2015

Powder Mountain Resort Development
Phase 1 – Phase 1E Update
Hydraulic Model Report

NV5
BEYOND ENGINEERING

7/7/2015

HYDRAULIC MODEL DESIGN ELEMENTS REPORT

Powder Mountain Resort Development – Phase 1 PRUD – Phase 1E Update
(Project Name)

#29028
(Water System Number)

Powder Mountain Phase I PRUD Culinary Water System
(Water System Name)

#9318
(DDW File Number, If Available)

July 7, 2015
(Date)

Ryan Cathey, PE
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July 2015

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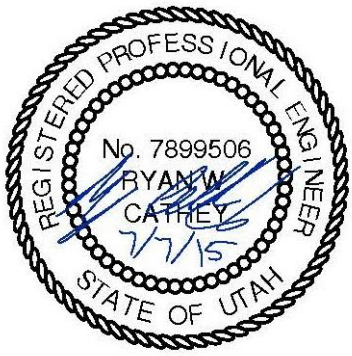
Meets all requirements as set forth in *R309-511* (*Hydraulic Modeling Rule*) and complies with the provisions thereof, as well as the sizing requirements of *R309-510*, and the minimum water pressures of *R309-105-9*. Where applicable the proposed additions to the distribution system will not cause the pressures at any new or existing connections to be less than those specified in R309-105-9. The calibration methodology is described in the report and the model is sufficiently calibrated and accurate to represent the conditions within this water system. The hydraulic modeling method is Hazen-Williams, and the computer software used was Bentley WaterCAD V8i.

Signature _____ State of Utah No. 7899506
Ryan W. Cathey, P.E.



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EXECUTIVE SUMMARY

The Powder Mountain Water Distribution System Phase I PRUD is intended to ensure that this system will have adequate capacity to meet peak instantaneous demands as well as peak day demands with fire flow requirements for Phase I.

Since this is a working document all infrastructure sizing presented in this document is based on the best information available at the time. Future development should review their own infrastructure based on their product type to ensure demands for peak day, peak instantaneous and fire flows are satisfied. Concurrently, this hydraulic model should be kept updated with the latest information.

This submittal is an update to the original submittal that was conditionally approved in September of 2013. One of the conditions of the Conditional Approval is an update to the hydraulic model and submittal of construction drawings for Lots 1-4, 9, and 10 (Phase 1E). Enclosed is the updated hydraulic model analysis and attached is the construction drawings and updated hydraulic model.

1.0 INTRODUCTION

1.1 SYSTEM INFORMATION

The existing culinary water system at Powder Mountain is a series of small pump stations and storage facilities. The system has two primary sources, one shallow well and one spring. The majority of mainline throughout the system is 4" diameter and insufficient for fire protection needs. The small system services roughly 123 customers and is managed by Powder Mountain Water and Sewer Improvement District.

1.2 EXISTING SYSTEM DESCRIPTION

The existing system is managed by Powder Mountain Water and Sewer Improvement District (PMWSID). The Phase 1 system has been connected to the existing system through and "Interconnection Water Line". However, for the purpose of this report and analysis, the proposed Phase 1 system will be completely independent and will function as a standalone network. Although, there has been some oversizing of infrastructure in order to accommodate existing and future developments.

1.3 PROPOSED & PROJECTED ADDITIONS AND IMPROVEMENTS TO THE SYSTEM

The existing culinary water system composed primarily of 4" infrastructure is inadequate in providing the required peak day, peak instantaneous and peak day with fire flow demands as well as providing storage for average peak day demand and fire suppression as required by the State of Utah.

To achieve compliance with Division of Drinking Water requirements the existing system needs to be upsized to a minimum of 8" for fire suppression.

The proposed development at Powder Mountain will address each of these issues over time. The phased development in this area includes the development of several new sources, additional storage, and new pipe networks to meet all state requirements. Prior to this phase of development an "Interconnection Water Line" was installed to provide additional storage capacity to the existing system from the new storage tank. However, for the purposes of this analysis the phase 1 system is considered to be stand alone.

See table 2 below in section "2.1 ERC EVAULATION" for a list of proposed connections for Phase 1. The current phase includes development of 154 new connections East of Hidden Lake. In order to serve the proposed and future connections a new well was drilled near Hidden Lake with anticipation of an approximate source safe yield of 120 gpm. In addition a new storage facility was constructed to hold approximately 400,000 gallons, 250,000 of which will be fire suppression per the request of the local fire marshal. In phase 1 approximately 23,500 linear feet of new pipeline has been or will be constructed to meet the needs of phase 1 new connections and future development. The new facilities in Phase 1 will be owned and managed by PMWSID.

2.0 WATER DEMAND CRITERIA

The parameters used to evaluate the present and future capacity requirements of the water distribution system are based on R309-510 of the State of Utah Administrative Code for Public Drinking Water Systems. A minimum pipe diameter of 8" is required for all water mains serving fire hydrants. The maximum velocity allowable in a pipeline is 15 feet per second.

2.1 ERC EVALUATION

The Powder Mountain Phase I PRUD has two types of demands; indoor and fire flow. An equivalent residential connection (ERC) was determined based on square footage for each building type, such as hotel, single family, commercial, etc. The ERCs were developed using DDW standards. *"TABLE 1"* shows the different building types with the calculated GPD/ERC. To determine the peak day indoor demand the number of ERCs was multiplied by the DDW indoor peak day demand of 800gpd/ERC. The indoor peak instantaneous demand was calculated by using the equation outlined in *"2.0 WATER DEMAND CRITERIA".* Required storage was determined by multiplying the number of ERCs by 400gal/unit for residential units.

TABLE 1

Landuse	ERC/Unit	GPD/Unit	Fireflow (GPM)
residential	1.00	800	2000
Nest	1.00	800	2000

Fire flows and storage requirements for each building type were provided by from the local fire authority requiring a maximum fire flow 2,000 gpm and maximum storage of 250,000 gallons as required by the local fire authority.

TABLE 2

Area	ERC
Phase 1	154

2.2 INDOOR WATER USE DEMAND

Peak Day Demand
Source sizing per R309-510-7 is defined as 800 gallons per day per connection (gpd/c) for residential single family homes and 800 gallons per day per equivalent residential connection (ERC). Please note that though 800 gpd/ERC as noted in "2.0 WATER DEMAND CRITERIA" is a conservative estimate since these homes are recreational.

Per R309-105-9 Minimum Water Pressure, 40 psi must be maintained for Peak Day Demand.

Peak Instantaneous Demand
The equation outlined in R309-510-9 (1)(a) where N is the number of ERC's is as follows:

$$Q=10.8 \times N^{0.64}$$

Per R309-105-9 Minimum Water Pressure, 30 psi must be maintained for Peak Instantaneous Demand.

2.3 OUTDOOR WATER USE DEMAND

Please see attached for a letter summarizing the outdoor water use demand for the development. Outdoor water use has been limited to an average of 1,800 square feet per ERC.

2.4 FIRE FLOW REQUIREMENTS

Per R309-105-9 Minimum Water Pressure, 20 psi must be maintained for Peak Day Demand while experiencing fire flows.

2,000 gpm for residential units and 250,000 gallons have been provided for fire suppression as required by the local fire authority.

2.5 STORAGE

Storage facilities must have a capacity of 400gal/ERC for indoor single family residential.

2.6 DEMAND VERSUS EXISTING (AND/ OR PROPOSED) CAPACITY

The "Interconnection Water Line" will provide substantial additional storage for the existing system. However, the new well at hidden lake is not sufficient to provide source capacity for the existing system. It is assumed that the existing system will run off its existing sources. Therefore, the demands of the existing system have been ignored for this analysis.

Although Phase 1 is assessed as a stand-alone system, there was a significant amount of design in anticipation of future development. It is anticipated that the infrastructure in this phase will be adequate to support the current future plans. Source capacity is sufficient for the current development. However, additional sources will need to be developed for future phases. In addition, actual water use should be closely monitored and compared to standard demand criteria as outlined in Utah State Code R309-510.

3.0 METHODOLOGY AND ANALYSIS

3.1 HYDRAULIC MODEL USED

Microsoft Excel was used to calculate the inputs based on the assumptions outlined in this document. This data was then input into Bentley WaterCAD to size pipes and verify demands and pressures for Peak Day Demand, Peak Instantaneous Demand and Peak Day Demand with Fire Flows have been met for Phase 1 and Master Plan scenarios.

Note: The Phase I pipes are oversized for future expansion.

3.2 HYDRAULIC MODEL INPUT

See *"TABLE 2"* and *"APPENDIX"* for input information.

3.3 FIELD CALIBRATION METHODOLOGY

Since the interconnection water line to the existing PMWSID system has not been fully completed, there are no field calibrations that can be performed. NV5 suggests that calibration of the hydraulic model is performed once the system is constructed and opperational.

3.4 HYDRAULIC MODEL ANALYSIS

Phase 1
This section addresses the developments that are predicted to begin construction in 2015. The existing major water infrastructure, such as transmission lines, tanks and sources that are in construction will be extended to serve Phase 1E.
Phase 1 demands have been calculated based on the Site Plan provided by Langvardt Design Group. There is an 18" waterline currently under construction that will connect an approximately 120 gpm producing well to a minimum 413,749 gallon storage tank. The tank will maintain pressure and flow for peak day, peak instantaneous and peak day demand with fire flow. The demands have been adjusted to match the increase in building infrastructure and were calculated in the same manner as described in the "2.0 WATER DEMAND CRITERIA" section.

Fire flows and storage requirements will remain the same for the Phase 1 scenario as described in *"2.0 WATER DEMAND CRITERIA"*.

4.0 ANALYSIS RESULTS AND CONCLUSIONS

4.1 HYDRAULIC MODEL RESULTS

Phase 1
The Phase 1 total domestic peak day and peak instantaneous demands are 86 gpm and 1420 gpm respectively with 154 ERCs as shown in *"TABLE 2"*. The indoor peak instantaneous was calculated using the equation outlined in *"2.0 WATER DEMAND CRITERIA"*. Per DDW standards fire flow is added to peak day giving a peak day demand with fire flow of 2,100 gpm. Therefore the controlling flow is the peak instantaneous demand. The total required storage for the Phase 1 infrastructure is 413,749 gallons which includes 250,000 gallons of fire storage.

The distribution system with the proposed infrastructure has no deficiencies under peak instantaneous, and peak day with fire demands. However, the proposed system is deficient in the peak day scenario at Junction J-62. This junction is located at the high point of Heartwood Drive (Phase 1B). Pressure at this junction is 46.0 psi when the tank is full, however, in the lowest operating condition (the tank only has fire protection storage of 250,000 gallons), elevation 8893.20, the pressure at junction J-62 is 38.0 psi. In addition, when the tank is near empty the peak day pressure is 34.0 psi. This roadway is located along a ridgeline and there are 11 single family homes and 15 nest cabins that receive water from this pipeline. All homes and cabins are downhill of the roadway therefore, actual deficiencies experienced by users will be less than at junction J-62. Please note that all requirements are met for the peak instantaneous and peak day with fire flow during all conditions. Due to the minor nature of the deficiency and compliance regarding peak day with fire flow and peak instantaneous conditions, an exception has been previously granted by The Division of Drinking Water. See attached for the letter of exception in the conditional plan approval dated September 11, 2013

The impacts to the existing system have been assessed in a separate Hydraulic Model Analysis. In general, the interconnection to the new water tank has provided substantial additional storage for the existing system while having minimal pressure impacts.

4.2 COMPARISON OF FIELD MEASUREMENTS AND MODEL RESULTS

The only field measurements documented at this time was conducted for the existing water distribution system as outlined in *"1.1 SYSTEM INFORMATION"*. Model Results can be found in *"4.0 ANALYSIS RESULTS AND CONCLUSION"*.

4.3 CONCLUSION OF PROJECT IMPACT FROM MODEL RESULTS

Listed below in order of importance are the recommendations based on the results from this hydraulic model.

1. Closely monitor and record actual use for new and existing portions of the development and compare to standard demand values.
2. Improve a second source in the next phase of development
3. Update demands and Master Plan as more information becomes available.
4. Update Master Plan with each proposed development.

4.4 RULE COMPLIANCE CONCLUSION

With the designed improvements all existing and new water users will be provided the quantity of water at pressures compliant with Division of Drinking Water rules (*R309-105-9 Administration: General Requirements of Public Water Systems – Minimum Water Pressure*). The only exception is the 11 single family homes and 15 next cabins. Exception to the rule has been granted for the minor deficiency that has been identified in Section 4.1.

APPENDIX

Conditional Plan Approval – September 2013
Irrigation Use Letter – January 2014

AutoCAD Exhibits
Proposed Phase 1 System Schematic Layout
Pressure Zones Exhibit
WaterCAD Input Spreadsheet
WaterCAD Schematic

WaterCAD Tables
Peak Day Instantaneous - Junction Table/Pipe Table
Peak Day with Fire Flow - Fire Flow Report/Junction Table/Pipe Table
Peak Day - Junction Table/Pipe Table

State of Utah

GARY R. HERBERT
Governor

GREG BELL
Lieutenant Governor

Department of
Environmental Quality

Amanda Smith
Executive Director

DIVISION OF DRINKING WATER
Kenneth H. Bousfield, P.E.
Director

September 11, 2013

Evan D. Miller
Powder Mountain Ski Resort
P.O. Box 270
Eden, UT 84310

Dear Mr. Miller:

Subject: **Conditional Plan Approval**, Summit at Powder Mountain PRUD Phase 1 (DS001 Distribution System), and **Exception to *R309-105-9*** Pressure Requirements, System #29028, File #9318

On August 6, 2013, the Division of Drinking Water (the Division) received the plans and specifications for the distribution system for Phase 1 of the Summit at Powder Mountain PRUD from your consultant, Ryan Cathey, P.E., of NV5, Inc. Also received on this date was the updated Hydraulic Model for Phase 1 only, and an exception request to water distribution system pressure requirement in *R309-105-9*. The Division received the preliminary engineer design plans for the distribution system and draft Hydraulic Model Report on March 18, 2013. The Division provided review comments on these documents in a letter dated July 17, 2013 from Bob Hart, P.E. Mr. Cathey provided a response to the review comments in a letter dated August 8, 2013.

The Summit Group's Master Plan shows the development of 2,500 estate homes, condos, town houses, and cabins at the Powder Mountain Resort. The Phase 1 of the Summit at Powder Mountain PRUD has the potential for 154 connections to the water system. The following water infrastructure being developed by the Summit Group will become part of the Powder Mountain Water and Sewer District:

- The distribution system serving Phase 1 of the Summit at Powder Mountain PRUD (154 connections) is reviewed under File #9318.
- The drilling of the Hidden Valley PWS Well (WS008) to provide water to Phase 1 of the Summit at Powder Mountain PRUD is being reviewed under Project #9428.
- The construction of the Hidden Lake 415K Gallon Tank (ST004) and the well equipping of the Hidden Lake PWS Well (WS008) (Project #9319) were approved by the Division in a letter dated July 22, 2013.

Our understanding of the project for the Phase 1 distribution system is the installation of a l6-inch water line in the Summit Pass roadway, which will become a county road, to deliver water to four areas in Phase 1 of the Summit at Powder Mountain PRUD. There are five sets of drawings that were submitted:

1. Summit at Powder Mountain Phase 1 – Summit Pass & Spring Park
2. Summit at Powder Mountain Phase 1A – Horizon Run
3. Summit at Powder Mountain Phase 1B – Heartwood Drive
4. Summit at Powder Mountain Phase 1C – Copper Crest Road
5. Summit at Powder Mountain Phase 1D – Meridian Ave., Daybreak Ridge, and Rolling Drive

There will be one pressure reducing valve station in the Summit Pass roadway. The piping for the distribution system will be approximately 23,500 feet of HDPE pipe. The water lines in the four areas are mostly 10-inch and 12-inch HDPE pipe. Approximately 30 fire hydrants will be installed.

We have completed our review of the plans and specifications, stamped and signed by Ryan Cathey, P.E., and dated July 30, 2013, and find they basically comply with the applicable portions of Utah's Administrative Rules for Public Drinking Water Systems in R309. **We hereby approve the proposed plans to construct the distribution system (DS001) for Phase 1 of the Summit at Powder Mountain PRUD subject to the following conditions**:

1. The waterline plans for six lots (**1, 2, 3, 4, 9, and 10**) were not included in the plans that were submitted. These lots will be served with a branch waterline in the common driveway serving these lots. Per the hydraulic model, the drop in elevation will require a pressure reducing valve. **The waterline plans for these lots shall be submitted to the Division for review and approval prior to construction**.

2. The waterline plans to serve 15 nest cabins on lot 35 off Heartwood Drive were not included in the plans that were submitted. **The waterline plans for the 15 nest cabins shall be submitted to the Division for review and approval prior to construction**.

3. The waterline plans to serve 20 nest cabins on lot 116 off Daybreak Ridge Drive were not included in the plans that were submitted. **The waterline plans for the 20 nest cabins shall be submitted to the Division for review and approval prior to construction**.

Ryan Cathey, P.E., requested that the Director, per State of Utah Administrative Rules for Public Drinking Water Systems *R309-500-4*, titled Authority grant an exception to Rule *R309-105-9* Minimum Water Pressure. This rule requires all new water systems shall be designed and shall meet the following minimum water pressures at points of connection:

(a) 20 psi during conditions of fire flow and fire demand experienced during peak day demand;

(b) 30 psi during peak instantaneous demand; and,

(c) 40 psi during peak day demand.

The hydraulic model shows that lots 24-34 for single family homes and lot 35 which will have 15 nest cabins cannot meet the 40 psi minimum peak day demand for all operating conditions. If the storage tank is full, 46.0 psi pressure is provided to these lots during peak day demand, but at the lowest operating level of the tank (only the 250,000 gallons of fire storage left in the tank); only 38.0 psi pressure is provided to these lots during peak day demand. If the storage tank was essentially empty, 34.0 psi is provided to these lots during peak day demand. The condition where peak day demand would be less than the required 40 psi would be unusual and temporary. The water system meets the minimum pressure requirements in all scenarios of peak instantaneous demand and peak day demand with fire flow. There is not a site to locate the storage tank at a higher elevation without going a considerable distant. Due to the conditions of the earthwork at the Hidden Lake 415K Gallon Tank site, the cost associated with raising the tank elevation is cost prohibitive. The water system is proposing to build the tank as designed in the Hidden Lake 415K Gallon Tank project (File #9319).

The Division concurs with your evaluation of the pressure provided to the single family homes on lots 24-34 and the 15 nest cabins on lot 35. There would be minimal improvement to the protection of public health, if any, from modifying the tank design to a higher elevation. The proposed design of the distribution system and the storage tank elevation meets the intent of the rule in providing adequate pressure to all connections. The cost to correct the slight decrease to under 40 psi during peak demand and the unusual condition of the tank being at its lowest operating level, is not justified by any improvement to protection of the public health for this water system. On this basis, **an exception to *R309-105-9* Minimum Water Pressure is hereby granted for the single family homes on lots 24-24 and the 15 nest cabins on lot 35.**
This approval pertains to construction only. **An operating permit must be obtained from the Director before the distribution system (DS001) for Summit at Powder Mountain PRUD Phase 1 may be put into service**. A checklist outlining the items required for operating permit issuance is enclosed for your information.

Approvals or permits by local authority or county may be necessary before beginning construction of this project. As the project proceeds, notice of any changes in the approved design, as well as any change affecting the quantity or quality of the delivered water, must be submitted to the Division. We may also conduct interim and final inspections of this project. Please notify us when actual construction begins so that these inspections can be scheduled.

This approval must be renewed if construction has not begun or if substantial equipment has not been ordered within one year of the date of this letter.

If you have any questions regarding this letter, please contact Bob Hart, of this office, at (801) 536-0054, or Ying-Ying Macauley, Engineering Section Manager, of this office, at (801) 536-4188.

Sincerely,

Kenneth H. Bousfield, P.E.
Director

REH

Enclosure – Operating Permit Checklist

cc: Louis Cooper, Env. Director, Weber-Morgan Health Department, lcooper@co.weber.ut.us
John Reeve, Reeve and Associates, Inc., jreeve@reeve-assoc.com
Sean Wilkinson, Weber County Planner, swilkinson@co.weber.ut.us
Jared Andersen, P.E., Weber County Engineer, jandersen@co.weber.ut.us
Dana Q. Schuler, P.E., Weber County Engineer, dshuler@co.weber.ut.us
Russ Watts, Summit Group, russ@wattsenterprises.co
Jeff Beckman, P.E., Bowen Collins & Associates, Inc., jbeckman@bowencollins.com
Ryan Cathey, P.E., NV5, Inc., ryan.cathey@NV5.com
Bob Hart, Division of Drinking Water, bhart@utah.gov

DDW-2013-009235

Division of Drinking Water Checklist for Issuing Operating Permits

Water System Name: _____ System Number: _____

Project Description: _____ File Number: _____

The following items must be submitted and found to be acceptable for operating permit issuance with the exception of distribution lines without booster pumps and/or pressure-reducing valves. *[Waterline projects without booster pumps and/or pressure-reducing valves may be placed into service prior to submittal of all items or the Division's issuance of an operating permit if: (1) the water system has officially designated a professional engineer (P.E.) responsible for the entire water system; and, (2) if this designated P.E. has received a "Certification of Rule Conformance" statement issued by a P.E. and evidence of satisfactory bacteriological sample result. In this case, a public water system will submit all items needed for obtaining an operating permit for each distribution system project even after the new waterlines have been placed into service as determined by the water system's designated P.E.]*

☐ Utah Registered Engineer's Certification of Rule Conformance that all conditions of plan approval (including conditions set forth by the Division Director in any conditional approval letter) have been accomplished

☐ Utah Registered Engineer's statement of what plan changes, if any, were necessary during construction and a Certification of Rule Conformance that all of these changes were in accordance with applicable Utah Administrative Code, *R309-500 through R309-550, Drinking Water Facility, Construction, Design, and Operation Rules*

☐ As-built drawings have been received at the Division (unless no changes were made to the previously submitted and approved pre-construction drawings)

☐ Confirmation that the record drawings have been received by the water system (unless no changes were made to the previously submitted and approved pre-construction drawings)

☐ Evidence of proper flushing and disinfection in accordance with the appropriate ANSI/AWWA Standards

- ☐ ANSI/AWWA C651-05 AWWA Standard for Disinfecting Water Mains
  - Two consecutive sample sets (each 1200 feet, end-of-line, each branch, etc.), none positive, at least 24 hours apart
- ☐ ANSI/AWWA C652-02 AWWA Standard for Disinfection of Water-Storage Facilities
  - One or more samples, none positive
- ☐ ANSI/AWWA C653-03 AWWA Standard for Disinfection of Water Treatment Plants
  - Two consecutive samples per unit, none positive, no less than 30 minutes apart
- ☐ ANSI/AWWA C654-03 AWWA Standard for Disinfection of Wells
  - Two consecutive samples, none positive, no less than 30 minutes apart

☐ Water quality data, where appropriate [*Guidance: Include appropriate raw and finished water data that demonstrate the performance of the new treatment facility. Storage tank water should be analyzed for residual volatile organic compounds after tank interior painting or coating.]*

☐ Confirmation that the water system owner has received the O&M manual for the new facility

☐ Location data of new storage tank, treatment facility, or source, if applicable

NV5
BEYOND ENGINEERING

January 6, 2014

Bob Hart, PE
Division of Drinking Water
195 North 1950 West
Salt Lake City, UT

Subject: Outdoor Demand Calculations
Water System # 29028; DDW File #9318

Mr. Hart,

Upon review of the WELL DRILLING, CONSTURCIOTN AND TESTING REPORT for the HIDDEN LAKE WELL (WS008) prepared by Laughlin Water Associates in December 2013 I have evaluated the water supply for the Summit Eden at Powder Mountain Phase 1 PRUD (Project #9318). Based on the "two thirds" rule the safe yield for the well has been assumed to be 120 gallons per minute. The residential peak day demand associated with the 154 units in the Phase 1 PRUD is 85.56 gallons per minute. **The source has 34.44 gallons per minute of excess capacity**.

Currently, the Phase 1 PRUD Hydraulic Model and Report excludes outdoor water use due to concerns of limited source capacity. Any excess source capacity has been planned to be used for outdoor demands. Per Utah Rule R309-510-7 "Source Sizing" this project is located in map zone three. Therefore, the outdoor demand for this project is 3.39 gallons per minute per irrigated acre. Therefore, the excess capacity can provide irrigation demands for 2,875 square feet of irrigated area per ERC on average. However, a primary goal of this development is to maintain the natural landscape to the maximum extent possible. Therefore, **the maximum square footage of irrigated area for all 154 ERCs has been reduced to an average of 1,800 square feet per ERC**. There is a range of lot sizes and types in the Phase 1 PRUD. The maximum irrigated area will vary depending on the lot size. However, the overall average for Phase 1 will not exceed 1,800 square feet.

The total irrigated area for the Phase 1 PRUD is 277,200 square feet (6.36 acres). At 3.39 gallons per minute per acre the outdoor demand is 21.57 gallons per minute. Please note that the actual demand per acre will be significantly lower than 3.39 GPM due to restrictions on turf grass, irrigation system requirements and limitations on plant selection.

The combined peak day demand for the Phase 1 PRUD is 85.56 GPM (indoor) + 21.57 GPM (outdoor) = 107.13 gallons per minute. There is a remainder of approximately 12.9 gallons per minute in excess capacity which equals roughly 20 future connections.

The additional flow rate due to outdoor demand has been considered for the sizing of the distribution system and there are no deficiencies. A revised hydraulic model can be provided if needed.

If you have any questions please do not hesitate to contact me at 801-743-1308 or ryan.cathey@NV5.com.

Respectfully,

Ryan Cathey, P.E.
Engineering Manager
NV5, Inc.

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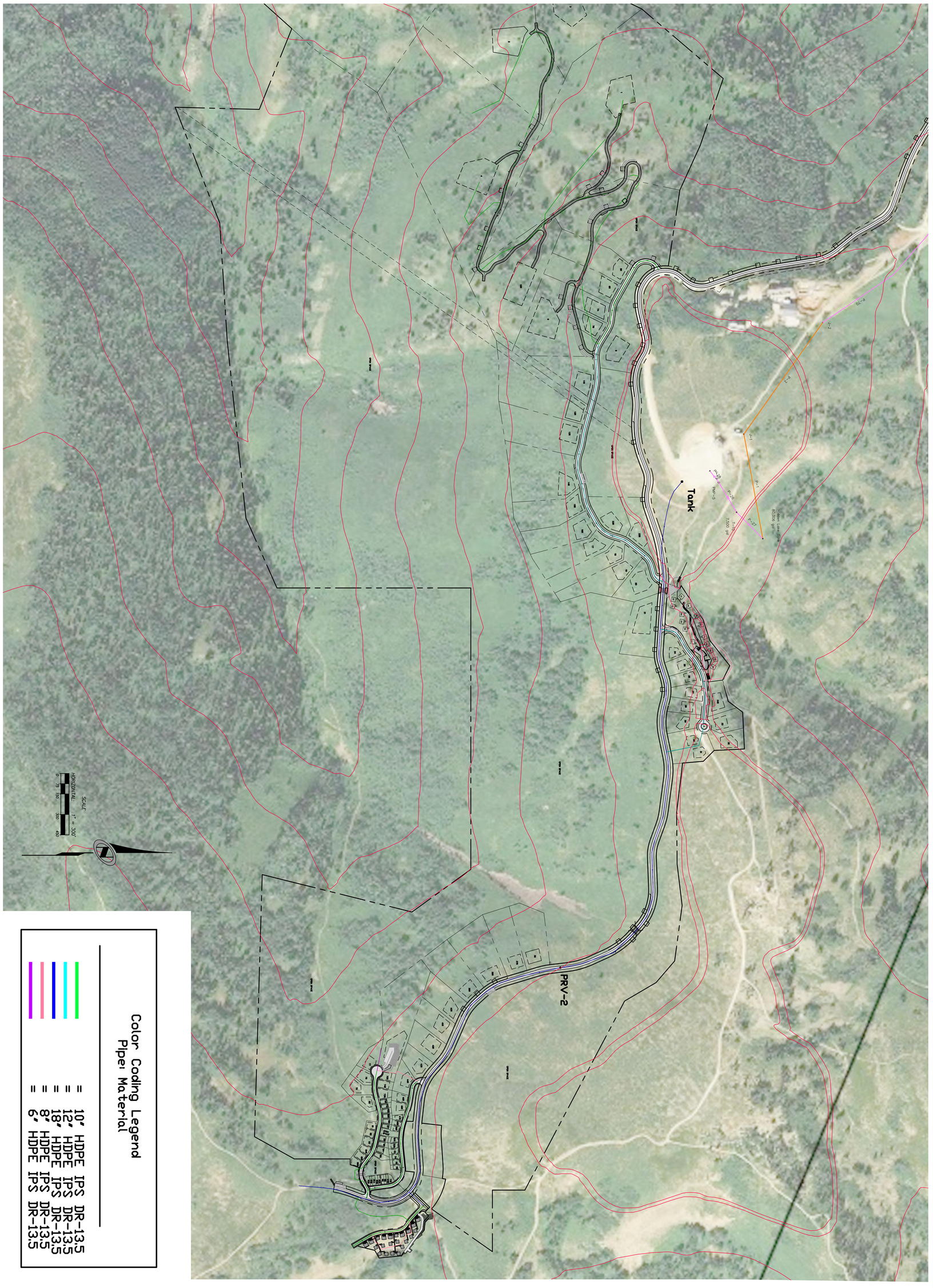

SLB07793
JOB NUMBER

SCALE
VERTICAL: 1" = N/A
HORIZONTAL: 1" = 200'

6
SHEET NUMBER

NV5
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POWDER MOUNTAIN RESORT

PHASE 1 CULINARY WATER SYSTEM
PRESSURE ZONE MAP

PREPARED FOR: SUMMIT, LLC

DATE SUBMITTED: 12/18/2013

NO.	BY	DATE	REVISIONS:

WaterCAD INPUT SPREADSHEET

PARCEL_ADD	Water_Junc	Phase	Landuse	Low Density UNITS/BLDG SF	# of Units	ERC	PEAK DAY DEMAND	PEAK INSTANTANEOUS DEMAND	FIRE FLOW DEMAND
LOT 1	J-63	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 2	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 3	J-38	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 4	J-64	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 5	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 6	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 7	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 8	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 9	J-143	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 10	J-144	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 11	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 12	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 13	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 14	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 15	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 16	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 17	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 18	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 19	J-65	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 20	J-66	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 21	J-65	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 22	J-65	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 23	J-54	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 24	J-127	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 25	J-127	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 26	J-127	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 27	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 28	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 29	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 30	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 31	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 32	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 33	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 34	J-62	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 35/1-3,15	J-127	Phase 1	Nest	4	4	4.00	2.22	26.23	2000
LOT 36	J-67	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 37	J-67	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 38	J-67	Phase 1	Residential	1	1	1.00	0.56	10.80	2000

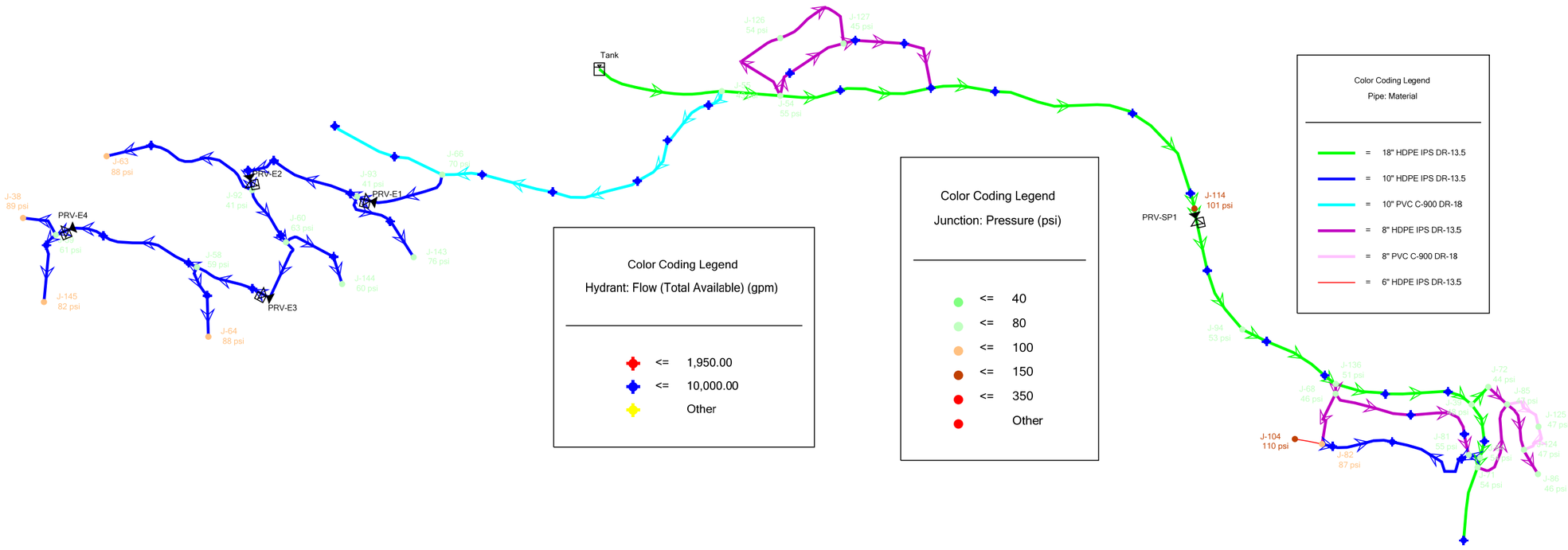
PARCEL_ADD	Water_Junc	Phase	Landuse	Low Density UNITS/BLDG SF	# of Units	ERC	PEAK DAY DEMAND	PEAK INSTANTANEOUS DEMAND	FIRE FLOW DEMAND
LOT 39	J-67	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 40	J-94	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 41	J-94	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 42	J-94	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 43	J-68	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 44	J-68	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 45	J-68	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 46	J-68	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 47	J-68	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 48	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 49	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 50	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 51	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 52	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 53	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 54	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 55	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 56	J-83	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 57A	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 57B	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 58	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 59	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 60A	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 60B	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 61A	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 61B	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 62	J-81	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 63	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 64	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 65	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 66	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 67	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 68	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 69	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 70	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 71	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 72	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 73	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000

PARCEL_ADD	Water_Junc	Phase	Landuse	Low Density UNITS/BLDG SF	# of Units	ERC	PEAK DAY DEMAND	PEAK INSTANTANEOUS DEMAND	FIRE FLOW DEMAND
LOT 74	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 75	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 76	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 77	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 78	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 79	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 80	J-82	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 81	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 82	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 83	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 84	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 85	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 86	J-95	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 87	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 88	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 89A	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 89B	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 90	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 91	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 92	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 93	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 94A	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 94B	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 95	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 96	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 97	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 98	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 99	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 100	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 101	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 102	J-39	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 103	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 104	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 105	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 106	J-84	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 107	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 108	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 109	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000

PARCEL_ADD	Water_Junc	Phase	Landuse	Low Density UNITS/BLDG SF	# of Units	ERC	PEAK DAY DEMAND	PEAK INSTANTANEOUS DEMAND	FIRE FLOW DEMAND
LOT 110	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 111	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 112	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 113	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 114	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 115	J-124	Phase 1	Residential	1	1	1.00	0.56	10.80	2000
LOT 116/3-4, 6-7	J-124	Phase 1	Nest	4	4	4.00	2.22	26.23	2000
LOT 35/4-14	J-126	Phase 1	Nest	11	11	11.00	6.11	50.11	2000
LOT 116/7-8	J-86	Phase 1	Nest	2	2	2.00	1.11	16.83	2000
LOT 116/1	J-85	Phase 1	Nest	1	1	1.00	0.56	10.80	2000
LOT 116/2,9-20	J-125	Phase 1	Nest	13	13	13.00	7.22	55.76	2000
					154	154	86	1471	

WaterCAD SCHEMATIC

Scenario: PEAK DAY W/ FIRE FLOW



PEAK DAY INSTANTANEOUS

FlexTable: Junction Table

Current Time: 0.000 hours

Label	Elevation (ft)	Hydraulic Grade (ft)	Demand (gpm)	Pressure (psi)
J-38	8,215	8,421	10.80	89
J-145	8,232	8,421	10.80	82
J-59	8,280	8,421	0.00	61
J-64	8,300	8,502	10.80	88
J-58	8,365	8,502	0.00	59
J-63	8,456	8,660	10.80	88
J-104	8,493	8,746	20.05	109
J-60	8,515	8,660	0.00	63
J-144	8,520	8,660	10.80	60
J-82	8,546	8,746	151.20	87
J-92	8,565	8,660	0.00	41
J-143	8,586	8,762	10.80	76
J-81	8,621	8,746	97.20	54
J-71	8,622	8,746	0.00	54
J-84	8,623	8,746	129.60	53
J-94	8,625	8,747	32.40	53
J-136	8,630	8,747	0.00	50
J-39	8,637	8,746	108.00	47
J-85	8,639	8,746	10.80	46
J-125	8,640	8,746	55.76	46
J-124	8,640	8,746	123.43	46
J-86	8,641	8,746	16.83	46
J-68	8,641	8,746	54.00	46
J-72	8,646	8,746	0.00	43
J-114	8,660	8,890	0.00	100
J-93	8,668	8,762	0.00	41
J-66	8,733	8,892	140.40	69
J-54	8,767	8,892	10.80	54
J-126	8,769	8,892	50.11	53
J-127	8,789	8,892	58.63	44
J-55	8,795	8,893	0.00	42

FlexTable: Pipe Table

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Material	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-221	167	J-82	J-104	6" HDPE IPS DR-13.5	5.6	140.0	20.05	0.3
P-208	334	J-68	J-82	8" HDPE IPS DR-13.5	7.3	140.0	158.70	1.2
P-180	360	H-B3	H-SP2	8" HDPE IPS DR-13.5	7.3	140.0	49.92	0.4
P-188	511	J-71	J-85	8" HDPE IPS DR-13.5	7.3	140.0	63.53	0.5
P-196	484	J-68	H-C1	8" HDPE IPS DR-13.5	7.3	140.0	102.47	0.8
P-238	306	J-85	J-124	8" HDPE IPS DR-13.5	7.3	140.0	85.73	0.7
P-239	170	J-124	J-86	8" HDPE IPS DR-13.5	7.3	140.0	16.83	0.1
P-243	594	J-54	J-126	8" HDPE IPS DR-13.5	7.3	140.0	109.77	0.8
P-244	601	J-126	J-127	8" HDPE IPS DR-13.5	7.3	140.0	59.66	0.5
P-247	155	J-72	J-85	8" HDPE IPS DR-13.5	7.3	140.0	143.29	1.1
P-248	60	J-68	J-136	8" HDPE IPS DR-13.5	7.3	140.0	-315.17	2.4
P-261	373	J-127	H-B1	8" HDPE IPS DR-13.5	7.3	140.0	-135.29	1.0
P-262	158	H-B1	J-54	8" HDPE IPS DR-13.5	7.3	140.0	-135.29	1.0
P-271	402	H-C1	H-C2	8" HDPE IPS DR-13.5	7.3	140.0	5.27	0.0
P-272	128	H-C2	J-81	8" HDPE IPS DR-13.5	7.3	140.0	5.26	0.0
P-273	298	H-B3	H-B2	8" HDPE IPS DR-13.5	7.3	140.0	-136.32	1.0
P-274	73	H-B2	J-127	8" HDPE IPS DR-13.5	7.3	140.0	-136.33	1.0
P-241	284	J-85	J-125	8" PVC C-900 DR-18	8.0	150.0	110.29	0.7
P-242	206	J-125	J-124	8" PVC C-900 DR-18	8.0	150.0	54.53	0.3
P-108	248	J-38	J-59	10" HDPE IPS DR-13.5	9.1	140.0	-10.80	0.1
P-297	553	H-E11	H-E10	10" HDPE IPS DR-13.5	9.1	140.0	-21.61	0.1
P-298	57	H-E10	J-58	10" HDPE IPS DR-13.5	9.1	140.0	-21.61	0.1
P-299	248	J-64	H-E9	10" HDPE IPS DR-13.5	9.1	140.0	-10.80	0.1
P-300	197	H-E9	J-58	10" HDPE IPS DR-13.5	9.1	140.0	-10.81	0.1
P-301	363	J-58	H-E8	10" HDPE IPS DR-13.5	9.1	140.0	-32.42	0.2
P-303	326	J-60	H-E7	10" HDPE IPS DR-13.5	9.1	140.0	10.81	0.1
P-304	172	H-E7	J-144	10" HDPE IPS DR-13.5	9.1	140.0	10.80	0.1
P-305	52	J-60	H-E6	10" HDPE IPS DR-13.5	9.1	140.0	-43.23	0.2
P-306	326	H-E6	J-92	10" HDPE IPS DR-13.5	9.1	140.0	-43.24	0.2
P-310	193	H-E3	H-E4	10" HDPE IPS DR-13.5	9.1	140.0	54.04	0.3
P-311	46	J-93	H-E1	10" HDPE IPS DR-13.5	9.1	140.0	54.05	0.3
P-312	506	H-E1	H-E3	10" HDPE IPS DR-13.5	9.1	140.0	54.04	0.3
P-313	305	J-93	H-E2	10" HDPE IPS DR-13.5	9.1	140.0	10.81	0.1
P-314	258	H-E2	J-143	10" HDPE IPS DR-13.5	9.1	140.0	10.80	0.1
P-315	276	J-63	H-E5	10" HDPE IPS DR-13.5	9.1	140.0	-10.80	0.1
P-316	718	H-E5	J-92	10" HDPE IPS DR-13.5	9.1	140.0	-10.81	0.1
P-318	87	J-59	H-E12	10" HDPE IPS DR-13.5	9.1	140.0	10.81	0.1
P-319	346	H-E12	J-145	10" HDPE IPS DR-13.5	9.1	140.0	10.80	0.1
P-320	86	J-59	PRV-E4	10" HDPE IPS DR-13.5	9.1	140.0	-21.61	0.1
P-321	216	H-E11	PRV-E4	10" HDPE IPS DR-13.5	9.1	140.0	21.61	0.1
P-322	404	J-60	PRV-E3	10" HDPE IPS DR-13.5	9.1	140.0	32.42	0.2
P-323	94	PRV-E3	H-E8	10" HDPE IPS DR-13.5	9.1	140.0	32.43	0.2
P-324	65	H-E4	PRV-E2	10" HDPE IPS DR-13.5	9.1	140.0	54.03	0.3
P-325	58	PRV-E2	J-92	10" HDPE IPS DR-13.5	9.1	140.0	54.04	0.3
P-326	502	J-66	PRV-E1	10" HDPE IPS DR-13.5	9.1	140.0	61.45	0.3
P-327	84	PRV-E1	J-93	10" HDPE IPS DR-13.5	9.1	140.0	64.86	0.3
P-289	367	H-C4	H-C5	10" HDPE IPS DR-13.5	9.1	140.0	12.55	0.1
P-290	65	H-C5	J-82	10" HDPE IPS DR-13.5	9.1	140.0	12.55	0.1
P-291	51	J-81	H-C3	10" HDPE IPS DR-13.5	9.1	140.0	120.56	0.6
P-292	538	H-C3	H-C4	10" HDPE IPS DR-13.5	9.1	140.0	120.55	0.6
P-216	70	J-81	J-84	10" HDPE IPS DR-13.5	9.1	140.0	-212.50	1.0
P-251	311	J-66	H-A2	10" PVC C-900 DR-18	9.8	140.0	0.01	0.0
P-252	407	H-A2	H-A1	10" PVC C-900 DR-18	9.8	140.0	0.01	0.0

FlexTable: Pipe Table

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Material	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-253	243	J-66	H-A3	10" PVC C-900 DR-18	9.8	140.0	-201.87	0.9
P-255	437	H-A3	H-A4	10" PVC C-900 DR-18	9.8	140.0	-201.87	0.9
P-257	533	H-A4	H-A5	10" PVC C-900 DR-18	9.8	140.0	-201.88	0.9
P-258	327	H-A5	H-A6	10" PVC C-900 DR-18	9.8	140.0	-201.89	0.9
P-259	129	J-55	H-A7	10" PVC C-900 DR-18	9.8	140.0	234.29	1.0
P-260	335	H-A7	H-A6	10" PVC C-900 DR-18	9.8	140.0	234.29	1.0
P-135	146	J-39	J-72	18" HDPE IPS DR-13.5	15.2	140.0	143.29	0.3
P-217	450	J-71	H-SP12	18" HDPE IPS DR-13.5	15.2	140.0	0.00	0.0
P-220	60	J-84	J-71	18" HDPE IPS DR-13.5	15.2	140.0	63.53	0.1
P-287	243	J-39	H-SP11	18" HDPE IPS DR-13.5	15.2	140.0	405.64	0.7
P-288	103	H-SP11	J-84	18" HDPE IPS DR-13.5	15.2	140.0	405.63	0.7
P-100	353	J-54	J-55	18" HDPE IPS DR-13.5	15.2	140.0	-1,253.65	2.2
P-227	420	J-94	H-SP6	18" HDPE IPS DR-13.5	15.2	140.0	-1,004.54	1.8
P-228	62	J-114	PRV-SP1	18" HDPE IPS DR-13.5	15.2	140.0	1,047.67	1.9
P-229	319	PRV-SP1	H-SP6	18" HDPE IPS DR-13.5	15.2	140.0	1,047.74	1.9
P-233	774	Tank	J-55	18" HDPE IPS DR-13.5	15.2	140.0	1,487.94	2.6
P-263	555	H-SP2	H-SP1	18" HDPE IPS DR-13.5	15.2	140.0	-997.77	1.8
P-264	370	H-SP1	J-54	18" HDPE IPS DR-13.5	15.2	140.0	-997.78	1.8
P-268	306	H-SP9	J-136	18" HDPE IPS DR-13.5	15.2	140.0	-656.95	1.2
P-269	164	J-39	H-SP10	18" HDPE IPS DR-13.5	15.2	140.0	-656.94	1.2
P-270	380	H-SP10	H-SP9	18" HDPE IPS DR-13.5	15.2	140.0	-656.95	1.2
P-278	389	H-SP3	H-SP2	18" HDPE IPS DR-13.5	15.2	140.0	-1,047.69	1.9
P-280	861	H-SP4	H-SP3	18" HDPE IPS DR-13.5	15.2	140.0	-1,047.69	1.9
P-281	96	J-114	H-SP5	18" HDPE IPS DR-13.5	15.2	140.0	-1,047.67	1.9
P-282	617	H-SP5	H-SP4	18" HDPE IPS DR-13.5	15.2	140.0	-1,047.68	1.9
P-284	162	H-SP7	J-94	18" HDPE IPS DR-13.5	15.2	140.0	-972.14	1.7
P-285	85	J-136	H-SP8	18" HDPE IPS DR-13.5	15.2	140.0	-972.13	1.7
P-286	410	H-SP8	H-SP7	18" HDPE IPS DR-13.5	15.2	140.0	-972.14	1.7

PEAK DAY with FIRE FLOW

Fire Flow Node FlexTable: Fire Flow Report

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Velocity of Maximum Pipe (ft/s)
H-A1	True	2,000.00	2,474.45	20	10.6
H-A2	True	2,000.00	2,985.56	21	12.8
H-A3	True	2,000.00	3,429.59	23	14.7
H-A4	True	2,000.00	3,507.04	26	15.0
H-A5	True	2,000.00	3,507.06	33	15.0
H-A6	True	2,000.00	3,508.70	36	15.0
H-A7	True	2,000.00	3,507.03	31	15.0
H-B1	True	2,000.00	2,877.39	36	15.0
H-B2	True	2,000.00	3,176.09	21	15.0
H-B3	True	2,000.00	2,769.50	20	11.8
H-C1	True	2,000.00	3,821.47	22	15.0
H-C2	True	2,000.00	2,704.74	40	15.0
H-C3	True	2,000.00	3,734.80	35	15.0
H-C4	True	2,000.00	4,325.57	38	15.0
H-C5	True	2,000.00	3,942.90	51	15.0
H-E1	True	2,000.00	3,010.68	31	15.0
H-E2	True	2,000.00	3,010.68	37	15.0
H-E3	True	2,000.00	3,010.69	36	15.0
H-E4	True	2,000.00	3,010.68	52	15.0
H-E5	True	2,000.00	3,010.70	35	15.0
H-E6	True	2,000.00	3,010.70	41	15.0
H-E7	True	2,000.00	3,010.69	22	15.0
H-E8	True	2,000.00	3,010.70	31	15.0
H-E9	True	2,000.00	3,010.68	45	15.0
H-E10	True	2,000.00	3,010.69	39	15.0
H-E11	True	2,000.00	3,010.69	43	15.0
H-E12	True	2,000.00	3,010.69	49	15.0
H-SP1	True	2,000.00	5,364.30	20	9.6
H-SP2	True	2,000.00	5,074.43	20	9.1
H-SP3	True	2,000.00	5,547.95	20	10.0
H-SP4	True	2,000.00	6,292.82	20	11.3
H-SP5	True	2,000.00	6,669.22	20	11.9
H-SP6	True	2,000.00	5,358.02	20	9.6
H-SP7	True	2,000.00	5,532.44	20	9.9
H-SP8	True	2,000.00	5,157.00	20	9.3
H-SP9	True	2,000.00	4,865.97	20	8.8
H-SP10	True	2,000.00	4,639.48	20	8.4
H-SP11	True	2,000.00	4,857.30	20	8.7
H-SP12	True	2,000.00	5,260.07	20	9.5
J-38	True	2,000.00	3,011.24	64	15.0
J-39	True	2,000.00	7,220.40	24	12.9
J-54	True	2,000.00	8,398.80	37	15.0
J-55	True	2,000.00	8,398.20	31	15.0
J-58	True	2,000.00	3,010.68	46	15.0
J-59	True	2,000.00	3,010.67	57	15.0
J-60	True	2,000.00	3,010.68	49	15.0
J-63	True	2,000.00	3,011.24	54	15.0
J-64	True	2,000.00	3,011.24	61	15.0
J-66	True	2,000.00	3,202.84	34	13.7
J-68	True	2,000.00	2,781.25	41	15.0
J-71	True	2,000.00	7,214.82	29	12.9
J-72	True	2,000.00	6,213.29	20	11.1

Fire Flow Node FlexTable: Fire Flow Report

Current Time: 0.000 hours

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Velocity of Maximum Pipe (ft/s)
J-81	True	2,000.00	4,286.45	44	15.0
J-82	True	2,000.00	3,834.36	67	15.0
J-84	True	2,000.00	7,221.55	29	12.9
J-85	True	2,000.00	3,053.85	35	15.0
J-86	False	2,000.00	1,956.39	32	15.0
J-92	True	2,000.00	3,010.68	39	15.0
J-93	True	2,000.00	3,010.68	38	15.0
J-94	True	2,000.00	7,216.47	44	12.9
J-104	False	0.50	0.00	110	0.2
J-114	True	2,000.00	7,214.81	51	12.9
J-124	True	2,000.00	3,060.51	28	15.0
J-125	True	2,000.00	3,060.51	29	15.0
J-126	True	2,000.00	3,648.56	28	15.0
J-127	True	2,000.00	4,717.78	20	14.6
J-136	True	2,000.00	7,214.83	34	12.9
J-143	True	2,000.00	3,011.24	58	15.0
J-144	True	2,000.00	3,011.25	33	15.0
J-145	True	2,000.00	3,011.23	65	15.0

FlexTable: Hydrant Table

Current Time: 0.000 hours

Label	Include Lateral Loss?	Lateral Length (ft)	Elevation (ft)	Satisfies Fire Flow Constraints?	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)
H-A1	True	20	8,766	True	0.00	8,894	55	2,000.00	2,474.45	2,474.45	32	20	37	P-259	10.6
H-A2	True	20	8,745	True	0.00	8,894	64	2,000.00	2,985.56	2,985.56	44	21	20	P-260	12.8
H-A3	True	20	8,736	True	0.00	8,894	69	2,000.00	3,429.59	3,429.59	52	23	20	P-259	14.7
H-A4	True	20	8,739	True	0.00	8,894	67	2,000.00	3,507.04	3,507.04	53	26	26	P-260	15.0
H-A5	True	20	8,744	True	0.00	8,894	65	2,000.00	3,507.06	3,507.06	54	33	34	P-260	15.0
H-A6	True	20	8,746	True	1.67	8,894	64	2,001.67	3,507.03	3,508.70	54	36	36	P-259	15.0
H-A7	True	20	8,783	True	0.00	8,894	48	2,000.00	3,507.03	3,507.03	42	31	36	P-259	15.0
H-B1	True	20	8,774	True	0.00	8,894	52	2,000.00	2,877.39	2,877.39	44	36	35	P-262	15.0
H-B2	True	20	8,792	True	0.00	8,894	44	2,000.00	3,176.09	3,176.09	34	21	29	P-274	15.0
H-B3	True	20	8,805	True	4.44	8,894	39	2,004.44	2,765.06	2,769.50	28	20	37	P-180	11.8
H-C1	True	20	8,608	True	5.00	8,747	60	2,005.00	3,816.47	3,821.47	49	22	33	P-196	15.0
H-C2	True	20	8,618	True	0.00	8,747	56	2,000.00	2,704.74	2,704.74	47	40	35	P-272	15.0
H-C3	True	20	8,616	True	0.00	8,747	57	2,000.00	3,734.80	3,734.80	50	35	33	P-291	15.0
H-C4	True	20	8,569	True	5.56	8,747	77	2,005.56	4,320.01	4,325.57	68	38	31	P-248	15.0
H-C5	True	20	8,549	True	0.00	8,747	86	2,000.00	3,942.90	3,942.90	76	51	32	P-248	15.0
H-E1	True	15	8,667	True	0.00	8,762	41	2,000.00	3,010.68	3,010.68	36	31	24	P-326	15.0
H-E2	True	15	8,636	True	0.00	8,762	55	2,000.00	3,010.68	3,010.68	46	37	24	P-326	15.0
H-E3	True	15	8,620	True	0.00	8,762	62	2,000.00	3,010.69	3,010.69	50	36	24	P-326	15.0
H-E4	True	15	8,570	True	0.00	8,762	83	2,000.00	3,010.68	3,010.68	69	52	24	P-327	15.0
H-E5	True	15	8,488	True	0.00	8,660	74	2,000.00	3,010.70	3,010.70	56	35	24	P-327	15.0
H-E6	True	15	8,523	True	0.00	8,660	59	2,000.00	3,010.70	3,010.70	51	41	24	P-327	15.0
H-E7	True	15	8,540	True	0.00	8,660	52	2,000.00	3,010.69	3,010.69	38	22	24	P-327	15.0
H-E8	True	15	8,408	True	0.00	8,502	41	2,000.00	3,010.70	3,010.70	36	31	24	P-327	15.0
H-E9	True	15	8,340	True	0.00	8,502	70	2,000.00	3,010.68	3,010.68	58	45	24	P-327	15.0
H-E10	True	15	8,361	True	0.00	8,502	61	2,000.00	3,010.69	3,010.69	51	39	24	P-327	15.0
H-E11	True	15	8,315	True	0.00	8,502	81	2,000.00	3,010.69	3,010.69	63	43	24	P-327	15.0
H-E12	True	15	8,276	True	0.00	8,421	63	2,000.00	3,010.69	3,010.69	57	49	24	P-327	15.0

FlexTable: Hydrant Table

Current Time: 0.000 hours

Label	Include Lateral Loss?	Lateral Length (ft)	Elevation (ft)	Satisfies Fire Flow Constraints?	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)	Flow (Total Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual @ Total Flow Needed) (psi)	Pressure (Calculated Residual) (psi)	Pressure (Calculated System Lower Limit) (psi)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (ft/s)
H-SP1	True	20	8,769	True	0.00	8,894	54	2,000.00	5,364.30	5,364.30	49	20	29	P-233	9.6
H-SP2	True	20	8,771	True	0.00	8,894	53	2,000.00	5,074.43	5,074.43	47	20	29	P-233	9.1
H-SP3	True	20	8,749	True	0.00	8,894	63	2,000.00	5,547.95	5,547.95	56	20	27	P-233	10.0
H-SP4	True	20	8,700	True	0.00	8,894	84	2,000.00	6,292.82	6,292.82	76	20	24	P-233	11.3
H-SP5	True	20	8,665	True	0.00	8,894	99	2,000.00	6,669.22	6,669.22	90	20	22	P-233	11.9
H-SP6	True	20	8,640	True	2.22	8,747	47	2,002.22	5,355.80	5,358.02	42	20	28	P-233	9.6
H-SP7	True	20	8,626	True	0.00	8,747	52	2,000.00	5,532.44	5,532.44	48	20	27	P-233	9.9
H-SP8	True	20	8,630	True	0.00	8,747	51	2,000.00	5,157.00	5,157.00	46	20	28	P-233	9.3
H-SP9	True	20	8,633	True	0.00	8,747	50	2,000.00	4,865.97	4,865.97	44	20	29	P-233	8.8
H-SP10	True	20	8,636	True	0.00	8,747	48	2,000.00	4,639.48	4,639.48	43	20	30	P-233	8.4
H-SP11	True	20	8,627	True	0.00	8,747	52	2,000.00	4,857.30	4,857.30	46	20	30	P-233	8.7
H-SP12	True	20	8,607	True	0.00	8,747	61	2,000.00	5,260.07	5,260.07	54	20	28	P-233	9.5

FlexTable: Junction Table

Current Time: 0.000 hours

Label	Elevation (ft)	Hydraulic Grade (ft)	Demand (gpm)	Pressure (psi)
J-38	8,215	8,421	0.56	89
J-145	8,232	8,421	0.56	82
J-59	8,280	8,421	0.00	61
J-64	8,300	8,502	0.56	88
J-58	8,365	8,502	0.00	59
J-63	8,456	8,660	0.56	88
J-104	8,493	8,747	0.00	110
J-60	8,515	8,660	0.00	63
J-144	8,520	8,660	0.56	60
J-82	8,546	8,747	7.78	87
J-92	8,565	8,660	0.00	41
J-143	8,586	8,762	0.56	76
J-81	8,621	8,747	5.00	55
J-71	8,622	8,747	0.00	54
J-84	8,623	8,747	6.67	54
J-94	8,625	8,747	1.67	53
J-136	8,630	8,747	0.00	51
J-39	8,637	8,747	5.56	48
J-85	8,639	8,747	0.56	47
J-125	8,640	8,747	7.22	47
J-124	8,640	8,747	7.22	47
J-86	8,641	8,747	1.11	46
J-68	8,641	8,747	2.78	46
J-72	8,646	8,747	0.00	44
J-114	8,660	8,894	0.00	101
J-93	8,668	8,762	0.00	41
J-66	8,733	8,894	7.22	70
J-54	8,767	8,894	0.56	55
J-126	8,769	8,894	6.11	54
J-127	8,789	8,894	3.89	45
J-55	8,795	8,894	0.00	43

FlexTable: Pipe Table

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Material	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-221	167	J-82	J-104	6" HDPE IPS DR-13.5	5.6	140.0	0.00	0.0
P-208	334	J-68	J-82	8" HDPE IPS DR-13.5	7.3	140.0	8.27	0.1
P-180	360	H-B3	H-SP2	8" HDPE IPS DR-13.5	7.3	140.0	2.03	0.0
P-188	511	J-71	J-85	8" HDPE IPS DR-13.5	7.3	140.0	5.42	0.0
P-196	484	J-68	H-C1	8" HDPE IPS DR-13.5	7.3	140.0	5.81	0.0
P-238	306	J-85	J-124	8" HDPE IPS DR-13.5	7.3	140.0	6.51	0.0
P-239	170	J-124	J-86	8" HDPE IPS DR-13.5	7.3	140.0	1.11	0.0
P-243	594	J-54	J-126	8" HDPE IPS DR-13.5	7.3	140.0	7.87	0.1
P-244	601	J-126	J-127	8" HDPE IPS DR-13.5	7.3	140.0	1.76	0.0
P-247	155	J-72	J-85	8" HDPE IPS DR-13.5	7.3	140.0	10.69	0.1
P-248	60	J-68	J-136	8" HDPE IPS DR-13.5	7.3	140.0	-16.86	0.1
P-261	373	J-127	H-B1	8" HDPE IPS DR-13.5	7.3	140.0	-8.60	0.1
P-262	158	H-B1	J-54	8" HDPE IPS DR-13.5	7.3	140.0	-8.61	0.1
P-271	402	H-C1	H-C2	8" HDPE IPS DR-13.5	7.3	140.0	0.81	0.0
P-272	128	H-C2	J-81	8" HDPE IPS DR-13.5	7.3	140.0	0.80	0.0
P-273	298	H-B3	H-B2	8" HDPE IPS DR-13.5	7.3	140.0	-6.47	0.0
P-274	73	H-B2	J-127	8" HDPE IPS DR-13.5	7.3	140.0	-6.47	0.0
P-241	284	J-85	J-125	8" PVC C-900 DR-18	8.0	150.0	9.04	0.1
P-242	206	J-125	J-124	8" PVC C-900 DR-18	8.0	150.0	1.82	0.0
P-108	248	J-38	J-59	10" HDPE IPS DR-13.5	9.1	140.0	-0.56	0.0
P-297	553	H-E11	H-E10	10" HDPE IPS DR-13.5	9.1	140.0	-1.13	0.0
P-298	57	H-E10	J-58	10" HDPE IPS DR-13.5	9.1	140.0	-1.13	0.0
P-299	248	J-64	H-E9	10" HDPE IPS DR-13.5	9.1	140.0	-0.56	0.0
P-300	197	H-E9	J-58	10" HDPE IPS DR-13.5	9.1	140.0	-0.57	0.0
P-301	363	J-58	H-E8	10" HDPE IPS DR-13.5	9.1	140.0	-1.69	0.0
P-303	326	J-60	H-E7	10" HDPE IPS DR-13.5	9.1	140.0	0.57	0.0
P-304	172	H-E7	J-144	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-305	52	J-60	H-E6	10" HDPE IPS DR-13.5	9.1	140.0	-2.28	0.0
P-306	326	H-E6	J-92	10" HDPE IPS DR-13.5	9.1	140.0	-2.28	0.0
P-310	193	H-E3	H-E4	10" HDPE IPS DR-13.5	9.1	140.0	2.82	0.0
P-311	46	J-93	H-E1	10" HDPE IPS DR-13.5	9.1	140.0	2.84	0.0
P-312	506	H-E1	H-E3	10" HDPE IPS DR-13.5	9.1	140.0	2.83	0.0
P-313	305	J-93	H-E2	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-314	258	H-E2	J-143	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-315	276	J-63	H-E5	10" HDPE IPS DR-13.5	9.1	140.0	-0.56	0.0
P-316	718	H-E5	J-92	10" HDPE IPS DR-13.5	9.1	140.0	-0.57	0.0
P-318	87	J-59	H-E12	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-319	346	H-E12	J-145	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-320	86	J-59	PRV-E4	10" HDPE IPS DR-13.5	9.1	140.0	-1.12	0.0
P-321	216	H-E11	PRV-E4	10" HDPE IPS DR-13.5	9.1	140.0	1.13	0.0
P-322	404	J-60	PRV-E3	10" HDPE IPS DR-13.5	9.1	140.0	1.71	0.0
P-323	94	PRV-E3	H-E8	10" HDPE IPS DR-13.5	9.1	140.0	1.70	0.0
P-324	65	H-E4	PRV-E2	10" HDPE IPS DR-13.5	9.1	140.0	2.82	0.0
P-325	58	PRV-E2	J-92	10" HDPE IPS DR-13.5	9.1	140.0	2.84	0.0
P-326	502	J-66	PRV-E1	10" HDPE IPS DR-13.5	9.1	140.0	3.42	0.0
P-327	84	PRV-E1	J-93	10" HDPE IPS DR-13.5	9.1	140.0	3.40	0.0
P-289	367	H-C4	H-C5	10" HDPE IPS DR-13.5	9.1	140.0	-0.49	0.0
P-290	65	H-C5	J-82	10" HDPE IPS DR-13.5	9.1	140.0	-0.49	0.0
P-291	51	J-81	H-C3	10" HDPE IPS DR-13.5	9.1	140.0	5.08	0.0
P-292	538	H-C3	H-C4	10" HDPE IPS DR-13.5	9.1	140.0	5.07	0.0
P-216	70	J-81	J-84	10" HDPE IPS DR-13.5	9.1	140.0	-9.28	0.0
P-251	311	J-66	H-A2	10" PVC C-900 DR-18	9.8	140.0	0.01	0.0
P-252	407	H-A2	H-A1	10" PVC C-900 DR-18	9.8	140.0	0.01	0.0

FlexTable: Pipe Table

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Material	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-253	243	J-66	H-A3	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-255	437	H-A3	H-A4	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-257	533	H-A4	H-A5	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-258	327	H-A5	H-A6	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-259	129	J-55	H-A7	10" PVC C-900 DR-18	9.8	140.0	12.33	0.1
P-260	335	H-A7	H-A6	10" PVC C-900 DR-18	9.8	140.0	12.32	0.1
P-135	146	J-39	J-72	18" HDPE IPS DR-13.5	15.2	140.0	10.69	0.0
P-217	450	J-71	H-SP12	18" HDPE IPS DR-13.5	15.2	140.0	0.00	0.0
P-220	60	J-84	J-71	18" HDPE IPS DR-13.5	15.2	140.0	5.43	0.0
P-287	243	J-39	H-SP11	18" HDPE IPS DR-13.5	15.2	140.0	21.37	0.0
P-288	103	H-SP11	J-84	18" HDPE IPS DR-13.5	15.2	140.0	21.37	0.0
P-100	353	J-54	J-55	18" HDPE IPS DR-13.5	15.2	140.0	-73.43	0.1
P-227	420	J-94	H-SP6	18" HDPE IPS DR-13.5	15.2	140.0	-56.16	0.1
P-228	62	J-114	PRV-SP1	18" HDPE IPS DR-13.5	15.2	140.0	58.40	0.1
P-229	319	PRV-SP1	H-SP6	18" HDPE IPS DR-13.5	15.2	140.0	58.38	0.1
P-233	774	Tank	J-55	18" HDPE IPS DR-13.5	15.2	140.0	85.76	0.2
P-263	555	H-SP2	H-SP1	18" HDPE IPS DR-13.5	15.2	140.0	-56.39	0.1
P-264	370	H-SP1	J-54	18" HDPE IPS DR-13.5	15.2	140.0	-56.39	0.1
P-268	306	H-SP9	J-136	18" HDPE IPS DR-13.5	15.2	140.0	-37.63	0.1
P-269	164	J-39	H-SP10	18" HDPE IPS DR-13.5	15.2	140.0	-37.62	0.1
P-270	380	H-SP10	H-SP9	18" HDPE IPS DR-13.5	15.2	140.0	-37.63	0.1
P-278	389	H-SP3	H-SP2	18" HDPE IPS DR-13.5	15.2	140.0	-58.41	0.1
P-280	861	H-SP4	H-SP3	18" HDPE IPS DR-13.5	15.2	140.0	-58.41	0.1
P-281	96	J-114	H-SP5	18" HDPE IPS DR-13.5	15.2	140.0	-58.40	0.1
P-282	617	H-SP5	H-SP4	18" HDPE IPS DR-13.5	15.2	140.0	-58.40	0.1
P-284	162	H-SP7	J-94	18" HDPE IPS DR-13.5	15.2	140.0	-54.49	0.1
P-285	85	J-136	H-SP8	18" HDPE IPS DR-13.5	15.2	140.0	-54.49	0.1
P-286	410	H-SP8	H-SP7	18" HDPE IPS DR-13.5	15.2	140.0	-54.49	0.1

PEAK DAY

FlexTable: Junction Table

Current Time: 0.000 hours

Label	Elevation (ft)	Hydraulic Grade (ft)	Demand (gpm)	Pressure (psi)
J-38	8,215	8,421	0.56	89
J-145	8,232	8,421	0.56	82
J-59	8,280	8,421	0.00	61
J-64	8,300	8,502	0.56	88
J-58	8,365	8,502	0.00	59
J-63	8,456	8,660	0.56	88
J-104	8,493	8,747	0.00	110
J-60	8,515	8,660	0.00	63
J-144	8,520	8,660	0.56	60
J-82	8,546	8,747	7.78	87
J-92	8,565	8,660	0.00	41
J-143	8,586	8,762	0.56	76
J-81	8,621	8,747	5.00	55
J-71	8,622	8,747	0.00	54
J-84	8,623	8,747	6.67	54
J-94	8,625	8,747	1.67	53
J-136	8,630	8,747	0.00	51
J-39	8,637	8,747	5.56	48
J-85	8,639	8,747	0.56	47
J-125	8,640	8,747	7.22	47
J-124	8,640	8,747	7.22	47
J-86	8,641	8,747	1.11	46
J-68	8,641	8,747	2.78	46
J-72	8,646	8,747	0.00	44
J-114	8,660	8,894	0.00	101
J-93	8,668	8,762	0.00	41
J-66	8,733	8,894	7.22	70
J-54	8,767	8,894	0.56	55
J-126	8,769	8,894	6.11	54
J-127	8,789	8,894	3.89	45
J-55	8,795	8,894	0.00	43

FlexTable: Pipe Table

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Material	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-221	167	J-82	J-104	6" HDPE IPS DR-13.5	5.6	140.0	0.00	0.0
P-208	334	J-68	J-82	8" HDPE IPS DR-13.5	7.3	140.0	8.27	0.1
P-180	360	H-B3	H-SP2	8" HDPE IPS DR-13.5	7.3	140.0	2.03	0.0
P-188	511	J-71	J-85	8" HDPE IPS DR-13.5	7.3	140.0	5.42	0.0
P-196	484	J-68	H-C1	8" HDPE IPS DR-13.5	7.3	140.0	5.81	0.0
P-238	306	J-85	J-124	8" HDPE IPS DR-13.5	7.3	140.0	6.51	0.0
P-239	170	J-124	J-86	8" HDPE IPS DR-13.5	7.3	140.0	1.11	0.0
P-243	594	J-54	J-126	8" HDPE IPS DR-13.5	7.3	140.0	7.87	0.1
P-244	601	J-126	J-127	8" HDPE IPS DR-13.5	7.3	140.0	1.76	0.0
P-247	155	J-72	J-85	8" HDPE IPS DR-13.5	7.3	140.0	10.69	0.1
P-248	60	J-68	J-136	8" HDPE IPS DR-13.5	7.3	140.0	-16.86	0.1
P-261	373	J-127	H-B1	8" HDPE IPS DR-13.5	7.3	140.0	-8.60	0.1
P-262	158	H-B1	J-54	8" HDPE IPS DR-13.5	7.3	140.0	-8.61	0.1
P-271	402	H-C1	H-C2	8" HDPE IPS DR-13.5	7.3	140.0	0.81	0.0
P-272	128	H-C2	J-81	8" HDPE IPS DR-13.5	7.3	140.0	0.80	0.0
P-273	298	H-B3	H-B2	8" HDPE IPS DR-13.5	7.3	140.0	-6.47	0.0
P-274	73	H-B2	J-127	8" HDPE IPS DR-13.5	7.3	140.0	-6.47	0.0
P-241	284	J-85	J-125	8" PVC C-900 DR-18	8.0	150.0	9.04	0.1
P-242	206	J-125	J-124	8" PVC C-900 DR-18	8.0	150.0	1.82	0.0
P-108	248	J-38	J-59	10" HDPE IPS DR-13.5	9.1	140.0	-0.56	0.0
P-297	553	H-E11	H-E10	10" HDPE IPS DR-13.5	9.1	140.0	-1.13	0.0
P-298	57	H-E10	J-58	10" HDPE IPS DR-13.5	9.1	140.0	-1.13	0.0
P-299	248	J-64	H-E9	10" HDPE IPS DR-13.5	9.1	140.0	-0.56	0.0
P-300	197	H-E9	J-58	10" HDPE IPS DR-13.5	9.1	140.0	-0.57	0.0
P-301	363	J-58	H-E8	10" HDPE IPS DR-13.5	9.1	140.0	-1.69	0.0
P-303	326	J-60	H-E7	10" HDPE IPS DR-13.5	9.1	140.0	0.57	0.0
P-304	172	H-E7	J-144	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-305	52	J-60	H-E6	10" HDPE IPS DR-13.5	9.1	140.0	-2.28	0.0
P-306	326	H-E6	J-92	10" HDPE IPS DR-13.5	9.1	140.0	-2.28	0.0
P-310	193	H-E3	H-E4	10" HDPE IPS DR-13.5	9.1	140.0	2.82	0.0
P-311	46	J-93	H-E1	10" HDPE IPS DR-13.5	9.1	140.0	2.84	0.0
P-312	506	H-E1	H-E3	10" HDPE IPS DR-13.5	9.1	140.0	2.83	0.0
P-313	305	J-93	H-E2	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-314	258	H-E2	J-143	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-315	276	J-63	H-E5	10" HDPE IPS DR-13.5	9.1	140.0	-0.56	0.0
P-316	718	H-E5	J-92	10" HDPE IPS DR-13.5	9.1	140.0	-0.57	0.0
P-318	87	J-59	H-E12	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-319	346	H-E12	J-145	10" HDPE IPS DR-13.5	9.1	140.0	0.56	0.0
P-320	86	J-59	PRV-E4	10" HDPE IPS DR-13.5	9.1	140.0	-1.12	0.0
P-321	216	H-E11	PRV-E4	10" HDPE IPS DR-13.5	9.1	140.0	1.13	0.0
P-322	404	J-60	PRV-E3	10" HDPE IPS DR-13.5	9.1	140.0	1.71	0.0
P-323	94	PRV-E3	H-E8	10" HDPE IPS DR-13.5	9.1	140.0	1.70	0.0
P-324	65	H-E4	PRV-E2	10" HDPE IPS DR-13.5	9.1	140.0	2.82	0.0
P-325	58	PRV-E2	J-92	10" HDPE IPS DR-13.5	9.1	140.0	2.84	0.0
P-326	502	J-66	PRV-E1	10" HDPE IPS DR-13.5	9.1	140.0	3.42	0.0
P-327	84	PRV-E1	J-93	10" HDPE IPS DR-13.5	9.1	140.0	3.40	0.0
P-289	367	H-C4	H-C5	10" HDPE IPS DR-13.5	9.1	140.0	-0.49	0.0
P-290	65	H-C5	J-82	10" HDPE IPS DR-13.5	9.1	140.0	-0.49	0.0
P-291	51	J-81	H-C3	10" HDPE IPS DR-13.5	9.1	140.0	5.08	0.0
P-292	538	H-C3	H-C4	10" HDPE IPS DR-13.5	9.1	140.0	5.07	0.0
P-216	70	J-81	J-84	10" HDPE IPS DR-13.5	9.1	140.0	-9.28	0.0
P-251	311	J-66	H-A2	10" PVC C-900 DR-18	9.8	140.0	0.01	0.0
P-252	407	H-A2	H-A1	10" PVC C-900 DR-18	9.8	140.0	0.01	0.0

FlexTable: Pipe Table

Current Time: 0.000 hours

Label	Length (Scaled) (ft)	Start Node	Stop Node	Material	Diameter (in)	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)
P-253	243	J-66	H-A3	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-255	437	H-A3	H-A4	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-257	533	H-A4	H-A5	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-258	327	H-A5	H-A6	10" PVC C-900 DR-18	9.8	140.0	-10.65	0.0
P-259	129	J-55	H-A7	10" PVC C-900 DR-18	9.8	140.0	12.33	0.1
P-260	335	H-A7	H-A6	10" PVC C-900 DR-18	9.8	140.0	12.32	0.1
P-135	146	J-39	J-72	18" HDPE IPS DR-13.5	15.2	140.0	10.69	0.0
P-217	450	J-71	H-SP12	18" HDPE IPS DR-13.5	15.2	140.0	0.00	0.0
P-220	60	J-84	J-71	18" HDPE IPS DR-13.5	15.2	140.0	5.43	0.0
P-287	243	J-39	H-SP11	18" HDPE IPS DR-13.5	15.2	140.0	21.37	0.0
P-288	103	H-SP11	J-84	18" HDPE IPS DR-13.5	15.2	140.0	21.37	0.0
P-100	353	J-54	J-55	18" HDPE IPS DR-13.5	15.2	140.0	-73.43	0.1
P-227	420	J-94	H-SP6	18" HDPE IPS DR-13.5	15.2	140.0	-56.16	0.1
P-228	62	J-114	PRV-SP1	18" HDPE IPS DR-13.5	15.2	140.0	58.40	0.1
P-229	319	PRV-SP1	H-SP6	18" HDPE IPS DR-13.5	15.2	140.0	58.38	0.1
P-233	774	Tank	J-55	18" HDPE IPS DR-13.5	15.2	140.0	85.76	0.2
P-263	555	H-SP2	H-SP1	18" HDPE IPS DR-13.5	15.2	140.0	-56.39	0.1
P-264	370	H-SP1	J-54	18" HDPE IPS DR-13.5	15.2	140.0	-56.39	0.1
P-268	306	H-SP9	J-136	18" HDPE IPS DR-13.5	15.2	140.0	-37.63	0.1
P-269	164	J-39	H-SP10	18" HDPE IPS DR-13.5	15.2	140.0	-37.62	0.1
P-270	380	H-SP10	H-SP9	18" HDPE IPS DR-13.5	15.2	140.0	-37.63	0.1
P-278	389	H-SP3	H-SP2	18" HDPE IPS DR-13.5	15.2	140.0	-58.41	0.1
P-280	861	H-SP4	H-SP3	18" HDPE IPS DR-13.5	15.2	140.0	-58.41	0.1
P-281	96	J-114	H-SP5	18" HDPE IPS DR-13.5	15.2	140.0	-58.40	0.1
P-282	617	H-SP5	H-SP4	18" HDPE IPS DR-13.5	15.2	140.0	-58.40	0.1
P-284	162	H-SP7	J-94	18" HDPE IPS DR-13.5	15.2	140.0	-54.49	0.1
P-285	85	J-136	H-SP8	18" HDPE IPS DR-13.5	15.2	140.0	-54.49	0.1
P-286	410	H-SP8	H-SP7	18" HDPE IPS DR-13.5	15.2	140.0	-54.49	0.1