Alexander Place SDP

Preliminary Utility Report SDP26-xxxx

379 Alexander Place and 382 Alexander Place
IMEG #20002764.02

Prepared for:

Alexander Place Investors LLC

c/o Lenn Haffeman

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Prepared by:

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1st Submittal August 2026

UTILITY REPORT APPROVAL BLOCKS

Engineer's Statement:
The enclosed utility report, and exhibits, were prepared by me or under my direct supervision and is correct to the best of my knowledge and belief. Said utility report has been prepared in accordance with applicable Town of Castle Rock criteria and is in conformance with the master utility plans for the affected area. I accept responsibility for any liability caused by negligent acts, errors, or omissions on my part in preparing this report.

Signature: _____
Rick Rome, P.E.
Registered Professional Engineer
State Of Colorado No.35103
(Affix Seal)

Owner/Developer's Statement:

As Owner/Developer of Land(s) identified within this report; I agree to proceed, implement and comply with all recommendations and requirements outlined herein.

_____
Alexander Investors, LLC

_____
Authorized Signature
Lenn Haffeman
Manager

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Preliminary Utility Report
Alexander Place SDP Amendment No. 1

Project Location and Description

This report builds on concepts and design parameters developed with the Alexander Place PDP Amendment No. 1 Preliminary Utility report by IMEG dated August 2026.

A. Site Location

The project is in the north half of Section 26 T7S R67W 6th PM and is currently a combination of platted commercial land and unplatted land, see vicinity map in Appendix E. The property is bounded to the east by the Thornton property, Diamond Ridge subdivision is located approximately 1400 lf east of the property, to the south by the Town of Castle Rock Open Space, and to the west by the Monta Vista subdivision. The property ownership is Alexander Place Investors, LLC. IMEG is the consulting engineer providing civil engineering services. The overall project boundary encompasses approximately 15.52 acres.

B. Description of Property and Land Use

Development of the project includes 50 single-family detached lots planned with an approximate 60' frontage dimension. Access to the site is from the intersection of Via Soleana and Alexander Place. Single family development accounts for one Single Family Equivalent (SFE) per dwelling unit or 50 SFE's plus the irrigation demand for open space areas. The development is proposed as a single phase of construction. The development includes connections to the Soleana development to the north at two locations being the Luminera Court right of way and Tract F of the initial Soleana development. A service connection to existing water and sewer is also located at Alexander Place and Via Soleana. This provides a total of three (3) water connections and one (1) sewer connection to existing utility infrastructure.

Irrigation System Demands:

The irrigation system demands are evaluated with this application to consider three separate issues.

1. For the purposes of water distribution system sizing, average daily demands are calculated based on common areas include approximately 1.83 acres. Impact to the water distribution system in this area is developed based on section 4.4.1 in the Town of Castle Rock Water System Design Criteria Manual
2. For the purpose of irrigation tap sizing, water demands are calculated based on the Town of Castle Rock Landscape and Irrigation Criteria Manual in conjunction with the proposed planting schedule for this site plan. These areas are proposed for drip irrigation only that

includes a combination of the pocket park and low water use plant materials for the planting beds.

3. Water dedication requirements have been negotiated independently from this report.

The property is located within the Town of Castle Rock corporate boundary and is served by the Town of Castle Rock for water and sewer services. Grading for the project is such that standard depth can be maintained for the sewer system collecting flows and draining west. The total 50 SFE represents a sufficiently small flow that the downstream capacity of the existing sewer system will not be adversely affected. Easements necessary for Town utilities will be provided either at the time of platting or at the time of final design/construction documents.

Water and sewer infrastructure will be installed in a combination of rights of way and tracts.

There is one existing domestic water well on site that served the historic property. This well will be abandon as part of this project.

For the purposes of the water distribution system sizing water demand calculations are based on the following calculations.

CALCULATED WATER DISTRIBUTION SYSTEM DEMANDS

A water demand calculation for each junction was completed to determine the Average Day Demands (ADD), Max Day Demands (MDD), and Peak Hour Demands (PHD), assuming 400 gpd per du, for single family and duplex demand, that can be found in Appendix A.

A. Average Day Demands (ADD)

The calculated average ADD for the overall water system is based on 50 SFE's plus common irrigation. The domestic ADD is 13.9 gpm.

The common area irrigation ADD is estimated at 17.2 gpm.

B. Max Day Demands (MDD)

The calculated average MDD for the water system is 34.7 gpm+17.2 gpm.

C. Peak Hour Demands (PHD)

The calculated average PHD for the water system is 76.4 gpm + 17.2 gpm.

Storage Requirement:

The storage requirement for this project is based on the Max Daily Demand (MDD) being

(34.7 gpm+17.2gpm) x 60 min/hr x 24 hr = 74,771 gallons

Plus 1500 gpm x 60 min/hr x 2 hr = 180,000 gallons

Total required storage = 254,771 gallons

It should be noted that the final system demands will be based on a formal landscape and irrigation plan that will impact the final meter sizing and water use calculations.

EXISTING WATER SYSTEM

A. Existing Distribution System

The property is in the Metzler North Blue zone with an 8-inch water stub-out located at the intersection of Via Soleana and Alexander Place. A 12" main is located at the west end of the site. An additional main is located near the southwest corner of the property that crosses the Metzler open space. This plan does not contemplate the need for additional redundancy connecting to that supply line.

This project is being developed in coordination with the Soleana development immediately north of the property. As such, a coordinated access and water connection location is proposed approximately 700 feet east of Via Soleana in the extension of Luminera Court. A tertiary connection is considered east of the access road in coordination with the Brisa Way construction with the original Soleana development. The improvements documented in this analysis are presented as those improvements required to serve the Soleana Place development for which the developer is responsible. Future improvements providing service and support to offsite or adjacent areas are outside the scope of this evaluation. Funding of future improvements not specifically documented with this evaluation will be established by parties being the beneficiaries of the improvements.

This configuration optimizes the use of adjoining properties and provides water distribution looping for fire suppression and water quality.

B. Existing Supply Facilities

The existing water supply is provided from the Town of Castle Rock. The anticipated highest elevation served by the blue pressure zone is 6330 located near the east end of Alexander Place. The lowest elevation serving the project is 6255. The connection point for the system is located at the intersection of Alexander Place and Via Soleana at an elevation of 6232. The water system in this area is an established system. Storage demands on the existing system include a calculated 267,840 gallons including fire flow storage requirements. This volume is accounted for in Tank 11 having a 1.0 MG capacity to serve the development.

PROPOSED WATER SYSTEM

The proposed water system includes installation of 8” water main oriented in a looped format to provide fire, domestic and irrigation service to the lots in the subdivision.

A. Proposed Distribution System

The distribution system includes installation of 8” water main oriented in a looped format to provide fire, domestic and irrigation service to the lots in the subdivision. A series of residential taps will be included for individual house services with an irrigation tap to support public landscape proposed internal to the project.

The distribution system will be limited to internal distribution for service to the site.

B. Proposed Supply Facilities

Supply facilities currently existing within the Town limits have adequate capacity to support the 50 single family equivalents proposed on the site together with the estimated 17.2 gpm associated with the irrigation systems. There are no offsite modifications proposed as part of this development.

C. Land Dedication Requirements

Water systems are generally contained within the publicly dedicated ROW for this project. The easternmost connection is provided through a 30’ wide Tract C which will connect to the water stub provided with Phase 3 of the Soleana Filing 1 development at Brisa Way. This connection will eliminate the need for the Water Loop in Soleana Filing 1 Tract H which is replaced with the main line in Street A.

Maintenance access is provided in public ROW with the exception of Soleana Filing 1 Tract H which includes a concrete trail and Soleana Place Tract C which includes a road base maintenance access consistent with Town criteria.

PROPOSED WATER SYSTEM ANALYSIS AND MODELING

A. Hydraulic Models

The hydraulic model presented with this analysis was developed using the Bently WaterCAD software package. The hydraulic parameters are based on the Town stated high and low hydraulic grade line elevations for the operation at the PRV being 6476 feet at the high setting and 6456 at the low setting.

B. Hydraulic Modeling Scenarios

The hydraulic models include three scenarios including peak hour and Maximum daily demand with fire flow applied at the most remote locations within the subdivision. These locations are at fitting F2-J8 at the easternmost end of the development being the highest point in the project area. This includes a dead-end service within the parameters of the Town of Castle Rock fire department criteria.

The second location is at the southeast corner of the site at fitting F2-J6 to verify looped capacity within the system. For these analyses, pipe F2-P2 is considered out of service during the analysis.

C. Hydraulic Modeling Output and Required Schematics

A hydraulic analysis is provided to illustrate the system performance under Peak Hour conditions and two fire flow scenarios where hydrants are operated at design fire flow at the north and south cul-de-sacs in the proposed development. Design flows are based on 400 gpd per dwelling unit and a 1500 gpm fire flow assuming application of flow at various locations on the site.

Minimum performance requirements are presented in the table below:

Event	Parameter	Criteria	Model (total)	Model (Alexander Pl)
Static Pressure (low)	Minimum	43 psi	44 psi	59 psi
Static Pressure (high)	Maximum	125 psi	120 psi	92 psi
Peak Hour	Velocity	10 fps max	1.75 fps	0.46 fps
	Pressure	35 psi min	43 psi	58 psi
Fire Flow F2-J6	Velocity	15 fps max	10.45 fps	9.58 fps
	Pressure	20 psi min	23 psi	34 psi
Fire Flow F2-J8	Velocity	15 fps max	10.45 fps	9.59 fps
	Pressure	20 psi min	21 psi	30 psi
Fire Flow FH3.2	Velocity	15 fps max	10.41 fps	5.00 fps
	Pressure	20 psi min	20 psi	34 psi

Table assumes that Pipe F2-P2 is closed during the Max Day + fire events and peak event.

The hydraulic model is based on a series of assumptions related to the proposed system.

The Town has indicated that the project is in the Metzler Blue zone which has operating pressure controlled by PRV's between elevations 6476 feet and 6456 feet as the operational hydraulic conditions. Based on conversations with the Town, this hydraulic operational



range is consistent with the operational needs for the existing users in the area and is considered a requirement for the operation of the proposed water system expansion.

In order to meet the Towns requirements for operational pressures, it is proposed to provide an internally looped system to service the upper elevations in the water system connected to the Soleana project.. This analysis includes a looped water system in the public rights of way providing looped connectivity.

Design flows are based on 400 gpd per dwelling unit and a 1500 gpm fire flow assuming application of flow at various locations on the site.

CALCULATED WASTEWATER FLOWS

The calculated sewer average day wastewater flows (ADF), Peaking Factor, and Peak Design Flows (PDF) for design sanitary sewer manhole/junction locations can be found in Appendix D. The loading is based on a total of 50 dwelling units. Loads on the system are based on an average daily flow of 200 gpd per du.

A. Average Day Wastewater Flows (ADF)

The calculated average ADF for the sewer system is 0.0100 million gallons per day or 6.9 gpm.

B. Peaking Factor

The calculated peaking factor is applied in accordance with the Town of Castle Rock published equation being $PF = 3.65*ADF^{-0.168}$

The overall average peaking factor for the subdivision is calculated at 7.9. The Maximum Peak factor for the localized flow is assumed to have a maximum value of 5.0.

C. Peak Design Flows (PDF)

Using a PF of 5.0 the calculated Peak Hour Design Flows for the sewer system is 34.7 gpm. In addition to this value, a 10% of ADF infiltration allowance is added for a total design flow of 35.4 gpm.

EXISTING WASTEWATER SYSTEM

A. Existing Collection System

Existing sanitary sewer is provided in an 8” stub at the end of the Via Soleana improved segment. This system drains south and west through the Cooper Hook development to the Town’s larger wastewater collection and conveyance system.

Any future development of the existing water infrastructure needed to serve this site is the responsibility of the owner/developer.

PROPOSED WASTEWATER SYSTEM

A. Proposed Collection System

Sewer service for the development will be served with main line collecting effluent from the

property in Alexander Place. Grading for the project is such that standard depth can be maintained for the sewer system collecting flows and draining south. The total 50 SFE's represents a sufficiently small flow that the downstream capacity of the existing sewer system will not be adversely affected.

B. Proposed Wastewater Facilities

The proposed sanitary sewer extension will include a single point of connection at Via Soleana and extended within proposed rights of way for single family residential service. Development of the sewer infrastructure necessary to serve the project will be the responsibility of the developer/owner

C. Land Dedication Requirements

There are no proposed land dedications specifically associated with the sewer improvements. Pocket parks and open space areas are not currently planned to include sewer services. The level of available district funding may facilitate the ability to provide a local amenity that could connect to the sewer system. Those demands will be addressed at such time as the final amenity package for the community is developed.

PROPOSED WASTEWATER SYSTEM ANALYSIS AND MODELING

A. Hydraulic Models

The hydraulic model for the sanitary sewer system was developed using the Bently SewerCAD software. Sewer flows are based on 50 single family equivalents with an assumed loading of 200 gpd per SFE. For 50 units, this results in an Average Daily flow of 6.9 gpm. The peak factor includes the Town of Castle rock published equation plus an additional 10% of the ADF to account for potential infiltration loads from the development area. Peak flow is calculated at 35.4 gpm including the infiltration adjustment.

B. Hydraulic Modeling Scenarios

Hydraulic modeling is provided for the Peak Hour event. Mannings equations are assumed to be 0.011 for all pipes in the system. Peak hour maximum velocity in the system is calculated at 4.86 fps. Maintaining depth to diameter ratios below 50%.

C. Hydraulic Modeling Output and Required Schematics

A summary report is provided in the appendix of this report that includes a summary of flow accumulation, hydraulic results, and physical parameters for the system. These results are generally in compliance with Town of Castle Rock standards. We anticipate minor refinements to the proposed plan and layout that will mitigate potential requested for variance from criteria specifically related to the sanitary sewer system.

POTENTIAL PERMITTING REQUIREMENTS

Permit for the sewer system will be administered through the Town of Castle Rock. There are no anticipated uses on site that would deviate from typical domestic sewage that would be contributed from the property.

Variance Requirements

There are currently no anticipated variances planned for this project.

REFERENCES

- Alexander Place PDP Amendment No. 1 Preliminary Utility Report IMEG August 2026
- Town of Castle Rock Water System Design 2018 Criteria Manual
- Town of Castle Rock Wastewater Collection Design 2018 Criterial Manual
- Soleana Subdivision Final Utility reports

APPENDIX A

Water Demands

- Water Demand Calculations
- Water Storage Calculations

Alexander Place PDP Amendment 1 5/7/26

Water Demand Calculations

JUNCTION NO. FROM WATERGEMS	Open Space	DU	ADD	MDD	PEAK HOUR
F2J1	14.1 gpm	11	17.2 gpm	21.7 gpm	30.9 gpm
f2j2		5	1.4 gpm	3.5 gpm	7.6 gpm
f2j3		3	0.8 gpm	2.1 gpm	4.6 gpm
F2-4		12	3.3 gpm	8.3 gpm	18.3 gpm
F2-5	3.1 gpm	10	5.9 gpm	10.0 gpm	18.4 gpm
F2J6		2	0.6 gpm	1.4 gpm	3.1 gpm
F2J7		4	1.1 gpm	2.8 gpm	6.1 gpm
f2j8		3	0.8 gpm	2.1 gpm	4.6 gpm
Total	17.2 gpm	50	31.1 gpm	51.9 gpm	93.6 gpm
Irrigation by plant count	TBD				

Note: open space areas and tracts are inteneded as non irrigated areas.

Single Family Demand	400	gpd per du
	0.278	gpm per du
Irrigated Open Space	9.40 *	SFE per Acre
PF (MDD)=	2.5	Max Daily Demand
PF (PHD)=	5.5	Peak Hour Demand

Fire Flow Scenerios applied at T3.2 and FHT 1b.3
Storage Requirement

*** Note, the calculated use of 9.40 sfe per acre of open space is used exclusively for the purpose of water distribution system sizing. The actual demand and associated tap fees are based on irrigation tap sizing calculations and plant material tables.**

The Storage requirement for Soleana is based on the Max Daily Demand (MDD) being:

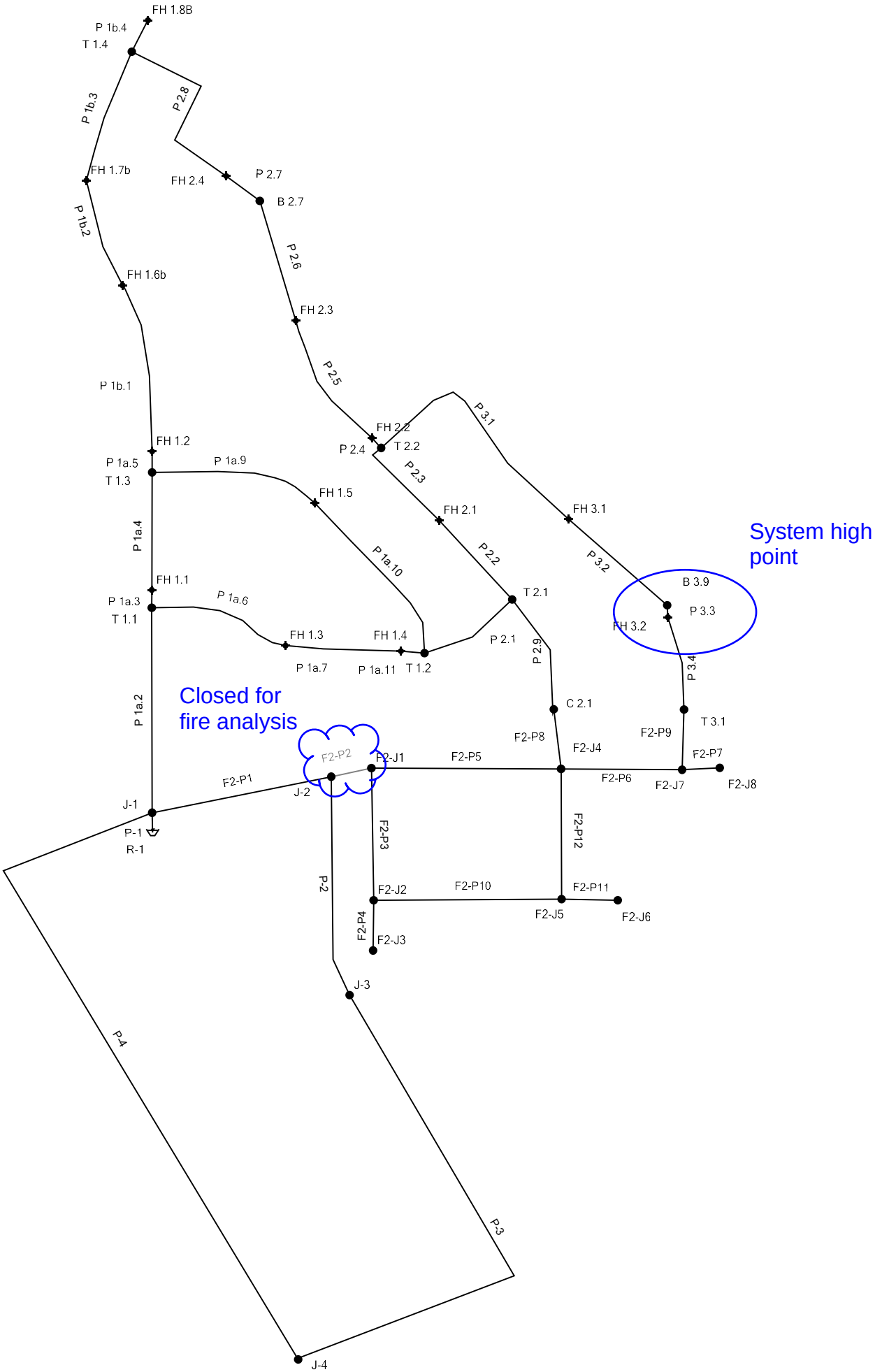
(34.7 gpm+17.2 gpm) x 60 min/hr x 24 hr =	74,771 gal
Plus	
1500 gpm x 60 min/hr x 2 hr	180,000 gal
Total Required Storage	**254,771 gal**

APPENDIX B

Water Hydraulic Analysis & Modeling

- Network Layout Exhibit
- Static Analysis
- Peak Hour Analysis
- Max Day + Fire Analysis
- Max Day + Fire Analysis

SOLEANA


FH 1.8B
P 1b.4
T 1.4
P 1b.3
P 2.8
FH 1.7b
FH 2.4
P 2.7
B 2.7
P 1b.2
P 2.6
FH 1.6b
FH 2.3
P 2.5
P 1b.1
FH 2.2
P 3.1
FH 1.2
P 2.4
T 2.2
P 1a.5
T 1.3
P 1a.9
P 2.3
FH 1.5
FH 2.1
FH 3.1
System high point
P 1a.4
P 1a.10
P 2.2
P 3.2
FH 1.1
B 3.9
P 1a.3
T 1.1
P 1a.6
T 2.1
P 3.3
FH 3.2
FH 1.3
FH 1.4
P 2.1
P 2.6
P 3.4
P 1a.7
P 1a.11
T 1.2
Closed for fire analysis
C 2.1
T 3.1
P 1a.2
F2-P8
F2-P9
F2-P2
F2-J1
F2-P5
F2-J4
F2-P7
F2-P1
F2-P6
F2-J7
F2-J8
J-2
J-1
F2-P3
F2-P12
P-1
R-1
P-2
F2-J2
F2-P10
F2-P11
F2-P4
F2-J5
F2-J6
F2-J3
J-3
P-4
P-3
J-4

SOLEANA

FlexTable: Pipe Table

Active Scenario: Static Model at 6476

Current Time: 0.00 hours

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
F2-P1	481	J-2	J-1	12.0	PVC	120.0	0	0.00	0.000
F2-P10	495	F2-J2	F2-J5	8.0	PVC	150.0	0	0.00	0.000
F2-P11	148	F2-J5	F2-J6	8.0	PVC	120.0	0	0.00	0.000
F2-P12	343	F2-J4	F2-J5	8.0	PVC	120.0	0	0.00	0.000
F2-P2	108	F2-J1	J-2	12.0	PVC	120.0	(N/A)	(N/A)	(N/A)
F2-P3	348	F2-J1	F2-J2	8.0	PVC	120.0	0	0.00	0.000
F2-P4	133	F2-J2	F2-J3	8.0	PVC	120.0	0	0.00	0.000
F2-P5	500	F2-J1	F2-J4	8.0	PVC	120.0	0	0.00	0.000
F2-P6	319	F2-J4	F2-J7	8.0	PVC	120.0	0	0.00	0.000
F2-P7	99	F2-J7	F2-J8	8.0	PVC	120.0	0	0.00	0.000
F2-P8	158	F2-J4	C 2.1	8.0	PVC	120.0	0	0.00	0.000
F2-P9	159	T 3.1	F2-J7	8.0	PVC	120.0	0	0.00	0.000
P 1a.10	506	FH 1.5	T 1.2	8.0	PVC	120.0	0	0.00	0.000
P 1a.11	62	FH 1.4	T 1.2	8.0	PVC	120.0	0	0.00	0.000
P 1a.2	540	J-1	T 1.1	8.0	PVC	120.0	0	0.00	0.000
P 1a.3	47	FH 1.1	T 1.1	8.0	PVC	120.0	0	0.00	0.000
P 1a.4	310	T 1.3	FH 1.1	8.0	PVC	120.0	0	0.00	0.000
P 1a.5	55	FH 1.2	T 1.3	8.0	PVC	120.0	0	0.00	0.000
P 1a.6	379	T 1.1	FH 1.3	8.0	PVC	120.0	0	0.00	0.000
P 1a.7	304	FH 1.3	FH 1.4	8.0	PVC	120.0	0	0.00	0.000
P 1a.9	451	T 1.3	FH 1.5	8.0	PVC	120.0	0	0.00	0.000
P 1b.1	451	FH 1.6b	FH 1.2	8.0	PVC	120.0	0	0.00	0.000
P 1b.2	294	FH 1.7b	FH 1.6b	8.0	PVC	120.0	0	0.00	0.000
P 1b.3	361	T 1.4	FH 1.7b	8.0	PVC	120.0	0	0.00	0.000
P 1b.4	93	FH 1.8B	T 1.4	8.0	PVC	120.0	0	0.00	0.000
P 2.1	277	T 1.2	T 2.1	8.0	PVC	120.0	0	0.00	0.000
P 2.2	283	T 2.1	FH 2.1	8.0	PVC	120.0	0	0.00	0.000
P 2.3	275	FH 2.1	T 2.2	8.0	PVC	120.0	0	0.00	0.000

SOLEANA

FlexTable: Pipe Table

Active Scenario: Static Model at 6476

Current Time: 0.00 hours

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P 2.4	36	FH 2.2	T 2.2	8.0	PVC	120.0	0	0.00	0.000
P 2.5	378	FH 2.3	FH 2.2	8.0	PVC	120.0	0	0.00	0.000
P 2.6	329	B 2.7	FH 2.3	8.0	PVC	120.0	0	0.00	0.000
P 2.7	110	FH 2.4	B 2.7	8.0	PVC	120.0	0	0.00	0.000
P 2.8	527	T 1.4	FH 2.4	8.0	PVC	120.0	0	0.00	0.000
P 2.9	339	T 2.1	C 2.1	8.0	PVC	120.0	0	0.00	0.000
P 3.1	698	T 2.2	FH 3.1	8.0	PVC	120.0	0	0.00	0.000
P 3.2	345	FH 3.1	B 3.9	8.0	PVC	120.0	0	0.00	0.000
P 3.3	32	FH 3.2	B 3.9	8.0	PVC	120.0	0	0.00	0.000
P 3.4	249	T 3.1	FH 3.2	8.0	PVC	120.0	0	0.00	0.000
P-1	52	R-1	J-1	8.0	PVC	120.0	0	0.00	0.000
P-2	585	J-3	J-2	12.0	PVC	120.0	0	0.00	0.000
P-3	1,469	J-4	J-3	8.0	PVC	120.0	0	0.00	0.000
P-4	1,924	J-1	J-4	12.0	Ductile Iron	120.0	0	0.00	0.000

SOLEANA

FlexTable: Junction Table

Active Scenario: Static Model at 6456

Current Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
B 2.7	6,353.90	0	44	6,456.00
B 3.9	6,349.40	0	46	6,456.00
C 2.1	6,291.70	0	71	6,456.00
F2-J1	6,264.00	0	83	6,456.00
F2-J2	6,278.30	0	77	6,456.00
F2-J3	6,276.80	0	78	6,456.00
F2-J4	6,294.20	0	70	6,456.00
F2-J5	6,289.40	0	72	6,456.00
F2-J6	6,291.40	0	71	6,456.00
F2-J7	6,313.40	0	62	6,456.00
F2-J8	6,319.30	0	59	6,456.00
J-1	6,198.61	0	111	6,456.00
J-2	6,251.99	0	88	6,456.00
J-3	6,277.00	0	77	6,456.00
J-4	6,243.06	0	92	6,456.00
T 1.1	6,245.30	0	91	6,456.00
T 1.2	6,284.60	0	74	6,456.00
T 1.3	6,270.30	0	80	6,456.00
T 1.4	6,305.80	0	65	6,456.00
T 2.1	6,300.40	0	67	6,456.00
T 2.2	6,327.60	0	56	6,456.00
T 3.1	6,318.00	0	60	6,456.00

SOLEANA

FlexTable: Junction Table

Active Scenario: Static Model at 6476

Current Time: 0.00 hours

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
B 2.7	6,354.00	0	53	6,476.00
B 3.9	6,347.50	0	56	6,476.00
C 2.1	6,265.00	0	91	6,476.00
F2-J1	6,264.00	0	92	6,476.00
F2-J2	6,278.00	0	86	6,476.00
F2-J3	6,277.00	0	86	6,476.00
F2-J4	6,294.00	0	79	6,476.00
F2-J5	6,289.40	0	81	6,476.00
F2-J6	6,291.36	0	80	6,476.00
F2-J7	6,313.40	0	70	6,476.00
F2-J8	6,319.30	0	68	6,476.00
J-1	6,198.61	0	120	6,476.00
J-2	6,251.99	0	97	6,476.00
J-3	6,277.00	0	86	6,476.00
J-4	6,243.06	0	101	6,476.00
T 1.1	6,247.74	0	99	6,476.00
T 1.2	6,283.80	0	83	6,476.00
T 1.3	6,274.90	0	87	6,476.00
T 1.4	6,307.50	0	73	6,476.00
T 2.1	6,291.12	0	80	6,476.00
T 2.2	6,338.47	0	60	6,476.00
T 3.1	6,331.88	0	62	6,476.00

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FlexTable: Pipe Table

Active Scenario: PH Filing 2

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
F2-P1	481	J-2	J-1	12.0	PVC	120.0	0	0.00	0.000
F2-P10	495	F2-J2	F2-J5	8.0	PVC	120.0	-12	0.08	0.000
F2-P11	148	F2-J5	F2-J6	8.0	PVC	120.0	3	0.02	0.000
F2-P12	343	F2-J4	F2-J5	8.0	PVC	120.0	34	0.22	0.000
F2-P2	108	F2-J1	J-2	12.0	PVC	120.0	(N/A)	(N/A)	(N/A)
F2-P3	348	F2-J1	F2-J2	8.0	PVC	120.0	0	0.00	0.000
F2-P4	133	F2-J2	F2-J3	8.0	PVC	120.0	5	0.03	0.000
F2-P5	500	F2-J1	F2-J4	8.0	PVC	120.0	-31	0.20	0.000
F2-P6	319	F2-J4	F2-J7	8.0	PVC	120.0	-12	0.07	0.000
F2-P7	99	F2-J7	F2-J8	8.0	PVC	120.0	5	0.03	0.000
F2-P8	158	F2-J4	C 2.1	8.0	PVC	120.0	-71	0.46	0.000
F2-P9	159	T 3.1	F2-J7	8.0	PVC	120.0	22	0.14	0.000
P 1a.10	506	FH 1.5	T 1.2	8.0	PVC	120.0	47	0.30	0.000
P 1a.11	62	FH 1.4	T 1.2	8.0	PVC	120.0	101	0.64	0.000
P 1a.2	540	J-1	T 1.1	8.0	PVC	120.0	274	1.75	0.002
P 1a.3	47	FH 1.1	T 1.1	8.0	PVC	120.0	-122	0.78	0.000
P 1a.4	310	T 1.3	FH 1.1	8.0	PVC	120.0	-122	0.78	0.000
P 1a.5	55	FH 1.2	T 1.3	8.0	PVC	120.0	-64	0.41	0.000
P 1a.6	379	T 1.1	FH 1.3	8.0	PVC	120.0	101	0.64	0.000
P 1a.7	304	FH 1.3	FH 1.4	8.0	PVC	120.0	101	0.64	0.000
P 1a.9	451	T 1.3	FH 1.5	8.0	PVC	120.0	47	0.30	0.000
P 1b.1	451	FH 1.6b	FH 1.2	8.0	PVC	120.0	-64	0.41	0.000
P 1b.2	294	FH 1.7b	FH 1.6b	8.0	PVC	120.0	-64	0.41	0.000
P 1b.3	361	T 1.4	FH 1.7b	8.0	PVC	120.0	-64	0.41	0.000
P 1b.4	93	FH 1.8B	T 1.4	8.0	PVC	120.0	0	0.00	0.000
P 2.1	277	T 1.2	T 2.1	8.0	PVC	120.0	130	0.83	0.000
P 2.2	283	T 2.1	FH 2.1	8.0	PVC	120.0	23	0.15	0.000
P 2.3	275	FH 2.1	T 2.2	8.0	PVC	120.0	23	0.15	0.000
P 2.4	36	FH 2.2	T 2.2	8.0	PVC	120.0	33	0.21	0.000
P 2.5	378	FH 2.3	FH 2.2	8.0	PVC	120.0	33	0.21	0.000

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FlexTable: Pipe Table

Active Scenario: PH Filing 2

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P 2.6	329	B 2.7	FH 2.3	8.0	PVC	120.0	33	0.21	0.000
P 2.7	110	FH 2.4	B 2.7	8.0	PVC	120.0	42	0.27	0.000
P 2.8	527	T 1.4	FH 2.4	8.0	PVC	120.0	42	0.27	0.000
P 2.9	339	T 2.1	C 2.1	8.0	PVC	120.0	71	0.46	0.000
P 3.1	698	T 2.2	FH 3.1	8.0	PVC	120.0	41	0.26	0.000
P 3.2	345	FH 3.1	B 3.9	8.0	PVC	120.0	41	0.26	0.000
P 3.3	32	FH 3.2	B 3.9	8.0	PVC	120.0	-22	0.14	0.000
P 3.4	249	T 3.1	FH 3.2	8.0	PVC	120.0	-22	0.14	0.000
P-1	52	R-1	J-1	8.0	PVC	120.0	274	1.75	0.002
P-2	585	J-3	J-2	12.0	PVC	120.0	0	0.00	0.000
P-3	1,469	J-4	J-3	8.0	PVC	120.0	0	0.00	0.000
P-4	1,924	J-1	J-4	12.0	Ductile Iron	120.0	0	0.00	0.000

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FlexTable: Junction Table

Active Scenario: PH Filing 2

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
B 2.7	6,354.00	9	43	6,454.52
B 3.9	6,347.50	18	46	6,454.44
C 2.1	6,265.00	0	82	6,454.45
F2-J1	6,264.00	31	82	6,454.41
F2-J2	6,278.30	8	76	6,454.41
F2-J3	6,276.80	5	77	6,454.41
F2-J4	6,294.20	18	69	6,454.43
F2-J5	6,289.40	18	71	6,454.41
F2-J6	6,291.40	3	71	6,454.41
F2-J7	6,313.40	6	61	6,454.43
F2-J8	6,319.30	5	58	6,454.43
J-1	6,198.61	0	111	6,455.90
J-2	6,251.99	0	88	6,455.90
J-3	6,277.00	0	77	6,455.90
J-4	6,243.06	0	92	6,455.90
T 1.1	6,247.74	51	90	6,454.86
T 1.2	6,283.80	18	74	6,454.64
T 1.3	6,274.90	11	78	6,454.71
T 1.4	6,307.50	21	64	6,454.56
T 2.1	6,291.12	36	71	6,454.50
T 2.2	6,338.47	15	50	6,454.49
T 3.1	6,331.88	0	53	6,454.43

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FlexTable: Pipe Table

Active Scenario: MDD Fire at F2-J6 Closed F2-P2

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
F2-P1	481	J-2	J-1	12.0	PVC	120.0	5	0.01	0.000
F2-P10	495	F2-J2	F2-J5	8.0	PVC	120.0	481	3.07	0.005
F2-P11	148	F2-J5	F2-J6	8.0	PVC	120.0	1,501	9.58	0.045
F2-P12	343	F2-J4	F2-J5	8.0	PVC	120.0	1,030	6.57	0.022
F2-P2	108	F2-J1	J-2	12.0	PVC	120.0	(N/A)	(N/A)	(N/A)
F2-P3	348	F2-J1	F2-J2	8.0	PVC	120.0	487	3.11	0.006
F2-P4	133	F2-J2	F2-J3	8.0	PVC	120.0	2	0.01	0.000
F2-P5	500	F2-J1	F2-J4	8.0	PVC	120.0	-509	3.25	0.006
F2-P6	319	F2-J4	F2-J7	8.0	PVC	120.0	-507	3.23	0.006
F2-P7	99	F2-J7	F2-J8	8.0	PVC	120.0	2	0.01	0.000
F2-P8	158	F2-J4	C 2.1	8.0	PVC	120.0	-1,040	6.64	0.023
F2-P9	159	T 3.1	F2-J7	8.0	PVC	120.0	512	3.27	0.006
P 1a.10	506	FH 1.5	T 1.2	8.0	PVC	120.0	405	2.59	0.004
P 1a.11	62	FH 1.4	T 1.2	8.0	PVC	120.0	757	4.83	0.013
P 1a.2	540	J-1	T 1.1	8.0	PVC	120.0	1,638	10.45	0.053
P 1a.3	47	FH 1.1	T 1.1	8.0	PVC	120.0	-853	5.45	0.016
P 1a.4	310	T 1.3	FH 1.1	8.0	PVC	120.0	-853	5.45	0.016
P 1a.5	55	FH 1.2	T 1.3	8.0	PVC	120.0	-443	2.83	0.005
P 1a.6	379	T 1.1	FH 1.3	8.0	PVC	120.0	757	4.83	0.013
P 1a.7	304	FH 1.3	FH 1.4	8.0	PVC	120.0	757	4.83	0.013
P 1a.9	451	T 1.3	FH 1.5	8.0	PVC	120.0	405	2.59	0.004
P 1b.1	451	FH 1.6b	FH 1.2	8.0	PVC	120.0	-443	2.83	0.005
P 1b.2	294	FH 1.7b	FH 1.6b	8.0	PVC	120.0	-443	2.83	0.005
P 1b.3	361	T 1.4	FH 1.7b	8.0	PVC	120.0	-443	2.83	0.005
P 1b.4	93	FH 1.8B	T 1.4	8.0	PVC	120.0	0	0.00	0.000
P 2.1	277	T 1.2	T 2.1	8.0	PVC	120.0	1,154	7.36	0.028
P 2.2	283	T 2.1	FH 2.1	8.0	PVC	120.0	97	0.62	0.000
P 2.3	275	FH 2.1	T 2.2	8.0	PVC	120.0	97	0.62	0.000
P 2.4	36	FH 2.2	T 2.2	8.0	PVC	120.0	429	2.74	0.004
P 2.5	378	FH 2.3	FH 2.2	8.0	PVC	120.0	429	2.74	0.004

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FlexTable: Pipe Table

Active Scenario: MDD Fire at F2-J6 Closed F2-P2

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P 2.6	329	B 2.7	FH 2.3	8.0	PVC	120.0	429	2.74	0.004
P 2.7	110	FH 2.4	B 2.7	8.0	PVC	120.0	434	2.77	0.005
P 2.8	527	T 1.4	FH 2.4	8.0	PVC	120.0	434	2.77	0.005
P 2.9	339	T 2.1	C 2.1	8.0	PVC	120.0	1,040	6.64	0.023
P 3.1	698	T 2.2	FH 3.1	8.0	PVC	120.0	520	3.32	0.006
P 3.2	345	FH 3.1	B 3.9	8.0	PVC	120.0	520	3.32	0.006
P 3.3	32	FH 3.2	B 3.9	8.0	PVC	120.0	-512	3.27	0.006
P 3.4	249	T 3.1	FH 3.2	8.0	PVC	120.0	-512	3.27	0.006
P-1	52	R-1	J-1	8.0	PVC	120.0	1,638	10.45	0.053
P-2	585	J-3	J-2	12.0	PVC	120.0	5	0.01	0.000
P-3	1,469	J-4	J-3	8.0	PVC	120.0	5	0.03	0.000
P-4	1,924	J-1	J-4	12.0	Ductile Iron	120.0	5	0.01	0.000

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FlexTable: Junction Table

Active Scenario: MDD Fire at F2-J6 Closed F2-P2

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
B 2.7	6,354.00	4	25	6,410.79
B 3.9	6,347.50	8	23	6,400.92
C 2.1	6,265.00	0	58	6,399.92
F2-J1	6,264.00	22	56	6,393.29
F2-J2	6,278.30	4	49	6,391.34
F2-J3	6,276.80	2	50	6,391.34
F2-J4	6,294.20	8	44	6,396.31
F2-J5	6,289.40	10	43	6,388.64
F2-J6	6,291.40	1,501	39	6,381.97
F2-J7	6,313.40	3	37	6,398.23
F2-J8	6,319.30	2	34	6,398.23
J-1	6,198.61	0	110	6,453.26
J-2	6,251.99	0	87	6,453.26
J-3	6,277.00	0	76	6,453.26
J-4	6,243.06	0	91	6,453.26
T 1.1	6,247.74	28	77	6,424.74
T 1.2	6,283.80	8	57	6,415.31
T 1.3	6,274.90	5	62	6,419.11
T 1.4	6,307.50	10	46	6,413.66
T 2.1	6,291.12	16	50	6,407.66
T 2.2	6,338.47	7	30	6,407.50
T 3.1	6,331.88	0	29	6,399.20

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FlexTable: Hydrant Table

Active Scenario: MDD Fire at F2-J6 Closed F2-P2

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
FH 1.1	6,248.20	0	76	6,424.00
FH 1.2	6,273.80	0	63	6,418.85
FH 1.3	6,263.50	0	68	6,419.95
FH 1.4	6,284.20	0	57	6,416.09
FH 1.5	6,292.80	0	54	6,417.32
FH 1.6b	6,294.40	0	53	6,416.73
FH 1.7b	6,297.40	0	51	6,415.35
FH 1.8B	6,310.20	0	45	6,413.66
FH 2.1	6,312.30	0	41	6,407.58
FH 2.2	6,339.62	0	29	6,407.66
FH 2.3	6,344.30	0	28	6,409.33
FH 2.4	6,355.50	0	24	6,411.28
FH 3.1	6,345.97	0	25	6,403.10
FH 3.2	6,347.50	0	23	6,400.73

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FlexTable: Pipe Table

Active Scenario: MDD Fire at F2-J8 Closed F2-P2

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
F2-P1	481	J-2	J-1	12.0	PVC	120.0	2	0.01	0.000
F2-P10	495	F2-J2	F2-J5	8.0	PVC	120.0	-8	0.05	0.000
F2-P11	148	F2-J5	F2-J6	8.0	PVC	120.0	1	0.01	0.000
F2-P12	343	F2-J4	F2-J5	8.0	PVC	120.0	20	0.13	0.000
F2-P2	108	F2-J1	J-2	12.0	PVC	120.0	(N/A)	(N/A)	(N/A)
F2-P3	348	F2-J1	F2-J2	8.0	PVC	120.0	-3	0.02	0.000
F2-P4	133	F2-J2	F2-J3	8.0	PVC	120.0	2	0.01	0.000
F2-P5	500	F2-J1	F2-J4	8.0	PVC	120.0	-19	0.12	0.000
F2-P6	319	F2-J4	F2-J7	8.0	PVC	120.0	873	5.57	0.016
F2-P7	99	F2-J7	F2-J8	8.0	PVC	120.0	1,502	9.59	0.045
F2-P8	158	F2-J4	C 2.1	8.0	PVC	120.0	-920	5.87	0.018
F2-P9	159	T 3.1	F2-J7	8.0	PVC	120.0	632	4.03	0.009
P 1a.10	506	FH 1.5	T 1.2	8.0	PVC	120.0	400	2.56	0.004
P 1a.11	62	FH 1.4	T 1.2	8.0	PVC	120.0	755	4.82	0.013
P 1a.2	540	J-1	T 1.1	8.0	PVC	120.0	1,638	10.45	0.053
P 1a.3	47	FH 1.1	T 1.1	8.0	PVC	120.0	-855	5.46	0.016
P 1a.4	310	T 1.3	FH 1.1	8.0	PVC	120.0	-855	5.46	0.016
P 1a.5	55	FH 1.2	T 1.3	8.0	PVC	120.0	-450	2.87	0.005
P 1a.6	379	T 1.1	FH 1.3	8.0	PVC	120.0	755	4.82	0.013
P 1a.7	304	FH 1.3	FH 1.4	8.0	PVC	120.0	755	4.82	0.013
P 1a.9	451	T 1.3	FH 1.5	8.0	PVC	120.0	400	2.56	0.004
P 1b.1	451	FH 1.6b	FH 1.2	8.0	PVC	120.0	-450	2.87	0.005
P 1b.2	294	FH 1.7b	FH 1.6b	8.0	PVC	120.0	-450	2.87	0.005
P 1b.3	361	T 1.4	FH 1.7b	8.0	PVC	120.0	-450	2.87	0.005
P 1b.4	93	FH 1.8B	T 1.4	8.0	PVC	120.0	0	0.00	0.000
P 2.1	277	T 1.2	T 2.1	8.0	PVC	120.0	1,147	7.32	0.027
P 2.2	283	T 2.1	FH 2.1	8.0	PVC	120.0	210	1.34	0.001
P 2.3	275	FH 2.1	T 2.2	8.0	PVC	120.0	210	1.34	0.001
P 2.4	36	FH 2.2	T 2.2	8.0	PVC	120.0	436	2.78	0.005
P 2.5	378	FH 2.3	FH 2.2	8.0	PVC	120.0	436	2.78	0.005

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FlexTable: Pipe Table

Active Scenario: MDD Fire at F2-J8 Closed F2-P2

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P 2.6	329	B 2.7	FH 2.3	8.0	PVC	120.0	436	2.78	0.005
P 2.7	110	FH 2.4	B 2.7	8.0	PVC	120.0	440	2.81	0.005
P 2.8	527	T 1.4	FH 2.4	8.0	PVC	120.0	440	2.81	0.005
P 2.9	339	T 2.1	C 2.1	8.0	PVC	120.0	920	5.87	0.018
P 3.1	698	T 2.2	FH 3.1	8.0	PVC	120.0	640	4.08	0.009
P 3.2	345	FH 3.1	B 3.9	8.0	PVC	120.0	640	4.08	0.009
P 3.3	32	FH 3.2	B 3.9	8.0	PVC	120.0	-632	4.03	0.009
P 3.4	249	T 3.1	FH 3.2	8.0	PVC	120.0	-632	4.03	0.009
P-1	52	R-1	J-1	8.0	PVC	120.0	1,638	10.45	0.053
P-2	585	J-3	J-2	12.0	PVC	120.0	2	0.01	0.000
P-3	1,469	J-4	J-3	8.0	PVC	120.0	2	0.01	0.000
P-4	1,924	J-1	J-4	12.0	Ductile Iron	120.0	2	0.01	0.000

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FlexTable: Junction Table

Active Scenario: MDD Fire at F2-J8 Closed F2-P2

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
B 2.7	6,354.00	4	24	6,410.52
B 3.9	6,347.50	8	22	6,397.47
C 2.1	6,265.00	0	59	6,401.63
F2-J1	6,264.00	22	58	6,398.75
F2-J2	6,278.30	4	52	6,398.75
F2-J3	6,276.80	2	53	6,398.75
F2-J4	6,294.20	8	45	6,398.75
F2-J5	6,289.40	10	47	6,398.75
F2-J6	6,291.40	1	46	6,398.75
F2-J7	6,313.40	3	35	6,393.50
F2-J8	6,319.30	1,502	30	6,389.03
J-1	6,198.61	0	110	6,453.26
J-2	6,251.99	0	87	6,453.26
J-3	6,277.00	0	76	6,453.26
J-4	6,243.06	0	91	6,453.26
T 1.1	6,247.74	28	77	6,424.74
T 1.2	6,283.80	8	57	6,415.36
T 1.3	6,274.90	5	62	6,419.08
T 1.4	6,307.50	10	46	6,413.47
T 2.1	6,291.12	16	50	6,407.79
T 2.2	6,338.47	7	30	6,407.13
T 3.1	6,331.88	0	27	6,394.93

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FlexTable: Hydrant Table

Active Scenario: MDD Fire at F2-J8 Closed F2-P2

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
FH 1.1	6,248.20	0	76	6,424.00
FH 1.2	6,273.80	0	63	6,418.81
FH 1.3	6,263.50	0	68	6,419.97
FH 1.4	6,284.20	0	57	6,416.14
FH 1.5	6,292.80	0	54	6,417.33
FH 1.6b	6,294.40	0	53	6,416.64
FH 1.7b	6,297.40	0	51	6,415.22
FH 1.8B	6,310.20	0	45	6,413.47
FH 2.1	6,312.30	0	41	6,407.46
FH 2.2	6,339.62	0	29	6,407.30
FH 2.3	6,344.30	0	28	6,409.02
FH 2.4	6,355.50	0	24	6,411.03
FH 3.1	6,345.97	0	24	6,400.67
FH 3.2	6,347.50	0	21	6,397.18

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FlexTable: Pipe Table

Active Scenario: MDD Fire at FH3.2 Closed F2-P1

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
F2-P1	481	J-2	J-1	12.0	PVC	120.0	2	0.01	0.000
F2-P10	495	F2-J2	F2-J5	8.0	PVC	120.0	-8	0.05	0.000
F2-P11	148	F2-J5	F2-J6	8.0	PVC	120.0	1	0.01	0.000
F2-P12	343	F2-J4	F2-J5	8.0	PVC	120.0	16	0.10	0.000
F2-P2	108	F2-J1	J-2	12.0	PVC	120.0	(N/A)	(N/A)	(N/A)
F2-P3	348	F2-J1	F2-J2	8.0	PVC	120.0	-2	0.02	0.000
F2-P4	133	F2-J2	F2-J3	8.0	PVC	120.0	2	0.01	0.000
F2-P5	500	F2-J1	F2-J4	8.0	PVC	120.0	-16	0.10	0.000
F2-P6	319	F2-J4	F2-J7	8.0	PVC	120.0	743	4.74	0.012
F2-P7	99	F2-J7	F2-J8	8.0	PVC	120.0	2	0.01	0.000
F2-P8	158	F2-J4	C 2.1	8.0	PVC	120.0	-784	5.00	0.013
F2-P9	159	T 3.1	F2-J7	8.0	PVC	120.0	-738	4.71	0.012
P 1a.10	506	FH 1.5	T 1.2	8.0	PVC	120.0	391	2.49	0.004
P 1a.11	62	FH 1.4	T 1.2	8.0	PVC	120.0	748	4.77	0.012
P 1a.2	540	J-1	T 1.1	8.0	PVC	120.0	1,632	10.41	0.052
P 1a.3	47	FH 1.1	T 1.1	8.0	PVC	120.0	-856	5.46	0.016
P 1a.4	310	T 1.3	FH 1.1	8.0	PVC	120.0	-856	5.46	0.016
P 1a.5	55	FH 1.2	T 1.3	8.0	PVC	120.0	-460	2.94	0.005
P 1a.6	379	T 1.1	FH 1.3	8.0	PVC	120.0	748	4.77	0.012
P 1a.7	304	FH 1.3	FH 1.4	8.0	PVC	120.0	748	4.77	0.012
P 1a.9	451	T 1.3	FH 1.5	8.0	PVC	120.0	391	2.49	0.004
P 1b.1	451	FH 1.6b	FH 1.2	8.0	PVC	120.0	-460	2.94	0.005
P 1b.2	294	FH 1.7b	FH 1.6b	8.0	PVC	120.0	-460	2.94	0.005
P 1b.3	361	T 1.4	FH 1.7b	8.0	PVC	120.0	-460	2.94	0.005
P 1b.4	93	FH 1.8B	T 1.4	8.0	PVC	120.0	0	0.00	0.000
P 2.1	277	T 1.2	T 2.1	8.0	PVC	120.0	1,131	7.22	0.027
P 2.2	283	T 2.1	FH 2.1	8.0	PVC	120.0	331	2.11	0.003
P 2.3	275	FH 2.1	T 2.2	8.0	PVC	120.0	331	2.11	0.003
P 2.4	36	FH 2.2	T 2.2	8.0	PVC	120.0	446	2.85	0.005
P 2.5	378	FH 2.3	FH 2.2	8.0	PVC	120.0	446	2.85	0.005

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FlexTable: Pipe Table

Active Scenario: MDD Fire at FH3.2 Closed F2-P1

Label	Length (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)
P 2.6	329	B 2.7	FH 2.3	8.0	PVC	120.0	446	2.85	0.005
P 2.7	110	FH 2.4	B 2.7	8.0	PVC	120.0	450	2.87	0.005
P 2.8	527	T 1.4	FH 2.4	8.0	PVC	120.0	450	2.87	0.005
P 2.9	339	T 2.1	C 2.1	8.0	PVC	120.0	784	5.00	0.013
P 3.1	698	T 2.2	FH 3.1	8.0	PVC	120.0	770	4.91	0.013
P 3.2	345	FH 3.1	B 3.9	8.0	PVC	120.0	770	4.91	0.013
P 3.3	32	FH 3.2	B 3.9	8.0	PVC	120.0	-762	4.86	0.013
P 3.4	249	T 3.1	FH 3.2	8.0	PVC	120.0	738	4.71	0.012
P-1	52	R-1	J-1	8.0	PVC	120.0	1,632	10.41	0.052
P-2	585	J-3	J-2	12.0	PVC	120.0	2	0.01	0.000
P-3	1,469	J-4	J-3	8.0	PVC	120.0	2	0.01	0.000
P-4	1,924	J-1	J-4	12.0	Ductile Iron	120.0	2	0.01	0.000

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FlexTable: Junction Table

Active Scenario: MDD Fire at FH3.2 Closed F2-P1

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
B 2.7	6,354.00	4	24	6,410.38
B 3.9	6,347.50	8	20	6,393.24
C 2.1	6,265.00	0	60	6,403.79
F2-J1	6,264.00	18	60	6,401.65
F2-J2	6,278.30	4	53	6,401.65
F2-J3	6,276.80	2	54	6,401.65
F2-J4	6,294.20	8	46	6,401.66
F2-J5	6,289.40	7	49	6,401.65
F2-J6	6,291.40	1	48	6,401.65
F2-J7	6,313.40	3	36	6,397.76
F2-J8	6,319.30	2	34	6,397.76
J-1	6,198.61	0	110	6,453.28
J-2	6,251.99	0	87	6,453.28
J-3	6,277.00	0	76	6,453.28
J-4	6,243.06	0	91	6,453.28
T 1.1	6,247.74	28	77	6,424.97
T 1.2	6,283.80	8	57	6,415.74
T 1.3	6,274.90	5	62	6,419.30
T 1.4	6,307.50	10	46	6,413.46
T 2.1	6,291.12	16	51	6,408.37
T 2.2	6,338.47	7	30	6,406.85
T 3.1	6,331.88	0	28	6,395.84

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FlexTable: Hydrant Table

Active Scenario: MDD Fire at FH3.2 Closed F2-P1

Label	Elevation (ft)	Demand (gpm)	Pressure (psi)	Hydraulic Grade (ft)
FH 1.1	6,248.20	0	76	6,424.22
FH 1.2	6,273.80	0	63	6,419.02
FH 1.3	6,263.50	0	68	6,420.28
FH 1.4	6,284.20	0	57	6,416.51
FH 1.5	6,292.80	0	54	6,417.62
FH 1.6b	6,294.40	0	53	6,416.76
FH 1.7b	6,297.40	0	51	6,415.28
FH 1.8B	6,310.20	0	45	6,413.46
FH 2.1	6,312.30	0	41	6,407.60
FH 2.2	6,339.62	0	29	6,407.02
FH 2.3	6,344.30	0	28	6,408.82
FH 2.4	6,355.50	0	24	6,410.92
FH 3.1	6,345.97	0	22	6,397.74
FH 3.2	6,347.50	1,500	20	6,392.83

APPENDIX C

Wastewater Flows

- Sewer Loading Calculations

Alexander Place PDP Amendment No. 1

6/30/2026

Preliminary Utility Report - Sewer Loading

SEWER DEMAND CALCULATION

		Basin flow calculation					Cumulative flow calculation		
Design Manhole	Parcels	DU	GPD	ADF (gpm)	PF	Peak Hour (gpm)	ADF (gpm)	PF	Peak Hour (gpm)
MH 5	1-16, 21-27	23	200	3.2	5.0	16.3	3.2	5.0	16.3
MH 12	17-20	4	200	0.6	5.0	2.8			
MH 13	28-34, 35-43	16	200	2.2	5.0	11.3	2.8	5.0	14.2
MH 14	44-50	7	200	1.0	5.0	5.0	3.8	5.0	19.1
Totals		50	200	6.9	5.0	34.7			
				0.0100	7.9				
Infiltration			10%	0.7		35.4			

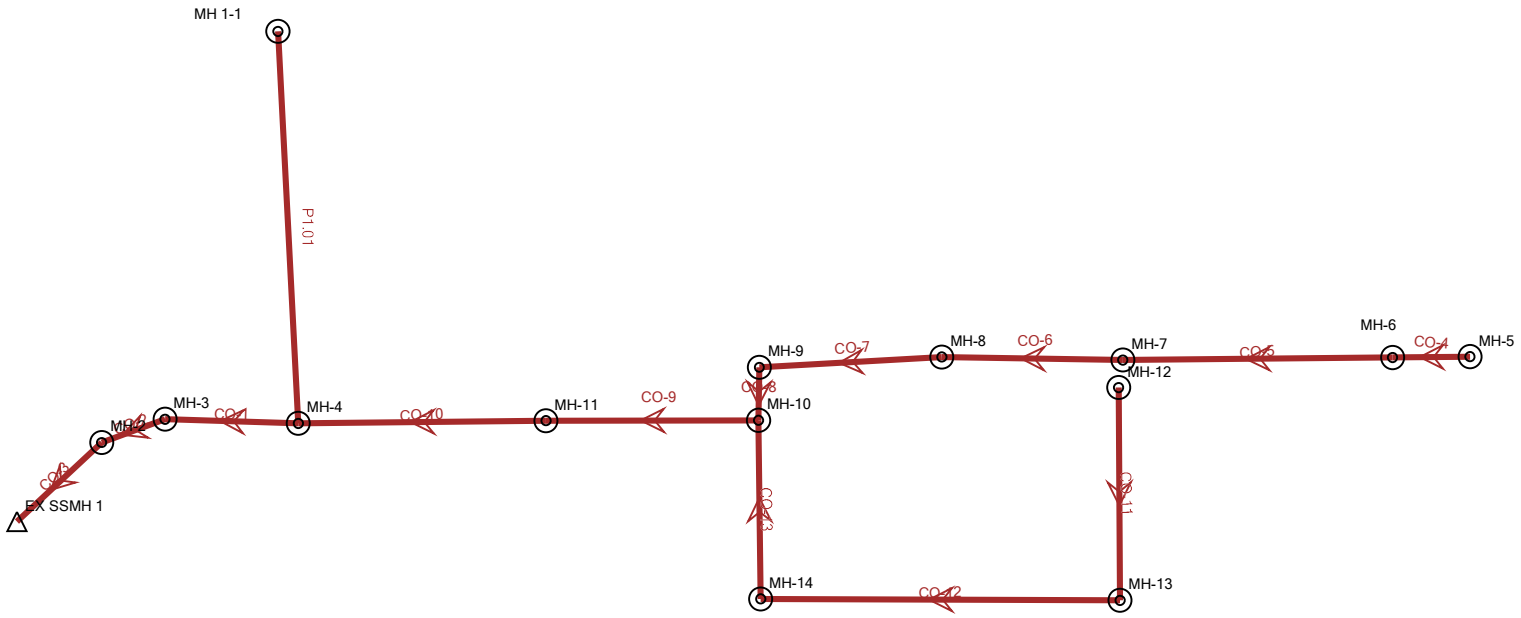
Indicated location where flow is applied in the model

APPENDIX D

Wastewater Hydraulic Modeling

- Sewer Network Exhibit
- Conduit Tables

Scenario: Base



Conduit FlexTable: Table - 1

Label	Depth/Rise (%)	Diameter (in)	Flow (gpm)	Manning's n	Velocity (ft/s)
CO-1	18.7	8.0	52.4	0.011	3.90
CO-2	19.6	8.0	52.4	0.011	3.29
CO-3	21.0	8.0	52.4	0.011	2.60
CO-4	10.1	8.0	16.3	0.011	3.22
CO-5	10.0	8.0	16.3	0.011	3.23
CO-6	10.1	8.0	16.3	0.011	3.23
CO-7	10.0	8.0	16.3	0.011	3.24
CO-8	18.1	8.0	16.3	0.011	4.34
CO-9	19.2	8.0	52.4	0.011	3.58
CO-10	18.1	8.0	52.4	0.011	4.47
CO-11	9.2	8.0	2.8	0.011	1.22
CO-12	16.2	8.0	17.0	0.011	2.08
CO-13	21.4	8.0	36.1	0.011	4.86
P1.01	0.0	8.0	0.0	0.011	0.00

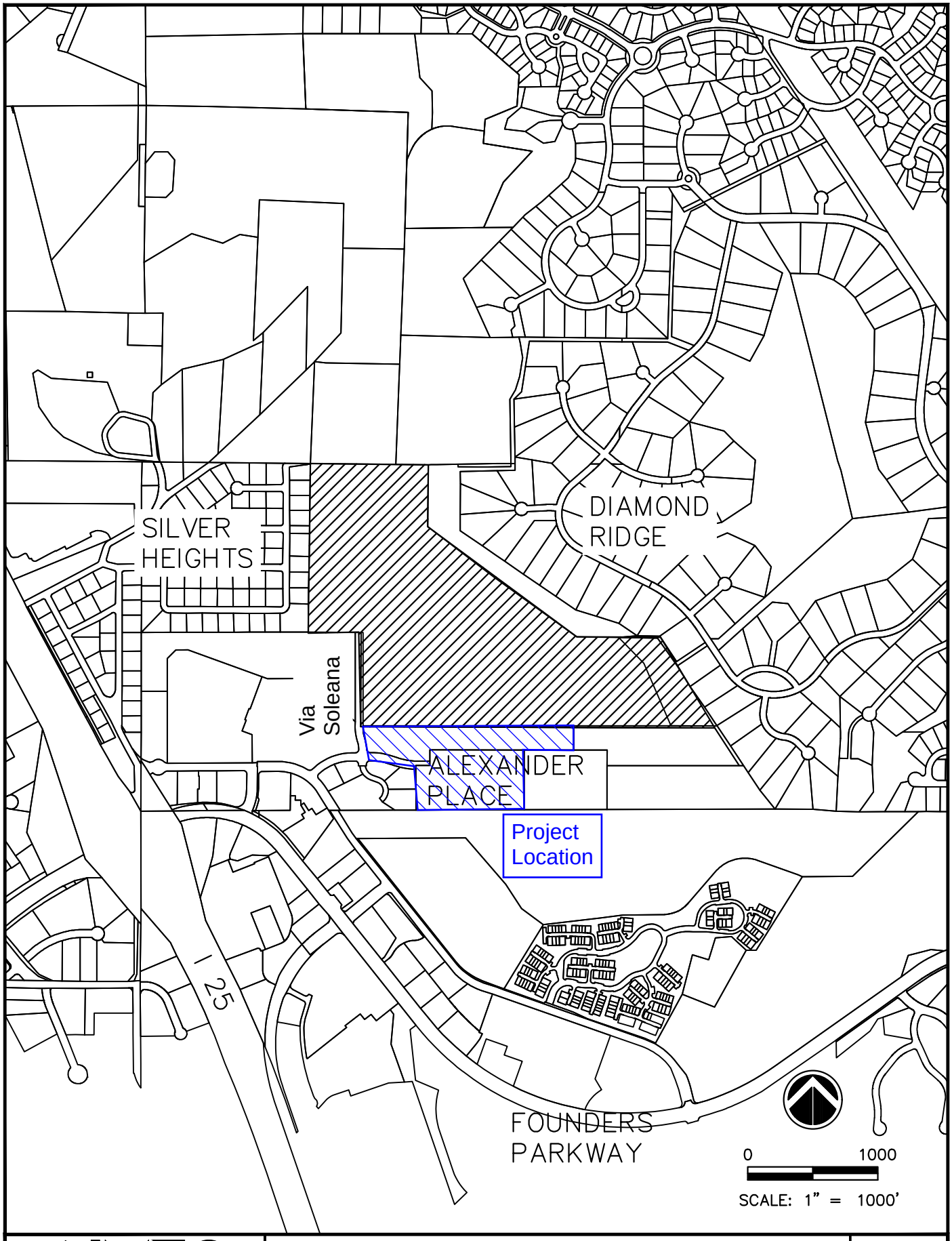
18: Base System Flows
(Manhole System Flows)

*	ID	Label	Flow (Known) (gpm)
True	72	MH 1-1	0.0
True	179	MH-2	0.0
True	180	MH-3	0.0
True	181	MH-4	0.0
True	186	MH-5	16.3
True	187	MH-6	0.0
True	189	MH-7	0.0
True	191	MH-8	0.0
True	193	MH-9	0.0
True	195	MH-10	0.0
True	197	MH-11	0.0
True	200	MH-12	2.8
True	201	MH-13	17.0
True	203	MH-14	36.1

Appendix E

Maps and Plans

- Vicinity Map
- Utility Maps provided by the Utilities Department
- Site Development Plan
- ~~Water/Wastewater Utility Plans (Pending Site Plan and CD Process)~~



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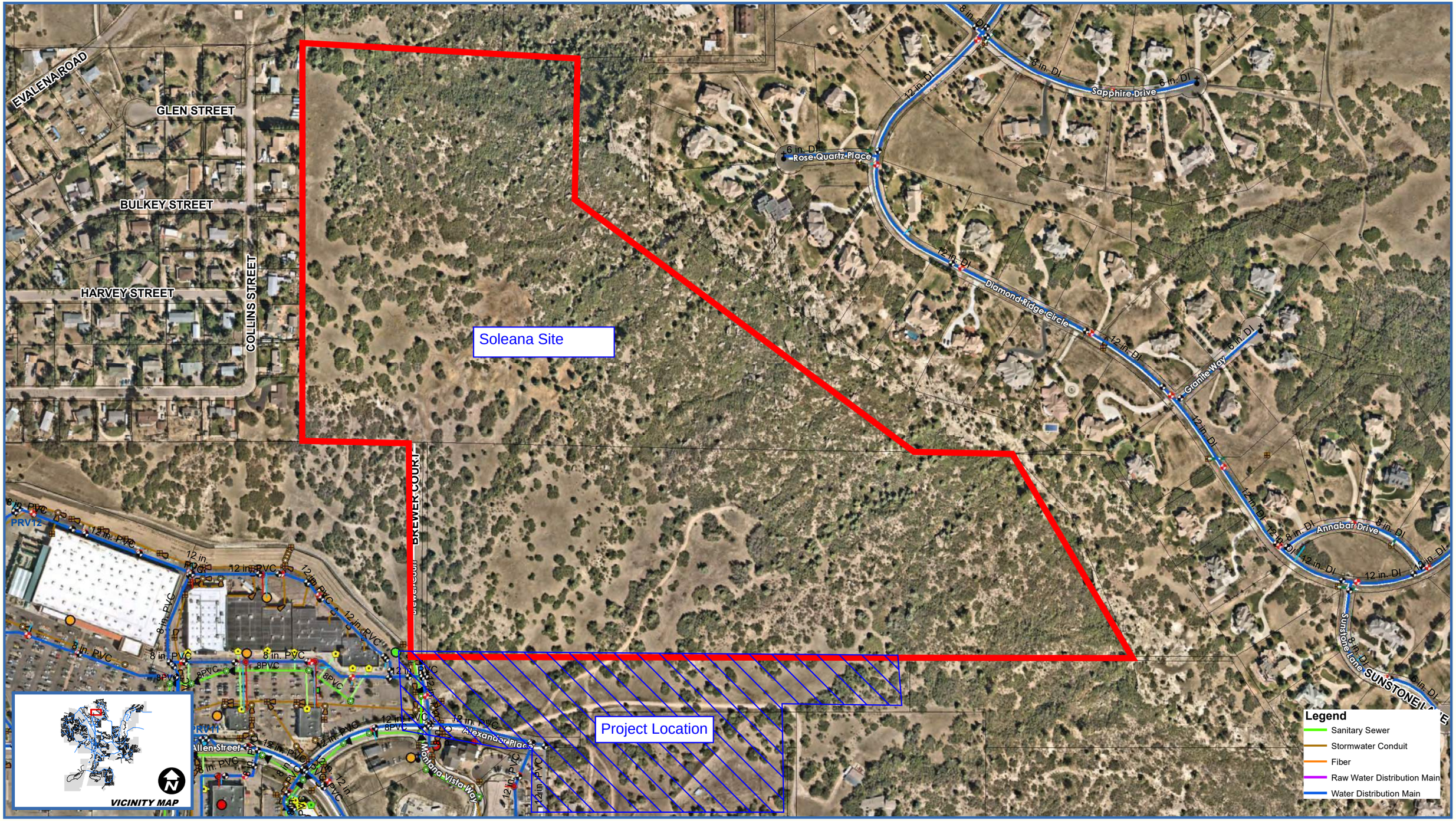
ALEXANDER WAY

CASTLE ROCK, CO

VICINITY MAP

EXHIBIT

11/9/21 G:\2020\20002764.00\DESIGN\CIVIL\C3D\EXHIBITCONCEPT\20002764 VIC MAP.DWG



CASTLE ROCK Qwater
Securing our future drop by drop

0 150 300 600 900 Feet

1 inch = 300 feet

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CASTLE ROCK UTILITIES MAP (INTERNAL USE ONLY)

Date: 12/31/2020

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All Utilities Printing Map



7/30/2026

- Fire Hydrant
- Control Valve
  - CV / Air Release
- System Valve
  - Butterfly, Active
  - Fire, Active
  - Gate, Active
  - Hydrant, Active
- Curb Stop Valve
  - Active
- Fitting
  - Cross, Active
- Vent, Active
- Manhole
  - Active
- Water Quality Sample Station
- Meters
  - Commercial
  - Commercial W Irr
  - Greenbelts
  - Multi Family W Irr
  - Multi Unit
  - Town
- Pumps
- Pressure Relief Valve
- Backflow
- Test Station
- Pressurized Water Main
  - Active
  - Abandoned, Inactive
- Fire Supression Lateral
  - Active
- Lateral Line
  - Active
- Water Facility
- Clean Out
- Manhole
  - Private, PVT
- TCR
- Gravity Main
  - Active
- Lateral Line
  - Active
- Inlet
- Outfall
  - No
- Manhole
- Pipe
  - Active
- Ponds (Polygon Layer)
- Parcels
- Highways
- Major Streets
- Minor Streets

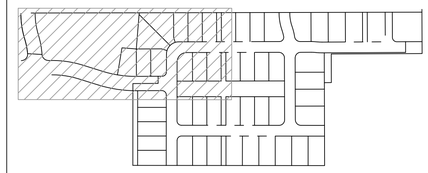
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SITE DEVELOPMENT PLAN

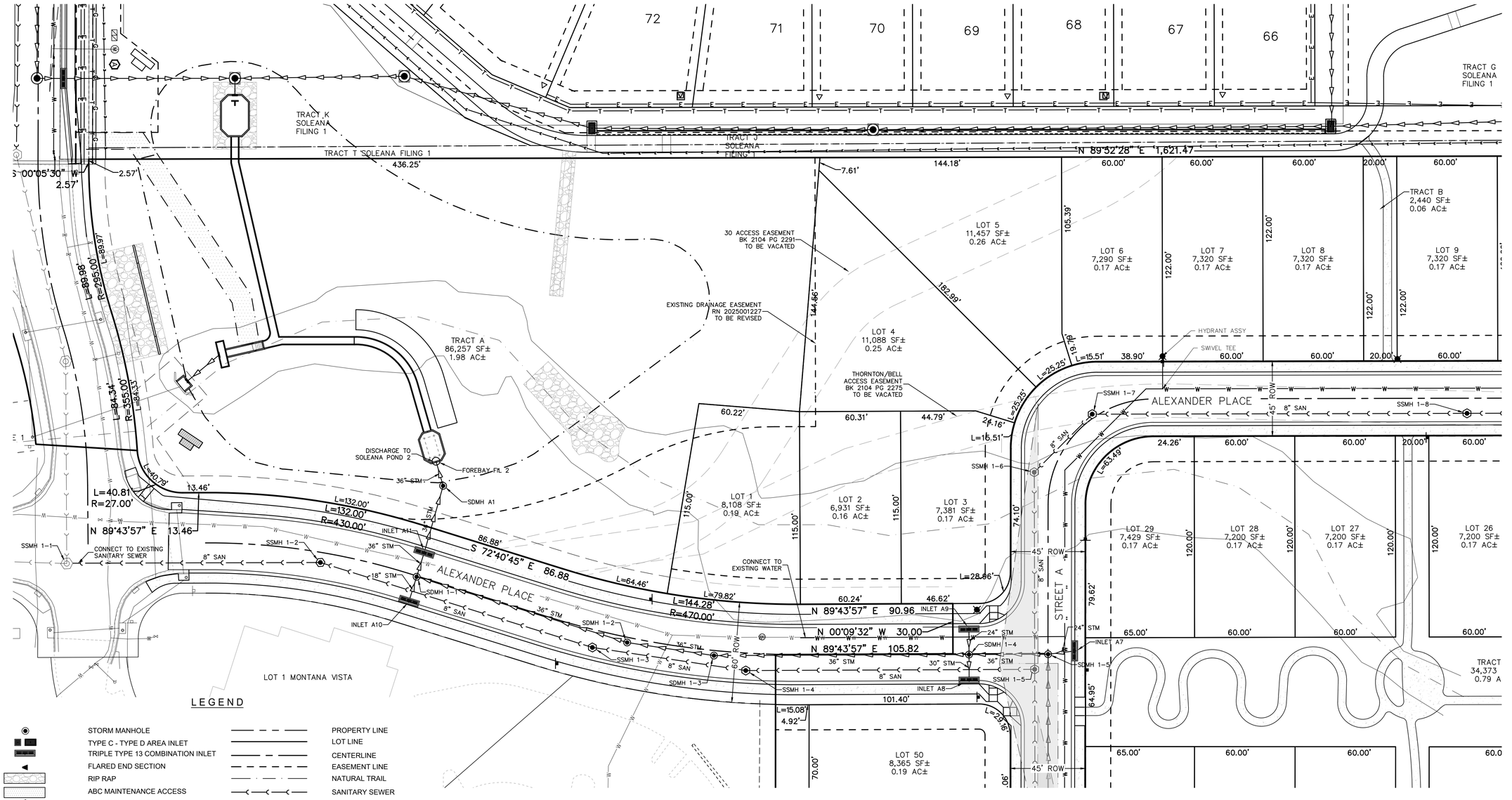
A TRACT OF LAND LOCATED IN THE NORTHERN HALF OF SECTION 26,
TOWNSHIP 7 SOUTH, RANGE 67 WEST OF THE 6TH PRINCIPAL MERIDIAN
TOWN OF CASTLE ROCK, COUNTY OF DOUGLAS, STATE OF COLORADO



KEY MAP
1"=300'

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LEGEND

STORM MANHOLE	PROPERTY LINE
TYPE C - TYPE D AREA INLET	LOT LINE
TRIPLE TYPE 13 COMBINATION INLET	CENTERLINE
FLARED END SECTION	EASEMENT LINE
RIP RAP	NATURAL TRAIL
ABC MAINTENANCE ACCESS	SANITARY SEWER
SANITARY MANHOLE	STORM SEWER
WATER VALVE	WATER LINE
HYDRANT	IRRIGATION LINE
IRRIGATION METER AND BFP	UNDERGROUND ELECTRIC
IRRIGATION CONTROLS	GAS LINE
GAS VALVE	TELEPHONE LINE
LIGHT POLE	CONTOUR
TRANSFORMER	CURB UNDERDRAIN
SIGHT TRIANGLE	UTILITY EASEMENT
CURB RAMPS	RIDGELINE
	RIDGELINE
	RIDGELINE

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SCALE: 1" = 30'

No.	Revision Type:	Date:

Designed By:
Prepared By: ***
Approved By: ***
Date: DATE
Horiz. Scale:
Vert. Scale:
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Job No.:

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Sheet Name: UTILITY PLAN

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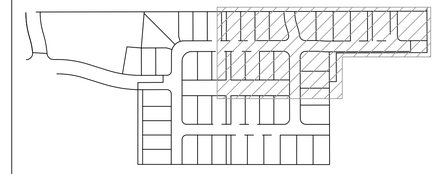
SITE DEVELOPMENT PLAN
SOLEANA
TOWN OF CASTLE ROCK
PROJECT NO. SDP24-0010

Sheet: 10 of 19

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SITE DEVELOPMENT PLAN

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TRACT G SOLEANA FILING 1
TRACT J SOLEANA FILING 1
TRACT H SOLEANA FILING 1
TRACT I SOLEANA FILING 1
TRACT E SOLEANA FILING 1
PARCEL A RN 2006062021
TRACT A COOPERHOOK/ MAIN PLACE FILING 1
TRACT B 2,440 SF± 0.06 AC±
TRACT C 3,876 SF± 0.09 AC±
TRACT D 7,247 SF± 0.17 AC±
TRACT E 34,373 SF± 0.79 AC±
LOT 9 7,320 SF± 0.17 AC±
LOT 10 7,320 SF± 0.17 AC±
LOT 11 7,320 SF± 0.17 AC±
LOT 12 8,626 SF± 0.20 AC±
LOT 13 9,488 SF± 0.22 AC±
LOT 14 8,660 SF± 0.20 AC±
LOT 15 8,637 SF± 0.20 AC±
LOT 16 8,618 SF± 0.20 AC±
LOT 17 8,679 SF± 0.20 AC±
LOT 18 26,242 SF± 0.60 AC±
LOT 19 10,024 SF± 0.23 AC±
LOT 20 8,662 SF± 0.20 AC±
LOT 21 8,662 SF± 0.20 AC±
LOT 23 7,746 SF± 0.18 AC±
LOT 24 7,200 SF± 0.17 AC±
LOT 25 7,200 SF± 0.17 AC±
LOT 26 7,200 SF± 0.17 AC±
LOT 27 7,200 SF± 0.17 AC±
LUMINARA COURT
ALEXANDER PLACE
45' ROW
HYDRANT ASSY
SWIVEL TEE
INLET A1
INLET A2
SDMH 1-10
24" STM
30" STM
8" SAN
SSMH 1-8
SSMH 1-9
SSMH 1-10
SSMH 1-11
SSMH 1-12
SSMH 4-1
L=74.51'
L=26.40'
L=32.50'
L=33.61'
L=25.33'
L=20.68'
24.09'
L=29.06'
45.82'
L=23.21'
L=20.20'
L=25.91'
8.50'
43.97'
36.93'
115.20'
121.50'
265.79'
381.02
115.23'
N 00°16'38" W 173.48
S 00°09'58" E 120.00
S 89°43'22" W 29.22'
E 347.72
LOIS THORNTON LIVING TRUST (UNPLATTED)

LEGEND

- STORM MANHOLE
- TYPE C - TYPE D AREA INLET
- TRIPLE TYPE 13 COMBINATION INLET
- FLARED END SECTION
- RIP RAP
- ABC MAINTENANCE ACCESS
- SANITARY MANHOLE
- WATER VALVE
- HYDRANT
- IRRIGATION METER AND BFP
- IRRIGATION CONTROLS
- GAS VALVE
- LIGHT POLE
- TRANSFORMER
- SIGHT TRIANGLE
- CURB RAMPS
- PROPERTY LINE
- LOT LINE
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- NATURAL TRAIL
- SANITARY SEWER
- STORM SEWER
- WATER LINE
- IRRIGATION LINE
- UNDERGROUND ELECTRIC
- GAS LINE
- TELEPHONE LINE
- CONTOUR (100)
- CURB UNDERDRAIN
- UE — UTILITY EASEMENT
- RIDGELINE
- RIDGELINE
- RIDGELINE

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SCALE: 1" = 30'

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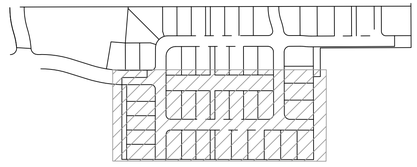
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Sheet Name: UTILITY PLAN

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SITE DEVELOPMENT PLAN
SOLEANA
TOWN OF CASTLE ROCK
PROJECT NO. SDP24-0010

SITE DEVELOPMENT PLAN

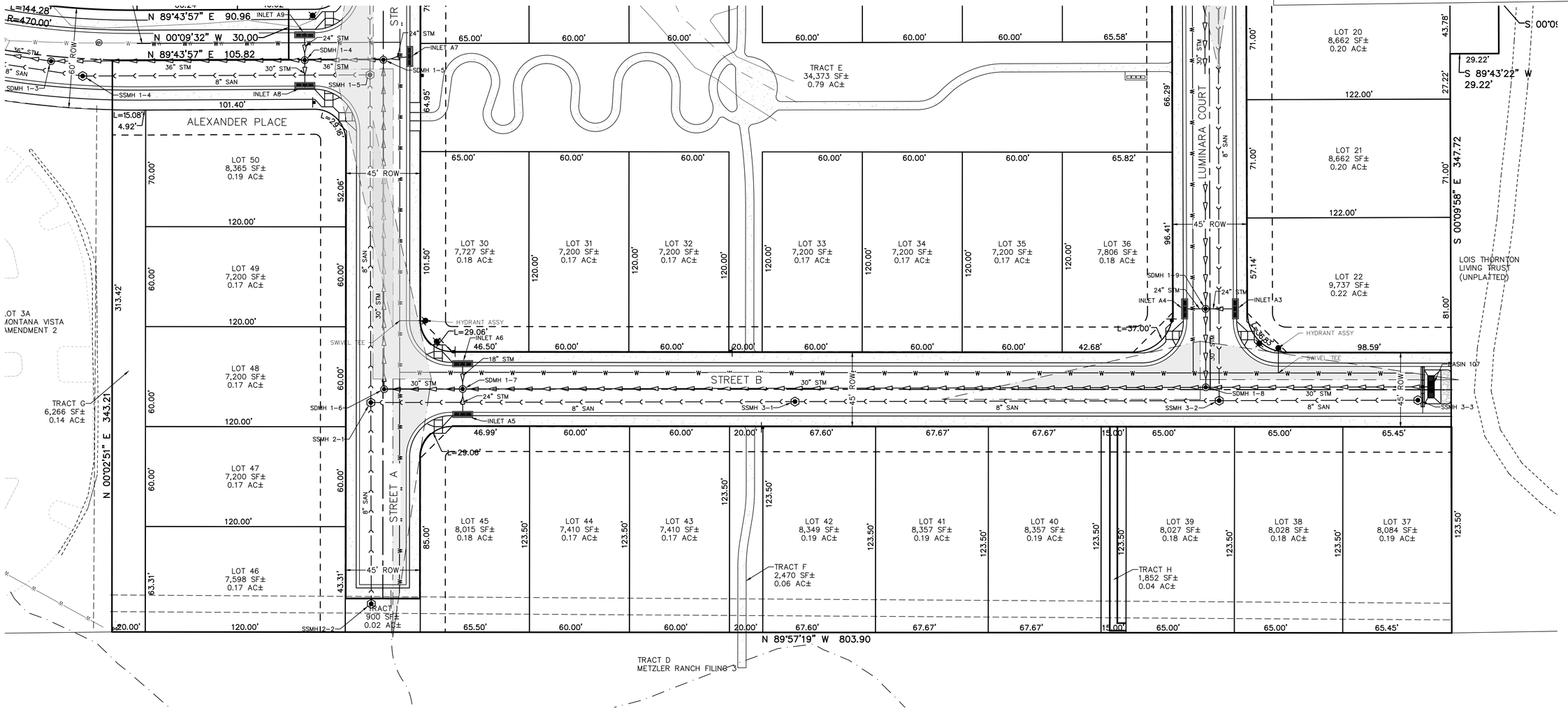
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1"=300'

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TYPE C - TYPE D AREA INLET	LOT LINE
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ABC MAINTENANCE ACCESS	SANITARY SEWER
SANITARY MANHOLE	STORM SEWER
WATER VALVE	WATER LINE
HYDRANT	IRRIGATION LINE
IRRIGATION METER AND BFP	UNDERGROUND ELECTRIC
IRRIGATION CONTROLS	GAS LINE
GAS VALVE	TELEPHONE LINE
LIGHT POLE	CONTOUR
TRANSFORMER	CURB UNDERDRAIN
SIGHT TRIANGLE	UTILITY EASEMENT
CURB RAMPS	RIDGELINE
	RIDGELINE
	RIDGELINE

30 15 0 30 60
SCALE: 1" = 30'

Revision Type:	
No.	
Rev. Date:	
Designed By:	
Prepared By: ***	
Approved By: ***	
Date: DATE:	Sheet: 12
Horiz. Scale:	Job No.:
Vert. Scale:	
Location:	TOWN OF CASTLE ROCK, COLORADO
Plan Set:	SITE DEVELOPMENT PLAN
Sheet Name:	UTILITY PLAN

2400XXXX

SITE DEVELOPMENT PLAN
SOLEANA
TOWN OF CASTLE ROCK
PROJECT NO. SDP24-0010

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