 | P-24 | 25 | J-23 | J-24 | 8 | Ductile Iron | 130 | FALSE | 0 | -5.72 | 0.04 | 0 | FALSE | 0 |
| 79 | P-25 | 6 | J-24 | J-25 | 8 | Ductile Iron | 130 | FALSE | 0 | 10.47 | 0.07 | 0 | FALSE | 0 |
| 81 | P-26 | 91 | J-25 | J-26 | 8 | Ductile Iron | 130 | FALSE | 0 | 8.98 | 0.06 | 0 | FALSE | 0 |
| 83 | P-27 | 59 | J-26 | J-27 | 8 | Ductile Iron | 130 | FALSE | 0 | 5.99 | 0.04 | 0 | FALSE | 0 |
| 85 | P-28 | 35 | J-27 | J-28 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 87 | P-29 | 18 | J-28 | J-29 | 8 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 89 | P-30 | 86 | J-15 | J-30 | 8 | Ductile Iron | 130 | FALSE | 0 | 71.91 | 0.46 | 0 | FALSE | 0 |
| 91 | P-31 | 8 | J-30 | J-31 | 8 | Ductile Iron | 130 | FALSE | 0 | 70.41 | 0.45 | 0 | FALSE | 0 |
| 93 | P-32 | 61 | J-31 | J-32 | 8 | Ductile Iron | 130 | FALSE | 0 | 67.42 | 0.43 | 0 | FALSE | 0 |
| 95 | P-33 | 76 | J-32 | J-33 | 8 | Ductile Iron | 130 | FALSE | 0 | 64.43 | 0.41 | 0 | FALSE | 0 |
| 97 | P-34 | 3 | J-33 | J-34 | 8 | Ductile Iron | 130 | FALSE | 0 | 62.93 | 0.4 | 0 | FALSE | 0 |
| 99 | P-35 | 3 | J-34 | J-35 | 8 | Ductile Iron | 130 | FALSE | 0 | 62.93 | 0.4 | 0 | FALSE | 0 |
| 101 | P-36 | 46 | J-35 | J-36 | 8 | Ductile Iron | 130 | FALSE | 0 | 61.44 | 0.39 | 0 | FALSE | 0 |
| 103 | P-37 | 46 | J-36 | J-37 | 8 | Ductile Iron | 130 | FALSE | 0 | 30.28 | 0.19 | 0 | FALSE | 0 |
| 105 | P-38 | 95 | J-37 | J-38 | 8 | Ductile Iron | 130 | FALSE | 0 | 27.29 | 0.17 | 0 | FALSE | 0 |
| 122 | P-46 | 92 | J-38 | J-45 | 8 | Ductile Iron | 130 | FALSE | 0 | 24.3 | 0.16 | 0 | FALSE | 0 |
| 124 | P-47 | 3 | J-45 | J-46 | 8 | Ductile Iron | 130 | FALSE | 0 | 22.8 | 0.15 | 0 | FALSE | 0 |
| 126 | P-48 | 3 | J-46 | J-47 | 8 | Ductile Iron | 130 | FALSE | 0 | 22.8 | 0.15 | 0 | FALSE | 0 |
| 128 | P-49 | 17 | J-47 | J-48 | 8 | Ductile Iron | 130 | FALSE | 0 | 21.31 | 0.14 | 0 | FALSE | 0 |
| 132 | P-51 | 106 | J-48 | J-50 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 134 | P-52 | 6 | J-50 | J-51 | 8 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.01 | 0 | FALSE | 0 |
| 136 | P-53 | 27 | J-51 | J-52 | 8 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 164 | P-67 | 79 | J-36 | J-66 | 8 | Ductile Iron | 130 | FALSE | 0 | 31.15 | 0.2 | 0 | FALSE | 0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 166 | P-68 | 50 | J-66 | J-67 | 8 | Ductile Iron | 130 | FALSE | 0 | 28.16 | 0.18 | 0 | FALSE | 0 |
| 168 | P-69 | 94 | J-67 | J-68 | 8 | Ductile Iron | 130 | FALSE | 0 | 22.17 | 0.14 | 0 | FALSE | 0 |
| 170 | P-70 | 94 | J-68 | J-69 | 8 | Ductile Iron | 130 | FALSE | 0 | 19.18 | 0.12 | 0 | FALSE | 0 |
| 171 | P-71 | 76 | J-69 | J-24 | 8 | Ductile Iron | 130 | FALSE | 0 | 16.19 | 0.1 | 0 | FALSE | 0 |
| 181 | P-76 | 22 | J-68 | J-74 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 201 | P-86 | 52 | J-18 | J-84 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 203 | P-87 | 26 | J-84 | J-85 | 8 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 207 | P-89 | 58 | J-48 | J-87 | 8 | Ductile Iron | 130 | FALSE | 0 | 18.31 | 0.12 | 0 | FALSE | 0 |
| 209 | P-90 | 16 | J-87 | J-88 | 8 | Ductile Iron | 130 | FALSE | 0 | 15.32 | 0.1 | 0 | FALSE | 0 |
| 211 | P-91 | 50 | J-88 | J-89 | 8 | Ductile Iron | 130 | FALSE | 0 | 13.83 | 0.09 | 0 | FALSE | 0 |
| 213 | P-92 | 28 | J-89 | J-90 | 8 | Ductile Iron | 130 | FALSE | 0 | 10.83 | 0.07 | 0 | FALSE | 0 |
| 215 | P-93 | 66 | J-90 | J-91 | 8 | Ductile Iron | 130 | FALSE | 0 | 7.84 | 0.05 | 0 | FALSE | 0 |
| 217 | P-94 | 28 | J-91 | J-92 | 8 | Ductile Iron | 130 | FALSE | 0 | 4.85 | 0.03 | 0 | FALSE | 0 |
| 219 | P-95 | 66 | J-92 | J-93 | 8 | Ductile Iron | 130 | FALSE | 0 | 1.86 | 0.01 | 0 | FALSE | 0 |
| 221 | P-96 | 28 | J-93 | J-94 | 8 | Ductile Iron | 130 | FALSE | 0 | -1.14 | 0.01 | 0 | FALSE | 0 |
| 222 | P-97 | 54 | J-94 | J-19 | 8 | Ductile Iron | 130 | FALSE | 0 | -4.13 | 0.03 | 0 | FALSE | 0 |
| 236 | P-104 | 34 | J-93 | J-101 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 238 | P-105 | 22 | J-94 | J-102 | 8 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.02 | 0 | FALSE | 0 |
| 33 | P-2 | 84 | J-1 | J-2 | 6 | Ductile Iron | 130 | FALSE | 0 | 49.29 | 0.56 | 0 | FALSE | 0 |
| 35 | P-3 | 214 | J-2 | J-3 | 6 | Ductile Iron | 130 | FALSE | 0 | 40.31 | 0.46 | 0 | FALSE | 0 |
| 37 | P-4 | 471 | J-3 | J-4 | 6 | Ductile Iron | 130 | FALSE | 0 | 31.33 | 0.36 | 0 | FALSE | 0 |
| 39 | P-5 | 138 | J-4 | J-5 | 6 | Ductile Iron | 130 | FALSE | 0 | 10.38 | 0.12 | 0 | FALSE | 0 |
| 41 | P-6 | 141 | J-1 | J-6 | 6 | Ductile Iron | 130 | FALSE | 0 | 11.97 | 0.14 | 0 | FALSE | 0 |
| 43 | P-7 | 173 | J-6 | J-7 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 61 | P-16 | 433 | J-15 | J-16 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 144 | P-57 | 23 | J-46 | H-2 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 156 | P-63 | 23 | J-34 | H-3 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 240 | P-106 | 9 | J-17 | H-1 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 248 | P-108 | 18 | J-24 | H-4 | 6 | Ductile Iron | 130 | FALSE | 0 | 0 | 0 | 0 | FALSE | 0 |
| 45 | P-8 | 40 | J-6 | J-8 | 2 | Ductile Iron | 130 | FALSE | 0 | 5.99 | 0.61 | 0.001 | FALSE | 0 |
| 47 | P-9 | 20 | J-6 | J-9 | 2 | Ductile Iron | 130 | FALSE | 0 | 5.99 | 0.61 | 0.001 | FALSE | 0 |
| 49 | P-10 | 40 | J-2 | J-10 | 2 | Ductile Iron | 130 | FALSE | 0 | 4.49 | 0.46 | 0.001 | FALSE | 0 |
| 51 | P-11 | 20 | J-2 | J-11 | 2 | Ductile Iron | 130 | FALSE | 0 | 4.49 | 0.46 | 0.001 | FALSE | 0 |
| 53 | P-12 | 20 | J-3 | J-12 | 2 | Ductile Iron | 130 | FALSE | 0 | 8.98 | 0.92 | 0.003 | FALSE | 0 |
| 55 | P-13 | 40 | J-4 | J-13 | 2 | Ductile Iron | 130 | FALSE | 0 | 10.47 | 1.07 | 0.003 | FALSE | 0 |
| 57 | P-14 | 20 | J-4 | J-14 | 2 | Ductile Iron | 130 | FALSE | 0 | 10.47 | 1.07 | 0.003 | FALSE | 0 |
| 148 | P-59 | 33 | J-38 | J-58 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 150 | P-60 | 34 | J-30 | J-59 | 2 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.15 | 0 | FALSE | 0 |
| 152 | P-61 | 33 | J-32 | J-60 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 160 | P-65 | 21 | J-31 | J-64 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 162 | P-66 | 33 | J-37 | J-65 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 177 | P-74 | 34 | J-67 | J-72 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 179 | P-75 | 22 | J-67 | J-73 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 183 | P-77 | 22 | J-69 | J-75 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 185 | P-78 | 33 | J-28 | J-76 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 187 | P-79 | 39 | J-27 | J-77 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 189 | P-80 | 34 | J-26 | J-78 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 195 | P-83 | 34 | J-22 | J-81 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 197 | P-84 | 38 | J-21 | J-82 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 205 | P-88 | 12 | J-84 | J-86 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 224 | P-98 | 23 | J-87 | J-95 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 228 | P-100 | 34 | J-89 | J-97 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 230 | P-101 | 22 | J-90 | J-98 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 232 | P-102 | 34 | J-91 | J-99 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 234 | P-103 | 23 | J-92 | J-100 | 2 | Ductile Iron | 130 | FALSE | 0 | 2.99 | 0.31 | 0 | FALSE | 0 |
| 138 | P-54 | 3 | J-50 | J-53 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 140 | P-55 | 3 | J-51 | J-54 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 142 | P-56 | 36 | J-45 | J-55 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 146 | P-58 | 36 | J-47 | J-57 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 154 | P-62 | 33 | J-33 | J-61 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 158 | P-64 | 33 | J-35 | J-63 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 173 | P-72 | 33 | J-66 | J-70 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 175 | P-73 | 22 | J-66 | J-71 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 191 | P-81 | 33 | J-25 | J-79 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 193 | P-82 | 34 | J-23 | J-80 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 199 | P-85 | 39 | J-20 | J-83 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |
| 226 | P-99 | 36 | J-88 | J-96 | 1 | Ductile Iron | 130 | FALSE | 0 | 1.5 | 0.61 | 0.003 | FALSE | 0 |

VTTM 5928 – River Rock (1226 Ojai Road)
Santa Paula, CA
Base Scenario: Domestic water demand only.
(Residual pressure @ 89.73 psi for 133 gpm flow)

| ID | Label | Hydrant Status | Include Lateral Loss? | Emitter Coefficient (gpm/psi^n) | Lateral Length (ft) | Elevation (ft) | Zone | Demand Collection | Demand (gpm) | Hydraulic Grade (ft) | Pressure (psi) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 239 | H-1 | Open | TRUE | 0 | 20 | 461.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 80 |
| 245 | H-2 | Open | TRUE | 0 | 20 | 483 | <None> | <Collection: 1 item> | 0 | 647.53 | 71 |
| 246 | H-3 | Open | TRUE | 0 | 20 | 472 | <None> | <Collection: 0 items> | 0 | 647.54 | 76 |
| 247 | H-4 | Open | TRUE | 0 | 20 | 458.5 | <None> | <Collection: 0 items> | 0 | 647.53 | 82 |

## LEDGEND

- ● WATER SYSTEM NODE
- P-6 PIPE LABEL
- J-1 JUNCTION LABEL
- H-2 FIRE HYDRANT LABEL
- R-1 RESERVOIR (PT. OF CONNECTION)
- PIPE AND FLOW DIRECTION

50 25 0 25 50 100

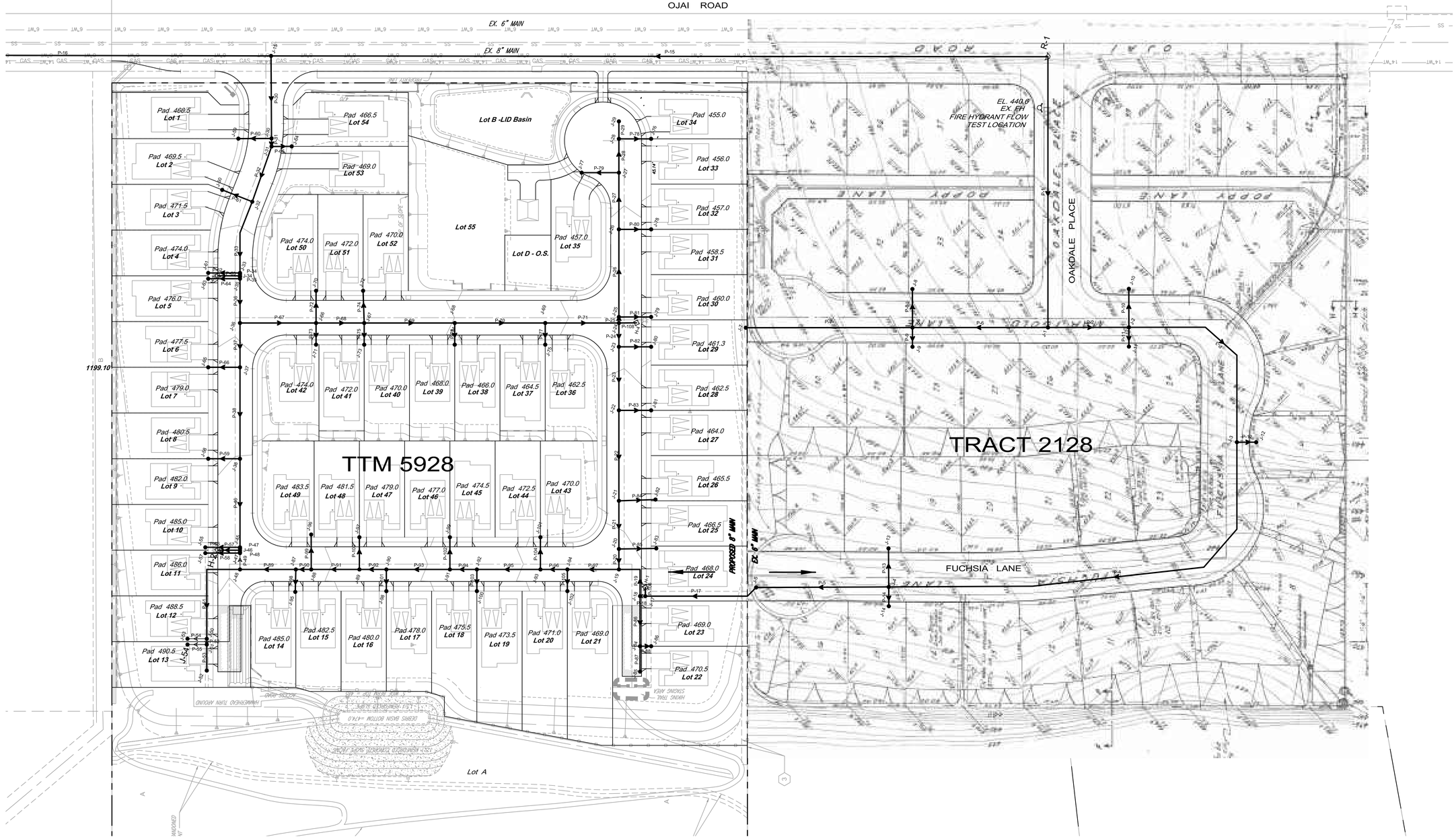
GRAPHIC SCALE
SCALE : 1"=50'

## PROPOSED WATER SYSTEM INFORMATION

| | |
|---|---|
| TOTAL SINGLE FAMILY RESIDENCE (SFR) | 34 FROM TRACT 2128 + 55 FROM TTM 5928 = 89 |
| PEAK HOUR DEMAND PER SFR | 1.496 GPM (3.5 RESIDENTS PER SFR) |
| TOTAL PEAK HOUR DEMAND | 133 GPM |
| FIRE FLOW DEMAND | 1,500 GPM |

## 'WATERCAD' MODELING ANALYSES RESULTS

| SCENARIO | FLOW RATE | PRESSURE @ HIGHEST POINT |
|---|---|---|
| #1: PEAK HOUR DEMAND (PHD) | 133 GPM | 68 PSI @ J-54 |
| #2: PHD + FIRE FLOW DEMAND | 1,633 GPM | 29 PSI @ J-54 & H-2 |




| NO. | REVISIONS: | DATE: | BY: |
|---|---|---|---|
| | | | |

REFERENCE

WORK ACCEPTED


Southland Civil Engineering & Survey, LLP
87 N. Raymond Ave., Ste. 500, Pasadena, CA 91103
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SOUTHLAND CIVIL ENGINEERING AND SURVEYING, LLP

| | |
|---|---|
| ENGINEER: | WILLIAM TING, P.E. |
| DESIGNED BY: | WCT |
| DRAWN BY: | WCT |
| CHECKED BY: | STEPHEN LEWIS, P.E. |
| DRAWING SCALE: | 1" = 50' |

SHEET TITLE:

# EXHIBIT 'A'
# WATER SYSTEM MAP
for
# TTM 5928 - RIVER ROCK

1226 OJAI ROAD, SANTA PAULA, CA 93060

OWNER:
WILLIAM HOMES, INC.
21080 CENTRE POINTE PKWY., #101; SANTA CLARITA, CA 91350

JOB NUMBER:
600-13010

DRAWING NO.
**W-1**

SHEET 1 OF 1 SHEETS

PLAN CHECK # XXXXXXXXXXXX PCIS XXXXXXXXXXXX

REVISION DATES (DESIGN STAGE ONLY)

REVISION DATES (DESIGN STAGE ONLY)

Drawing Name: WaterSystemMap.dwg
Last Edit Date: Jul 30, 2014 - 3:54pm
Drawing Location: J:\600-13010\Water\CAD\
Plotted By: Ayu
AutoCAD Version: AutoCAD 12