

September 12, 2017

Keith Simon
Board President
Rampart Range Metropolitan District No. 1
8390E. Crescent Pkwy, Ste. 500
Greenwood Village, CO 80111

Re: Acknowledgement of Water Resource Credits of Rampart Range Metropolitan District No. 1 for RidgeGate Development

Dear Mr. Simon,

This letter serves to acknowledge that PWSD has credited the Rampart Range Metropolitan District ("Rampart") with an additional 306 SFEs in water resource credits as a result of the completion of the Arapahoe Alternate Wells Case and conveyance of the RRC-9(A) well site to PWSD. This acknowledgement is pursuant to Section 6(a) of the Intergovernmental Agreement for Water and Sewer Service dated December 13, 2006, and recorded with the Douglas County Clerk and Recorder's Office on January 31, 2007, at Reception No. 2007009350, as amended by the First Amendment to Intergovernmental Agreement for Water and Sewer Service dated September 13, 2012 and recorded with the Douglas County Clerk and Recorder's Office on October 5, 2012, at Reception No. 2012075572, and Section 7 of the First Addendum to Intergovernmental Agreement for Water and Sewer Service dated July 22, 2014 and recorded with the Douglas County Clerk and Recorder's Office on August 8, 2014 at Reception No. 2014044603.

The total number of water resource credits provided to Rampart pursuant to the terms of the above-referenced agreements is 4,849 SFEs for the RRC well water rights and 3,741 SFEs for the non-RRC well water rights. Please do not hesitate to contact me if you have any questions or concerns regarding this matter.

Sincerely,



Ron R. Redd, P.E.
District Manager

**8589 total water
resource credits**

Cc: Stephen Leonhardt, Burns Figa & Will,

**WATER & SANITARY SEWER REPORT
FOR
RIDGEGATE SOUTHWEST VILLAGE**

Prepared for:

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Prepared by:

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July, 2020

Job Number 15950.00

CERTIFICATIONS

I hereby affirm that this report (plan) for the overall utility design of Ridgeway Southwest Village was prepared by me (or under my direct supervision) for the owners thereof in accordance with the provisions of the Parker Water & Sanitation District Standard Specifications. I understand that Parker Water & Sanitation District will not assume liability for water or sanitary sewer facilities designed by others.

Aaron Clutter, Registered Professional Engineer
Colorado Professional Engineer No. 36742
For and On Behalf of JR Engineering, LLC.

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PROJECT LOCATION AND DESCRIPTION

The Ridgeway Southwest Village development is located in Sections 23 and 24, Township 6 South, Range 69 West and Section 18, Township 6 South, Range 67 West of the 6th Principal Meridian. The site is located to the south of Ridgeway Parkway, and east of Interstate Highway 25 (I-25). The site is bisected by reaches of Happy Canyon Creek and Badger Gulch. The site is shown in the Vicinity Map in Appendix A.

The Ridgeway Southwest Village development will occupy approximately 698 acres and encompass 1788 single family residential lots, 176 multifamily lots, 13 acres of commercial development, a regional park, a school, and three community parks. The property is currently vacant and comprised of open space.

SANITARY SEWER SYSTEM

General Description

Currently, there are no known existing sanitary sewer lines within the site. There is an existing 24” sanitary sewer line within Ridgeway Parkway that routes wastewater to the Happy Canyon Creek sanitary sewer system. There is a separate system of 12” sanitary sewer mains in development within Ridgeway further to the east that will route wastewater to the Badger Gulch sanitary sewer system. Wastewater from the Ridgeway Southwest Village development will be serviced by the existing North Water Reclamation Facility. The existing gravity sanitary sewer collection mains to service the site are owned by Parker Water and Sanitation District (PWSD) and are located north of the site in Ridgeway Parkway.

The proposed Ridgeway Southwest Village development will be serviced by an internal sanitary sewer system comprised of eight, twelve, and eighteen inch mains. The Ridgeway Southwest Village system of sanitary mains will route wastewater from future adjacent developments through the site. The projected future offsite sanitary flows have been accounted for within this report and will come from a force main/sanitary lift station to the west of the sub-division and a portion of “Freshfield “ a single-family development projected to be built south of the site. Stub locations to surrounding sites are shown on the Sanitary Sewer Exhibit located in Appendix C. The collection system will convey wastewater flows via gravity to both the northwest and northeast corners of the site to both existing and future/planned mains. The wastewater tributary to the northwest existing sanitary sewer falls within the Ridgeway Southwest Village sanitary basin from the Parker Water & Sewer Master Plan Figure 6-2 Located in Appendix C. The wastewater tributary that flows to the northeast connection falls within the Badger Gulch sanitary basin within the Master Plan Figure 6-2. All Ridgeway Southwest Village development effluent will ultimately gravity flow to the Ridgeway East Lift Station and then on to the North Water Reclamation Facility.

Sanitary Sewer Loading Design

The sanitary loads within the site were determined from the East Ridgeway Sanitary Sewer Master Study dated March 2017, by Merrick and Company.” Sanitary Loading criteria used for the site analysis are summarized in Table 1 below.

Table 1:

Type of Use	Unit Flow (Average Daily Flow)	Peaking Factor (Peak Flow vs. Avg. Day)
Residential: Single Family	197/SFE	3.655
Residential: Multi-Family	197/SFE*2/3	3.655
School	25 gpsd	1.38
Recreation Center	40 gpvd	3.655
Regional Parks/Community Parks	1,500/gpd	----

Table 1: Ridgeway Sanitary Loading Criteria

SFE: Single Family Equivalent

gpsd: Gallons per Student per Day

gpvd: Gallons per Visitor per Day

Using the above criteria, the sanitary loading was developed for the overall site and is shown in the “Wastewater Loading for Ridgeway Southwest Village” development calculation sheet within Appendix B.

Pipe Analysis

Each pipe/conduit in the proposed sanitary sewer system was designed to meet all of the Parker Water & Sanitation Department’s design standards and criteria as shown within **Table 2** below.

Table 2:

Sewer Size (inches)	Minimum Slope (Feet per Hundred)	Maximum Slope (Feet per Hundred)
8	0.4	15
10	0.28	12
12	0.2	11
15	0.15	8.5
18	0.12	6.5
21	0.092	5
24	0.08	4.5

Pipe sizes were selected based on design flows and proposed pipe slopes to provide adequate capacity. Sanitary trunkline conduits were designed with a minimum velocity of two feet per second with pipes flowing no more than 60 % full for sewers that are 10-inch or smaller, and 50% full for sewers that are 12-inch or larger. All of the trunkline sanitary conduits in the proposed Ridgeway Southwest Village conform to these parameters (see calculations in Appendix B).

Sanitary Sewer Routing

The basins on the site were delineated to evaluate the primary trunkline(s) that will service the Ridgeway Southwest Village sanitary collection system. For additional information regarding average daily flows, peaking factors, velocity, conduit capacity, sanitary main sizes, and infiltration, refer to the “Wastewater Loading for Ridgeway Southwest Village” development calculation sheet as shown within Appendix B and the “Ridgeway Southwest Village - Sanitary Sewer Exhibit” located within Appendix C for individual conduit sizing and referenced sanitary sewer design points.

Basin A

Basin A consists of the western portion of the development is comprised of single-family units, multi-family units, school, rec center and regional parks. The sanitary collection system for basin A will receive additional loading from a planned lift station to be installed by others at an access point near S. Havana St. that is located adjacent to the southwestern corner of the development. In addition, the basin's collection system will collect anticipated loads from Freshfield (a proposed development to the south of the site) and receive infiltration flows from surrounding parks and land within the basin. Loads from basin A will ultimately outfall into a 24" sanitary sewer located within Ridgeway Parkway - part of the Happy Canyon Tributary, as shown in the Sanitary Sewer Exhibit in Appendix C.

Basin A was broken up into nine smaller sub-basins to size the main trunk lines that will service basin A as described below.

- Basin A1 consists of the southwestern upstream portion of basin A. Basin A1 receives offsite sanitary loads from a future lift station south of Havana Street that will serve 258 SFE. Basin A1 will receive additional onsite sanitary loads from single-family units. The main trunkline serving basin A1 was sized to be an 8" main. The total combined wastewater loading from Basin A1 can be found in the calculations at Design Point 1A (DP1A).
- Basin A2 is comprised of single-family units and the sanitary loading associated with upstream basin A1. Basin A2 will receive additional offsite loading from a future development named Freshfield that is upstream to the south of the site. The Freshfield loading was assumed to be 300 SFE. The main trunkline serving basin A2 was determined to a 10" main. The total combined wastewater loading within Basin A2 can be found in the calculations at Design Point 2A (DP2A).
- Basin A3 is comprised of sanitary loading generated from single-family units and from upstream basins A1 and A2. The main trunkline serving basin A3 and was determined to be a 10" main. The total combined wastewater loading within Basin A3 can be found in the calculations at Design Point 3A (DP3A).
- Basin A4 is comprised of sanitary loading generated from a combination of single-family units, multi-family units and loadings associated with upstream basins A1-A3. A 12" main was found to have adequate capacity for the calculated loading. The total combined wastewater loading within Basin A4 can be found in the calculations at Design Point 4A (DP4A).
- Basin A5 is comprised of sanitary loading generated from single-family units and a proposed recreation center. An 8" main was found to have adequate capacity for the calculated loading within basin A5. The total combined wastewater loading within Basin A5 can be found in the calculations at Design Point 5A (DP5A).

- Basin A6 collects loads from single-family residential, multi-family residential units, infiltration from a region park, and a school. Sanitary loading generated in basin A6 utilizes a separate trunkline from the one the services basins A1-A5. An 8” main was found to have adequate capacity for the calculated loading. The total combined wastewater loading within Basin A6 can be found in the calculations at Design Point 6A (DP6A).
- Basin A7 collects sanitary loads from single-family residential and multi-family residential units. Sanitary loading generated within this basin confluence with the combined loadings from basins A1-A6 and A8 at Design Point 7A (DP7A). The main trunkline serving basin A7 and was determined to be an 8” main until the confluence point where the line size is increased to 18”.
- Basin A8 receives infiltration from regional park A1. The main trunkline for basin A8 was sized to handle upstream loads from basins A1-A6. Sanitary loading generated within this basin confluence with the combined loadings from basins A1-A6 and A8 at Design Point 7A (DP7A). The main trunkline serving basin A7 and was determined to be a 15” main until the confluence point where the line size is increased to 18”.
- Basin A9 receives loads from all of the upstream A basins and planning area SFA-A4. An 18” main was found to have adequate capacity for the calculated loading. The total combined wastewater loading within Basin A9 can be found in the calculations at Design Point 8A (DP8A).

For additional information regarding average daily flows, peaking factors, velocity, conduit capacity, sanitary main sizes, and infiltration, refer to the “Wastewater Loading for Ridgeway Southwest Village” calculation sheet as shown within Appendix B and the “Ridgeway Southwest Village - Sanitary Sewer Exhibit” located within Appendix C.

Basin B

Basin B is located in the central portion of the development. The sanitary collection system for basin B will receive loads from single-family and commercial development. The effluent sewage from basin B will ultimately outfall into a 12” sanitary sewer located within Ridgeway Parkway, that is tributary to Badger Gulch. An 8” main was found to have adequate capacity for the calculated loading. For additional information regarding average daily flows, peaking factors, sanitary main sizes, velocity, conduit capacity, and infiltration, refer to the “Wastewater Loading for Ridgeway Southwest Village” calculation sheet as shown within Appendix B and the “Ridgeway Southwest Village -Sanitary Sewer Exhibit” located within Appendix C.

Basin C

Basin C is located in the eastern portion of the development. The sanitary collection system for basin C will receive flows from planned single-family development. The effluent wastewater from basin C will ultimately discharge into design Ridgeway Parkway to a 15" Sanitary Sewer that is tributary to Badger Gulch.

- Basin C1 is comprised of single family units. An 8" main was found to have adequate capacity for the calculated loading within basin C1. The total combined wastewater loading within basin C1 can be found in the calculations at Design Point 1C (DP1C).
- Basin C2 is comprised of single family units and from upstream basin C1. The main trunkline serving basin C2 was determined to be an 8" main.

For additional information regarding average daily flows, peaking factors, sanitary main sizes, velocity, conduit capacity, and infiltration, refer to the "Wastewater Loading for Ridgeway Southwest Village" calculation sheet as shown within Appendix B and the "Ridgeway Southwest Village - Sanitary Sewer Exhibit" located within Appendix C.

WATER DISTRIBUTION SYSTEM

General Description

The proposed water distribution system for Ridgeway Southwest Village consists of eight, twelve, twenty and twenty-four inch mains looped throughout site. The site's elevation ranges from 5,992 to 6,168 feet. The water distribution system for Ridgeway Southwest Village will tie into a future twenty-four inch water main east of Badger Gulch. The Ridgeway Southwest Village water system will also tie into twelve, sixteen, and twenty inch water lines located in Ridgeway Parkway to the north. The final site connection will be to the west into an existing twenty inch water main located in South Havana Street. The "Ridgeway Southwest Village - Water Line Exhibit" has been provided within Appendix D for visual reference of the proposed system. The Ridgeway Southwest Village development is currently planning for 1,788 single-family units, 176 multi-family units, 13 acres of commercial area, one recreation center, one school with an assumed 1,000 students, and three parks. See the "Ridgeway Southwest Village" map located in Appendix A for a breakdown of the land uses and lot types for the development.

Hydraulic Design

Design criteria used to analyze the hydraulics of the site were established using the "Parker Water and Sewer Standard Specifications Manual" and the approved "Ridgeway East Regional Master Plan" by Merrick. The following is a summary of the criteria:

Max Day Criteria

Minimum Pressure	40 psi
Maximum Pressure	120 psi
Maximum Velocity	7 ft/s
Maximum Head Loss	1 ft/100 ft

Max Day Demand + Fire Flow Criteria

Minimum Pressure	20 psi
Maximum Pressure	120 psi
Maximum Velocity	15 ft/s
Maximum Head Loss	5 ft/100 ft

Fire Flow Demand

Single Family	1,500 gpm
Commercial	3,000 gpm
Multi-Family	2,500 gpm

Domestic Demand Design

The unit demands for the Ridgeway Southwest Village were taken from the approved “Ridgeway East Regional Master Plan”. A single family equivalent (SFE) was determined to be an average of 2.7 persons. Multi-family units were determined to be equivalent to 0.67 SFE. Domestic demand criteria used for the site analysis is summarized below.

Potable Water Demands

Average Day Demand	410 gal/SFE/day
Maximum Day Factor	2.5
Maximum Day Demand	1,025 gal/SFE/day
Peak Hour Factor	5
Peak Hour Demand	2,050 gal/SFE/day
Commercial	1 SFE/4,045 sf
School	0.37 SFE/student

See the “Potable Water Demand” table located in Appendix E for a full summary of demand distribution into the WaterCAD model.

System Design Analysis

A WaterCAD model was created for the site to analyze the hydraulics of the proposed water system. The proposed water model included offsite demands to the west and north of the site that were taken from the Merrick InfoWater Model. The offsite demands were applied to nodes labeled offsite (OS) to get a more accurate representation of flow direction and pressure in the region. “Ridgeway - Water Line Exhibit” has been provided within Appendix D for visual reference of the proposed system. Scenarios were computed to analyze max day demand, peak hour demand, and max day plus fire flow demand conditions. The site falls within pressure zone 2 from the “Ridgeway East Regional Master Plan” which has a design hydraulic gradient of 6,315’ and serves elevations of 6,000-6,205’. Reservoir connections were modeled at 2 locations with an assumed static HGL of 6,315’.

Maximum Day

The maximum day demand scenario was generated utilizing the criteria established above. The lowest and highest onsite residual pressures for the max day model, with a reservoir HGL of 6,315, were 62.6 and 141.0 psi, respectively. There are a total of twenty-six junctions that exceed maximum residual pressure during max day conditions. These junctions fall between the elevation of 5,987.4

and 6,036.0 and have a pressure range of 120.2-141.0 psi. All junctions were above the minimum pressure of 40 psi and velocities ranged from 0.0-1.45 ft/s. PRVs may be installed prior to the lots with excessive residual pressure in order to meet PWSD maximum residual pressure criteria. When the model was computed with an HGL of 6,275', all nodes and pipes met PWSD residual pressure and velocity requirements. Model results have been tabulated in Appendix E.

Peak Hour

The peak hour demand scenario was generated utilizing the criteria established above. The lowest and highest onsite residual pressures for the peak hour model, with a reservoir HGL of 6,315, were 59.8 and 139.0 psi, respectively. There are a total of twenty junctions that exceed maximum residual pressure during max day conditions. These junctions fall between the elevation of 5,987.4 and 6,032 and have a pressure range of 120.5-139.0 psi. All junctions were above the minimum pressure of 40 psi and velocities ranged from 0.0-2.89 ft/s. PRVs may be installed prior to the lots with excessive residual pressure in order to meet PWSD maximum residual pressure criteria. When the model was computed with an HGL of 6,275', all nodes and pipes met PWSD residual pressure and velocity requirements. Model results have been tabulated in Appendix E.

Maximum Day + Fire Flow

The maximum day plus fire demand scenario was generated utilizing the criteria established above. Two scenarios were run in order to determine the worst case fire flow scenario within the subdivision. One scenario was applying the multi-family fire flow of 2,500 gpm to the highest elevation multi-family node which was node J-44. The second fire flow scenario was applying a 3000 gpm demand onto node J-142 which is directly adjacent to the 12 acre commercial area. The lowest and highest onsite residual pressures for the max day plus fire model with a 2,500 gpm fire flow applied at J-44, with a reservoir HGL of 6,315, were 52.6 and 139.8 psi, respectively. There are a total of twenty junctions that exceed maximum residual pressure during max day plus fire conditions. These junctions fall between the elevation of 5,987.4 and 6,030.0 and have a pressure range of 121.1-139.8 psi. All junctions were above the minimum pressure of 40 psi and velocities ranged from 0.0-8.56 ft/s. PRVs may be installed prior to the lots with excessive residual pressure in order to meet PWSD maximum residual pressure criteria. When the model was computed with an HGL of 6,275', all nodes and pipes met PWSD residual pressure and velocity requirements. Model results have been tabulated in

Appendix E. The lowest and highest onsite residual pressures for the max day plus fire model with a 3,000 gpm fire flow applied at J-142, with a reservoir HGL of 6,315, were 61.5 and 139.6 psi, respectively. There are a total of twenty-one junctions that exceed maximum residual pressure during max day plus fire conditions. These junctions fall between the elevation of 5,987.4 and 6,032.1 and have a pressure range of 120.2-139.6 psi. All junctions were above the minimum pressure of 40 psi and velocities ranged from 0.0-12.70 ft/s. PRVs may be installed prior to the lots with excessive residual pressure in order to meet PWSD maximum residual pressure criteria. When the model was computed with an HGL of 6,275', all nodes and pipes met PWSD residual pressure and velocity requirements. Model results have been tabulated in Appendix E.

CONCLUSION

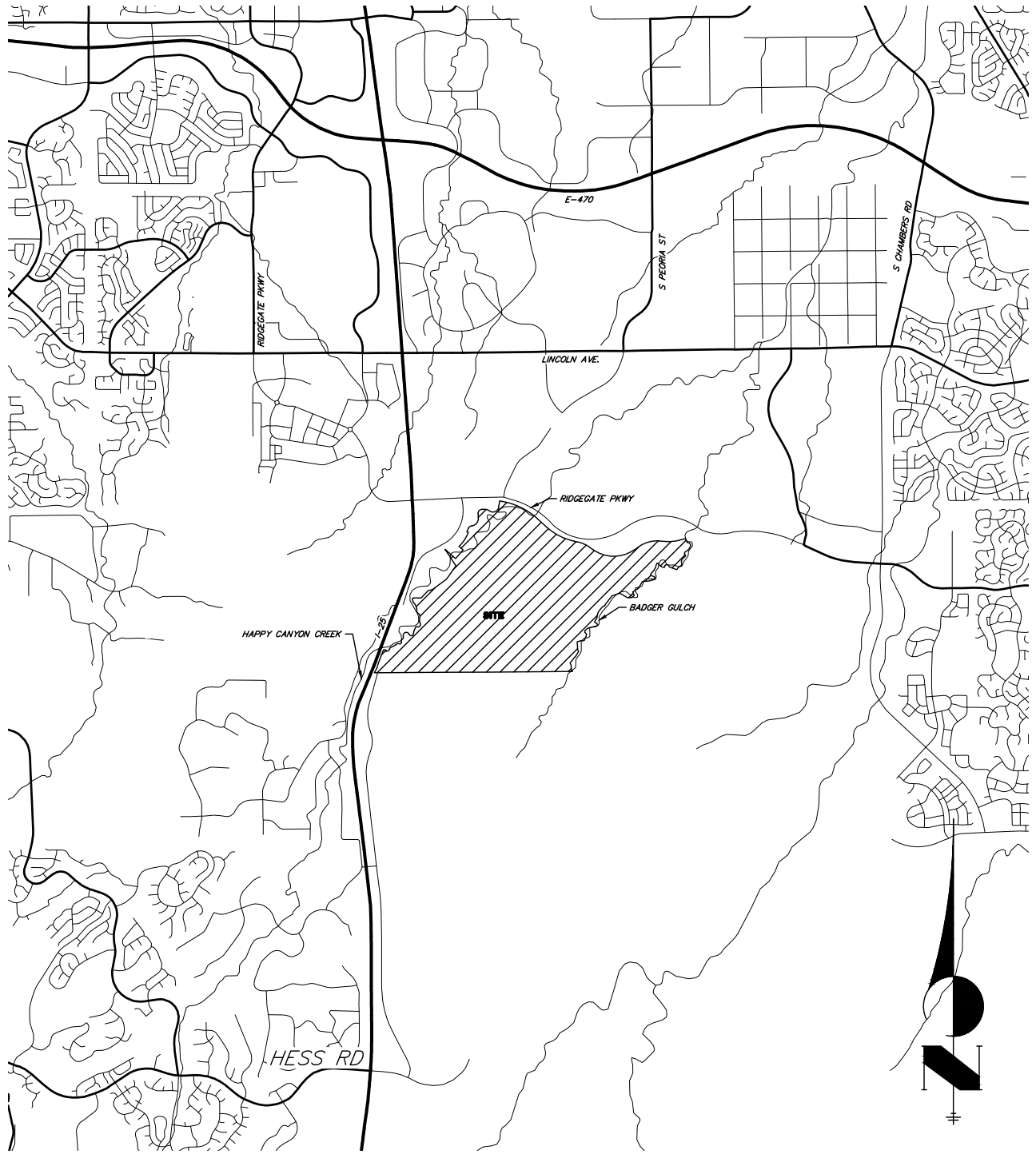
The proposed water and sanitary sewer systems that will service the Ridgegate Southwest Village development site have been demonstrated to be in compliance with the standards set forth by the Parker Water and Sanitation District and the Ridgegate East Regional Master Plans for Water and Wastewater Utilities.

REFERENCES

1. Engineering Department Standards And Specifications Manual, Parker Water and Sanitation District (PWSD), 2017.
2. Ridgegate East Regional Master Plans for Water and Wastewater Utilities, dated March 2017, by Merrick and Company.
3. Wastewater Engineering Treatment and Reuse, Metcalf & Eddy, Inc., 4th Edition, 2004.

APPENDIX A

VICINITY MAP, MASTER PLANS & SITE PLAN

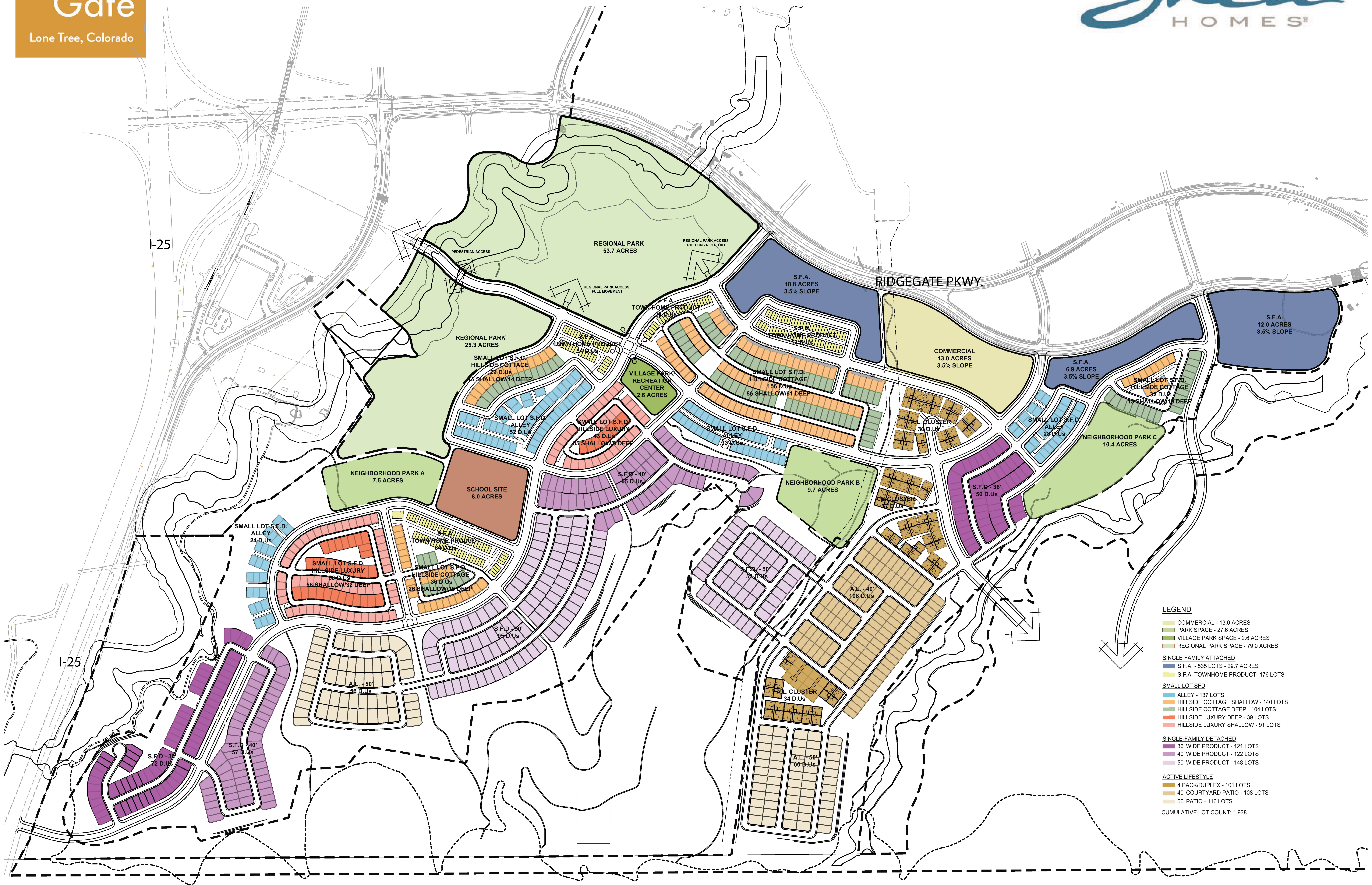


VICINITY MAP
SCALE 1"=5000'

15950.00
3/28/2020
SHEET 1 OF 1



Centennial 303-740-9393 • Colorado Springs 719-593-2593
Fort Collins 970-491-9888 • www.jrengineering.com



LEGEND

Commercial - 13.0 ACRES
Park Space - 27.6 ACRES
Village Park Space - 2.6 ACRES
Regional Park Space - 79.0 ACRES
SINGLE FAMILY ATTACHED
S.F.A. - 535 LOTS - 29.7 ACRES
S.F.A. TOWNHOME PRODUCT - 176 LOTS
SMALL LOT SFD
ALLEY - 137 LOTS
HILLSIDE COTTAGE SHALLOW - 140 LOTS
HILLSIDE COTTAGE DEEP - 104 LOTS
HILLSIDE LUXURY DEEP - 39 LOTS
HILLSIDE LUXURY SHALLOW - 91 LOTS
SINGLE-FAMILY DETACHED
36' WIDE PRODUCT - 121 LOTS
40' WIDE PRODUCT - 122 LOTS
50' WIDE PRODUCT - 148 LOTS
ACTIVE LIFESTYLE
4 PACK/DUPLEX - 101 LOTS
40' COURTYARD PATIO - 108 LOTS
50' PATIO - 116 LOTS
CUMULATIVE LOT COUNT: 1,938

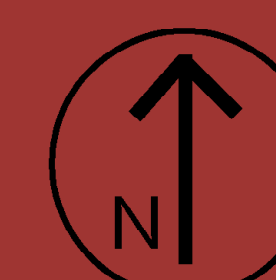
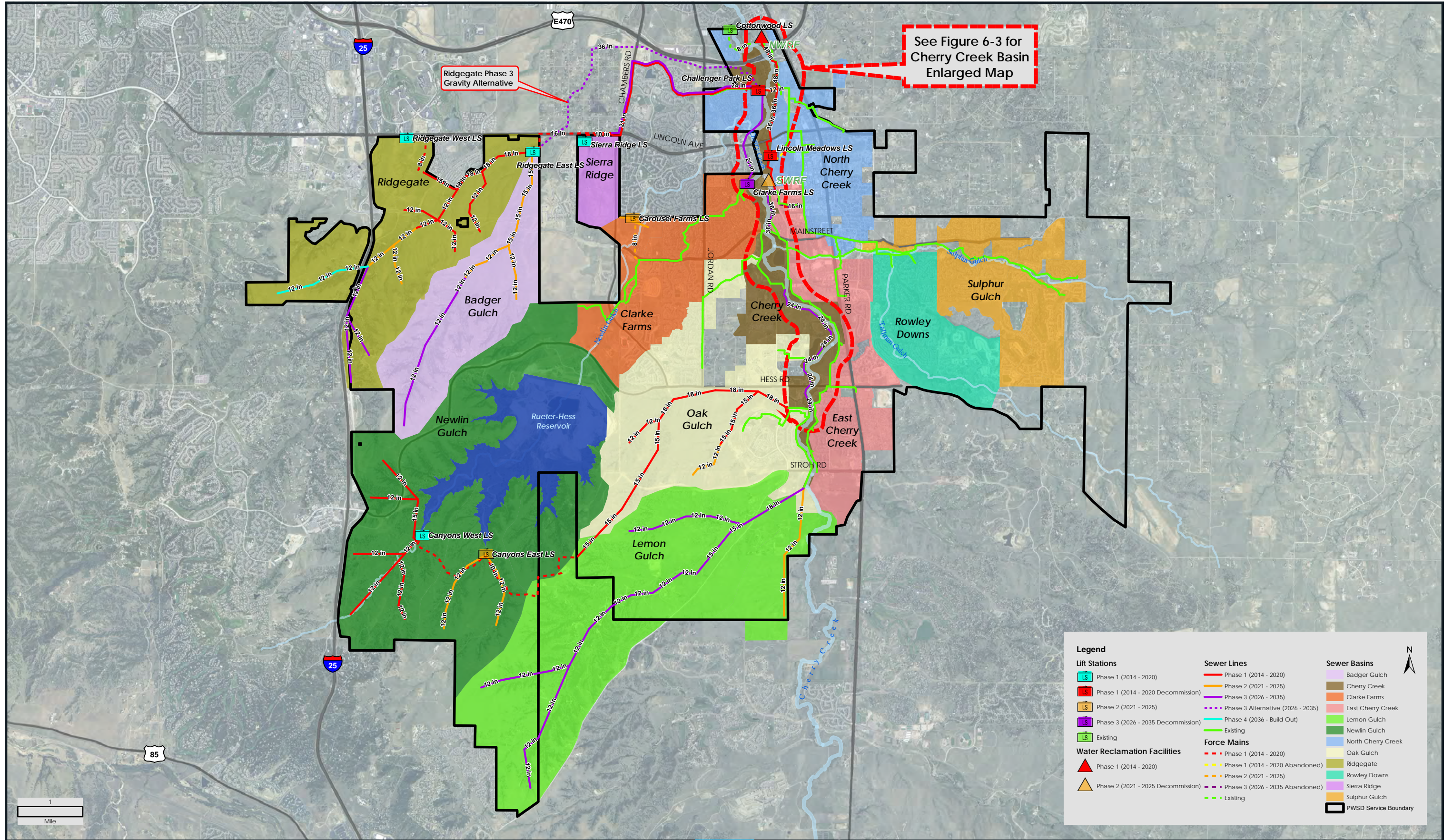


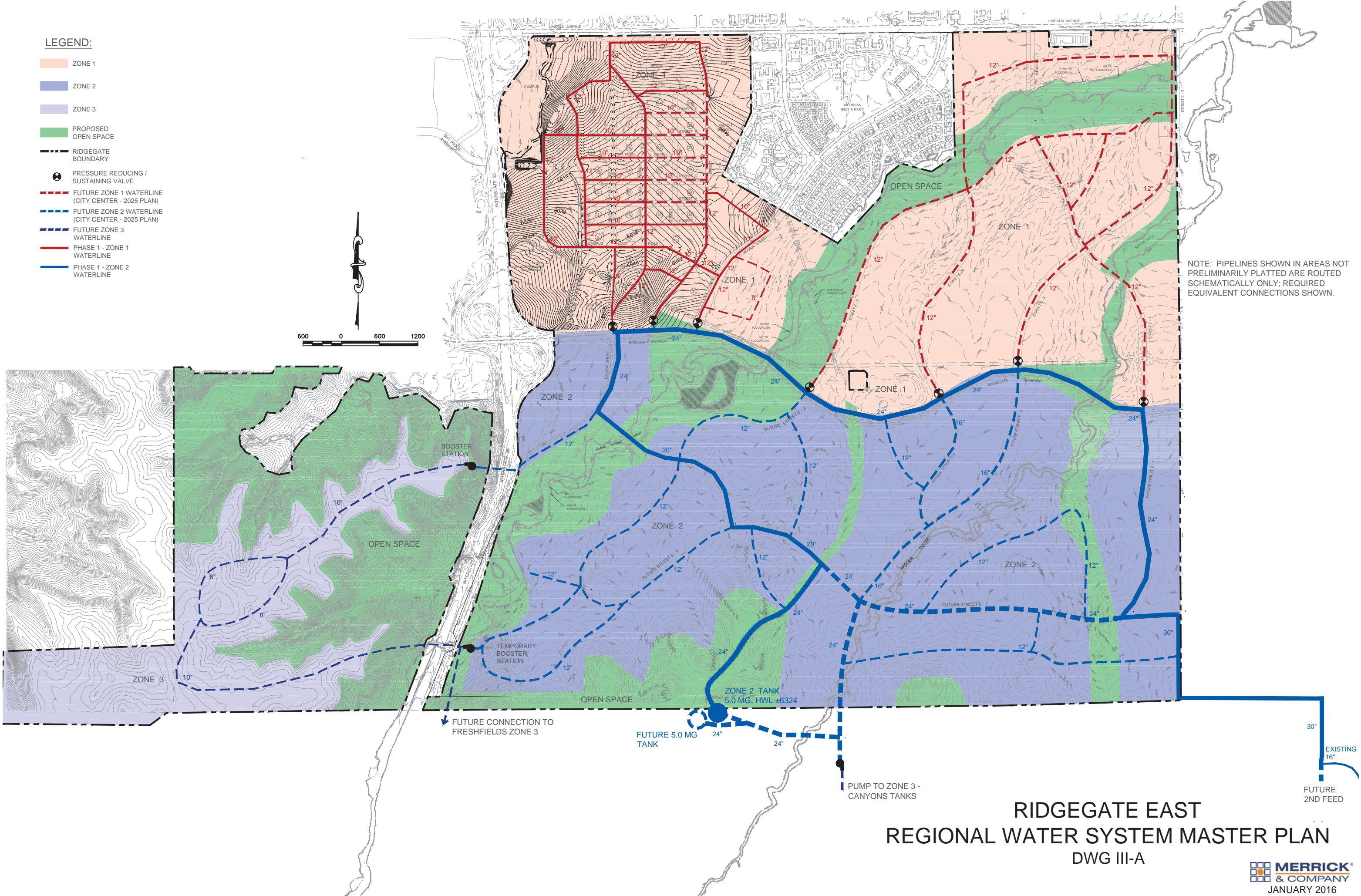
Figure 6-2
Future Wastewater Collection System Facilities and Phasing



Legend		
Lift Stations	Sewer Lines	Sewer Basins
LS Phase 1 (2014 - 2020)	Phase 1 (2014 - 2020)	Badger Gulch
LS Phase 1 (2014 - 2020 Decommission)	Phase 2 (2021 - 2025)	Cherry Creek
LS Phase 2 (2021 - 2025)	Phase 3 (2026 - 2035)	Clarke Farms
LS Phase 3 (2026 - 2035 Decommission)	Phase 3 Alternative (2026 - 2035)	East Cherry Creek
LS Existing	Phase 4 (2036 - Build Out)	Lemon Gulch
Water Reclamation Facilities	Existing	Newlin Gulch
Phase 1 (2014 - 2020)	Force Mains	North Cherry Creek
Phase 2 (2021 - 2025 Decommission)	Phase 1 (2014 - 2020)	Oak Gulch
	Phase 1 (2014 - 2020 Abandoned)	Ridgegate
	Phase 2 (2021 - 2025)	Rowley Downs
	Phase 3 (2026 - 2035 Abandoned)	Sierra Ridge
	Existing	Sulphur Gulch
		PWSD Service Boundary

LEGEND:

- ZONE 1
- ZONE 2
- ZONE 3
- PROPOSED OPEN SPACE
- RIDGEGATE BOUNDARY
- ⊗ PRESSURE REDUCING / SUSTAINING VALVE
- FUTURE ZONE 1 WATERLINE (CITY CENTER - 2025 PLAN)
- FUTURE ZONE 2 WATERLINE (CITY CENTER - 2025 PLAN)
- FUTURE ZONE 3 WATERLINE
- PHASE 1 - ZONE 1 WATERLINE
- PHASE 1 - ZONE 2 WATERLINE



NOTE: PIPELINES SHOWN IN AREAS NOT PRELIMINARILY PLATTED ARE ROUTED SCHEMATICALLY ONLY; REQUIRED EQUIVALENT CONNECTIONS SHOWN.

**RIDGEGATE EAST
REGIONAL WATER SYSTEM MASTER PLAN
DWG III-A**

APPENDIX B

SANITARY SEWER SYSTEM DATA AND CALCULATIONS

Project Name
Project No.
Calculated By
Checked By
Date

Ridgegate
15950.00
ARJ
AJH
7/6/2020

Wastewater Loading for Ridgegate Southwest Village Development

Run	Basin Delineator	Approx. Single Family Units -1 SFE	Approx. M.F. Units-2/3 SFE	Average Daily Flow (197 gpd/SFE)	Average Daily Flow (MGD)	Average Daily Flow (cfs)	Average Daily Flow (gpm)	Peak Factor Used	Peak Flow (cfs)	Infiltration/Contingency (10% of ADF, MGD)	Infiltration/Contingency (10% of ADF, cfs)	Peak Design Flow (gpm)	Peak Design Flow (cfs)	Min. Pipe Slope (ft/ft)	Pipe Diameter (D.in)	Pipe Diameter (D.ft)	Pipe Area (A.ft ²)	Depth in Circular Pipe (d.ft)	Alpha (a, rad)	Solver (Iterate Alpha till 0)	Wetted Area (sf)	Wetted Perimeter (ft)	Hydraulic Radius (R, ft)	Pipe Capacity (cfs)	Velocity ² (ft/s)	Pipe % Full ³
1A	A1 (units)	129		25.413	0.025	0.039	17.65	3.655	0.144	0.003	0.004	66.26	0.148													
	Lift Station	258		50.826	0.051	0.079	35.30	3.655	0.287	0.005	0.008	132.53	0.295													
	Basins A1 Total	387		76.239	0.076	0.118	52.94	3.655	0.431	0.008	0.012	198.79	0.443	0.0045	8	0.667	0.3	0.2	3.0522	0.0000	0.1646	1.02	0.2	0.96	2.69	46.23%
1A to 2A	A2 (units)	77		15.169	0.015	0.023	10.53	3.655	0.086	0.002	0.002	39.55	0.088													
	Freshfield	300.0		59.100	0.059	0.091	41.04	3.655	0.334	0.006	0.009	154.10	0.343													
	Basins A2+A1 Total	764		150.508	0.151	0.233	104.52	3.655	0.851	0.015	0.023	392.45	0.874	0.0050	10	0.833	0.5	0.3	3.0885	0.0000	0.2635	1.29	0.2	1.83	3.32	47.76%
2A to 3A	A3 (units)	111		21.867	0.022	0.034	15.19	3.655	0.124	0.002	0.003	57.02	0.127													
	Basins A3+ A2+A1 Total	875		172.375	0.172	0.267	119.70	3.655	0.975	0.017	0.027	449.47	1.001	0.0050	10	0.833	0.5	0.3	3.2516	0.0000	0.2918	1.35	0.2	1.83	3.43	54.69%
	Basins A3+A2+A1 Total	969	4	191.681	0.192	0.297	133.11	3.655	1.084	0.019	0.030	499.81	1.114	0.0028	12	1.000	0.8	0.4	3.1411	0.0000	0.3926	1.57	0.2	2.23	2.84	49.98%
3A to 4A	A4 (units)	94	4	19.306	0.019	0.030	13.41	3.655	0.109	0.002	0.003	50.34	0.112													
	Basins A4+A3+ A2+A1 Total	969	4	191.681	0.192	0.297	133.11	3.655	1.084	0.019	0.030	499.81	1.114	0.0028	12	1.000	0.8	0.4	3.1411	0.0000	0.3926	1.57	0.2	2.23	2.84	49.98%
	Basins A4+A3+ A2+A1 Total	969	4	191.681	0.192	0.297	133.11	3.655	1.084	0.019	0.030	499.81	1.114	0.0028	12	1.000	0.8	0.4	3.1411	0.0000	0.3926	1.57	0.2	2.23	2.84	49.98%
5A	A5 (units)	80		15.760	0.016	0.024	10.94	3.655	0.089	0.002	0.002	41.09	0.092													
	Rec-Center	40,000		0.040	0.040	0.062	27.78	3.655	0.226	0.004	0.006	104.30	0.232													
	Basins A5 Total	80		57.260	0.057	0.089	39.76	3.655	0.324	0.006	0.009	149.31	0.333	0.0040	8	0.667	0.3	0.1	2.8204	0.0000	0.1391	0.94	0.1	0.90	2.39	36.83%
6A	A6 (units)	158	19	34.803	0.035	0.054	24.17	3.655	0.197	0.003	0.005	90.75	0.202													
	School	25,000		0.025	0.025	0.039	17.36	3.655	0.141	0.003	0.004	65.19	0.145													
	Basins A6 Total	158	19	61.303	0.061	0.095	42.57	3.655	0.347	0.006	0.009	159.86	0.356	0.0028	8	0.667	0.3	0.2	3.0736	0.0000	0.1670	1.02	0.2	0.76	2.13	47.13%
5A to 6A	Basins A5+ A4+A3+ A2+A1 Total	---	---	248.941	0.249	0.385	172.88	3.655	1.408	0.025	0.039	649.15	1.446	0.0050	12	1.000	0.8	0.4	3.1080	0.0000	0.3843	1.55	0.2	2.98	3.76	48.58%
7A	A7 (units)	147	52	39.203	0.039	0.061	27.22	3.655	0.222	0.004	0.006	102.22	0.228													
	Basins A7 Total	147	52	39.203	0.039	0.061	27.22	3.655	0.222	0.004	0.006	102.22	0.228	0.0045	8	0.667	0.3	0.1	2.4557	0.0000	0.1012	0.82	0.1	0.96	2.25	23.77%
	Basins A7 Total	147	52	39.203	0.039	0.061	27.22	3.655	0.222	0.004	0.006	102.22	0.228	0.0045	8	0.667	0.3	0.1	2.4557	0.0000	0.1012	0.82	0.1	0.96	2.25	23.77%
6A to 7A	A8 - Regional Park A1	---	---	1.500	0.002	0.002	1.04	3.655	0.008	0.000	0.000	3.91	0.009													
	Basins A8 +A7+A6+ A5+ A4+A3+ A2+A1 Total	---	---	311.744	0.312	0.482	216.49	3.655	1.763	0.031	0.048	812.92	1.811	0.0028	15	1.250	1.2	0.6	3.0187	0.0000	0.5656	1.89	0.3	4.04	3.20	44.83%
	Basins A8 +A7+A6+ A5+ A4+A3+ A2+A1 Total	---	---	311.744	0.312	0.482	216.49	3.655	1.763	0.031	0.048	812.92	1.811	0.0028	15	1.250	1.2	0.6	3.0187	0.0000	0.5656	1.89	0.3	4.04	3.20	44.83%
7A to 8A	A9 - Units SFA-A4	195		38.415	0.038	0.059	26.68	3.655	0.217	0.004	0.006	100.17	0.223													
	Basins A9+A8+A7+A6+ A5+ A4+A3+ A2+A1 Total	1549	75	389.362	0.389	0.602	270.39	3.655	2.202	0.039	0.060	1015.32	2.262	0.0030	18	1.500	1.8	0.7	2.7275	0.0000	0.6539	2.05	0.3	6.80	3.46	33.27%
	Basins A9+A8+A7+A6+ A5+ A4+A3+ A2+A1 Total	1549	75	389.362	0.389	0.602	270.39	3.655	2.202	0.039	0.060	1015.32	2.262	0.0030	18	1.500	1.8	0.7	2.7275	0.0000	0.6539	2.05	0.3	6.80	3.46	33.27%
1B	B (units)	30		5.910	0.006	0.009	4.10	3.655	0.033	0.001	0.001	15.41	0.034													
	S.F.A. -B2	124		24.428	0.024	0.038	16.96	3.655	0.138	0.002	0.004	63.70	0.142													
	Basins B Total	154		49.838	0.050	0.077	34.61	3.655	0.282	0.005	0.008	129.95	0.290	0.0040	8	0.667	0.3	0.1	2.6949	0.0000	0.1084	0.90	0.1	0.9	2.09	32.06%
1C	C-1 (units)	292		57.524	0.058	0.089	39.95	3.655	0.325	0.006	0.009	149.99	0.334													
	C1 Total	292		57.524	0.058	0.089	39.95	3.655	0.325	0.006	0.009	149.99	0.334	0.0040	8	0.667	0.3	0.1	2.8247	0.0000	0.1396	0.94	0.1	0.9	2.39	37.00%
	C1 Total	292		57.524	0.058	0.089	39.95	3.655	0.325	0.006	0.009	149.99	0.334	0.0040	8	0.667	0.3	0.1	2.8247	0.0000	0.1396	0.94	0.1	0.9	2.39	37.00%
1C to 2C	C-2 (units)	110		21.670	0.022	0.034	15.05	3.655	0.123	0.002	0.003	56.50	0.126													
	Local Park-C1	1,500		1.500	0.002	0.002	1.04	3.655	0.008	0.000	0.000	3.91	0.009													
	Basins C1+C2 Total	402		80.694	0.081	0.125	56.04	3.655	0.456	0.008	0.012	210.41	0.469	0.0040	8	0.667	0.3	0.2	3.1863	0.0000	0.1795	1.06	0.2	0.9	2.61	51.90%
1D	D - Total	216		42.552	0.043	0.066	29.55	3.655	0.241	0.004	0.007	110.96	0.334	0.0040	8	0.667	0.3	0.1	2.8247	0.0000	0.1396	0.94	0.1	0.9	2.39	37.00%

Mannings Value 0.011

Sanitary trunkline conduits were designed with a minimum velocity of two feet per second with pipes flowing no more than 60% full for sewers that are 10-inch or smaller, and 50% full for sewers that are 12-inch or larger.

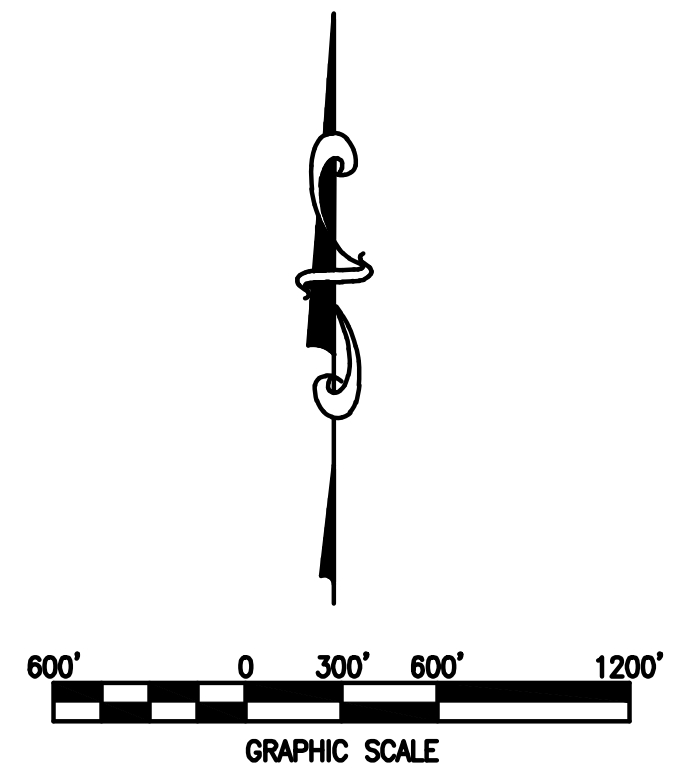
	Quantity	Average Daily Flow (GPD)	Average Daily Flow (MGD)	Average Daily Flow (cfs)	Average Daily Flow (gpm)	Peak Factor Used	Peak Flow (cfs)	Infiltration (10% of ADF, MGD)	Infiltration (10% of ADF, cfs)	Peak Design Flow (gpm)	Peak Design Flow (cfs)
Lift Station	1.0	50.826	0.051	0.079	35.30	3.65	0.29	0.005	0.008	132.53	0.30
Freshfield (300 SFE) (197 gpd/SFE)	300.0	99.000	0.099	0.153	68.75	3.65	0.56	0.010	0.015	258.14	0.58
School - 1,000 students (25 gpd)	1.0	25.000	0.025	0.039	17.36	3.65	0.14	0.003	0.004	65.19	0.15
Regional Park-A1 (79 acres) (1500 gpd)	1.0	1.500	0.002	0.002	1.04	3.65	0.01	0.000	0.000	3.91	0.01
Local Park-A2 (7.5 acre) (1500 gpd)	1.0	1.500	0.002	0.002	1.04	3.65	0.01	0.000	0.000	3.91	0.01
Local Park-A3 (9.7 acre) (1500 gpd)	1.0	1.500	0.002	0.002	1.04	3.65	0.01	0.000	0.000	3.91	0.01
Local Park-C1 (11.8 acre) (1500 gpd)	1.0	1.500	0.002	0.002	1.04	3.65	0.01	0.000	0.000	3.91	0.01
Rec Center -1,000 visitors (40 gpd)	1.0	40,000	0.040	0.062	27.78	3.65	0.23	0.004	0.006	104.30	0.23
Commercial-B1 (13 acre) (1500 gpd)	13.0	19,500	0.020	0.030	13.54	3.65	0.11	0.002	0.003	50.85	0.11
S.F.A. -B2 (124 SFE) (197 gpd/SFE)	124.0	24,428	0.024	0.038	16.96	3.65	0.14	0.002	0.004	63.70	0.14
S.F.A. -A4 (195 SFE) (197 gpd/SFE)	195.0	38,415	0.038	0.059	26.68	3.65	0.22	0.004	0.006	100.17	0.22
TOTAL	-	153,343	0.15	0.24	106.49	---	0.87	0.02	0.02	399.84	0.89

Criteria Table :

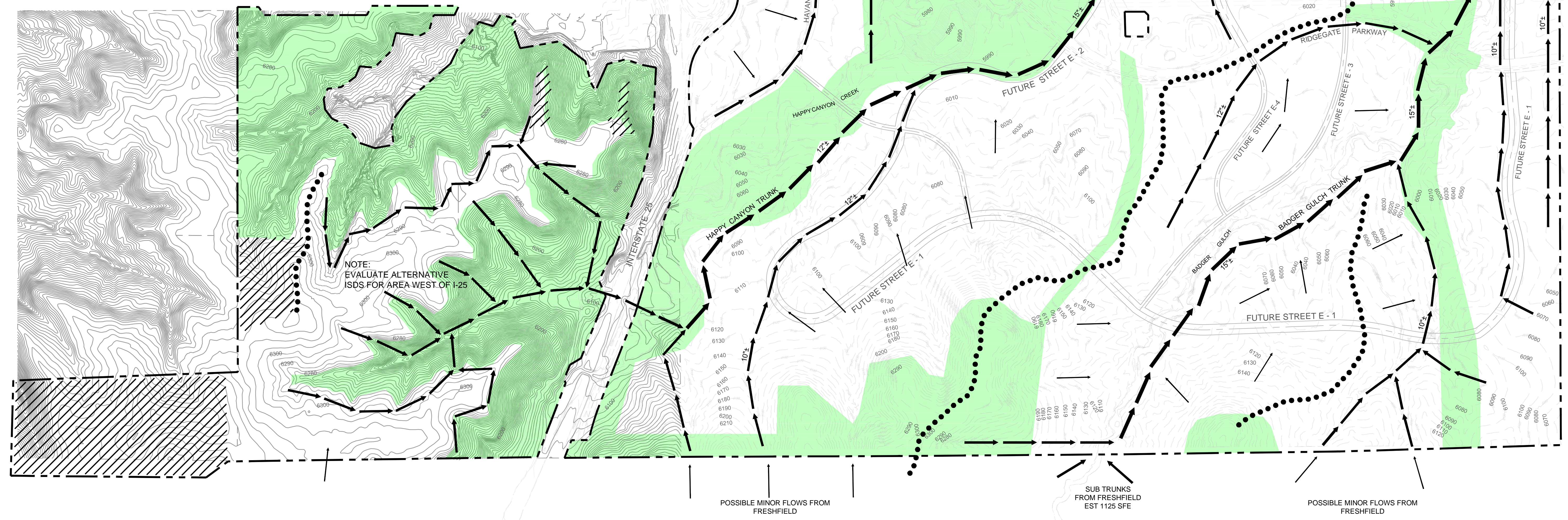
Type of Use	Unit Flow (Average Daily Flow)	Peaking Factor (Peak Flow vs. Avg. Day)
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APPENDIX C

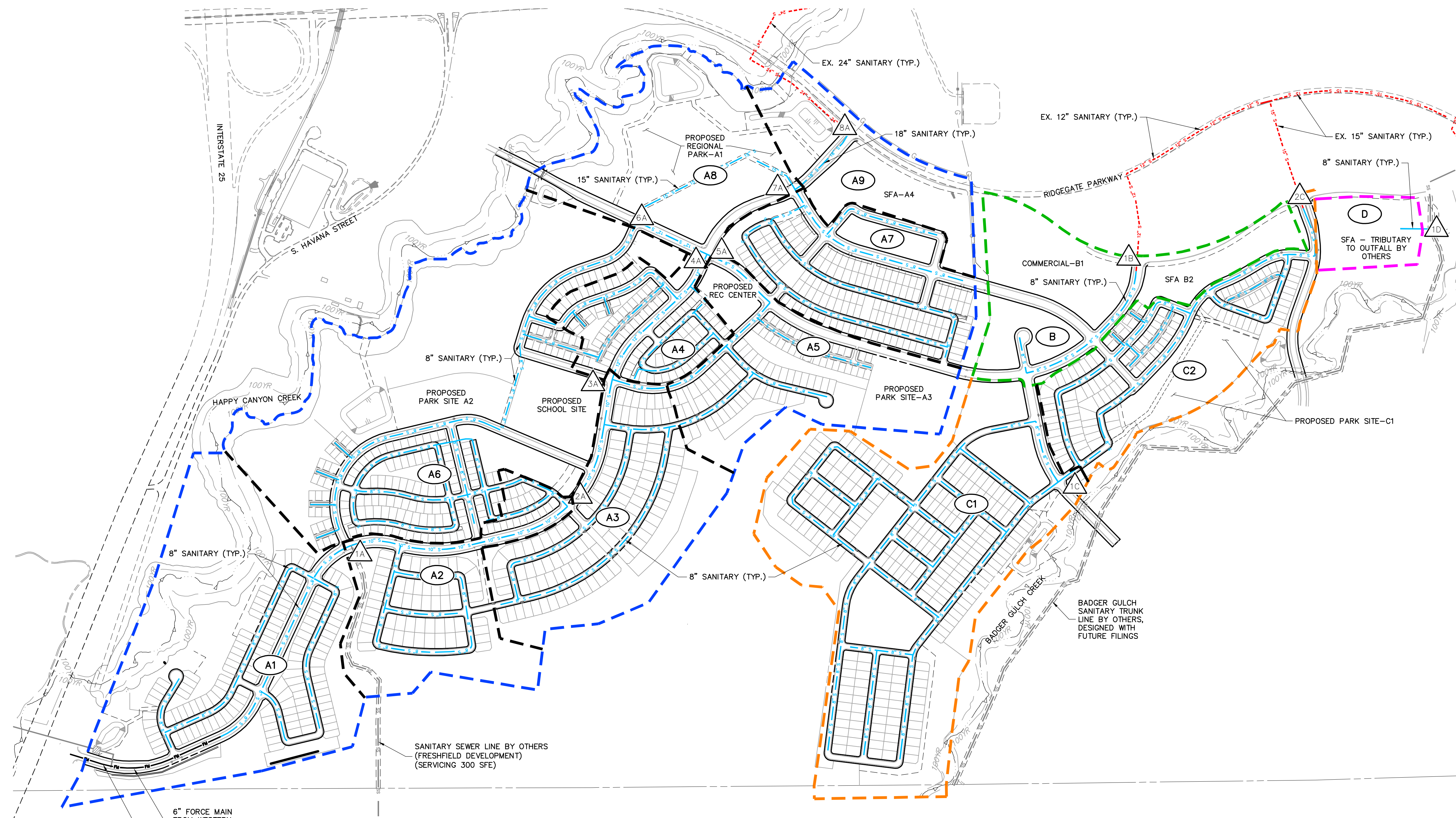
SANITARY SEWER EXHIBIT



- LEGEND:**
- SUB TRUNK SEWER (APPROXIMATE SIZE)
 - COLLECTOR SEWERS (8" UNLESS OTHERWISE SHOWN)
 - FORCE MAINS
 - DIRECTION OF FLOW (DESIGN GUIDANCE FOR UNPLANNED AREAS)
 - HIGHLIGHTED SEWERS - PHASE 1
 - TRIBUTARY ZONE BOUNDARY (RIDGE)
 - GRAVITY SEWER SERVICE NOT AVAILABLE
 - PROPOSED OPEN SPACE
 - RIDGEGATE BOUNDARY



**RIDGEGATE EAST
WASTEWATER COLLECTION MASTER PLAN
DWG IV-A**



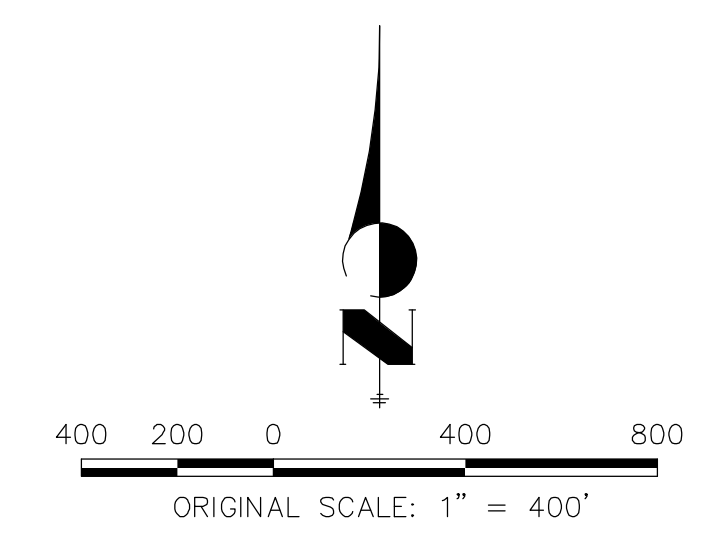
LEGEND

	FORCE MAIN
	EXISTING 12" SANITARY SEWER
	EXISTING 15" SANITARY SEWER
	EXISTING 24" SANITARY SEWER
	PROPOSED 8" SANITARY SEWER
	PROPOSED 10" SANITARY SEWER
	PROPOSED 12" SANITARY SEWER
	PROPOSED 15" SANITARY SEWER
	PROPOSED 18" SANITARY SEWER
	DESIGN POINT
	BASIN DESIGNATION
	BASIN A
	BASIN B
	BASIN C
	BASIN D

6" FORCE MAIN FROM WESTERN DEVELOPMENT
 6" FORCE MAIN TO EXTEND TO LIFT STATION BY OTHERS (SERVICING 258 SFE)

SANITARY SEWER LINE BY OTHERS (FRESHFIELD DEVELOPMENT) (SERVICING 300 SFE)

BADGER GULCH SANITARY TRUNK LINE BY OTHERS, DESIGNED WITH FUTURE FILINGS



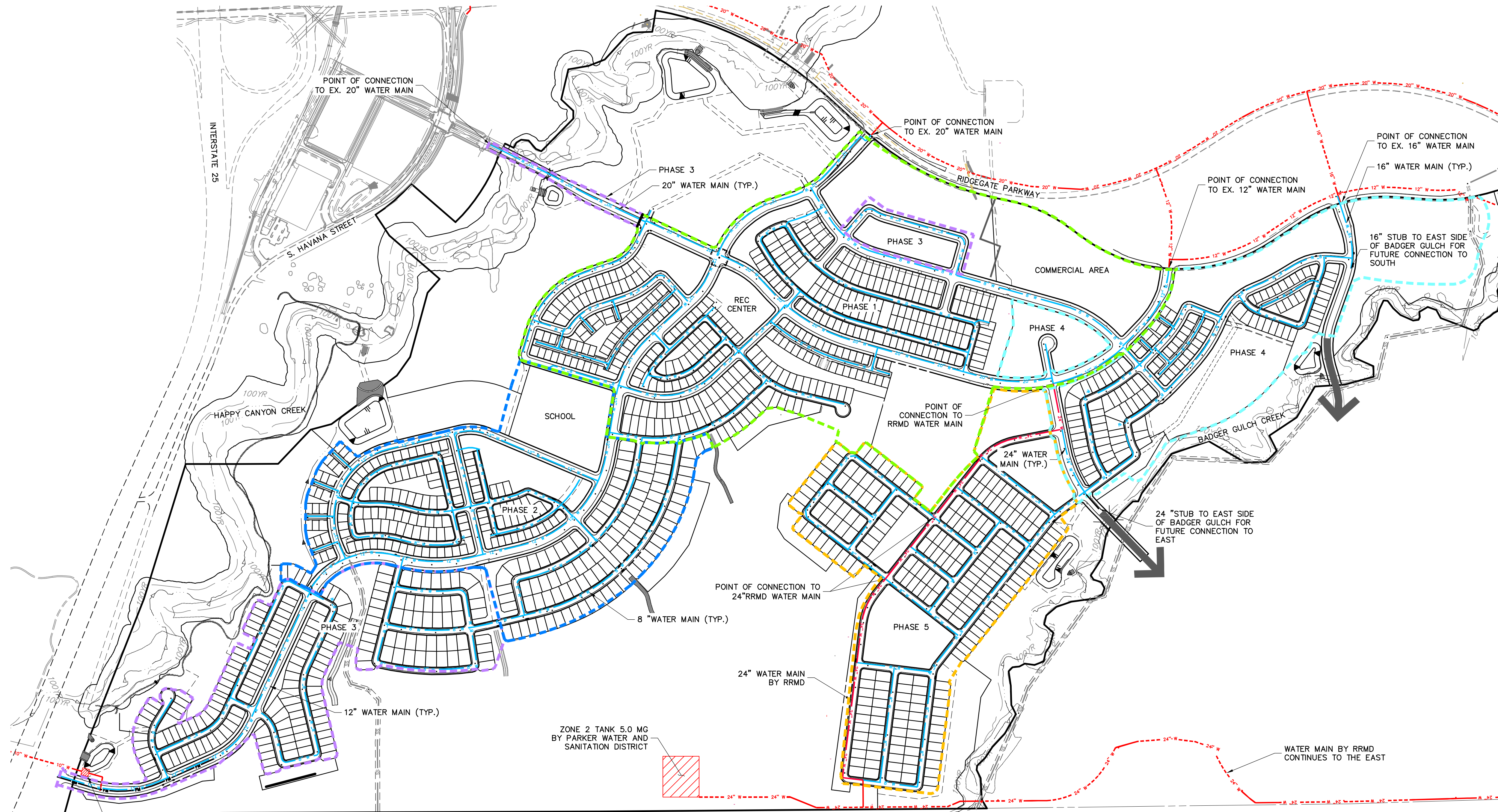
SANITARY SEWER EXHIBIT
 RIDGEGATE SOUTHWEST VILLAGE
 JOB NO. 15950.00
 7/6/2020
 SHEET 1 OF 1



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APPENDIX D

RIDGEGATE WATERLINE EXHIBIT



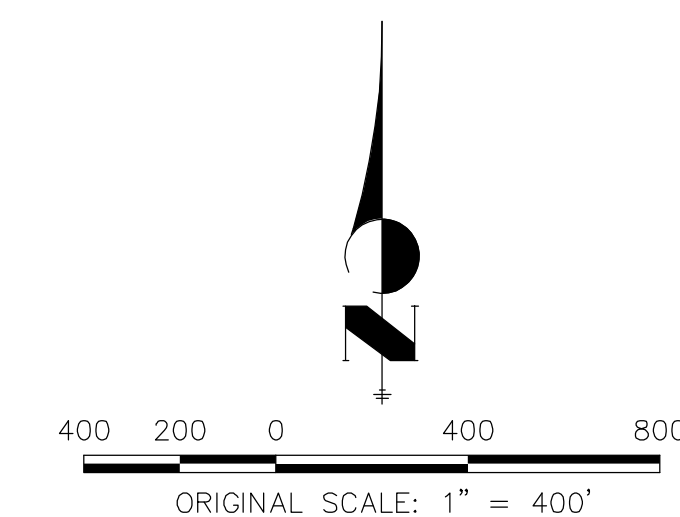
LEGEND

	EXISTING 10" WATER MAIN
	EXISTING 12" WATER MAIN
	EXISTING 16" WATER MAIN
	EXISTING 20" WATER MAIN
	EXISTING 24" WATER MAIN
	PROPOSED 8" WATER MAIN
	PROPOSED 12" WATER MAIN
	PROPOSED 16" WATER MAIN
	PROPOSED 20" WATER MAIN
	PROPOSED 24" WATER MAIN
	PHASE 1 BOUNDARY
	PHASE 2 BOUNDARY
	PHASE 3 BOUNDARY
	PHASE 4 BOUNDARY
	PHASE 5 BOUNDARY

RidgGate Development Total SFE by Phase

Phase	Single Family	Multi Family	Commercial	Rec Center	School	Total (SFE)
Phase 1	576	112	0	20	0	708
Phase 2	246	64	0	0	370	680
Phase 3	181	0	0	0	0	181
Phase 4	481	0	140	0	0	621
Phase 5	304	0	0	0	0	304
Total SFEs						2494

SFE - Single Family Equivalent



WATER LINE EXHIBIT
 RIDGATE SOUTHWEST VILLAGE
 JOB NO. 15950.00
 7/8/2020
 SHEET 1 OF 1



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APPENDIX E

DEMAND SPREADSHEET, WATERCAD MODEL & RESULTS

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-122	5,987.4	0.00	6,313.3	141.0
OS-2	5,990.0	0.00	6,313.3	139.9
OS-1	5,995.0	882.83	6,312.9	137.6
J-121	6,001.5	0.00	6,313.3	134.9
J-111	6,002.8	0.00	6,313.4	134.4
J-127	6,004.4	12.10	6,313.3	133.6
J-129	6,008.5	5.69	6,313.4	131.9
J-113	6,011.2	0.00	6,313.4	130.7
J-112	6,011.5	0.00	6,313.4	130.6
J-110	6,012.7	0.00	6,313.4	130.1
J-120	6,013.6	0.00	6,313.3	129.7
J-130	6,014.7	5.69	6,313.4	129.2
J-72	6,017.0	8.54	6,313.3	128.2
OS-4	6,019.8	531.10	6,313.7	127.2
J-132	6,021.1	19.93	6,313.4	126.5
OS-3	6,022.0	531.10	6,313.5	126.1
OS-5	6,022.0	78.50	6,313.4	126.1
J-70	6,022.8	8.54	6,313.3	125.7
J-114	6,023.0	14.24	6,313.4	125.6
J-115	6,023.7	0.00	6,313.4	125.3
J-123	6,026.5	81.86	6,313.3	124.1
J-183	6,027.6	0.00	6,313.7	123.8
J-181	6,029.1	153.75	6,313.7	123.1
J-248	6,030.0	0.00	6,313.3	122.6
J-105	6,031.4	0.00	6,313.2	121.9
J-104	6,031.4	0.00	6,313.2	121.9
J-182	6,032.0	0.00	6,313.7	121.9
J-103	6,032.1	2.14	6,313.0	121.5
J-136	6,034.3	0.00	6,313.5	120.8
J-89	6,035.3	8.07	6,313.1	120.2

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-116	6,035.7	0.00	6,313.5	120.2
J-242	6,036.0	0.00	6,313.5	120.0
J-102	6,036.5	6.41	6,313.0	119.7
J-180	6,037.8	0.00	6,313.7	119.4
J-170	6,037.8	5.69	6,313.7	119.4
J-179	6,038.3	44.13	6,313.7	119.2
J-69	6,038.2	0.00	6,313.2	119.0
J-177	6,039.6	3.56	6,313.7	118.6
J-106	6,039.8	2.85	6,313.4	118.4
J-79	6,041.3	8.07	6,313.1	117.6
J-148	6,042.4	0.00	6,313.7	117.4
J-134	6,042.3	0.71	6,313.6	117.4
J-133	6,042.9	3.56	6,313.6	117.1
J-91	6,043.2	0.00	6,313.0	116.8
J-234	6,044.1	0.71	6,313.7	116.7
J-97	6,044.0	2.85	6,313.0	116.4
J-124	6,044.3	82.57	6,313.3	116.4
J-167	6,045.3	2.85	6,313.7	116.1
J-117	6,045.5	0.00	6,313.5	116.0
J-163	6,047.2	44.13	6,313.7	115.3
J-88	6,047.1	4.98	6,313.1	115.1
J-96	6,047.4	5.69	6,313.0	114.9
J-137	6,048.1	14.95	6,313.5	114.8
J-157	6,048.8	1.42	6,313.7	114.6
J-76	6,048.2	1.42	6,313.1	114.6
J-161	6,049.6	1.42	6,313.7	114.3
J-71	6,049.0	6.41	6,313.1	114.3
J-92	6,049.1	7.83	6,313.0	114.2
J-168	6,049.9	3.56	6,313.7	114.1
J-135	6,049.8	15.66	6,313.6	114.1

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-153	6,050.4	0.00	6,313.8	113.9
J-128	6,050.3	14.24	6,313.5	113.9
J-68	6,050.0	0.00	6,313.1	113.9
J-77	6,050.0	0.00	6,313.1	113.8
J-158	6,050.9	2.14	6,313.7	113.7
J-83	6,050.3	7.12	6,313.1	113.7
J-233	6,051.0	2.14	6,313.7	113.7
J-162	6,051.4	0.00	6,313.7	113.5
J-87	6,050.9	3.56	6,313.1	113.5
J-100	6,051.0	0.00	6,313.0	113.4
J-147	6,051.8	0.00	6,313.8	113.3
J-101	6,051.1	3.56	6,313.0	113.3
J-154	6,052.2	1.42	6,313.8	113.1
J-107	6,052.7	9.97	6,313.4	112.8
J-78	6,052.5	0.00	6,313.1	112.8
J-149	6,053.4	0.00	6,313.8	112.6
J-81	6,053.1	4.98	6,313.1	112.5
J-152	6,055.1	1.42	6,313.8	111.9
J-249	6,055.0	0.00	6,313.1	111.7
J-159	6,056.1	0.00	6,313.7	111.5
J-80	6,055.5	2.85	6,313.1	111.5
J-142	6,057.0	99.65	6,313.4	110.9
J-150	6,057.6	5.69	6,313.8	110.8
J-86	6,057.8	4.27	6,313.1	110.5
J-82	6,058.1	4.98	6,313.1	110.3
J-187	6,059.0	4.27	6,313.8	110.3
J-66	6,058.5	0.00	6,312.9	110.0
J-151	6,059.6	0.00	6,313.8	110.0
J-93	6,058.9	6.41	6,313.0	110.0
J-67	6,058.9	0.00	6,313.1	109.9

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-139	6,060.6	1.42	6,313.6	109.5
J-64	6,060.4	11.39	6,312.9	109.2
J-138	6,061.3	9.97	6,313.6	109.2
J-155	6,062.0	3.56	6,313.7	108.9
J-118	6,061.8	0.00	6,313.6	108.9
J-94	6,061.5	1.42	6,313.0	108.8
J-85	6,062.1	2.85	6,313.1	108.6
J-243	6,064.0	0.00	6,313.9	108.1
J-95	6,063.6	9.97	6,313.0	107.9
J-156	6,064.7	2.14	6,313.7	107.8
J-119	6,065.9	0.00	6,313.7	107.2
J-184	6,066.4	1.42	6,313.8	107.0
J-141	6,066.7	1.42	6,313.8	106.9
J-188	6,066.9	7.83	6,313.9	106.8
J-108	6,066.8	7.83	6,313.5	106.7
J-30	6,066.9	3.80	6,312.4	106.2
J-185	6,068.6	4.98	6,313.8	106.1
J-186	6,070.4	12.10	6,313.8	105.3
J-189	6,071.4	7.83	6,314.0	105.0
J-145	6,071.4	17.08	6,313.9	104.9
J-146	6,071.4	0.00	6,313.9	104.9
J-33	6,070.1	5.22	6,312.4	104.8
J-99	6,070.9	3.56	6,313.0	104.7
J-98	6,071.3	5.69	6,312.9	104.5
J-63	6,072.2	7.83	6,312.8	104.1
J-29	6,072.0	8.54	6,312.4	104.0
J-109	6,075.5	4.27	6,313.5	103.0
J-50	6,075.1	4.27	6,312.7	102.8
J-191	6,076.8	7.12	6,314.0	102.6
J-194	6,078.7	5.69	6,314.1	101.8

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-65	6,079.6	7.12	6,312.9	100.9
J-28	6,079.2	4.27	6,312.4	100.9
J-231	6,080.8	0.00	6,314.0	100.9
J-62	6,081.6	2.14	6,312.6	100.0
J-27	6,081.4	2.85	6,312.4	99.9
J-37	6,084.4	6.41	6,312.4	98.7
J-193	6,086.5	9.25	6,314.1	98.5
J-224	6,086.0	1.42	6,312.4	98.0
J-25	6,086.9	2.85	6,312.4	97.6
J-26	6,087.0	4.27	6,312.4	97.5
J-197	6,089.4	6.41	6,314.2	97.3
J-41	6,088.3	0.00	6,312.4	97.0
J-40	6,088.4	8.54	6,312.4	96.9
J-42	6,088.8	7.12	6,312.4	96.8
J-223	6,091.3	10.68	6,312.4	95.7
J-24	6,091.4	2.85	6,312.4	95.6
J-61	6,092.0	3.56	6,312.6	95.4
J-32	6,092.4	12.81	6,312.4	95.2
J-241	6,094.0	0.00	6,312.4	94.5
J-34	6,094.0	0.00	6,312.4	94.5
J-38	6,095.0	8.54	6,312.4	94.1
J-49	6,095.1	263.37	6,312.5	94.1
J-23	6,095.4	2.85	6,312.4	93.9
J-232	6,097.6	0.00	6,314.1	93.7
J-22	6,096.0	2.85	6,312.4	93.6
J-36	6,096.4	5.69	6,312.4	93.5
J-196	6,099.8	7.12	6,314.2	92.8
J-46	6,099.2	0.00	6,312.4	92.3
J-45	6,099.6	8.54	6,312.4	92.1
J-39	6,099.7	7.12	6,312.4	92.0

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-21	6,100.0	0.00	6,312.4	91.9
J-19	6,100.6	3.56	6,312.4	91.6
J-20	6,101.5	2.85	6,312.4	91.2
J-225	6,102.0	2.14	6,312.4	91.0
J-48	6,102.8	0.00	6,312.5	90.7
J-51	6,104.3	7.83	6,312.4	90.0
J-18	6,104.3	0.00	6,312.4	90.0
J-43	6,104.6	7.83	6,312.4	89.9
J-1	6,105.7	0.00	6,312.4	89.4
J-199	6,108.2	9.97	6,314.2	89.1
J-44	6,106.8	4.27	6,312.4	88.9
J-5	6,106.9	3.56	6,312.4	88.9
J-195	6,109.8	7.83	6,314.2	88.4
J-16	6,109.9	6.41	6,312.4	87.6
J-47	6,110.8	0.00	6,312.4	87.2
J-60	6,113.3	21.35	6,312.5	86.2
J-15	6,113.3	10.68	6,312.4	86.2
J-17	6,113.7	0.00	6,312.4	86.0
J-53	6,115.2	8.54	6,312.4	85.3
J-198	6,117.2	7.83	6,314.3	85.3
J-4	6,116.9	3.56	6,312.4	84.6
J-13	6,121.3	8.54	6,312.4	82.7
J-200	6,123.2	8.54	6,314.2	82.6
J-214	6,123.6	8.54	6,314.3	82.5
J-52	6,121.9	6.41	6,312.4	82.4
J-3	6,122.3	7.83	6,312.4	82.3
J-211	6,124.4	14.95	6,314.3	82.2
J-58	6,122.6	8.54	6,312.5	82.1
J-192	6,124.7	0.00	6,314.3	82.0
J-8	6,123.8	9.25	6,312.4	81.6

Max Day

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-201	6,126.2	0.00	6,314.2	81.4
J-6	6,126.2	9.97	6,312.4	80.6
J-14	6,127.0	0.00	6,312.4	80.2
J-2	6,127.0	0.00	6,312.4	80.2
J-57	6,128.0	12.81	6,312.5	79.8
J-9	6,128.6	4.27	6,312.4	79.5
J-218	6,131.4	7.83	6,314.5	79.2
J-59	6,130.6	24.91	6,312.5	78.7
J-209	6,132.7	9.97	6,314.3	78.6
J-55	6,132.3	4.98	6,312.4	77.9
J-54	6,132.5	7.12	6,312.4	77.8
J-217	6,135.8	9.25	6,314.5	77.3
J-202	6,136.4	6.41	6,314.3	76.9
J-208	6,137.8	0.71	6,314.3	76.4
J-7	6,136.3	0.00	6,312.4	76.2
J-56	6,137.6	2.14	6,312.4	75.7
J-213	6,143.9	8.54	6,314.4	73.8
J-207	6,144.2	5.69	6,314.3	73.6
J-205	6,144.8	4.98	6,314.3	73.3
J-216	6,145.9	19.93	6,314.5	72.9
J-221	6,148.0	13.52	6,314.5	72.1
J-12	6,146.9	12.10	6,312.4	71.6
J-10	6,148.1	4.98	6,312.4	71.1
J-203	6,151.6	6.41	6,314.3	70.4
J-220	6,157.0	7.12	6,314.6	68.2
J-204	6,161.4	7.12	6,314.3	66.1
J-206	6,164.4	6.41	6,314.3	64.8
J-11	6,167.3	10.68	6,312.4	62.8
J-219	6,170.0	7.12	6,314.7	62.6

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-355	3,157	20.0	130.0	1,415.43	1.45
P-287	300	8.0	130.0	225.81	1.44
P-75	332	12.0	130.0	495.66	1.41
P-338	1,000	24.0	130.0	1,942.40	1.38
P-268	823	24.0	130.0	1,790.50	1.27
P-174	473	20.0	130.0	1,227.60	1.25
P-173	155	20.0	130.0	1,226.18	1.25
P-265	280	24.0	130.0	1,750.22	1.24
P-259	350	24.0	130.0	1,741.68	1.24
P-74	347	12.0	130.0	435.03	1.23
P-113	140	12.0	130.0	434.52	1.23
P-114	253	12.0	130.0	434.52	1.23
P-303	137	8.0	130.0	184.85	1.18
P-336	271	24.0	130.0	1,640.43	1.16
P-242	262	24.0	130.0	1,612.85	1.14
P-304	161	24.0	130.0	1,605.75	1.14
P-307	440	24.0	130.0	1,605.75	1.14
P-256	283	24.0	130.0	1,597.69	1.13
P-181	502	8.0	130.0	177.07	1.13
P-273	263	24.0	130.0	1,577.16	1.12
P-231	324	24.0	130.0	1,565.42	1.11
P-351	2,845	12.0	130.0	389.99	1.11
P-183	40	24.0	130.0	1,548.34	1.10
P-145	616	20.0	130.0	1,041.34	1.06
P-112	323	12.0	130.0	366.09	1.04
P-229	191	8.0	130.0	154.89	0.99
P-344	1,179	20.0	130.0	964.22	0.98
P-143	291	20.0	130.0	934.47	0.95
P-144	405	20.0	130.0	934.47	0.95
P-332	19	20.0	130.0	927.89	0.95

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-111	447	12.0	130.0	329.95	0.94
P-271	245	8.0	130.0	144.77	0.92
P-136	157	8.0	130.0	143.87	0.92
P-179	536	12.0	130.0	320.73	0.91
P-342	1,938	20.0	130.0	882.83	0.90
P-130	275	8.0	130.0	138.36	0.88
P-347	652	12.0	130.0	298.31	0.85
P-236	259	8.0	130.0	129.51	0.83
P-280	316	8.0	130.0	127.41	0.81
P-141	353	20.0	130.0	784.02	0.80
P-331	241	20.0	130.0	784.02	0.80
P-79	289	8.0	130.0	119.85	0.76
P-343	2,067	20.0	130.0	731.43	0.75
P-78	455	8.0	130.0	112.02	0.72
P-239	269	8.0	130.0	109.77	0.70
P-172	154	8.0	130.0	106.86	0.68
P-293	137	8.0	130.0	105.86	0.68
P-163	178	8.0	130.0	101.54	0.65
P-148	298	8.0	130.0	99.61	0.64
P-81	671	8.0	130.0	97.65	0.62
P-82	305	8.0	130.0	97.65	0.62
P-85	150	8.0	130.0	97.32	0.62
P-134	437	8.0	130.0	94.76	0.60
P-72	802	8.0	130.0	90.84	0.58
P-83	463	8.0	130.0	88.78	0.57
P-84	336	8.0	130.0	88.78	0.57
P-286	4	8.0	130.0	87.45	0.56
P-297	241	8.0	130.0	87.01	0.56
P-160	33	8.0	130.0	85.88	0.55
P-255	151	8.0	130.0	85.13	0.54

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-133	347	8.0	130.0	84.79	0.54
P-254	181	8.0	130.0	84.42	0.54
P-243	264	8.0	130.0	82.99	0.53
P-53	116	8.0	130.0	82.91	0.53
P-240	808	8.0	130.0	82.52	0.53
P-165	119	8.0	130.0	81.89	0.52
P-301	219	8.0	130.0	81.61	0.52
P-184	687	12.0	130.0	181.69	0.52
P-175	749	8.0	130.0	77.42	0.49
P-126	411	8.0	130.0	77.31	0.49
P-241	262	8.0	130.0	76.18	0.49
P-228	232	8.0	130.0	76.18	0.49
P-272	262	8.0	130.0	75.26	0.48
P-117	193	8.0	130.0	73.75	0.47
P-337	263	8.0	130.0	73.50	0.47
P-166	737	8.0	130.0	71.92	0.46
P-226	257	8.0	130.0	71.91	0.46
P-71	1,096	8.0	130.0	71.84	0.46
P-227	559	8.0	130.0	70.88	0.45
P-257	282	8.0	130.0	70.28	0.45
P-115	116	8.0	130.0	68.43	0.44
P-116	343	8.0	130.0	68.06	0.43
P-299	909	8.0	130.0	67.37	0.43
P-154	601	12.0	130.0	151.40	0.43
P-358	59	12.0	130.0	151.40	0.43
P-146	457	12.0	130.0	150.90	0.43
P-147	368	12.0	130.0	150.90	0.43
P-224	336	8.0	130.0	66.93	0.43
P-198	199	8.0	130.0	64.20	0.41
P-168	460	8.0	130.0	63.55	0.41

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-269	825	8.0	130.0	62.39	0.40
P-270	826	8.0	130.0	61.74	0.39
P-225	457	8.0	130.0	58.78	0.38
P-73	305	12.0	130.0	131.88	0.37
P-156	202	8.0	130.0	57.86	0.37
P-167	396	8.0	130.0	56.97	0.36
P-76	229	8.0	130.0	56.36	0.36
P-346	1,278	12.0	130.0	116.62	0.33
P-66	380	8.0	130.0	49.45	0.32
P-266	380	8.0	130.0	48.88	0.31
P-220	461	16.0	130.0	193.47	0.31
P-158	395	8.0	130.0	47.44	0.30
P-245	150	8.0	130.0	47.40	0.30
P-246	181	8.0	130.0	47.40	0.30
P-67	680	8.0	130.0	46.93	0.30
P-253	284	8.0	130.0	46.35	0.30
P-70	230	8.0	130.0	45.62	0.29
P-187	133	8.0	130.0	45.00	0.29
P-200	176	8.0	130.0	44.53	0.28
P-217	124	8.0	130.0	43.73	0.28
P-188	22	8.0	130.0	43.58	0.28
P-48	135	8.0	130.0	42.17	0.27
P-56	690	12.0	130.0	94.59	0.27
P-20	351	12.0	130.0	91.83	0.26
P-32	1,075	8.0	130.0	39.78	0.25
P-219	195	8.0	130.0	39.72	0.25
P-185	163	8.0	130.0	38.02	0.24
P-77	259	8.0	130.0	36.62	0.23
P-260	260	8.0	130.0	36.35	0.23
P-118	161	8.0	130.0	36.14	0.23

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-222	655	8.0	130.0	35.57	0.23
P-250	261	8.0	130.0	35.43	0.23
P-238	378	8.0	130.0	35.40	0.23
P-54	412	12.0	130.0	78.32	0.22
P-234	306	8.0	130.0	34.68	0.22
P-275	261	8.0	130.0	33.66	0.21
P-252	390	8.0	130.0	32.38	0.21
P-95	180	8.0	130.0	31.11	0.20
P-186	47	8.0	130.0	29.93	0.19
P-223	210	8.0	130.0	29.93	0.19
P-140	550	20.0	130.0	184.36	0.19
P-55	560	12.0	130.0	65.89	0.19
P-108	363	8.0	130.0	29.25	0.19
P-57	344	8.0	130.0	28.70	0.18
P-195	115	8.0	130.0	28.63	0.18
P-35	140	8.0	130.0	28.15	0.18
P-251	271	8.0	130.0	25.97	0.17
P-235	340	8.0	130.0	25.43	0.16
P-17	244	8.0	130.0	25.11	0.16
P-248	253	8.0	130.0	24.79	0.16
P-52	236	8.0	130.0	24.66	0.16
P-107	163	8.0	130.0	24.27	0.15
P-69	589	8.0	130.0	23.87	0.15
P-16	219	8.0	130.0	23.08	0.15
P-94	350	8.0	130.0	23.04	0.15
P-93	256	8.0	130.0	23.04	0.15
P-31	479	12.0	130.0	48.94	0.14
P-282	497	8.0	130.0	21.56	0.14
P-314	143	8.0	130.0	21.55	0.14
P-106	179	8.0	130.0	20.71	0.13

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-312	199	8.0	130.0	20.61	0.13
P-308	378	8.0	130.0	20.53	0.13
P-51	297	8.0	130.0	20.39	0.13
P-263	262	8.0	130.0	20.36	0.13
P-345	744	16.0	130.0	79.90	0.13
P-30	278	12.0	130.0	44.67	0.13
P-212	189	8.0	130.0	19.67	0.13
P-18	457	12.0	130.0	43.65	0.12
P-19	445	12.0	130.0	43.65	0.12
P-247	389	8.0	130.0	18.38	0.12
P-313	214	8.0	130.0	17.76	0.11
P-49	129	8.0	130.0	17.69	0.11
P-62	309	8.0	130.0	17.06	0.11
P-180	43	12.0	130.0	38.02	0.11
P-28	178	12.0	130.0	37.55	0.11
P-15	408	8.0	130.0	16.67	0.11
P-13	428	8.0	130.0	16.57	0.11
P-194	95	8.0	130.0	16.34	0.10
P-92	153	8.0	130.0	15.92	0.10
P-193	436	8.0	130.0	15.85	0.10
P-36	732	8.0	130.0	15.33	0.10
P-68	276	8.0	130.0	15.33	0.10
P-46	189	8.0	130.0	15.32	0.10
P-119	235	8.0	130.0	15.30	0.10
P-91	94	8.0	130.0	15.28	0.10
P-2	192	8.0	130.0	14.63	0.09
P-322	43	12.0	130.0	31.85	0.09
P-328	132	8.0	130.0	13.96	0.09
P-61	595	8.0	130.0	13.60	0.09
P-104	212	8.0	130.0	13.59	0.09

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-9	192	8.0	130.0	13.55	0.09
P-127	345	8.0	130.0	13.01	0.08
P-37	120	8.0	130.0	12.96	0.08
P-137	179	20.0	130.0	78.50	0.08
P-138	578	20.0	130.0	78.50	0.08
P-139	450	20.0	130.0	78.50	0.08
P-353	752	20.0	130.0	78.50	0.08
P-58	211	8.0	130.0	12.43	0.08
P-65	277	8.0	130.0	11.67	0.07
P-50	231	8.0	130.0	11.59	0.07
P-26	135	12.0	130.0	25.62	0.07
P-10	441	8.0	130.0	11.19	0.07
P-59	419	8.0	130.0	10.65	0.07
P-7	259	8.0	130.0	10.29	0.07
P-60	272	8.0	130.0	9.61	0.06
P-64	671	8.0	130.0	9.53	0.06
P-278	701	8.0	130.0	9.18	0.06
P-325	403	8.0	130.0	9.14	0.06
P-86	128	8.0	130.0	8.87	0.06
P-24	129	12.0	130.0	19.92	0.06
P-23	50	12.0	130.0	19.92	0.06
P-98	157	8.0	130.0	8.61	0.05
P-45	417	8.0	130.0	8.20	0.05
P-123	40	8.0	130.0	8.19	0.05
P-204	135	8.0	130.0	8.15	0.05
P-206	274	8.0	130.0	7.96	0.05
P-324	403	8.0	130.0	7.72	0.05
P-121	252	8.0	130.0	7.47	0.05
P-356	381	8.0	130.0	7.17	0.05
P-3	188	8.0	130.0	7.12	0.05

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-80	573	8.0	130.0	7.12	0.05
P-109	150	8.0	130.0	7.12	0.05
P-169	140	8.0	130.0	6.58	0.04
P-125	127	8.0	130.0	6.58	0.04
P-6	434	12.0	130.0	14.63	0.04
P-8	363	12.0	130.0	14.63	0.04
P-323	113	8.0	130.0	6.23	0.04
P-11	262	8.0	130.0	6.21	0.04
P-276	274	8.0	130.0	6.03	0.04
P-21	131	12.0	130.0	13.51	0.04
P-14	457	8.0	130.0	5.99	0.04
P-249	401	8.0	130.0	5.94	0.04
P-318	362	8.0	130.0	5.30	0.03
P-63	291	8.0	130.0	4.55	0.03
P-12	616	8.0	130.0	4.47	0.03
P-124	207	8.0	130.0	4.46	0.03
P-135	132	8.0	130.0	4.27	0.03
P-33	402	8.0	130.0	4.22	0.03
P-320	184	8.0	130.0	4.01	0.03
P-232	466	24.0	130.0	33.20	0.02
P-4	223	8.0	130.0	3.56	0.02
P-244	378	8.0	130.0	3.17	0.02
P-22	188	8.0	130.0	2.85	0.02
P-25	189	8.0	130.0	2.85	0.02
P-27	187	8.0	130.0	2.85	0.02
P-29	185	8.0	130.0	2.85	0.02
P-97	162	8.0	130.0	2.85	0.02
P-105	42	8.0	130.0	2.85	0.02
P-149	838	8.0	130.0	2.82	0.02
P-122	347	8.0	130.0	2.50	0.02

Max Day

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-348	567	8.0	130.0	2.33	0.01
P-349	639	8.0	130.0	2.33	0.01
P-319	370	8.0	130.0	2.27	0.01
P-281	47	8.0	130.0	2.14	0.01
P-128	82	8.0	130.0	2.14	0.01
P-191	118	8.0	130.0	2.14	0.01
P-197	106	8.0	130.0	1.42	0.01
P-120	89	8.0	130.0	1.42	0.01
P-277	322	8.0	130.0	1.31	0.01
P-96	135	8.0	130.0	0.78	0.01
P-315	122	8.0	130.0	0.71	0.00
P-161	115	8.0	130.0	0.71	0.00
P-296	166	8.0	130.0	0.50	0.00
P-216	357	8.0	130.0	0.40	0.00
P-44	321	8.0	130.0	0.34	0.00
P-5	406	8.0	130.0	0.32	0.00
P-190	117	8.0	130.0	0.01	0.00
P-334	244	8.0	130.0	0.00	0.00
P-34	76	8.0	130.0	0.00	0.00
P-1	791	12.0	130.0	0.00	0.00
P-221	76	16.0	130.0	0.00	0.00
P-110	140	8.0	130.0	0.00	0.00

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-122	5,987.4	0.00	6,308.7	139.0
OS-2	5,990.0	0.00	6,308.7	137.9
OS-1	5,995.0	1,765.00	6,307.5	135.2
J-121	6,001.5	0.00	6,308.9	133.0
J-111	6,002.8	0.00	6,309.1	132.5
J-127	6,004.4	24.20	6,308.9	131.7
J-129	6,008.5	11.39	6,309.2	130.1
J-113	6,011.2	0.00	6,309.1	128.9
J-112	6,011.5	0.00	6,309.1	128.8
J-110	6,012.7	0.00	6,309.1	128.2
J-120	6,013.6	0.00	6,309.0	127.8
J-130	6,014.7	11.39	6,309.2	127.4
J-72	6,017.0	17.08	6,309.0	126.3
OS-4	6,019.8	1,062.20	6,310.4	125.7
J-132	6,021.1	39.86	6,309.3	124.7
OS-3	6,022.0	1,062.20	6,309.6	124.4
OS-5	6,022.0	157.00	6,309.1	124.2
J-114	6,023.0	28.47	6,309.1	123.8
J-70	6,022.8	17.08	6,308.8	123.8
J-115	6,023.7	0.00	6,309.3	123.6
J-183	6,027.6	0.00	6,310.4	122.4
J-123	6,026.5	163.72	6,308.7	122.1
J-181	6,029.1	307.50	6,310.4	121.7
J-248	6,030.0	0.00	6,308.7	120.6
J-182	6,032.0	0.00	6,310.5	120.5
J-105	6,031.4	0.00	6,308.6	119.9
J-104	6,031.4	0.00	6,308.4	119.8
J-103	6,032.1	4.27	6,307.9	119.3
J-136	6,034.3	0.00	6,309.4	119.0
J-116	6,035.7	0.00	6,309.4	118.4

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-242	6,036.0	0.00	6,309.4	118.3
J-89	6,035.3	16.13	6,308.3	118.1
J-180	6,037.8	0.00	6,310.4	117.9
J-170	6,037.8	11.39	6,310.4	117.9
J-179	6,038.3	88.26	6,310.3	117.7
J-102	6,036.5	12.81	6,307.9	117.4
J-177	6,039.6	7.12	6,310.4	117.2
J-69	6,038.2	0.00	6,308.6	117.0
J-106	6,039.8	5.69	6,309.1	116.5
J-148	6,042.4	0.00	6,310.2	115.9
J-134	6,042.3	1.42	6,309.8	115.7
J-79	6,041.3	16.13	6,308.3	115.5
J-133	6,042.9	7.12	6,309.8	115.5
J-234	6,044.1	1.42	6,310.5	115.3
J-167	6,045.3	5.69	6,310.4	114.7
J-91	6,043.2	0.00	6,307.9	114.5
J-124	6,044.3	165.14	6,308.7	114.4
J-117	6,045.5	0.00	6,309.6	114.3
J-97	6,044.0	5.69	6,307.9	114.2
J-163	6,047.2	88.26	6,310.3	113.9
J-157	6,048.8	2.85	6,310.5	113.2
J-137	6,048.1	29.90	6,309.6	113.1
J-88	6,047.1	9.97	6,308.3	113.0
J-161	6,049.6	2.85	6,310.5	112.9
J-168	6,049.9	7.12	6,310.4	112.7
J-96	6,047.4	11.39	6,307.9	112.7
J-153	6,050.4	0.00	6,310.5	112.5
J-76	6,048.2	2.85	6,308.2	112.5
J-135	6,049.8	31.32	6,309.8	112.5
J-158	6,050.9	4.27	6,310.5	112.3

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-233	6,051.0	4.27	6,310.5	112.3
J-128	6,050.3	28.47	6,309.7	112.2
J-71	6,049.0	12.81	6,308.2	112.2
J-162	6,051.4	0.00	6,310.4	112.1
J-92	6,049.1	15.66	6,307.9	112.0
J-147	6,051.8	0.00	6,310.5	111.9
J-68	6,050.0	0.00	6,308.2	111.7
J-154	6,052.2	2.85	6,310.5	111.7
J-77	6,050.0	0.00	6,308.3	111.7
J-83	6,050.3	14.24	6,308.3	111.6
J-87	6,050.9	7.12	6,308.3	111.3
J-149	6,053.4	0.00	6,310.5	111.2
J-100	6,051.0	0.00	6,307.9	111.1
J-101	6,051.1	7.12	6,307.9	111.1
J-107	6,052.7	19.93	6,309.4	111.0
J-78	6,052.5	0.00	6,308.3	110.7
J-152	6,055.1	2.85	6,310.5	110.5
J-81	6,053.1	9.97	6,308.2	110.4
J-159	6,056.1	0.00	6,310.5	110.1
J-249	6,055.0	0.00	6,308.3	109.6
J-150	6,057.6	11.39	6,310.5	109.4
J-80	6,055.5	5.69	6,308.2	109.3
J-142	6,057.0	199.31	6,309.2	109.1
J-187	6,059.0	8.54	6,310.8	109.0
J-151	6,059.6	0.00	6,310.5	108.6
J-86	6,057.8	8.54	6,308.3	108.4
J-82	6,058.1	9.97	6,308.2	108.2
J-139	6,060.6	2.85	6,310.0	107.9
J-67	6,058.9	0.00	6,308.0	107.7
J-93	6,058.9	12.81	6,307.9	107.7

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-66	6,058.5	0.00	6,307.4	107.7
J-138	6,061.3	19.93	6,309.9	107.6
J-155	6,062.0	7.12	6,310.5	107.5
J-118	6,061.8	0.00	6,309.9	107.3
J-243	6,064.0	0.00	6,311.1	106.9
J-64	6,060.4	22.78	6,307.4	106.9
J-94	6,061.5	2.85	6,307.9	106.6
J-85	6,062.1	5.69	6,308.3	106.5
J-156	6,064.7	4.27	6,310.5	106.3
J-119	6,065.9	0.00	6,310.4	105.8
J-95	6,063.6	19.93	6,307.9	105.7
J-184	6,066.4	2.85	6,310.6	105.6
J-188	6,066.9	15.66	6,311.0	105.6
J-141	6,066.7	2.85	6,310.6	105.5
J-108	6,066.8	15.66	6,309.7	105.1
J-185	6,068.6	9.97	6,310.7	104.7
J-186	6,070.4	24.20	6,310.7	104.0
J-189	6,071.4	15.66	6,311.4	103.8
J-145	6,071.4	34.17	6,311.1	103.7
J-146	6,071.4	0.00	6,311.1	103.7
J-30	6,066.9	7.59	6,305.7	103.3
J-99	6,070.9	7.12	6,307.6	102.4
J-98	6,071.3	11.39	6,307.5	102.2
J-33	6,070.1	10.44	6,305.7	101.9
J-63	6,072.2	15.66	6,307.0	101.6
J-191	6,076.8	14.24	6,311.4	101.5
J-109	6,075.5	8.54	6,309.7	101.3
J-29	6,072.0	17.08	6,305.7	101.1
J-194	6,078.7	11.39	6,311.7	100.8
J-50	6,075.1	8.54	6,306.5	100.1

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-231	6,080.8	0.00	6,311.5	99.8
J-65	6,079.6	14.24	6,307.4	98.6
J-28	6,079.2	8.54	6,305.7	98.0
J-193	6,086.5	18.51	6,311.8	97.5
J-62	6,081.6	4.27	6,306.5	97.3
J-27	6,081.4	5.69	6,305.7	97.0
J-197	6,089.4	12.81	6,312.0	96.3
J-37	6,084.4	12.81	6,305.7	95.7
J-224	6,086.0	2.85	6,305.7	95.0
J-25	6,086.9	5.69	6,305.7	94.6
J-26	6,087.0	8.54	6,305.7	94.6
J-41	6,088.3	0.00	6,305.7	94.1
J-40	6,088.4	17.08	6,305.7	94.0
J-42	6,088.8	14.24	6,305.7	93.9
J-61	6,092.0	7.12	6,306.5	92.8
J-223	6,091.3	21.35	6,305.7	92.7
J-24	6,091.4	5.69	6,305.7	92.7
J-232	6,097.6	0.00	6,311.8	92.7
J-32	6,092.4	25.62	6,305.7	92.3
J-196	6,099.8	14.24	6,312.1	91.8
J-241	6,094.0	0.00	6,305.7	91.6
J-34	6,094.0	0.00	6,305.7	91.6
J-49	6,095.1	526.74	6,305.9	91.2
J-38	6,095.0	17.08	6,305.7	91.2
J-23	6,095.4	5.69	6,305.7	91.0
J-22	6,096.0	5.69	6,305.7	90.7
J-36	6,096.4	11.39	6,305.7	90.5
J-46	6,099.2	0.00	6,305.7	89.4
J-45	6,099.6	17.08	6,305.7	89.2
J-39	6,099.7	14.24	6,305.7	89.1

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-21	6,100.0	0.00	6,305.7	89.0
J-19	6,100.6	7.12	6,305.7	88.7
J-20	6,101.5	5.69	6,305.7	88.3
J-199	6,108.2	19.93	6,312.2	88.3
J-225	6,102.0	4.27	6,305.7	88.1
J-48	6,102.8	0.00	6,305.8	87.8
J-195	6,109.8	15.66	6,312.0	87.5
J-51	6,104.3	15.66	6,305.7	87.1
J-18	6,104.3	0.00	6,305.7	87.1
J-43	6,104.6	15.66	6,305.7	87.0
J-1	6,105.7	0.00	6,305.6	86.5
J-44	6,106.8	8.54	6,305.7	86.0
J-5	6,106.9	7.12	6,305.6	85.9
J-16	6,109.9	12.81	6,305.6	84.7
J-198	6,117.2	15.66	6,312.4	84.5
J-47	6,110.8	0.00	6,305.7	84.3
J-60	6,113.3	42.71	6,305.9	83.3
J-15	6,113.3	21.35	6,305.6	83.2
J-17	6,113.7	0.00	6,305.6	83.0
J-53	6,115.2	17.08	6,305.7	82.4
J-200	6,123.2	17.08	6,312.2	81.8
J-214	6,123.6	17.08	6,312.6	81.8
J-4	6,116.9	7.12	6,305.6	81.7
J-211	6,124.4	29.90	6,312.5	81.4
J-192	6,124.7	0.00	6,312.4	81.2
J-201	6,126.2	0.00	6,312.3	80.5
J-13	6,121.3	17.08	6,305.6	79.8
J-52	6,121.9	12.81	6,305.7	79.5
J-3	6,122.3	15.66	6,305.6	79.3
J-58	6,122.6	17.08	6,305.8	79.3

Peak Hour

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-8	6,123.8	18.51	6,305.6	78.6
J-218	6,131.4	15.66	6,313.0	78.6
J-209	6,132.7	19.93	6,312.6	77.8
J-6	6,126.2	19.93	6,305.6	77.6
J-14	6,127.0	0.00	6,305.6	77.3
J-2	6,127.0	0.00	6,305.6	77.3
J-57	6,128.0	25.63	6,305.8	77.0
J-217	6,135.8	18.51	6,313.2	76.7
J-9	6,128.6	8.54	6,305.6	76.6
J-202	6,136.4	12.81	6,312.3	76.1
J-59	6,130.6	49.83	6,306.0	75.9
J-208	6,137.8	1.42	6,312.5	75.6
J-55	6,132.3	9.97	6,305.7	75.0
J-54	6,132.5	14.24	6,305.7	74.9
J-7	6,136.3	0.00	6,305.6	73.3
J-213	6,143.9	17.08	6,312.9	73.1
J-207	6,144.2	11.39	6,312.4	72.8
J-56	6,137.6	4.27	6,305.7	72.8
J-205	6,144.8	9.97	6,312.3	72.5
J-216	6,145.9	39.86	6,313.2	72.4
J-221	6,148.0	27.05	6,313.3	71.5
J-203	6,151.6	12.81	6,312.3	69.5
J-12	6,146.9	24.20	6,305.6	68.7
J-10	6,148.1	9.97	6,305.6	68.1
J-220	6,157.0	14.24	6,313.5	67.7
J-204	6,161.4	14.24	6,312.3	65.3
J-206	6,164.4	12.81	6,312.4	64.0
J-219	6,170.0	14.24	6,313.9	62.3
J-11	6,167.3	21.35	6,305.6	59.8

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-355	3,157	20.0	130.0	2,830.56	2.89
P-287	300	8.0	130.0	451.59	2.88
P-75	332	12.0	130.0	991.22	2.81
P-338	1,000	24.0	130.0	3,884.40	2.75
P-268	823	24.0	130.0	3,580.64	2.54
P-174	473	20.0	130.0	2,454.89	2.51
P-173	155	20.0	130.0	2,452.04	2.50
P-265	280	24.0	130.0	3,500.05	2.48
P-259	350	24.0	130.0	3,482.97	2.47
P-74	347	12.0	130.0	869.98	2.47
P-113	140	12.0	130.0	868.95	2.47
P-114	253	12.0	130.0	868.95	2.47
P-303	137	8.0	130.0	369.65	2.36
P-336	271	24.0	130.0	3,280.50	2.33
P-242	262	24.0	130.0	3,225.36	2.29
P-304	161	24.0	130.0	3,211.13	2.28
P-307	440	24.0	130.0	3,211.13	2.28
P-256	283	24.0	130.0	3,195.04	2.27
P-181	502	8.0	130.0	354.10	2.26
P-273	263	24.0	130.0	3,153.97	2.24
P-231	324	24.0	130.0	3,130.47	2.22
P-351	2,845	12.0	130.0	779.89	2.21
P-183	40	24.0	130.0	3,096.30	2.20
P-145	616	20.0	130.0	2,082.39	2.13
P-112	323	12.0	130.0	732.11	2.08
P-229	191	8.0	130.0	309.75	1.98
P-344	1,179	20.0	130.0	1,928.10	1.97
P-143	291	20.0	130.0	1,868.69	1.91
P-144	405	20.0	130.0	1,868.69	1.91
P-332	19	20.0	130.0	1,855.53	1.89

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-111	447	12.0	130.0	659.85	1.87
P-271	245	8.0	130.0	289.52	1.85
P-136	157	8.0	130.0	287.71	1.84
P-179	536	12.0	130.0	641.41	1.82
P-342	1,938	20.0	130.0	1,765.00	1.80
P-130	275	8.0	130.0	276.71	1.77
P-347	652	12.0	130.0	596.51	1.69
P-236	259	8.0	130.0	258.99	1.65
P-280	316	8.0	130.0	254.79	1.63
P-141	353	20.0	130.0	1,567.82	1.60
P-331	241	20.0	130.0	1,567.82	1.60
P-79	289	8.0	130.0	239.69	1.53
P-343	2,067	20.0	130.0	1,462.41	1.49
P-78	455	8.0	130.0	224.03	1.43
P-239	269	8.0	130.0	219.52	1.40
P-172	154	8.0	130.0	213.70	1.36
P-293	137	8.0	130.0	211.70	1.35
P-163	178	8.0	130.0	203.05	1.30
P-148	298	8.0	130.0	199.16	1.27
P-81	671	8.0	130.0	195.28	1.25
P-82	305	8.0	130.0	195.28	1.25
P-85	150	8.0	130.0	194.62	1.24
P-134	437	8.0	130.0	189.50	1.21
P-72	802	8.0	130.0	181.66	1.16
P-83	463	8.0	130.0	177.54	1.13
P-84	336	8.0	130.0	177.54	1.13
P-286	4	8.0	130.0	174.88	1.12
P-297	241	8.0	130.0	174.07	1.11
P-160	33	8.0	130.0	171.73	1.10
P-255	151	8.0	130.0	170.25	1.09

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-133	347	8.0	130.0	169.57	1.08
P-254	181	8.0	130.0	168.83	1.08
P-243	264	8.0	130.0	165.95	1.06
P-53	116	8.0	130.0	165.78	1.06
P-240	808	8.0	130.0	165.02	1.05
P-165	119	8.0	130.0	163.75	1.05
P-301	219	8.0	130.0	163.19	1.04
P-184	687	12.0	130.0	363.32	1.03
P-175	749	8.0	130.0	154.79	0.99
P-126	411	8.0	130.0	154.61	0.99
P-241	262	8.0	130.0	152.35	0.97
P-228	232	8.0	130.0	152.34	0.97
P-272	262	8.0	130.0	150.51	0.96
P-117	193	8.0	130.0	147.49	0.94
P-337	263	8.0	130.0	146.99	0.94
P-166	737	8.0	130.0	143.82	0.92
P-226	257	8.0	130.0	143.80	0.92
P-71	1,096	8.0	130.0	143.68	0.92
P-227	559	8.0	130.0	141.75	0.90
P-257	282	8.0	130.0	140.55	0.90
P-115	116	8.0	130.0	136.85	0.87
P-116	343	8.0	130.0	136.10	0.87
P-299	909	8.0	130.0	134.72	0.86
P-154	601	12.0	130.0	302.59	0.86
P-358	59	12.0	130.0	302.59	0.86
P-146	457	12.0	130.0	301.69	0.86
P-147	368	12.0	130.0	301.69	0.86
P-224	336	8.0	130.0	133.83	0.85
P-198	199	8.0	130.0	128.39	0.82
P-168	460	8.0	130.0	127.09	0.81

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-269	825	8.0	130.0	124.77	0.80
P-270	826	8.0	130.0	123.46	0.79
P-225	457	8.0	130.0	117.55	0.75
P-73	305	12.0	130.0	263.70	0.75
P-156	202	8.0	130.0	115.70	0.74
P-167	396	8.0	130.0	113.92	0.73
P-76	229	8.0	130.0	112.71	0.72
P-346	1,278	12.0	130.0	233.19	0.66
P-66	380	8.0	130.0	98.88	0.63
P-266	380	8.0	130.0	97.76	0.62
P-220	461	16.0	130.0	386.96	0.62
P-158	395	8.0	130.0	94.86	0.61
P-245	150	8.0	130.0	94.80	0.61
P-246	181	8.0	130.0	94.80	0.61
P-67	680	8.0	130.0	93.85	0.60
P-253	284	8.0	130.0	92.69	0.59
P-70	230	8.0	130.0	91.21	0.58
P-187	133	8.0	130.0	90.00	0.57
P-200	176	8.0	130.0	89.05	0.57
P-217	124	8.0	130.0	87.47	0.56
P-188	22	8.0	130.0	87.15	0.56
P-48	135	8.0	130.0	84.29	0.54
P-56	690	12.0	130.0	189.13	0.54
P-20	351	12.0	130.0	183.64	0.52
P-32	1,075	8.0	130.0	79.53	0.51
P-219	195	8.0	130.0	79.45	0.51
P-185	163	8.0	130.0	76.01	0.49
P-77	259	8.0	130.0	73.23	0.47
P-260	260	8.0	130.0	72.69	0.46
P-118	161	8.0	130.0	72.26	0.46

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-222	655	8.0	130.0	71.14	0.45
P-250	261	8.0	130.0	70.85	0.45
P-238	378	8.0	130.0	70.80	0.45
P-54	412	12.0	130.0	156.58	0.44
P-234	306	8.0	130.0	69.37	0.44
P-275	261	8.0	130.0	67.31	0.43
P-252	390	8.0	130.0	64.75	0.41
P-95	180	8.0	130.0	62.21	0.40
P-186	47	8.0	130.0	59.85	0.38
P-223	210	8.0	130.0	59.85	0.38
P-140	550	20.0	130.0	368.70	0.38
P-55	560	12.0	130.0	131.73	0.37
P-108	363	8.0	130.0	58.51	0.37
P-57	344	8.0	130.0	57.40	0.37
P-195	115	8.0	130.0	57.25	0.37
P-35	140	8.0	130.0	56.27	0.36
P-251	271	8.0	130.0	51.94	0.33
P-235	340	8.0	130.0	50.86	0.32
P-17	244	8.0	130.0	50.21	0.32
P-248	253	8.0	130.0	49.57	0.32
P-52	236	8.0	130.0	49.32	0.31
P-107	163	8.0	130.0	48.54	0.31
P-69	589	8.0	130.0	47.74	0.30
P-16	219	8.0	130.0	46.14	0.29
P-93	256	8.0	130.0	46.08	0.29
P-94	350	8.0	130.0	46.08	0.29
P-31	479	12.0	130.0	97.91	0.28
P-282	497	8.0	130.0	43.12	0.28
P-314	143	8.0	130.0	43.09	0.28
P-106	179	8.0	130.0	41.42	0.26

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-312	199	8.0	130.0	41.21	0.26
P-308	378	8.0	130.0	41.06	0.26
P-51	297	8.0	130.0	40.78	0.26
P-263	262	8.0	130.0	40.73	0.26
P-345	744	16.0	130.0	159.74	0.25
P-30	278	12.0	130.0	89.37	0.25
P-212	189	8.0	130.0	39.34	0.25
P-18	457	12.0	130.0	87.28	0.25
P-19	445	12.0	130.0	87.28	0.25
P-247	389	8.0	130.0	36.76	0.23
P-313	214	8.0	130.0	35.52	0.23
P-49	129	8.0	130.0	35.45	0.23
P-62	309	8.0	130.0	34.10	0.22
P-180	43	12.0	130.0	76.01	0.22
P-28	178	12.0	130.0	75.14	0.21
P-15	408	8.0	130.0	33.33	0.21
P-13	428	8.0	130.0	33.13	0.21
P-194	95	8.0	130.0	32.67	0.21
P-92	153	8.0	130.0	31.84	0.20
P-193	436	8.0	130.0	31.70	0.20
P-68	276	8.0	130.0	30.66	0.20
P-36	732	8.0	130.0	30.65	0.20
P-46	189	8.0	130.0	30.62	0.20
P-119	235	8.0	130.0	30.59	0.20
P-91	94	8.0	130.0	30.55	0.19
P-2	192	8.0	130.0	29.25	0.19
P-322	43	12.0	130.0	63.76	0.18
P-328	132	8.0	130.0	27.85	0.18
P-104	212	8.0	130.0	27.19	0.17
P-61	595	8.0	130.0	27.18	0.17

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-9	192	8.0	130.0	27.10	0.17
P-127	345	8.0	130.0	26.01	0.17
P-37	120	8.0	130.0	25.96	0.17
P-137	179	20.0	130.0	157.00	0.16
P-138	578	20.0	130.0	157.00	0.16
P-139	450	20.0	130.0	157.00	0.16
P-353	752	20.0	130.0	157.00	0.16
P-58	211	8.0	130.0	24.85	0.16
P-65	277	8.0	130.0	23.35	0.15
P-50	231	8.0	130.0	23.19	0.15
P-26	135	12.0	130.0	51.25	0.15
P-10	441	8.0	130.0	22.39	0.14
P-59	419	8.0	130.0	21.29	0.14
P-7	259	8.0	130.0	20.58	0.13
P-60	272	8.0	130.0	19.22	0.12
P-64	671	8.0	130.0	19.08	0.12
P-278	701	8.0	130.0	18.33	0.12
P-325	403	8.0	130.0	18.26	0.12
P-86	128	8.0	130.0	17.74	0.11
P-23	50	12.0	130.0	39.87	0.11
P-24	129	12.0	130.0	39.87	0.11
P-98	157	8.0	130.0	17.22	0.11
P-123	40	8.0	130.0	16.39	0.10
P-45	417	8.0	130.0	16.38	0.10
P-204	135	8.0	130.0	16.29	0.10
P-206	274	8.0	130.0	15.93	0.10
P-324	403	8.0	130.0	15.41	0.10
P-121	252	8.0	130.0	14.93	0.10
P-356	381	8.0	130.0	14.28	0.09
P-3	188	8.0	130.0	14.24	0.09

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-80	573	8.0	130.0	14.24	0.09
P-109	150	8.0	130.0	14.24	0.09
P-169	140	8.0	130.0	13.17	0.08
P-125	127	8.0	130.0	13.15	0.08
P-6	434	12.0	130.0	29.25	0.08
P-8	363	12.0	130.0	29.25	0.08
P-323	113	8.0	130.0	12.51	0.08
P-11	262	8.0	130.0	12.42	0.08
P-276	274	8.0	130.0	12.09	0.08
P-21	131	12.0	130.0	27.06	0.08
P-14	457	8.0	130.0	11.98	0.08
P-249	401	8.0	130.0	11.87	0.08
P-318	362	8.0	130.0	10.60	0.07
P-63	291	8.0	130.0	9.11	0.06
P-12	616	8.0	130.0	8.93	0.06
P-124	207	8.0	130.0	8.93	0.06
P-33	402	8.0	130.0	8.55	0.05
P-135	132	8.0	130.0	8.54	0.05
P-320	184	8.0	130.0	8.02	0.05
P-232	466	24.0	130.0	66.42	0.05
P-4	223	8.0	130.0	7.12	0.05
P-244	378	8.0	130.0	6.33	0.04
P-22	188	8.0	130.0	5.69	0.04
P-25	189	8.0	130.0	5.69	0.04
P-27	187	8.0	130.0	5.69	0.04
P-29	185	8.0	130.0	5.69	0.04
P-97	162	8.0	130.0	5.69	0.04
P-105	42	8.0	130.0	5.69	0.04
P-149	838	8.0	130.0	5.68	0.04
P-122	347	8.0	130.0	5.00	0.03

Peak Hour

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-348	567	8.0	130.0	4.67	0.03
P-349	639	8.0	130.0	4.67	0.03
P-319	370	8.0	130.0	4.54	0.03
P-128	82	8.0	130.0	4.27	0.03
P-191	118	8.0	130.0	4.27	0.03
P-281	47	8.0	130.0	4.27	0.03
P-120	89	8.0	130.0	2.85	0.02
P-197	106	8.0	130.0	2.85	0.02
P-277	322	8.0	130.0	2.60	0.02
P-96	135	8.0	130.0	1.56	0.01
P-161	115	8.0	130.0	1.42	0.01
P-315	122	8.0	130.0	1.42	0.01
P-296	166	8.0	130.0	0.89	0.01
P-216	357	8.0	130.0	0.79	0.01
P-44	321	8.0	130.0	0.70	0.00
P-5	406	8.0	130.0	0.65	0.00
P-221	76	16.0	130.0	0.00	0.00
P-190	117	8.0	130.0	0.00	0.00
P-1	791	12.0	130.0	0.00	0.00
P-110	140	8.0	130.0	0.00	0.00
P-334	244	8.0	130.0	0.00	0.00
P-34	76	8.0	130.0	0.00	0.00

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-122	5,987.4	0.00	6,310.5	139.8
OS-2	5,990.0	0.00	6,310.6	138.7
OS-1	5,995.0	882.83	6,310.2	136.4
J-121	6,001.5	0.00	6,309.9	133.4
J-111	6,002.8	0.00	6,309.1	132.5
J-127	6,004.4	12.10	6,309.9	132.2
J-129	6,008.5	5.69	6,309.9	130.4
J-113	6,011.2	0.00	6,309.1	128.9
J-112	6,011.5	0.00	6,309.1	128.8
J-110	6,012.7	0.00	6,309.1	128.2
J-120	6,013.6	0.00	6,309.6	128.0
J-130	6,014.7	5.69	6,309.9	127.7
OS-4	6,019.8	531.10	6,312.1	126.5
J-72	6,017.0	8.54	6,308.6	126.2
OS-3	6,022.0	531.10	6,311.5	125.2
J-132	6,021.1	19.93	6,310.0	125.0
OS-5	6,022.0	78.50	6,309.1	124.2
J-114	6,023.0	14.24	6,309.1	123.8
J-115	6,023.7	0.00	6,309.3	123.6
J-70	6,022.8	8.54	6,308.1	123.4
J-183	6,027.6	0.00	6,312.1	123.1
J-123	6,026.5	81.86	6,309.9	122.6
J-181	6,029.1	153.75	6,312.1	122.4
J-182	6,032.0	0.00	6,312.1	121.2
J-248	6,030.0	0.00	6,310.0	121.1
J-105	6,031.4	0.00	6,307.0	119.2
J-136	6,034.3	0.00	6,309.7	119.2
J-104	6,031.4	0.00	6,305.8	118.7
J-180	6,037.8	0.00	6,311.9	118.6

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-170	6,037.8	5.69	6,311.9	118.6
J-116	6,035.7	0.00	6,309.5	118.5
J-179	6,038.3	44.13	6,311.9	118.4
J-242	6,036.0	0.00	6,309.5	118.3
J-177	6,039.6	3.56	6,311.9	117.8
J-103	6,032.1	2.14	6,303.4	117.4
J-89	6,035.3	8.07	6,305.7	117.0
J-148	6,042.4	0.00	6,311.7	116.5
J-69	6,038.2	0.00	6,307.0	116.3
J-106	6,039.8	2.85	6,308.2	116.1
J-134	6,042.3	0.71	6,310.4	116.0
J-234	6,044.1	0.71	6,311.8	115.8
J-133	6,042.9	3.56	6,310.4	115.7
J-102	6,036.5	6.41	6,303.4	115.5
J-167	6,045.3	2.85	6,311.9	115.4
J-124	6,044.3	82.57	6,310.0	115.0
J-163	6,047.2	44.13	6,311.9	114.5
J-79	6,041.3	8.07	6,305.7	114.4
J-117	6,045.5	0.00	6,309.8	114.3
J-157	6,048.8	1.42	6,311.8	113.8
J-161	6,049.6	1.42	6,311.8	113.5
J-168	6,049.9	3.56	6,311.9	113.3
J-137	6,048.1	14.95	6,309.9	113.3
J-153	6,050.4	0.00	6,311.8	113.1
J-158	6,050.9	2.14	6,311.8	112.9
J-233	6,051.0	2.14	6,311.8	112.8
J-135	6,049.8	15.66	6,310.4	112.7
J-162	6,051.4	0.00	6,311.9	112.7
J-91	6,043.2	0.00	6,303.5	112.6

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-128	6,050.3	14.24	6,310.3	112.5
J-147	6,051.8	0.00	6,311.7	112.5
J-154	6,052.2	1.42	6,311.8	112.3
J-97	6,044.0	2.85	6,303.4	112.2
J-88	6,047.1	4.98	6,305.6	111.8
J-149	6,053.4	0.00	6,311.7	111.8
J-76	6,048.2	1.42	6,305.6	111.3
J-152	6,055.1	1.42	6,311.8	111.1
J-71	6,049.0	6.41	6,305.5	111.0
J-107	6,052.7	9.97	6,308.9	110.8
J-96	6,047.4	5.69	6,303.4	110.7
J-159	6,056.1	0.00	6,311.8	110.7
J-77	6,050.0	0.00	6,305.6	110.6
J-68	6,050.0	0.00	6,305.5	110.6
J-83	6,050.3	7.12	6,305.6	110.4
J-87	6,050.9	3.56	6,305.6	110.2
J-92	6,049.1	7.83	6,303.4	110.0
J-150	6,057.6	5.69	6,311.8	110.0
J-142	6,057.0	99.65	6,310.7	109.8
J-78	6,052.5	0.00	6,305.6	109.5
J-187	6,059.0	4.27	6,311.9	109.4
J-81	6,053.1	4.98	6,305.6	109.2
J-100	6,051.0	0.00	6,303.4	109.2
J-151	6,059.6	0.00	6,311.8	109.1
J-101	6,051.1	3.56	6,303.4	109.1
J-249	6,055.0	0.00	6,305.6	108.4
J-80	6,055.5	2.85	6,305.6	108.2
J-139	6,060.6	1.42	6,310.5	108.2
J-155	6,062.0	3.56	6,311.8	108.1

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-138	6,061.3	9.97	6,310.4	107.8
J-118	6,061.8	0.00	6,310.1	107.4
J-86	6,057.8	4.27	6,305.6	107.2
J-243	6,064.0	0.00	6,311.8	107.2
J-82	6,058.1	4.98	6,305.6	107.1
J-156	6,064.7	2.14	6,311.8	106.9
J-184	6,066.4	1.42	6,311.8	106.2
J-67	6,058.9	0.00	6,304.0	106.0
J-188	6,066.9	7.83	6,311.9	106.0
J-119	6,065.9	0.00	6,310.9	106.0
J-93	6,058.9	6.41	6,303.4	105.8
J-141	6,066.7	1.42	6,311.1	105.7
J-85	6,062.1	2.85	6,305.6	105.4
J-185	6,068.6	4.98	6,311.9	105.2
J-108	6,066.8	7.83	6,309.8	105.1
J-66	6,058.5	0.00	6,300.6	104.7
J-94	6,061.5	1.42	6,303.4	104.7
J-186	6,070.4	12.10	6,311.9	104.5
J-64	6,060.4	11.39	6,301.2	104.2
J-189	6,071.4	7.83	6,312.0	104.1
J-145	6,071.4	17.08	6,311.8	104.0
J-146	6,071.4	0.00	6,311.8	104.0
J-95	6,063.6	9.97	6,303.4	103.8
J-191	6,076.8	7.12	6,312.0	101.8
J-109	6,075.5	4.27	6,309.8	101.4
J-194	6,078.7	5.69	6,312.4	101.1
J-231	6,080.8	0.00	6,312.1	100.1
J-99	6,070.9	3.56	6,302.1	100.1
J-98	6,071.3	5.69	6,301.6	99.6

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-63	6,072.2	7.83	6,299.1	98.2
J-193	6,086.5	9.25	6,312.4	97.7
J-197	6,089.4	6.41	6,312.6	96.6
J-30	6,066.9	3.80	6,288.6	96.0
J-65	6,079.6	7.12	6,301.2	95.9
J-50	6,075.1	4.27	6,296.0	95.6
J-33	6,070.1	5.22	6,288.0	94.3
J-29	6,072.0	8.54	6,287.4	93.2
J-232	6,097.6	0.00	6,312.4	92.9
J-62	6,081.6	2.14	6,295.6	92.6
J-196	6,099.8	7.12	6,312.7	92.1
J-28	6,079.2	4.27	6,288.7	90.6
J-27	6,081.4	2.85	6,288.7	89.7
J-199	6,108.2	9.97	6,312.8	88.5
J-37	6,084.4	6.41	6,288.4	88.3
J-61	6,092.0	3.56	6,295.9	88.2
J-195	6,109.8	7.83	6,312.6	87.7
J-224	6,086.0	1.42	6,288.3	87.5
J-25	6,086.9	2.85	6,288.7	87.3
J-26	6,087.0	4.27	6,288.7	87.3
J-40	6,088.4	8.54	6,288.2	86.4
J-41	6,088.3	0.00	6,288.0	86.4
J-42	6,088.8	7.12	6,286.6	85.6
J-24	6,091.4	2.85	6,288.7	85.4
J-223	6,091.3	10.68	6,288.5	85.3
J-49	6,095.1	263.37	6,292.1	85.3
J-198	6,117.2	7.83	6,312.9	84.7
J-34	6,094.0	0.00	6,288.7	84.2
J-32	6,092.4	12.81	6,286.9	84.2

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-23	6,095.4	2.85	6,288.8	83.7
J-38	6,095.0	8.54	6,288.3	83.6
J-241	6,094.0	0.00	6,286.9	83.5
J-22	6,096.0	2.85	6,288.8	83.4
J-36	6,096.4	5.69	6,288.4	83.1
J-46	6,099.2	0.00	6,289.3	82.3
J-200	6,123.2	8.54	6,312.8	82.0
J-214	6,123.6	8.54	6,313.1	82.0
J-21	6,100.0	0.00	6,288.9	81.7
J-211	6,124.4	14.95	6,313.0	81.6
J-39	6,099.7	7.12	6,288.2	81.6
J-19	6,100.6	3.56	6,288.9	81.5
J-192	6,124.7	0.00	6,312.9	81.4
J-48	6,102.8	0.00	6,290.4	81.2
J-20	6,101.5	2.85	6,288.9	81.1
J-45	6,099.6	8.54	6,286.8	81.0
J-201	6,126.2	0.00	6,312.8	80.8
J-51	6,104.3	7.83	6,289.8	80.3
J-18	6,104.3	0.00	6,289.0	79.9
J-225	6,102.0	2.14	6,286.7	79.9
J-1	6,105.7	0.00	6,289.0	79.3
J-43	6,104.6	7.83	6,286.7	78.8
J-218	6,131.4	7.83	6,313.4	78.8
J-5	6,106.9	3.56	6,289.0	78.8
J-209	6,132.7	9.97	6,313.1	78.1
J-16	6,109.9	6.41	6,289.0	77.5
J-47	6,110.8	0.00	6,289.5	77.3
J-60	6,113.3	21.35	6,291.3	77.0
J-217	6,135.8	9.25	6,313.5	76.9

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-202	6,136.4	6.41	6,312.9	76.3
J-15	6,113.3	10.68	6,289.0	76.0
J-17	6,113.7	0.00	6,289.0	75.8
J-208	6,137.8	0.71	6,313.0	75.8
J-53	6,115.2	8.54	6,290.0	75.6
J-44	6,106.8	2,504.27	6,279.4	74.7
J-4	6,116.9	3.56	6,289.0	74.5
J-213	6,143.9	8.54	6,313.4	73.3
J-207	6,144.2	5.69	6,312.9	73.0
J-58	6,122.6	8.54	6,291.3	73.0
J-52	6,121.9	6.41	6,290.0	72.7
J-205	6,144.8	4.98	6,312.9	72.7
J-13	6,121.3	8.54	6,289.0	72.6
J-216	6,145.9	19.93	6,313.6	72.5
J-3	6,122.3	7.83	6,289.0	72.1
J-221	6,148.0	13.52	6,313.7	71.7
J-8	6,123.8	9.25	6,289.0	71.4
J-57	6,128.0	12.81	6,291.3	70.7
J-6	6,126.2	9.97	6,289.0	70.4
J-59	6,130.6	24.91	6,292.9	70.2
J-14	6,127.0	0.00	6,289.0	70.1
J-2	6,127.0	0.00	6,289.0	70.1
J-203	6,151.6	6.41	6,312.9	69.8
J-9	6,128.6	4.27	6,289.0	69.4
J-55	6,132.3	4.98	6,290.1	68.3
J-54	6,132.5	7.12	6,290.2	68.2
J-220	6,157.0	7.12	6,313.8	67.8
J-7	6,136.3	0.00	6,289.0	66.1
J-56	6,137.6	2.14	6,290.2	66.0

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-204	6,161.4	7.12	6,312.9	65.5
J-206	6,164.4	6.41	6,312.9	64.3
J-219	6,170.0	7.12	6,314.2	62.4
J-12	6,146.9	12.10	6,289.0	61.5
J-10	6,148.1	4.98	6,289.0	60.9
J-11	6,167.3	10.68	6,289.0	52.6

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-52	236	8.0	130.0	1,340.83	8.56
P-53	116	8.0	130.0	1,315.06	8.39
P-51	297	8.0	130.0	1,163.44	7.43
P-75	332	12.0	130.0	2,507.71	7.11
P-74	347	12.0	130.0	2,222.75	6.31
P-287	300	8.0	130.0	937.43	5.98
P-113	140	12.0	130.0	1,918.65	5.44
P-114	253	12.0	130.0	1,918.65	5.44
P-112	323	12.0	130.0	1,754.71	4.98
P-49	129	8.0	130.0	755.29	4.82
P-111	447	12.0	130.0	1,645.48	4.67
P-73	305	12.0	130.0	1,566.29	4.44
P-136	157	8.0	130.0	642.11	4.10
P-130	275	8.0	130.0	626.31	4.00
P-79	289	8.0	130.0	607.80	3.88
P-78	455	8.0	130.0	599.97	3.83
P-37	120	8.0	130.0	515.70	3.29
P-72	802	8.0	130.0	514.95	3.29
P-81	671	8.0	130.0	497.40	3.17
P-82	305	8.0	130.0	497.40	3.17
P-328	132	8.0	130.0	480.90	3.07
P-174	473	20.0	130.0	2,854.02	2.91
P-173	155	20.0	130.0	2,852.60	2.91
P-57	344	8.0	130.0	454.27	2.90
P-70	230	8.0	130.0	448.80	2.86
P-293	137	8.0	130.0	410.10	2.62
P-145	616	20.0	130.0	2,521.06	2.57
P-85	150	8.0	130.0	401.56	2.56
P-332	19	20.0	130.0	2,461.92	2.51

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-32	1,075	8.0	130.0	393.09	2.51
P-83	463	8.0	130.0	393.02	2.51
P-84	336	8.0	130.0	393.02	2.51
P-338	1,000	24.0	130.0	3,420.36	2.43
P-126	411	8.0	130.0	374.08	2.39
P-117	193	8.0	130.0	370.52	2.36
P-116	343	8.0	130.0	364.83	2.33
P-71	1,096	8.0	130.0	360.01	2.30
P-66	380	8.0	130.0	358.55	2.29
P-355	3,157	20.0	130.0	2,215.75	2.26
P-143	291	20.0	130.0	2,200.82	2.25
P-144	405	20.0	130.0	2,200.82	2.25
P-268	823	24.0	130.0	3,165.91	2.25
P-265	280	24.0	130.0	3,126.88	2.22
P-259	350	24.0	130.0	3,118.34	2.21
P-231	324	24.0	130.0	3,055.04	2.17
P-183	40	24.0	130.0	3,037.96	2.15
P-336	271	24.0	130.0	3,025.19	2.15
P-67	680	8.0	130.0	335.10	2.14
P-303	137	8.0	130.0	331.54	2.12
P-304	161	24.0	130.0	2,970.21	2.11
P-307	440	24.0	130.0	2,970.21	2.11
P-242	262	24.0	130.0	2,962.09	2.10
P-58	211	8.0	130.0	321.53	2.05
P-256	283	24.0	130.0	2,888.53	2.05
P-172	154	8.0	130.0	320.24	2.04
P-323	113	8.0	130.0	319.84	2.04
P-273	263	24.0	130.0	2,860.00	2.03
P-286	4	8.0	130.0	311.12	1.99

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-56	690	12.0	130.0	700.02	1.99
P-356	381	8.0	130.0	308.21	1.97
P-134	437	8.0	130.0	308.14	1.97
P-181	502	8.0	130.0	300.64	1.92
P-133	347	8.0	130.0	298.17	1.90
P-141	353	20.0	130.0	1,819.81	1.86
P-331	241	20.0	130.0	1,819.81	1.86
P-76	229	8.0	130.0	280.69	1.79
P-351	2,845	12.0	130.0	611.70	1.74
P-48	135	8.0	130.0	271.44	1.73
P-146	457	12.0	130.0	601.68	1.71
P-147	368	12.0	130.0	601.68	1.71
P-154	601	12.0	130.0	598.60	1.70
P-358	59	12.0	130.0	598.60	1.70
P-344	1,179	20.0	130.0	1,655.81	1.69
P-169	140	8.0	130.0	261.11	1.67
P-54	412	12.0	130.0	567.28	1.61
P-271	245	8.0	130.0	247.33	1.58
P-236	259	8.0	130.0	243.01	1.55
P-343	2,067	20.0	130.0	1,481.43	1.51
P-77	259	8.0	130.0	236.40	1.51
P-280	316	8.0	130.0	228.71	1.46
P-21	131	12.0	130.0	475.45	1.35
P-23	50	12.0	130.0	469.04	1.33
P-24	129	12.0	130.0	469.04	1.33
P-26	135	12.0	130.0	463.34	1.31
P-239	269	8.0	130.0	202.97	1.30
P-175	749	8.0	130.0	200.99	1.28
P-60	272	8.0	130.0	180.02	1.15

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-165	119	8.0	130.0	178.79	1.14
P-219	195	8.0	130.0	169.58	1.08
P-166	737	8.0	130.0	168.82	1.08
P-36	732	8.0	130.0	164.15	1.05
P-115	116	8.0	130.0	163.94	1.05
P-347	652	12.0	130.0	356.72	1.01
P-185	163	8.0	130.0	156.23	1.00
P-62	309	8.0	130.0	155.76	0.99
P-167	396	8.0	130.0	153.87	0.98
P-243	264	8.0	130.0	153.18	0.98
P-240	808	8.0	130.0	151.43	0.97
P-35	140	8.0	130.0	151.33	0.97
P-163	178	8.0	130.0	151.33	0.97
P-59	419	8.0	130.0	149.35	0.95
P-229	191	8.0	130.0	143.24	0.91
P-342	1,938	20.0	130.0	882.83	0.90
P-255	151	8.0	130.0	141.14	0.90
P-346	1,278	12.0	130.0	317.20	0.90
P-254	181	8.0	130.0	140.43	0.90
P-241	262	8.0	130.0	136.00	0.87
P-160	33	8.0	130.0	135.67	0.87
P-257	282	8.0	130.0	132.48	0.85
P-301	219	8.0	130.0	131.40	0.84
P-272	262	8.0	130.0	126.39	0.81
P-337	263	8.0	130.0	123.67	0.79
P-299	909	8.0	130.0	117.16	0.75
P-282	497	8.0	130.0	117.02	0.75
P-278	701	8.0	130.0	116.85	0.75
P-61	595	8.0	130.0	115.29	0.74

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-269	825	8.0	130.0	113.82	0.73
P-156	202	8.0	130.0	112.92	0.72
P-270	826	8.0	130.0	112.87	0.72
P-91	94	8.0	130.0	110.79	0.71
P-118	161	8.0	130.0	109.24	0.70
P-55	560	12.0	130.0	245.75	0.70
P-168	460	8.0	130.0	107.23	0.68
P-50	231	8.0	130.0	107.05	0.68
P-86	128	8.0	130.0	104.38	0.67
P-245	150	8.0	130.0	103.41	0.66
P-246	181	8.0	130.0	103.41	0.66
P-217	124	8.0	130.0	97.86	0.62
P-158	395	8.0	130.0	97.23	0.62
P-276	274	8.0	130.0	96.90	0.62
P-277	322	8.0	130.0	95.41	0.61
P-44	321	8.0	130.0	91.21	0.58
P-324	403	8.0	130.0	89.00	0.57
P-325	403	8.0	130.0	87.58	0.56
P-45	417	8.0	130.0	82.67	0.53
P-179	536	12.0	130.0	183.93	0.52
P-95	180	8.0	130.0	81.46	0.52
P-220	461	16.0	130.0	323.34	0.52
P-253	284	8.0	130.0	80.70	0.52
P-65	277	8.0	130.0	80.38	0.51
P-266	380	8.0	130.0	78.70	0.50
P-64	671	8.0	130.0	78.24	0.50
P-140	550	20.0	130.0	488.60	0.50
P-46	189	8.0	130.0	75.55	0.48
P-108	363	8.0	130.0	74.41	0.47

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-93	256	8.0	130.0	73.39	0.47
P-94	350	8.0	130.0	73.39	0.47
P-63	291	8.0	130.0	73.26	0.47
P-320	184	8.0	130.0	71.72	0.46
P-238	378	8.0	130.0	70.93	0.45
P-250	261	8.0	130.0	69.87	0.45
P-180	43	12.0	130.0	156.23	0.44
P-107	163	8.0	130.0	69.43	0.44
P-227	559	8.0	130.0	69.09	0.44
P-260	260	8.0	130.0	68.74	0.44
P-125	127	8.0	130.0	66.52	0.42
P-228	232	8.0	130.0	66.32	0.42
P-92	153	8.0	130.0	66.27	0.42
P-106	179	8.0	130.0	65.87	0.42
P-198	199	8.0	130.0	65.66	0.42
P-149	838	8.0	130.0	65.02	0.42
P-322	43	12.0	130.0	143.51	0.41
P-186	47	8.0	130.0	63.31	0.40
P-223	210	8.0	130.0	63.31	0.40
P-226	257	8.0	130.0	62.05	0.40
P-28	178	12.0	130.0	137.81	0.39
P-104	212	8.0	130.0	58.75	0.37
P-30	278	12.0	130.0	130.69	0.37
P-195	115	8.0	130.0	57.99	0.37
P-275	261	8.0	130.0	57.95	0.37
P-224	336	8.0	130.0	57.07	0.36
P-225	457	8.0	130.0	56.99	0.36
P-31	479	12.0	130.0	126.42	0.36
P-212	189	8.0	130.0	56.06	0.36

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-234	306	8.0	130.0	54.98	0.35
P-252	390	8.0	130.0	54.04	0.34
P-98	157	8.0	130.0	53.77	0.34
P-216	357	8.0	130.0	53.73	0.34
P-348	567	8.0	130.0	53.40	0.34
P-349	639	8.0	130.0	53.40	0.34
P-127	345	8.0	130.0	52.83	0.34
P-119	235	8.0	130.0	48.58	0.31
P-251	271	8.0	130.0	47.63	0.30
P-248	253	8.0	130.0	46.36	0.30
P-96	135	8.0	130.0	45.94	0.29
P-235	340	8.0	130.0	45.73	0.29
P-69	589	8.0	130.0	44.80	0.29
P-124	207	8.0	130.0	44.28	0.28
P-188	22	8.0	130.0	43.04	0.27
P-187	133	8.0	130.0	41.62	0.27
P-20	351	12.0	130.0	91.83	0.26
P-121	252	8.0	130.0	40.75	0.26
P-247	389	8.0	130.0	39.95	0.26
P-297	241	8.0	130.0	36.56	0.23
P-68	276	8.0	130.0	36.26	0.23
P-318	362	8.0	130.0	35.58	0.23
P-204	135	8.0	130.0	32.73	0.21
P-319	370	8.0	130.0	32.58	0.21
P-122	347	8.0	130.0	30.78	0.20
P-33	402	8.0	130.0	29.58	0.19
P-194	95	8.0	130.0	28.57	0.18
P-308	378	8.0	130.0	28.53	0.18
P-313	214	8.0	130.0	27.15	0.17

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-206	274	8.0	130.0	26.89	0.17
P-193	436	8.0	130.0	25.86	0.17
P-17	244	8.0	130.0	25.11	0.16
P-123	40	8.0	130.0	25.09	0.16
P-312	199	8.0	130.0	24.30	0.16
P-16	219	8.0	130.0	23.08	0.15
P-148	298	8.0	130.0	21.38	0.14
P-314	143	8.0	130.0	20.16	0.13
P-18	457	12.0	130.0	43.64	0.12
P-19	445	12.0	130.0	43.64	0.12
P-263	262	8.0	130.0	19.10	0.12
P-184	687	12.0	130.0	39.52	0.11
P-15	408	8.0	130.0	16.67	0.11
P-13	428	8.0	130.0	16.57	0.11
P-2	192	8.0	130.0	14.63	0.09
P-9	192	8.0	130.0	13.55	0.09
P-137	179	20.0	130.0	78.50	0.08
P-138	578	20.0	130.0	78.50	0.08
P-139	450	20.0	130.0	78.50	0.08
P-353	752	20.0	130.0	78.50	0.08
P-10	441	8.0	130.0	11.19	0.07
P-7	259	8.0	130.0	10.29	0.07
P-232	466	24.0	130.0	91.94	0.07
P-200	176	8.0	130.0	9.60	0.06
P-222	655	8.0	130.0	7.67	0.05
P-244	378	8.0	130.0	7.21	0.05
P-345	744	16.0	130.0	28.84	0.05
P-3	188	8.0	130.0	7.12	0.05
P-80	573	8.0	130.0	7.12	0.05

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-109	150	8.0	130.0	7.12	0.05
P-6	434	12.0	130.0	14.63	0.04
P-8	363	12.0	130.0	14.63	0.04
P-11	262	8.0	130.0	6.21	0.04
P-14	457	8.0	130.0	5.99	0.04
P-249	401	8.0	130.0	5.85	0.04
P-12	616	8.0	130.0	4.47	0.03
P-135	132	8.0	130.0	4.27	0.03
P-4	223	8.0	130.0	3.56	0.02
P-296	166	8.0	130.0	3.08	0.02
P-22	188	8.0	130.0	2.85	0.02
P-25	189	8.0	130.0	2.85	0.02
P-27	187	8.0	130.0	2.85	0.02
P-29	185	8.0	130.0	2.85	0.02
P-97	162	8.0	130.0	2.85	0.02
P-105	42	8.0	130.0	2.85	0.02
P-128	82	8.0	130.0	2.14	0.01
P-191	118	8.0	130.0	2.14	0.01
P-281	47	8.0	130.0	2.14	0.01
P-120	89	8.0	130.0	1.42	0.01
P-197	106	8.0	130.0	1.42	0.01
P-161	115	8.0	130.0	0.71	0.00
P-315	122	8.0	130.0	0.71	0.00
P-5	406	8.0	130.0	0.32	0.00
P-190	117	8.0	130.0	0.00	0.00
P-221	76	16.0	130.0	0.00	0.00
P-110	140	8.0	130.0	0.00	0.00
P-34	76	8.0	130.0	0.00	0.00
P-1	791	12.0	130.0	0.00	0.00

*Max Day Plus Fire
(2500 gpm J-44)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-334	244	8.0	130.0	0.00	0.00

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-122	5,987.4	0.00	6,310.0	139.6
OS-2	5,990.0	0.00	6,310.0	138.5
OS-1	5,995.0	882.83	6,309.7	136.1
J-121	6,001.5	0.00	6,309.8	133.4
J-111	6,002.8	0.00	6,310.4	133.1
J-127	6,004.4	12.10	6,307.7	131.2
J-129	6,008.5	5.69	6,309.1	130.0
J-113	6,011.2	0.00	6,310.4	129.4
J-112	6,011.5	0.00	6,310.4	129.3
J-110	6,012.7	0.00	6,310.3	128.8
J-120	6,013.6	0.00	6,310.0	128.2
J-130	6,014.7	5.69	6,309.5	127.5
J-72	6,017.0	8.54	6,310.3	126.9
OS-4	6,019.8	531.10	6,311.4	126.2
OS-3	6,022.0	531.10	6,310.6	124.9
OS-5	6,022.0	78.50	6,310.3	124.8
J-132	6,021.1	19.93	6,309.4	124.7
J-70	6,022.8	8.54	6,310.3	124.4
J-114	6,023.0	14.24	6,310.4	124.3
J-115	6,023.7	0.00	6,310.4	124.0
J-183	6,027.6	0.00	6,311.3	122.8
J-181	6,029.1	153.75	6,311.3	122.1
J-182	6,032.0	0.00	6,311.4	120.9
J-105	6,031.4	0.00	6,310.2	120.6
J-104	6,031.4	0.00	6,310.2	120.6
J-103	6,032.1	2.14	6,310.0	120.2
J-136	6,034.3	0.00	6,310.4	119.4
J-89	6,035.3	8.07	6,310.1	118.9
J-116	6,035.7	0.00	6,310.5	118.9

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-242	6,036.0	0.00	6,310.5	118.8
J-123	6,026.5	81.86	6,300.8	118.7
J-102	6,036.5	6.41	6,310.0	118.4
J-180	6,037.8	0.00	6,311.1	118.2
J-170	6,037.8	5.69	6,311.0	118.2
J-179	6,038.3	44.13	6,311.0	118.0
J-69	6,038.2	0.00	6,310.2	117.7
J-177	6,039.6	3.56	6,311.0	117.4
J-106	6,039.8	2.85	6,310.4	117.1
J-79	6,041.3	8.07	6,310.1	116.3
J-148	6,042.4	0.00	6,310.6	116.1
J-134	6,042.3	0.71	6,310.5	116.0
J-248	6,030.0	0.00	6,297.6	115.8
J-133	6,042.9	3.56	6,310.5	115.8
J-91	6,043.2	0.00	6,310.0	115.5
J-234	6,044.1	0.71	6,310.8	115.4
J-97	6,044.0	2.85	6,310.0	115.1
J-167	6,045.3	2.85	6,311.0	115.0
J-117	6,045.5	0.00	6,310.6	114.7
J-163	6,047.2	44.13	6,310.9	114.1
J-88	6,047.1	4.98	6,310.1	113.8
J-96	6,047.4	5.69	6,310.0	113.6
J-137	6,048.1	14.95	6,310.5	113.5
J-157	6,048.8	1.42	6,310.8	113.3
J-76	6,048.2	1.42	6,310.1	113.3
J-161	6,049.6	1.42	6,310.8	113.0
J-71	6,049.0	6.41	6,310.1	113.0
J-168	6,049.9	3.56	6,311.0	112.9
J-92	6,049.1	7.83	6,310.0	112.9

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-135	6,049.8	15.66	6,310.5	112.8
J-153	6,050.4	0.00	6,310.7	112.6
J-68	6,050.0	0.00	6,310.1	112.6
J-77	6,050.0	0.00	6,310.1	112.5
J-128	6,050.3	14.24	6,310.2	112.5
J-158	6,050.9	2.14	6,310.8	112.4
J-83	6,050.3	7.12	6,310.1	112.4
J-233	6,051.0	2.14	6,310.8	112.4
J-162	6,051.4	0.00	6,310.9	112.3
J-87	6,050.9	3.56	6,310.1	112.2
J-100	6,051.0	0.00	6,310.0	112.1
J-101	6,051.1	3.56	6,310.0	112.0
J-154	6,052.2	1.42	6,310.7	111.8
J-147	6,051.8	0.00	6,310.1	111.7
J-107	6,052.7	9.97	6,310.6	111.6
J-78	6,052.5	0.00	6,310.1	111.5
J-81	6,053.1	4.98	6,310.1	111.2
J-149	6,053.4	0.00	6,310.1	111.1
J-152	6,055.1	1.42	6,310.7	110.6
J-249	6,055.0	0.00	6,310.1	110.4
J-159	6,056.1	0.00	6,310.8	110.2
J-80	6,055.5	2.85	6,310.1	110.2
J-150	6,057.6	5.69	6,310.7	109.5
J-86	6,057.8	4.27	6,310.1	109.2
J-187	6,059.0	4.27	6,311.2	109.1
J-82	6,058.1	4.98	6,310.1	109.0
J-66	6,058.5	0.00	6,309.9	108.8
J-93	6,058.9	6.41	6,310.0	108.7
J-151	6,059.6	0.00	6,310.7	108.7

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-67	6,058.9	0.00	6,310.1	108.6
J-139	6,060.6	1.42	6,310.7	108.2
J-124	6,044.3	82.57	6,293.9	108.0
J-64	6,060.4	11.39	6,309.9	108.0
J-138	6,061.3	9.97	6,310.7	107.9
J-118	6,061.8	0.00	6,310.8	107.7
J-155	6,062.0	3.56	6,310.8	107.6
J-94	6,061.5	1.42	6,310.0	107.5
J-85	6,062.1	2.85	6,310.1	107.3
J-243	6,064.0	0.00	6,311.6	107.1
J-95	6,063.6	9.97	6,310.0	106.6
J-156	6,064.7	2.14	6,310.8	106.5
J-119	6,065.9	0.00	6,311.1	106.1
J-141	6,066.7	1.42	6,311.2	105.8
J-184	6,066.4	1.42	6,310.8	105.7
J-188	6,066.9	7.83	6,311.3	105.7
J-108	6,066.8	7.83	6,310.7	105.5
J-30	6,066.9	3.80	6,309.4	105.0
J-185	6,068.6	4.98	6,311.0	104.9
J-186	6,070.4	12.10	6,311.0	104.1
J-189	6,071.4	7.83	6,311.8	104.0
J-145	6,071.4	17.08	6,311.6	103.9
J-146	6,071.4	0.00	6,311.6	103.9
J-33	6,070.1	5.22	6,309.4	103.5
J-99	6,070.9	3.56	6,310.0	103.4
J-98	6,071.3	5.69	6,309.9	103.2
J-63	6,072.2	7.83	6,309.8	102.8
J-29	6,072.0	8.54	6,309.4	102.7
J-109	6,075.5	4.27	6,310.7	101.8

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-191	6,076.8	7.12	6,311.8	101.7
J-50	6,075.1	4.27	6,309.7	101.5
J-194	6,078.7	5.69	6,312.2	101.0
J-231	6,080.8	0.00	6,311.9	100.0
J-65	6,079.6	7.12	6,309.9	99.7
J-28	6,079.2	4.27	6,309.4	99.6
J-62	6,081.6	2.14	6,309.6	98.7
J-27	6,081.4	2.85	6,309.4	98.6
J-193	6,086.5	9.25	6,312.2	97.6
J-37	6,084.4	6.41	6,309.4	97.4
J-224	6,086.0	1.42	6,309.4	96.7
J-197	6,089.4	6.41	6,312.4	96.5
J-25	6,086.9	2.85	6,309.4	96.3
J-26	6,087.0	4.27	6,309.4	96.3
J-41	6,088.3	0.00	6,309.4	95.7
J-40	6,088.4	8.54	6,309.4	95.6
J-42	6,088.8	7.12	6,309.4	95.5
J-142	6,057.0	3,099.65	6,277.3	95.3
J-223	6,091.3	10.68	6,309.4	94.4
J-24	6,091.4	2.85	6,309.4	94.3
J-61	6,092.0	3.56	6,309.7	94.2
J-32	6,092.4	12.81	6,309.4	93.9
J-241	6,094.0	0.00	6,309.4	93.2
J-34	6,094.0	0.00	6,309.4	93.2
J-232	6,097.6	0.00	6,312.2	92.9
J-38	6,095.0	8.54	6,309.4	92.8
J-49	6,095.1	263.37	6,309.5	92.8
J-23	6,095.4	2.85	6,309.4	92.6
J-22	6,096.0	2.85	6,309.4	92.3

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-36	6,096.4	5.69	6,309.4	92.2
J-196	6,099.8	7.12	6,312.5	92.0
J-46	6,099.2	0.00	6,309.4	91.0
J-45	6,099.6	8.54	6,309.4	90.8
J-39	6,099.7	7.12	6,309.4	90.7
J-21	6,100.0	0.00	6,309.4	90.6
J-19	6,100.6	3.56	6,309.4	90.4
J-20	6,101.5	2.85	6,309.4	90.0
J-225	6,102.0	2.14	6,309.4	89.8
J-48	6,102.8	0.00	6,309.5	89.4
J-51	6,104.3	7.83	6,309.4	88.8
J-18	6,104.3	0.00	6,309.4	88.8
J-43	6,104.6	7.83	6,309.4	88.6
J-199	6,108.2	9.97	6,312.6	88.4
J-1	6,105.7	0.00	6,309.4	88.1
J-195	6,109.8	7.83	6,312.4	87.7
J-44	6,106.8	4.27	6,309.4	87.7
J-5	6,106.9	3.56	6,309.4	87.6
J-16	6,109.9	6.41	6,309.4	86.3
J-47	6,110.8	0.00	6,309.4	86.0
J-60	6,113.3	21.35	6,309.5	84.9
J-15	6,113.3	10.68	6,309.4	84.9
J-17	6,113.7	0.00	6,309.4	84.7
J-198	6,117.2	7.83	6,312.8	84.6
J-53	6,115.2	8.54	6,309.4	84.0
J-4	6,116.9	3.56	6,309.4	83.3
J-200	6,123.2	8.54	6,312.6	81.9
J-214	6,123.6	8.54	6,312.9	81.9
J-211	6,124.4	14.95	6,312.9	81.6

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-13	6,121.3	8.54	6,309.4	81.4
J-192	6,124.7	0.00	6,312.8	81.4
J-52	6,121.9	6.41	6,309.4	81.1
J-3	6,122.3	7.83	6,309.4	81.0
J-58	6,122.6	8.54	6,309.5	80.8
J-201	6,126.2	0.00	6,312.6	80.7
J-8	6,123.8	9.25	6,309.4	80.3
J-6	6,126.2	9.97	6,309.4	79.3
J-14	6,127.0	0.00	6,309.4	78.9
J-2	6,127.0	0.00	6,309.4	78.9
J-218	6,131.4	7.83	6,313.3	78.7
J-57	6,128.0	12.81	6,309.5	78.5
J-9	6,128.6	4.27	6,309.4	78.2
J-209	6,132.7	9.97	6,313.0	78.0
J-59	6,130.6	24.91	6,309.5	77.4
J-217	6,135.8	9.25	6,313.4	76.9
J-55	6,132.3	4.98	6,309.4	76.6
J-54	6,132.5	7.12	6,309.4	76.5
J-202	6,136.4	6.41	6,312.7	76.3
J-208	6,137.8	0.71	6,312.9	75.7
J-7	6,136.3	0.00	6,309.4	74.9
J-56	6,137.6	2.14	6,309.4	74.4
J-213	6,143.9	8.54	6,313.2	73.3
J-207	6,144.2	5.69	6,312.8	72.9
J-205	6,144.8	4.98	6,312.7	72.7
J-216	6,145.9	19.93	6,313.4	72.5
J-221	6,148.0	13.52	6,313.6	71.7
J-12	6,146.9	12.10	6,309.4	70.3
J-10	6,148.1	4.98	6,309.4	69.8

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-203	6,151.6	6.41	6,312.7	69.7
J-220	6,157.0	7.12	6,313.7	67.8
J-204	6,161.4	7.12	6,312.7	65.5
J-206	6,164.4	6.41	6,312.8	64.2
J-219	6,170.0	7.12	6,314.1	62.3
J-11	6,167.3	10.68	6,309.4	61.5

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-181	502	8.0	130.0	1,990.22	12.70
P-297	241	8.0	130.0	1,273.86	8.13
P-175	749	8.0	130.0	1,109.43	7.08
P-296	166	8.0	130.0	814.57	5.20
P-149	838	8.0	130.0	654.49	4.18
P-348	567	8.0	130.0	537.51	3.43
P-349	639	8.0	130.0	537.51	3.43
P-148	298	8.0	130.0	471.39	3.01
P-179	536	12.0	130.0	1,044.67	2.96
P-185	163	8.0	130.0	417.11	2.66
P-355	3,157	20.0	130.0	2,498.66	2.55
P-338	1,000	24.0	130.0	3,557.95	2.52
P-268	823	24.0	130.0	3,293.94	2.34
P-265	280	24.0	130.0	3,255.06	2.31
P-259	350	24.0	130.0	3,246.52	2.30
P-303	137	8.0	130.0	356.69	2.28
P-336	271	24.0	130.0	3,154.02	2.24
P-304	161	24.0	130.0	3,097.00	2.20
P-307	440	24.0	130.0	3,097.00	2.20
P-242	262	24.0	130.0	3,087.65	2.19
P-229	191	8.0	130.0	336.59	2.15
P-256	283	24.0	130.0	3,008.75	2.13
P-231	324	24.0	130.0	2,999.27	2.13
P-183	40	24.0	130.0	2,982.19	2.11
P-273	263	24.0	130.0	2,979.50	2.11
P-174	473	20.0	130.0	1,937.53	1.98
P-173	155	20.0	130.0	1,936.11	1.98
P-351	2,845	12.0	130.0	691.19	1.96
P-168	460	8.0	130.0	301.14	1.92

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-156	202	8.0	130.0	295.45	1.89
P-344	1,179	20.0	130.0	1,814.66	1.85
P-271	245	8.0	130.0	256.89	1.64
P-236	259	8.0	130.0	253.82	1.62
P-145	616	20.0	130.0	1,579.41	1.61
P-287	300	8.0	130.0	243.58	1.55
P-280	316	8.0	130.0	238.13	1.52
P-219	195	8.0	130.0	237.10	1.51
P-163	178	8.0	130.0	235.74	1.50
P-184	687	12.0	130.0	528.44	1.50
P-143	291	20.0	130.0	1,441.49	1.47
P-144	405	20.0	130.0	1,441.49	1.47
P-160	33	8.0	130.0	220.08	1.40
P-75	332	12.0	130.0	494.66	1.40
P-146	457	12.0	130.0	489.05	1.39
P-147	368	12.0	130.0	489.05	1.39
P-301	219	8.0	130.0	215.81	1.38
P-239	269	8.0	130.0	211.73	1.35
P-169	140	8.0	130.0	206.52	1.32
P-299	909	8.0	130.0	201.57	1.29
P-346	1,278	12.0	130.0	453.23	1.29
P-332	19	20.0	130.0	1,234.97	1.26
P-343	2,067	20.0	130.0	1,208.35	1.23
P-74	347	12.0	130.0	434.83	1.23
P-113	140	12.0	130.0	419.46	1.19
P-114	253	12.0	130.0	419.46	1.19
P-180	43	12.0	130.0	417.11	1.18
P-158	395	8.0	130.0	181.64	1.16
P-141	353	20.0	130.0	1,104.39	1.13

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-331	241	20.0	130.0	1,104.39	1.13
P-227	559	8.0	130.0	167.09	1.07
P-228	232	8.0	130.0	161.67	1.03
P-243	264	8.0	130.0	159.68	1.02
P-240	808	8.0	130.0	157.86	1.01
P-226	257	8.0	130.0	157.40	1.00
P-186	47	8.0	130.0	155.97	1.00
P-223	210	8.0	130.0	155.97	1.00
P-112	323	12.0	130.0	350.69	0.99
P-225	457	8.0	130.0	154.99	0.99
P-224	336	8.0	130.0	152.42	0.97
P-111	447	12.0	130.0	329.26	0.93
P-255	151	8.0	130.0	146.32	0.93
P-254	181	8.0	130.0	145.61	0.93
P-154	601	12.0	130.0	325.52	0.92
P-358	59	12.0	130.0	325.52	0.92
P-241	262	8.0	130.0	141.61	0.90
P-342	1,938	20.0	130.0	882.83	0.90
P-130	275	8.0	130.0	139.35	0.89
P-257	282	8.0	130.0	138.26	0.88
P-172	154	8.0	130.0	137.92	0.88
P-198	199	8.0	130.0	133.18	0.85
P-272	262	8.0	130.0	131.15	0.84
P-217	124	8.0	130.0	131.01	0.84
P-136	157	8.0	130.0	130.58	0.83
P-337	263	8.0	130.0	128.32	0.82
P-195	115	8.0	130.0	128.21	0.82
P-134	437	8.0	130.0	125.82	0.80
P-79	289	8.0	130.0	120.84	0.77

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-165	119	8.0	130.0	119.54	0.76
P-269	825	8.0	130.0	118.62	0.76
P-270	826	8.0	130.0	117.63	0.75
P-133	347	8.0	130.0	115.85	0.74
P-188	22	8.0	130.0	113.26	0.72
P-78	455	8.0	130.0	113.01	0.72
P-187	133	8.0	130.0	111.84	0.71
P-166	737	8.0	130.0	109.57	0.70
P-245	150	8.0	130.0	108.59	0.69
P-246	181	8.0	130.0	108.59	0.69
P-320	184	8.0	130.0	106.10	0.68
P-286	4	8.0	130.0	104.23	0.67
P-293	137	8.0	130.0	103.14	0.66
P-220	461	16.0	130.0	390.86	0.62
P-81	671	8.0	130.0	95.27	0.61
P-82	305	8.0	130.0	95.27	0.61
P-167	396	8.0	130.0	94.62	0.60
P-85	150	8.0	130.0	94.60	0.60
P-72	802	8.0	130.0	90.91	0.58
P-212	189	8.0	130.0	90.44	0.58
P-216	357	8.0	130.0	86.88	0.55
P-83	463	8.0	130.0	86.06	0.55
P-84	336	8.0	130.0	86.06	0.55
P-253	284	8.0	130.0	83.88	0.54
P-53	116	8.0	130.0	82.96	0.53
P-266	380	8.0	130.0	81.47	0.52
P-126	411	8.0	130.0	79.38	0.51
P-117	193	8.0	130.0	75.82	0.48
P-238	378	8.0	130.0	74.21	0.47

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-250	261	8.0	130.0	73.07	0.47
P-71	1,096	8.0	130.0	71.96	0.46
P-260	260	8.0	130.0	71.73	0.46
P-116	343	8.0	130.0	70.13	0.45
P-115	116	8.0	130.0	68.76	0.44
P-194	95	8.0	130.0	64.90	0.41
P-313	214	8.0	130.0	63.48	0.41
P-312	199	8.0	130.0	60.63	0.39
P-275	261	8.0	130.0	60.29	0.38
P-193	436	8.0	130.0	59.75	0.38
P-73	305	12.0	130.0	131.70	0.37
P-234	306	8.0	130.0	57.03	0.36
P-252	390	8.0	130.0	56.05	0.36
P-76	229	8.0	130.0	55.56	0.35
P-314	143	8.0	130.0	54.05	0.34
P-318	362	8.0	130.0	53.95	0.34
P-204	135	8.0	130.0	51.10	0.33
P-251	271	8.0	130.0	49.64	0.32
P-66	380	8.0	130.0	49.52	0.32
P-319	370	8.0	130.0	48.58	0.31
P-248	253	8.0	130.0	48.35	0.31
P-235	340	8.0	130.0	47.78	0.30
P-67	680	8.0	130.0	47.05	0.30
P-70	230	8.0	130.0	45.74	0.29
P-206	274	8.0	130.0	42.89	0.27
P-200	176	8.0	130.0	42.75	0.27
P-48	135	8.0	130.0	42.27	0.27
P-56	690	12.0	130.0	94.48	0.27
P-247	389	8.0	130.0	41.94	0.27

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-20	351	12.0	130.0	91.83	0.26
P-32	1,075	8.0	130.0	39.76	0.25
P-345	744	16.0	130.0	152.90	0.24
P-77	259	8.0	130.0	37.49	0.24
P-54	412	12.0	130.0	78.35	0.22
P-347	652	12.0	130.0	75.21	0.21
P-95	180	8.0	130.0	31.28	0.20
P-108	363	8.0	130.0	29.42	0.19
P-55	560	12.0	130.0	65.85	0.19
P-308	378	8.0	130.0	29.25	0.19
P-140	550	20.0	130.0	181.64	0.19
P-57	344	8.0	130.0	28.63	0.18
P-35	140	8.0	130.0	28.18	0.18
P-17	244	8.0	130.0	25.11	0.16
P-52	236	8.0	130.0	24.66	0.16
P-107	163	8.0	130.0	24.44	0.16
P-69	589	8.0	130.0	23.82	0.15
P-93	256	8.0	130.0	23.21	0.15
P-94	350	8.0	130.0	23.21	0.15
P-16	219	8.0	130.0	23.08	0.15
P-31	479	12.0	130.0	48.81	0.14
P-282	497	8.0	130.0	21.57	0.14
P-118	161	8.0	130.0	21.43	0.14
P-125	127	8.0	130.0	21.29	0.14
P-106	179	8.0	130.0	20.88	0.13
P-51	297	8.0	130.0	20.39	0.13
P-30	278	12.0	130.0	44.54	0.13
P-18	457	12.0	130.0	43.65	0.12
P-19	445	12.0	130.0	43.65	0.12

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-263	262	8.0	130.0	18.96	0.12
P-49	129	8.0	130.0	17.18	0.11
P-62	309	8.0	130.0	17.05	0.11
P-15	408	8.0	130.0	16.67	0.11
P-28	178	12.0	130.0	37.42	0.11
P-13	428	8.0	130.0	16.57	0.11
P-92	153	8.0	130.0	16.09	0.10
P-91	94	8.0	130.0	15.61	0.10
P-36	732	8.0	130.0	15.37	0.10
P-46	189	8.0	130.0	15.34	0.10
P-68	276	8.0	130.0	15.28	0.10
P-2	192	8.0	130.0	14.63	0.09
P-328	132	8.0	130.0	14.52	0.09
P-322	43	12.0	130.0	31.72	0.09
P-104	212	8.0	130.0	13.76	0.09
P-61	595	8.0	130.0	13.58	0.09
P-9	192	8.0	130.0	13.55	0.09
P-123	40	8.0	130.0	13.29	0.08
P-37	120	8.0	130.0	12.85	0.08
P-137	179	20.0	130.0	78.50	0.08
P-138	578	20.0	130.0	78.50	0.08
P-139	450	20.0	130.0	78.50	0.08
P-353	752	20.0	130.0	78.50	0.08
P-58	211	8.0	130.0	12.50	0.08
P-65	277	8.0	130.0	11.77	0.08
P-50	231	8.0	130.0	11.60	0.07
P-26	135	12.0	130.0	25.59	0.07
P-10	441	8.0	130.0	11.19	0.07
P-59	419	8.0	130.0	10.64	0.07

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-7	259	8.0	130.0	10.29	0.07
P-119	235	8.0	130.0	10.20	0.07
P-232	466	24.0	130.0	90.60	0.06
P-60	272	8.0	130.0	9.69	0.06
P-64	671	8.0	130.0	9.63	0.06
P-278	701	8.0	130.0	9.22	0.06
P-86	128	8.0	130.0	9.20	0.06
P-325	403	8.0	130.0	9.18	0.06
P-23	50	12.0	130.0	19.89	0.06
P-24	129	12.0	130.0	19.89	0.06
P-98	157	8.0	130.0	8.78	0.06
P-45	417	8.0	130.0	8.22	0.05
P-244	378	8.0	130.0	8.10	0.05
P-324	403	8.0	130.0	7.76	0.05
P-356	381	8.0	130.0	7.69	0.05
P-122	347	8.0	130.0	7.60	0.05
P-3	188	8.0	130.0	7.12	0.05
P-80	573	8.0	130.0	7.12	0.05
P-109	150	8.0	130.0	7.12	0.05
P-6	434	12.0	130.0	14.63	0.04
P-8	363	12.0	130.0	14.63	0.04
P-11	262	8.0	130.0	6.21	0.04
P-323	113	8.0	130.0	6.13	0.04
P-276	274	8.0	130.0	6.01	0.04
P-21	131	12.0	130.0	13.48	0.04
P-14	457	8.0	130.0	5.99	0.04
P-249	401	8.0	130.0	5.83	0.04
P-124	207	8.0	130.0	5.15	0.03
P-222	655	8.0	130.0	4.97	0.03

*Max Day Plus Fire
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Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-63	291	8.0	130.0	4.65	0.03
P-12	616	8.0	130.0	4.47	0.03
P-135	132	8.0	130.0	4.27	0.03
P-4	223	8.0	130.0	3.56	0.02
P-33	402	8.0	130.0	3.54	0.02
P-127	345	8.0	130.0	3.40	0.02
P-22	188	8.0	130.0	2.85	0.02
P-25	189	8.0	130.0	2.85	0.02
P-27	187	8.0	130.0	2.85	0.02
P-29	185	8.0	130.0	2.85	0.02
P-97	162	8.0	130.0	2.85	0.02
P-105	42	8.0	130.0	2.85	0.02
P-121	252	8.0	130.0	2.37	0.02
P-128	82	8.0	130.0	2.14	0.01
P-191	118	8.0	130.0	2.14	0.01
P-281	47	8.0	130.0	2.14	0.01
P-197	106	8.0	130.0	1.42	0.01
P-120	89	8.0	130.0	1.42	0.01
P-277	322	8.0	130.0	1.35	0.01
P-96	135	8.0	130.0	0.95	0.01
P-161	115	8.0	130.0	0.71	0.00
P-315	122	8.0	130.0	0.71	0.00
P-5	406	8.0	130.0	0.32	0.00
P-44	321	8.0	130.0	0.32	0.00
P-1	791	12.0	130.0	0.00	0.00
P-221	76	16.0	130.0	0.00	0.00
P-190	117	8.0	130.0	0.00	0.00
P-110	140	8.0	130.0	0.00	0.00
P-34	76	8.0	130.0	0.00	0.00

*Max Day Plus Fire
(3000 gpm J-142)*

Label	Length (ft)	Diameter (in)	Hazen-Williams C	Flow (Absolute) (gpm)	Velocity (Maximum) (ft/s)
P-334	244	8.0	130.0	0.00	0.00