

**Sunset Creek
Water Servicing Report**



Prepared for:
York Developments

303 Richmond Street London, ON
N6B 2H8

Prepared by:
Stantec Consulting Ltd.
171 Queens Avenue, Suite 600
London, ON, N6A 5J7
Tel: 519-645-2007
Fax: 519-645-6575

September , 2023

Sign-off Sheet

This document entitled Sunset Creek Water Servicing Report was prepared by Stantec Consulting Ltd. ("Stantec") for the account of York Developments (the "Client") to support the permitting process for Client's application for a Subdivision Approval for the Sunset Creek Subdivision project (the "Project"). In connection thereto, this document may be reviewed and used by the provincial and municipal government agencies participating in the permitting process in the normal course of their duties. Except as set forth in the previous sentence, any reliance on this document by any third party for any other purpose is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any unauthorized use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on unauthorized use of this document.

Prepared by _____



(signature)

Abdalla Shaat, E.I.T.

Civil Engineering Designer/Project Coordinator
Community Development



Approved by _____

(stamp)

Dan Vucetice, MEng, P.Eng.

Project Manager, Engineering Team Lead, Associate
Community Development

**SUNSET CREEK
WATER SERVICING REPORT**

Table of Contents

1.0	WATER SERVICING REPORT	1
1.1	PREVIOUS STUDIES AND REPORTS	1
1.2	EXTERNAL WATER SERVICING REQUIREMENTS	1
1.3	CAPACITY REQUIREMENTS & DEMAND POPULATIONS.....	2
1.4	WATER MODEL RESULTS	3
1.5	WATER QUALITY	4
1.6	CONCLUSION	5

LIST OF APPENDICES

APPENDIX A

- W3 Phase 1 WaterCAD Figure
- W3 Phase 2 WaterCAD Figure
- Sunset Creek WaterCAD Figure
- Sunset Creek Water Demand Summary

APPENDIX B

- WaterCAD Results

1.0 WATER SERVICING REPORT

The following report describes the watermain infrastructure that will be required to service the proposed Sunset Creek Subdivision located in the southwestern portion of the City of London. The development is generally bounded by Colonel Talbot Road from the west and Phase 1 of the W3 Subdivision from the south, and the future Hudson Park Subdivision from the north.

1.1 PREVIOUS STUDIES AND REPORTS

The following studies and reports were used to develop this report:

- W3 Subdivision – Phase 2 Water Servicing Report, prepared by Stantec.
- W3 Subdivision – Phase 1 Water Servicing Report, prepared by Stantec.
- Heathwood Subdivision – Phase 2 Water Servicing Report, prepared by Stantec.

1.2 EXTERNAL WATER SERVICING REQUIREMENTS

The Sunset Creek Subdivision is located within an area serviced by the low-level watermain system. Per the City of London Design Specifications, the hydraulic grade line on this system is 301.8 meters. The proposed system's nearest existing connection point is a 600mm feeder main along Colonel Talbot Road at the future Street 'N' entrance. Additionally, a 300mm and 200mm watermain is available along Royal Magnolia Avenue within the W3 phase 1 subdivision. Looping with the 300mm and 200mm watermain along Royal Magnolia Avenue will be provided through the future Campbell Street North, Street 'R', and Street 'S' intersections.

Moreover, additional watermain looping is anticipated to occur through the future north developments (Hudson Park Subdivision) along Campbell Street North, Street 'O', and Street 'R'. This will be confirmed during the detailed design stage of each phase. A Water Network Figure is attached in Appendix A with the proposed watermain system layout.

1.3 CAPACITY REQUIREMENTS & DEMAND POPULATIONS

The proposed water system is modelled in accordance with the City of London standards, as summarized herein.

Average Domestic Water Demand = 255 l/cap/day
Maximum Day Peaking Factor = 3.5
Maximum Hour Peaking Factor = 7.8

The minimum pressure requirements for this development for average day demand and peak hour demand of 40psi or 28.16m H₂O, and for maximum day plus fire demand of 20psi or 14.08 m H₂O, are provided in accordance with City of London standards. The watermain network is sized so that the maximum velocity in the pipe does not exceed 1.5m/s during maximum hour domestic flow conditions or 2.4m/s during fire flow conditions in accordance with City of London standards. The fire demand analysis was done at all junctions to ensure that future hydrants will achieve sufficient flow regardless of location along the proposed system. Once fire hydrant locations are identified, re-confirmation of fire flows will be complete.

In accordance with City of London common design practice, a conservative fire flow demand required for the single family lots is 4,560 L/min (76 L/s), for medium density blocks is 6,300L/min (105L/s) and industrial/commercial blocks is 9,000 L/min (150L/s). These fire flow requirements for the single family lots were estimated using the "Water Supply for Public Fire Protection - A Guide to Recommended Practice" prepared by Fire Underwriters Survey Insurers' Advisory Organization (F.U.S.). Based on the current draft plan of subdivision, the development consists of a mix medium and low-density residential developments.

However, these requirements may be reduced based on Ontario Building Code (OBC) calculations for fire flow. These calculations take into account building sizes and volume which shall be confirmed during the detailed design stage of each phase when building information is available. For the time being, a fire flow scenario was complete for the subject site to indicate the available fire flows at the maximum allowable velocity of 2.4 m/s. Further fire flow analysis will be complete with each phase of the development to ensure that the available fire flows are adequate with each proposed block.

There is also a required 72 hour maximum turnover period of water in all pipes that is attained during average day demand conditions. Water looping is required due to the large scale of the subdivision with more than 80 anticipated units. Detailed water model results have been included in Appendix B and Appendix C.

1.4 WATER MODEL RESULTS

The water model strategy complete for this report includes a 200mm watermain system for Sunset Creek with anticipated water demands based on a population of 3 people/unit @ 30 units/hectare, and 2.4 people/unit @ 75 units/hectare for low-density and medium-density residential blocks, respectively. As broken down in table 1 "Demand Breakdown" attached in Appendix A. The proposed system has been modeled in conjunction with the existing watermain system in the W3 Subdivision, build-out of the W3 Subdivision is anticipated to be fully occupied prior to the Sunset Creek development. Therefore, model results include the existing water demands from the W3 subdivision.

As previously mentioned, the water model results incorporate the full system conditions under one (1) connection to Colonel Talbot Road and three (3) connections to Royal Magnolia Avenue. If phasing of the subdivision does not allow for connections to be made simultaneously, then a re-confirmation of the watermain system size and water supply will be required. Additionally, any future connections and demands from the Hudson Park Subdivision to the North will be required to be incorporated in the model if/when phasing and demands are known.

The water modelling results summary is included in the table below supporting that the proposed water network meets the requirements of the City of London for all scenarios. Detailed results of the modeling are included in Appendix B and Appendix C.

Table 1. Summary of Results Condition 1

Scenario	Velocity (m/s)		Pressure (psi)		Fire Flow (L/min)		Age (hours)	
	Max	Max Allowable	Min	Required Min	Available	Required	Max	Max Allowable
Average Day	0.1	1.5	45.8	40	-	-	-	-
Max Hour	0.81	1.5	43.9	40	-	-	-	-
Age Analysis (Full Build-out)	-	-	-	-	-	-	11.9	72
Max Day + Fire Flow (All Junctions)	2.4	2.4	20	20	6,012-8,974	4,560 – 6,300	-	-

SUNSET CREEK WATER SERVICING REPORT

Included modelling confirms the available fire flows at 20 psi (140kPa) residual pressure for all junctions (future proposed fire hydrants) are in excess of 5,680 L/min. Therefore, all future hydrants are anticipated to be of Class AA as per City of London Design Specifications & Requirements Manual section 7.8. During detailed design, all fire hydrant locations shall be set, with re-confirmation of velocity and pressures at the required fire flow based on each fire hydrants servicing area/development type.

1.5 WATER QUALITY

Under the Safe Drinking Water Act, the City of London has primary responsibility to ensure that the minimum chlorine residuals are maintained in the watermain distribution system. Thus, watermain looping and the use of automatic flushing device is recommended when needed. As the proposed watermain system is well looped and services many residents, we do not anticipate any issues with water quality during full build-out.

During the construction of each phase, automatic flushing devices will be required at all dead-ends until unit demands are available and/or a three (3) day water turn-over can be achieved. We anticipate temporary dead-end watermains will be constructed at the end of each phase. Until the watermain is extended and utilized by future phases or external lands, automatic flushing devices will be required in those areas. Automatic Flusher settings shall be calculated in the detailed design stage of each stage.

1.6 CONCLUSION

This report has been prepared to address the water servicing strategy of the ultimate build-out of the Sunset Creek Subdivision. A model was prepared for the subdivision to analyze average day, maximum hour and maximum day plus fire flow scenarios. The results of this modeling support that the proposed water network meets the pressure and velocity requirements of the City of London at all junctions and in all pipes for all scenarios, unless otherwise noted. An age analysis was also completed to confirm that a maximum 72-hour turnover time of water in all pipes and junctions will be achieved. Further analysis, and re-confirmation will be complete for each phase of the subdivision during detailed design.

We trust this meets your requirements for the Water Servicing Report. Should you have any questions or require more information, please do not hesitate to contact the undersigned.

Sincerely,

STANTEC CONSULTING LTD.



Abdalla Shaat, EIT
Civil Engineering Designer/Project Coordinator
Community Development
Direct:519-670-7137
Abdalla.Shaat@stantec.com

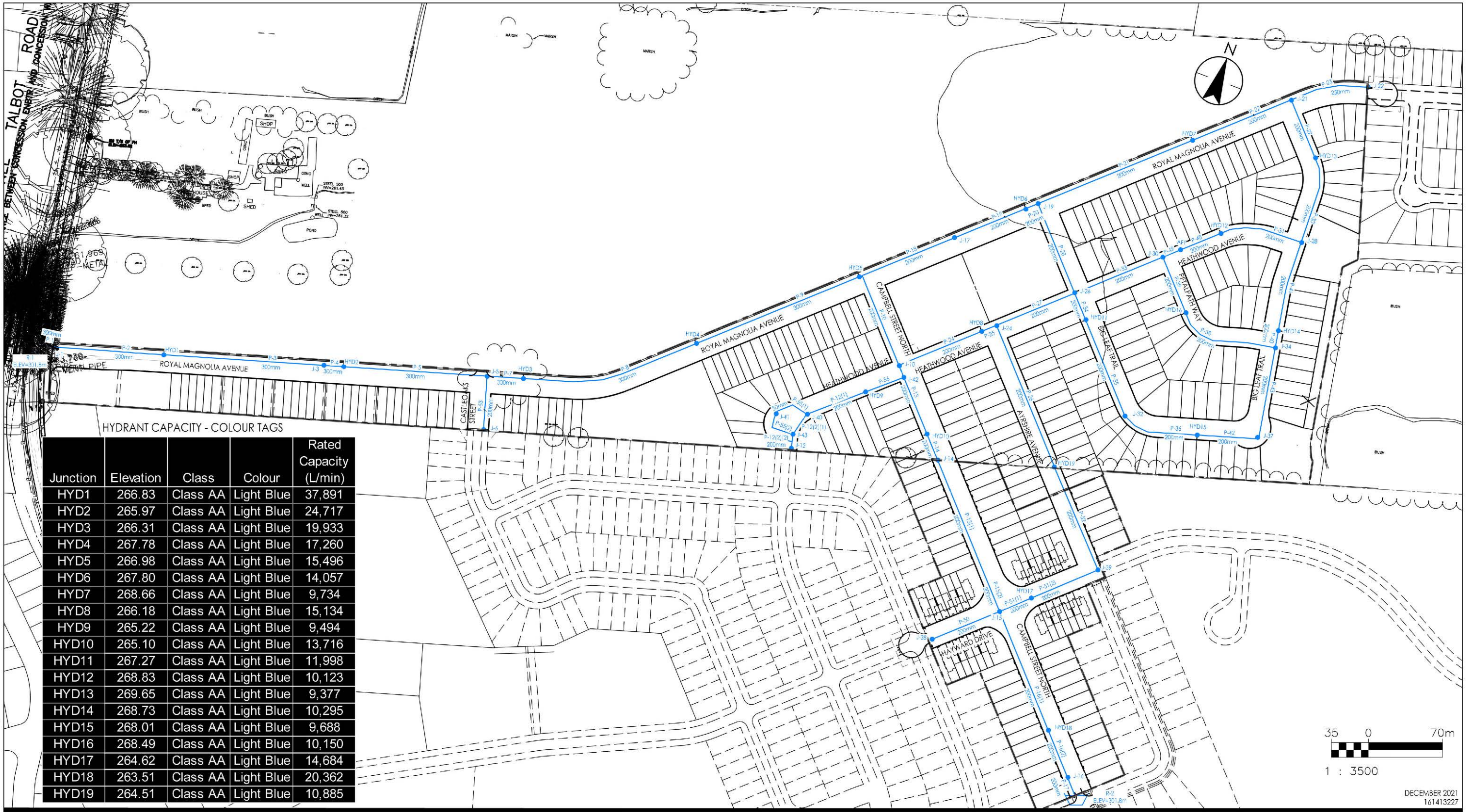


Dan Vucetic, MEng., P.Eng.
Project Manager, Engineering Team Lead,
Associate
Community Development
Direct:519-675-6622
Dan.Vucetic@stantec.com

APPENDIX A

- W3 Phase 1 WaterCAD Figure + Demand Table
- W3 Phase 2 WaterCAD Figure + Demand Table
- Sunset Creek WaterCAD Figure + Demand Table
- Sunset Creek Water Demand Summary

V:\01614\active\161414170\design\analysis\water\161413227_distribution_figure_phase1.dwg
 2021-12-14 10:08 PM by: Shaar, Abdolla



HYDRANT CAPACITY - COLOUR TAGS

Junction	Elevation	Class	Colour	Rated Capacity (L/min)
HYD1	266.83	Class AA	Light Blue	37,891
HYD2	265.97	Class AA	Light Blue	24,717
HYD3	266.31	Class AA	Light Blue	19,933
HYD4	267.78	Class AA	Light Blue	17,260
HYD5	266.98	Class AA	Light Blue	15,496
HYD6	267.80	Class AA	Light Blue	14,057
HYD7	268.66	Class AA	Light Blue	9,734
HYD8	266.18	Class AA	Light Blue	15,134
HYD9	265.22	Class AA	Light Blue	9,494
HYD10	265.10	Class AA	Light Blue	13,716
HYD11	267.27	Class AA	Light Blue	11,998
HYD12	268.83	Class AA	Light Blue	10,123
HYD13	269.65	Class AA	Light Blue	9,377
HYD14	268.73	Class AA	Light Blue	10,295
HYD15	268.01	Class AA	Light Blue	9,688
HYD16	268.49	Class AA	Light Blue	10,150
HYD17	264.62	Class AA	Light Blue	14,684
HYD18	263.51	Class AA	Light Blue	20,362
HYD19	264.51	Class AA	Light Blue	10,885

Legend

-  RESERVOIR
-  JUNCTION
-  WATERMAIN

Client/Project
 YORK DEVELOPMENTS
 W3 SUBDIVISION - PHASE 1

Figure No.
 2.0

Title
 WATER ANALYSIS

DECEMBER 2021
 161413227



600-171 Queens Avenue
 London ON N6A 5J7
 Tel. 519-645-2007
 www.stantec.com

Subject: Demand Summary
Project: W3 Subdivision - Phase 1 & Heathwood -Phase 2
Project No.: 161413227
Client: York Developments
Date: 14-Dec-21

Table 2

Junction	Elevation (m)	Commercial/Res Block		lots	Population	Average Day Demand (L/min)	Max Day Demand (L/min)	Max Hour Demand (L/min)
		Area (ha)	Units (75 uph)					
HYD1	266.83			15	36	6.38	22.31	49.73
HYD2	265.97			5	12	2.13	7.44	16.58
HYD3	266.31			8	20	3.54	12.40	27.63
HYD4	267.78	0.75	57	6	152	26.92	94.21	209.95
HYD5	266.98			14	34	6.02	21.07	46.96
HYD6	267.80			0	0	0.00	0.00	0.00
HYD7	268.66			11	33	5.84	20.45	45.58
HYD8	266.18			0	0	0.00	0.00	0.00
HYD9	265.22			8	24	4.25	14.88	33.15
HYD10	265.10			8	24	4.25	14.88	33.15
HYD11	267.27			0	0	0.00	0.00	0.00
HYD12	268.83			9	27	4.78	16.73	37.29
HYD13	269.65			0	0	0.00	0.00	0.00
HYD14	268.73			0	0	0.00	0.00	0.00
HYD15	268.01			8	24	4.25	14.88	33.15
HYD16	268.49			9	27	4.78	16.73	37.29
HYD17	264.62			0	0	0.00	0.00	0.00
HYD18	263.51			18	54	9.56	33.47	74.59
HYD19	266.4			22	66	11.69	40.91	91.16
J-1	264.27			7	17	3.01	10.54	23.48
J-3	266.05			10	24	4.25	14.88	33.15
J-5	265.41			12	29	5.14	17.97	40.06
J-6	265.07			0	0	0.00	0.00	0.00
J-10	265.16	0.273	-	0	28	4.96	17.35	38.68
J-12	265.45			1	3	0.53	1.86	4.14
J-14	265.09			13	39	6.91	24.17	53.87
J-15	264.52			22	58	10.27	35.95	80.11
J-16	262.96			6	18	3.19	11.16	24.86
J-17	267.44	0.553	-	0	56	9.92	34.71	77.35
J-19	267.87			9	27	4.78	16.73	37.29
J-21	270.06			6	18	3.19	11.16	24.86
J-22	270.96			3	9	1.59	5.58	12.43
J-24	266.36			10	30	5.31	18.59	41.44
J-26	267.37	0.28	-	10	58	10.27	35.95	80.11
J-28	269.25			13	39	6.91	24.17	53.87
J-30	268.26			11	33	5.84	20.45	45.58
J-32	267.74			14	42	7.44	26.03	58.01
J-34	268.73			14	42	7.44	26.03	58.01
J-37	268.3			7	21	3.72	13.02	29.01
J-38	264.52			10	24	4.25	14.88	33.15
J-39	264.52			9	25	4.43	15.49	34.53
J-40	265.37			5	15	2.66	9.30	20.72
J-41	265.39			3	9	1.59	5.58	12.43
J-42	265.15			5	15	2.66	9.30	20.72
J-43	265.42			1	3	0.53	1.86	4.14

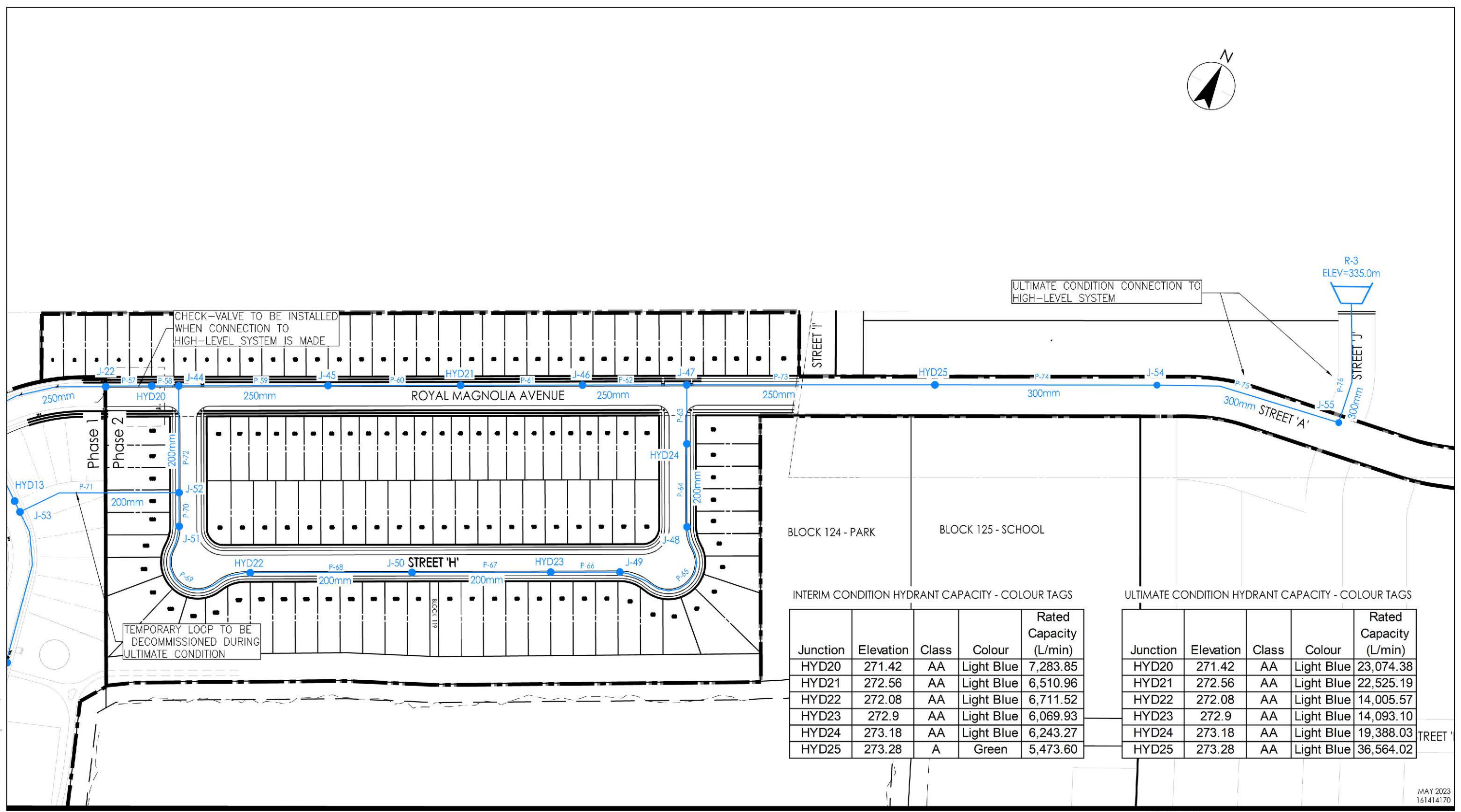
Note:

*Highlighted are commercial Blocks @ 100pph

*A per unit multiplier of 3.0 has been used for single family lots and 2.4 for medium density lots where lotting has been identified.



V:\01614\active\161414170\design\analysis\water\figures_cad\161414170_distribution_figure_phase2.dwg
2023-5-16 3:28 PM by: Shaat, Abdalla



INTERIM CONDITION HYDRANT CAPACITY - COLOUR TAGS

Junction	Elevation	Class	Colour	Rated Capacity (L/min)
HYD20	271.42	AA	Light Blue	7,283.85
HYD21	272.56	AA	Light Blue	6,510.96
HYD22	272.08	AA	Light Blue	6,711.52
HYD23	272.9	AA	Light Blue	6,069.93
HYD24	273.18	AA	Light Blue	6,243.27
HYD25	273.28	A	Green	5,473.60

ULTIMATE CONDITION HYDRANT CAPACITY - COLOUR TAGS

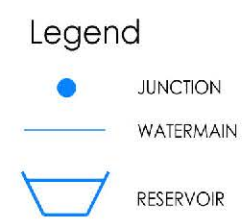
Junction	Elevation	Class	Colour	Rated Capacity (L/min)
HYD20	271.42	AA	Light Blue	23,074.38
HYD21	272.56	AA	Light Blue	22,525.19
HYD22	272.08	AA	Light Blue	14,005.57
HYD23	272.9	AA	Light Blue	14,093.10
HYD24	273.18	AA	Light Blue	19,388.03
HYD25	273.28	AA	Light Blue	36,564.02

TREET 'J'

MAY 2023
161414170



600-171 Queens Avenue
London ON N6A 5J7
Tel. 519-645-2007
www.stantec.com



Client/Project
YORK DEVELOPMENTS
W3 SUBDIVISION - PHASE 2

Figure No.
1.0

Title
WATER ANALYSIS

Subject: Demand Summary
Project: W3 Subdivision - Phase 2
Project No.: 161414170
Client: York Developments
Date: 1-Dec-22

Table 1

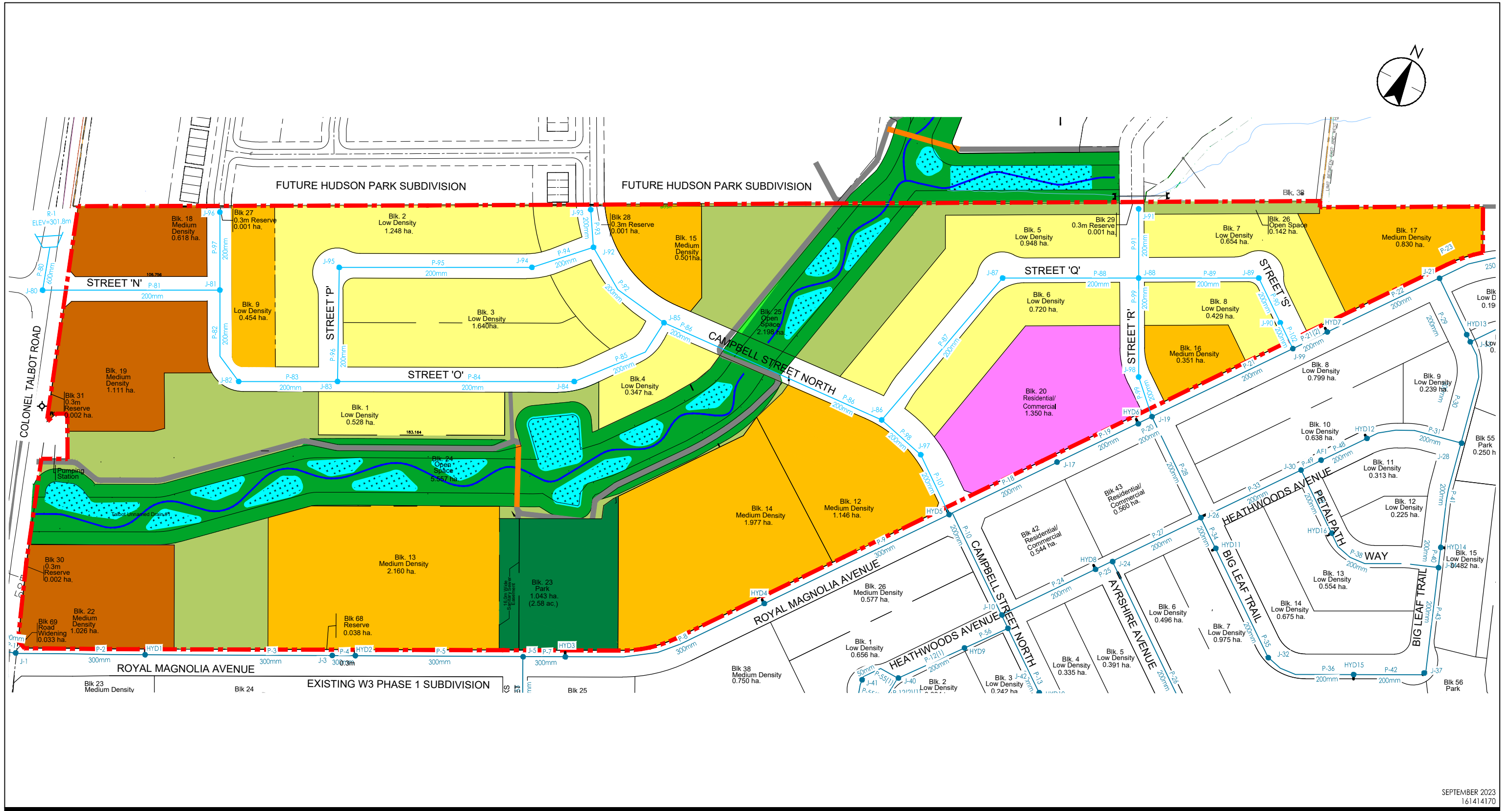
Junction	Single-Family Lots	Population	Average Day Demand (L/min)	Max Day Demand (L/min)	Max Hour Demand (L/min)	Lot #'s
J-44	6	18	3.19	11.16	24.86	7-10, 57-58
J-45	12	36	6.38	22.31	49.73	11-15, 50-56
J-46	15	45	7.97	27.89	62.16	22-28, 35-42
J-47	6	18	3.19	11.16	24.86	29-34
J-48	3	9	1.59	5.58	12.43	83-85
J-49	7	21	3.72	13.02	29.01	77-78, 86-90
J-50	14	42	7.44	26.03	58.01	65-71, 96-102
J-51	5	15	2.66	9.30	20.72	110-114
J-52	4	12	2.13	7.44	16.58	115-118
J-53	0	0	0.00	0.00	0.00	
J-54*	0	600	29.17	102.08	227.50	Primary School
HYD-20	6	18	3.19	11.16	24.86	1-6
HYD-21	13	39	6.91	24.17	53.87	16-21, 43-49
HYD-22	13	39	6.91	24.17	53.87	59-64, 103-109
HYD-23	10	30	5.31	18.59	41.44	72-76, 91-95
HYD-24	4	12	2.13	7.44	16.58	79-82
HYD-25	0	0	0.00	0.00	0.00	

Note:

*A per unit multiplier of 3.0 has been used for single family lots.

*School Demand as per MECP Design Guidelines section 3.4.3; 70L/(student day)

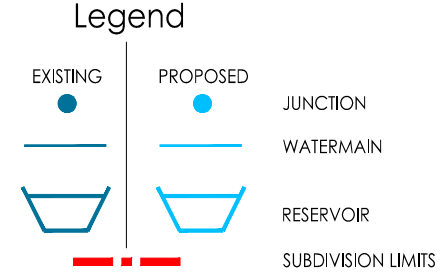
V:\01614170\design\water\sunset_creek\CAD\161414170_WA.dwg
 2023-9-12 3:14 PM by: Shadi, Abdalla



SEPTEMBER 2023
 161414170



600-171 Queens Avenue
 London ON N6A 5J7
 Tel. 519-645-2007
 www.stantec.com



Client/Project
 YORK DEVELOPMENTS
 SUNSET CREEK SUBDIVISION

Figure No.
 1.0

Title
 WATERCAD SCHEMATIC

Subject: Demand Summary
Project: Sunset Creek Subdivision
Project No.: 1614-
Client: York Developments
Date: 12-Sep-23

Table 1: Demand Breakdown

Block	Junction	Residential Type	Area	Units	Population	Average Day Demand (L/min)	Max Day Demand (L/min)	Max Hour Demand (L/min)
Block 1	J-83	LD	0.528	16	48	8.50	29.75	66.30
Block 2	J-95	LD	1.248	38	114	20.19	70.66	157.46
Block 3	J-94	LD	1.640	50	150	26.56	92.97	207.19
Block 4	J-84	LD	0.347	11	33	5.84	20.45	45.58
Block 5	J-87	LD	0.948	29	87	15.41	53.92	120.17
Block 6	J-87	LD	0.720	22	66	11.69	40.91	91.16
Block 7	J-89	LD	0.654	20	60	10.63	37.19	82.88
Block 8	J-90	LD	0.429	13	39	6.91	24.17	53.87
Block 9	J-82	LD	0.454	14	42	7.44	26.03	58.01
Block 12	J-86	MD	1.146	86	207	36.66	128.30	285.92
Block 13*	J-3 (W3)	MD	2.160	162	389	68.89	241.10	537.31
Block 14	J-86	MD	1.977	149	358	63.40	221.89	494.49
Block 15	J-85	MD	0.501	38	92	16.29	57.02	127.08
Block 16	J-98	MD	0.351	27	65	11.51	40.29	89.78
Block 17*	J-21 (W3)	MD	0.830	63	152	26.92	94.21	209.95
Block 18	J-81	MD	0.618	47	113	20.01	70.04	156.08
Block 19	J-81	MD	1.111	84	202	35.77	125.20	279.01
Block 20	J-97	RED/COM	1.350	102	245	43.39	151.85	338.41
Block 22*	HYD-1 (W3)	MD	1.026	77	185	32.76	114.66	255.53

Notes:

*LD = Low-Density, MD = Medium-Density, RED/COM = Residential/Commercial
 *30 units/ha @ 3 peopl/unit for LD and 75 units/ha @ 2.4 people/unit for MD as per CoL DSRM
 *Parks, Open Space, Reserve, and Road Widening Blocks are not included in this table
 *Blocks 13, 17 and 22 are anticipated to be serviced through W3 Phase 1 junctions identified above.
 Additional W3 existing demands include 4.25 L/min @J-3, 3.19 L/min @J-21.

APPENDIX B

- WaterCAD Results
(Sunset Creek Results Highlighted)

Sunset Creek & W3 Subdivision
Active Scenario: Average Day

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-1	12	R-1	J-1	300.0	120.0	416.86	0.10
P-2	104	J-1	HYD1	300.0	120.0	413.85	0.10
P-3	154	HYD1	J-3	300.0	120.0	374.71	0.09
P-4	16	J-3	HYD2	300.0	120.0	301.57	0.07
P-5	136	HYD2	J-5	300.0	120.0	299.44	0.07
P-7	34	J-5	HYD3	300.0	120.0	294.04	0.07
P-8	170	HYD3	HYD4	300.0	120.0	290.50	0.07
P-9	169	HYD4	HYD5	300.0	120.0	263.58	0.06
P-10	91	HYD5	J-10	200.0	110.0	-21.87	0.01
P-12(1)	64	HYD9	J-40	200.0	110.0	5.31	0.00
P-12(2)(1)	22	J-40	J-43	200.0	110.0	1.86	0.00
P-12(2)(2)	13	J-43	J-12	200.0	110.0	0.53	0.00
P-13(1)	9	J-10	J-42	200.0	110.0	-65.62	0.03
P-13(2)	61	J-42	HYD10	200.0	110.0	-77.84	0.04
P-14	28	HYD10	J-14	200.0	110.0	-82.09	0.04
P-15	151	J-14	J-15	200.0	110.0	-89.00	0.05
P-16(1)	123	J-15	HYD18	200.0	110.0	-183.80	0.10
P-16(2)	67	HYD18	J-16	200.0	110.0	-193.36	0.10
P-17	10	J-16	R-2	200.0	110.0	-196.55	0.10
P-18	94	HYD5	J-17	300.0	120.0	155.03	0.04
P-19	73	J-17	HYD6	300.0	120.0	145.11	0.03
P-20	13	HYD6	J-19	200.0	110.0	145.11	0.08
P-21(1)	132	J-19	J-99	200.0	110.0	60.43	0.03
P-21(2)	27	J-99	HYD7	200.0	110.0	88.34	0.05
P-22	101	HYD7	J-21	200.0	110.0	82.50	0.04
P-23	75	J-21	J-22	250.0	110.0	78.64	0.03
P-24	85	J-10	HYD8	250.0	110.0	38.80	0.01
P-25	14	HYD8	J-24	200.0	110.0	38.80	0.02
P-26	146	J-24	HYD19	200.0	110.0	-64.16	0.03
P-27	80	J-24	J-26	200.0	110.0	97.64	0.05
P-28	91	J-26	J-19	200.0	110.0	-31.64	0.02
P-29	51	J-21	HYD13	200.0	110.0	-26.25	0.01
P-29(1)	6	HYD13	J-53	200.0	110.0	-26.25	0.01
P-30	87	J-28	J-53	200.0	110.0	73.85	0.04
P-31	79	J-28	HYD12	200.0	110.0	-39.77	0.02
P-33	90	J-30	J-26	200.0	110.0	-73.52	0.04
P-34	28	J-26	HYD11	200.0	110.0	45.49	0.02
P-35	96	HYD11	J-32	200.0	110.0	45.49	0.02
P-36	75	J-32	HYD15	200.0	110.0	38.05	0.02
P-38	98	J-34	HYD16	200.0	110.0	-18.35	0.01
P-39	57	HYD16	J-30	200.0	110.0	-23.13	0.01
P-40	15	J-34	HYD14	200.0	110.0	40.99	0.02
P-41	86	HYD14	J-28	200.0	110.0	40.99	0.02
P-42	78	HYD15	J-37	200.0	110.0	33.80	0.02
P-43	65	J-37	J-34	200.0	110.0	30.08	0.02
P-48	51	HYD12	AF1	200.0	110.0	-44.55	0.02
P-49	7	AF1	J-30	200.0	110.0	-44.55	0.02

Sunset Creek & W3 Subdivision

Active Scenario: Average Day

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-50	63	J-38	J-15	200.0	110.0	-4.25	0.00
P-51(1)	29	J-15	HYD17	200.0	110.0	80.28	0.04
P-51(2)	70	HYD17	J-39	200.0	110.0	80.28	0.04
P-52	103	HYD19	J-39	200.0	110.0	-75.85	0.04
P-53	50	J-6	J-5	200.0	110.0	-0.26	0.00
P-55(1)	29	J-40	J-41	50.0	100.0	0.79	0.01
P-55(2)	28	J-41	J-43	50.0	100.0	-0.80	0.01
P-56	38	J-42	HYD9	200.0	110.0	9.56	0.01
P-57	26	J-22	HYD20	250.0	110.0	44.29	0.02
P-58	15	HYD20	J-44	250.0	110.0	41.10	0.01
P-59	82	J-44	J-45	250.0	110.0	50.72	0.02
P-60	71	J-45	HYD21	250.0	110.0	44.34	0.02
P-61	66	HYD21	J-46	250.0	110.0	37.43	0.01
P-62	57	J-46	J-47	250.0	110.0	29.46	0.01
P-63	34	J-47	HYD24	200.0	110.0	-2.90	0.00
P-64	44	HYD24	J-48	200.0	110.0	-5.03	0.00
P-65	74	J-48	J-49	200.0	110.0	-6.62	0.00
P-66	38	J-49	HYD23	200.0	110.0	-10.34	0.01
P-67	75	HYD23	J-50	200.0	110.0	-15.65	0.01
P-68	88	J-50	HYD22	200.0	110.0	-23.09	0.01
P-69	76	HYD22	J-51	200.0	110.0	-30.00	0.02
P-70	19	J-51	J-52	200.0	110.0	-32.66	0.02
P-71	89	J-53	J-52	200.0	110.0	47.60	0.03
P-72	59	J-52	J-44	200.0	110.0	12.81	0.01
P-73	128	J-47	HYD25	250.0	110.0	29.17	0.01
P-74	124	HYD25	J-54	300.0	120.0	29.17	0.01
P-75	105	J-55	J-54	300.0	120.0	(N/A)	(N/A)
P-76	71	R-3	J-55	300.0	120.0	(N/A)	(N/A)
P-80	20	R-4	J-80	600.0	120.0	195.46	0.01
P-81	133	J-80	J-81	200.0	110.0	195.46	0.10
P-82	69	J-81	J-82	200.0	110.0	139.68	0.07
P-83	87	J-82	J-83	200.0	110.0	132.24	0.07
P-84	218	J-83	J-84	200.0	110.0	55.60	0.03
P-85	74	J-84	J-85	200.0	110.0	49.76	0.03
P-86	200	J-85	J-86	200.0	110.0	54.86	0.03
P-87	144	J-86	J-87	200.0	110.0	35.79	0.02
P-88	108	J-87	J-88	200.0	110.0	8.69	0.00
P-89	106	J-88	J-89	200.0	110.0	45.45	0.02
P-90	51	J-89	J-90	200.0	110.0	34.82	0.02
P-91	49	J-88	J-91	200.0	110.0	0.00	0.00
P-92	75	J-85	J-92	200.0	110.0	-21.39	0.01
P-93	31	J-92	J-93	200.0	110.0	0.00	0.00
P-94	55	J-92	J-94	200.0	110.0	-21.39	0.01
P-95	164	J-94	J-95	200.0	110.0	-47.95	0.03
P-96	90	J-95	J-83	200.0	110.0	-68.14	0.04
P-97	63	J-81	J-96	200.0	110.0	0.00	0.00
P-98	79	J-86	J-97	200.0	110.0	-81.00	0.04

Sunset Creek & W3 Subdivision

Active Scenario: Average Day

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-99	75	J-88	J-98	200.0	100.0	-36.76	0.02
P-100	48	J-98	J-19	250.0	110.0	-48.27	0.02
P-101	18	J-97	HYD5	250.0	110.0	-124.39	0.04
P-102	19	J-90	J-99	200.0	110.0	27.91	0.01

Sunset Creek & W3 Subdivision
Active Scenario: Average Day

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
AF1	268.33	0.00	47.5
HYD1	266.83	39.14	49.6
HYD2	265.97	2.13	50.8
HYD3	266.31	3.54	50.3
HYD4	267.78	26.92	48.3
HYD5	266.98	6.02	49.4
HYD6	267.80	0.00	48.2
HYD7	268.66	5.84	47.0
HYD8	266.18	0.00	50.5
HYD9	265.22	4.25	51.9
HYD10	265.10	4.25	52.1
HYD11	267.27	0.00	49.0
HYD12	268.83	4.78	46.8
HYD13	269.69	0.00	45.5
HYD14	268.73	0.00	46.9
HYD15	268.01	4.25	47.9
HYD16	268.49	4.78	47.2
HYD17	264.52	0.00	52.9
HYD18	263.51	9.56	54.3
HYD19	266.40	11.69	50.2
HYD20	271.42	3.19	43.1
HYD21	272.56	6.91	41.5
HYD22	272.08	6.91	42.1
HYD23	272.90	5.31	41.0
HYD24	273.18	2.13	40.6
HYD25	273.28	0.00	40.4
J-1	264.27	3.01	53.3
J-3	266.05	73.14	50.7
J-5	265.41	5.14	51.6
J-6	265.40	0.26	51.6
J-10	265.16	4.96	52.0
J-12	265.45	0.53	51.6
J-14	265.09	6.91	52.1
J-15	264.52	10.27	52.9
J-16	262.96	3.19	55.1
J-17	267.44	9.92	48.7
J-19	267.87	4.78	48.1
J-21	270.06	30.11	45.0
J-22	270.87	34.35	43.9
J-24	266.36	5.31	50.3
J-26	267.37	10.27	48.8
J-28	269.25	6.91	46.2
J-30	268.26	5.84	47.6
J-32	267.74	7.44	48.3
J-34	268.73	7.44	46.9
J-37	268.30	3.72	47.5
J-38	264.52	4.25	52.9

Sunset Creek & W3 Subdivision
Active Scenario: Average Day

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
J-39	264.52	4.43	52.9
J-40	265.37	2.66	51.7
J-41	265.39	1.59	51.6
J-42	265.15	2.66	52.0
J-43	265.42	0.53	51.6
J-44	271.38	3.19	43.1
J-45	272.04	6.38	42.2
J-46	272.74	7.97	41.2
J-47	273.11	3.19	40.7
J-48	273.11	1.59	40.7
J-49	272.78	3.72	41.1
J-50	272.21	7.44	41.9
J-51	271.64	2.66	42.8
J-52	271.54	2.13	42.9
J-53	269.65	0.00	45.6
J-54	274.34	29.17	38.9
J-55	273.65	(N/A)	(N/A)
J-80	265.02	0.00	52.2
J-81	264.00	55.78	53.6
J-82	263.50	7.44	54.3
J-83	262.92	8.50	55.2
J-84	263.00	5.84	55.0
J-85	262.00	16.29	56.5
J-86	266.00	100.06	50.8
J-87	266.88	27.10	49.5
J-88	268.42	0.00	47.3
J-89	269.03	10.63	46.5
J-90	269.50	6.91	45.8
J-91	269.00	0.00	46.5
J-92	264.63	0.00	52.7
J-93	265.11	0.00	52.0
J-94	263.10	26.56	54.9
J-95	263.58	20.19	54.2
J-96	264.00	0.00	53.6
J-97	266.00	43.39	50.8
J-98	269.01	11.51	46.5
J-99	268.53	0.00	47.2

Sunset Creek & W3 Subdivision

Active Scenario: Max Hour

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-1	12	R-1	J-1	300.0	120.0	3,251.47	0.77
P-2	104	J-1	HYD1	300.0	120.0	3,227.99	0.76
P-3	154	HYD1	J-3	300.0	120.0	2,922.70	0.69
P-4	16	J-3	HYD2	300.0	120.0	2,352.21	0.55
P-5	136	HYD2	J-5	300.0	120.0	2,335.60	0.55
P-7	34	J-5	HYD3	300.0	120.0	2,293.48	0.54
P-8	170	HYD3	HYD4	300.0	120.0	2,265.86	0.53
P-9	169	HYD4	HYD5	300.0	120.0	2,055.89	0.48
P-10	91	HYD5	J-10	200.0	110.0	-170.55	0.09
P-12(1)	64	HYD9	J-40	200.0	110.0	41.42	0.02
P-12(2)(1)	22	J-40	J-43	200.0	110.0	14.53	0.01
P-12(2)(2)	13	J-43	J-12	200.0	110.0	4.13	0.00
P-13(1)	9	J-10	J-42	200.0	110.0	-511.84	0.27
P-13(2)	61	J-42	HYD10	200.0	110.0	-607.16	0.32
P-14	28	HYD10	J-14	200.0	110.0	-640.31	0.34
P-15	151	J-14	J-15	200.0	110.0	-694.21	0.37
P-16(1)	123	J-15	HYD18	200.0	110.0	-1,433.63	0.76
P-16(2)	67	HYD18	J-16	200.0	110.0	-1,508.19	0.80
P-17	10	J-16	R-2	200.0	110.0	-1,533.08	0.81
P-18	94	HYD5	J-17	300.0	120.0	1,209.26	0.29
P-19	73	J-17	HYD6	300.0	120.0	1,131.88	0.27
P-20	13	HYD6	J-19	200.0	110.0	1,131.88	0.60
P-21(1)	132	J-19	J-99	200.0	110.0	471.32	0.25
P-21(2)	27	J-99	HYD7	200.0	110.0	689.05	0.37
P-22	101	HYD7	J-21	200.0	110.0	643.50	0.34
P-23	75	J-21	J-22	250.0	110.0	613.36	0.21
P-24	85	J-10	HYD8	250.0	110.0	302.61	0.10
P-25	14	HYD8	J-24	200.0	110.0	302.61	0.16
P-26	146	J-24	HYD19	200.0	110.0	-500.43	0.27
P-27	80	J-24	J-26	200.0	110.0	761.62	0.40
P-28	91	J-26	J-19	200.0	110.0	-246.77	0.13
P-29	51	J-21	HYD13	200.0	110.0	-204.72	0.11
P-29(1)	6	HYD13	J-53	200.0	110.0	-204.72	0.11
P-30	87	J-28	J-53	200.0	110.0	576.03	0.31
P-31	79	J-28	HYD12	200.0	110.0	-310.18	0.16
P-33	90	J-30	J-26	200.0	110.0	-573.42	0.30
P-34	28	J-26	HYD11	200.0	110.0	354.86	0.19
P-35	96	HYD11	J-32	200.0	110.0	354.86	0.19
P-36	75	J-32	HYD15	200.0	110.0	296.83	0.16
P-38	98	J-34	HYD16	200.0	110.0	-143.12	0.08
P-39	57	HYD16	J-30	200.0	110.0	-180.41	0.10
P-40	15	J-34	HYD14	200.0	110.0	319.75	0.17
P-41	86	HYD14	J-28	200.0	110.0	319.75	0.17
P-42	78	HYD15	J-37	200.0	110.0	263.68	0.14
P-43	65	J-37	J-34	200.0	110.0	234.66	0.12
P-48	51	HYD12	AF1	200.0	110.0	-347.46	0.18
P-49	7	AF1	J-30	200.0	110.0	-347.46	0.18

Sunset Creek & W3 Subdivision

Active Scenario: Max Hour

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-50	63	J-38	J-15	200.0	110.0	-33.15	0.02
P-51(1)	29	J-15	HYD17	200.0	110.0	626.16	0.33
P-51(2)	70	HYD17	J-39	200.0	110.0	626.16	0.33
P-52	103	HYD19	J-39	200.0	110.0	-591.61	0.31
P-53	50	J-6	J-5	200.0	110.0	-2.03	0.00
P-55(1)	29	J-40	J-41	50.0	100.0	6.14	0.05
P-55(2)	28	J-41	J-43	50.0	100.0	-6.26	0.05
P-56	38	J-42	HYD9	200.0	110.0	74.57	0.04
P-57	26	J-22	HYD20	250.0	110.0	345.43	0.12
P-58	15	HYD20	J-44	250.0	110.0	320.55	0.11
P-59	82	J-44	J-45	250.0	110.0	395.60	0.13
P-60	71	J-45	HYD21	250.0	110.0	345.84	0.12
P-61	66	HYD21	J-46	250.0	110.0	291.94	0.10
P-62	57	J-46	J-47	250.0	110.0	229.78	0.08
P-63	34	J-47	HYD24	200.0	110.0	-22.63	0.01
P-64	44	HYD24	J-48	200.0	110.0	-39.25	0.02
P-65	74	J-48	J-49	200.0	110.0	-51.65	0.03
P-66	38	J-49	HYD23	200.0	110.0	-80.66	0.04
P-67	75	HYD23	J-50	200.0	110.0	-122.08	0.06
P-68	88	J-50	HYD22	200.0	110.0	-180.11	0.10
P-69	76	HYD22	J-51	200.0	110.0	-234.01	0.12
P-70	19	J-51	J-52	200.0	110.0	-254.76	0.14
P-71	89	J-53	J-52	200.0	110.0	371.31	0.20
P-72	59	J-52	J-44	200.0	110.0	99.94	0.05
P-73	128	J-47	HYD25	250.0	110.0	227.53	0.08
P-74	124	HYD25	J-54	300.0	120.0	227.53	0.05
P-75	105	J-55	J-54	300.0	120.0	(N/A)	(N/A)
P-76	71	R-3	J-55	300.0	120.0	(N/A)	(N/A)
P-80	20	R-4	J-80	600.0	120.0	1,524.56	0.09
P-81	133	J-80	J-81	200.0	110.0	1,524.56	0.81
P-82	69	J-81	J-82	200.0	110.0	1,089.48	0.58
P-83	87	J-82	J-83	200.0	110.0	1,031.44	0.55
P-84	218	J-83	J-84	200.0	110.0	433.67	0.23
P-85	74	J-84	J-85	200.0	110.0	388.12	0.21
P-86	200	J-85	J-86	200.0	110.0	427.88	0.23
P-87	144	J-86	J-87	200.0	110.0	279.19	0.15
P-88	108	J-87	J-88	200.0	110.0	67.81	0.04
P-89	106	J-88	J-89	200.0	110.0	354.54	0.19
P-90	51	J-89	J-90	200.0	110.0	271.63	0.14
P-91	49	J-88	J-91	200.0	110.0	0.00	0.00
P-92	75	J-85	J-92	200.0	110.0	-166.82	0.09
P-93	31	J-92	J-93	200.0	110.0	0.00	0.00
P-94	55	J-92	J-94	200.0	110.0	-166.82	0.09
P-95	164	J-94	J-95	200.0	110.0	-373.99	0.20
P-96	90	J-95	J-83	200.0	110.0	-531.47	0.28
P-97	63	J-81	J-96	200.0	110.0	0.00	0.00
P-98	79	J-86	J-97	200.0	110.0	-631.78	0.34

Sunset Creek & W3 Subdivision

Active Scenario: Max Hour

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)
P-99	75	J-88	J-98	200.0	100.0	-286.73	0.15
P-100	48	J-98	J-19	250.0	110.0	-376.51	0.13
P-101	18	J-97	HYD5	250.0	110.0	-970.22	0.33
P-102	19	J-90	J-99	200.0	110.0	217.73	0.12

Sunset Creek & W3 Subdivision

Active Scenario: Max Hour

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
AF1	268.33	0.00	45.5
HYD1	266.83	305.29	49.3
HYD2	265.97	16.61	50.0
HYD3	266.31	27.61	49.2
HYD4	267.78	209.98	46.8
HYD5	266.98	46.96	47.7
HYD6	267.80	0.00	46.5
HYD7	268.66	45.55	45.1
HYD8	266.18	0.00	48.9
HYD9	265.22	33.15	50.2
HYD10	265.10	33.15	50.5
HYD11	267.27	0.00	47.1
HYD12	268.83	37.28	44.8
HYD13	269.69	0.00	43.4
HYD14	268.73	0.00	45.0
HYD15	268.01	33.15	46.0
HYD16	268.49	37.28	45.3
HYD17	264.52	0.00	51.6
HYD18	263.51	74.57	53.8
HYD19	266.40	91.18	48.7
HYD20	271.42	24.88	41.0
HYD21	272.56	53.90	39.3
HYD22	272.08	53.90	40.0
HYD23	272.90	41.42	38.8
HYD24	273.18	16.61	38.4
HYD25	273.28	0.00	38.3
J-1	264.27	23.48	53.2
J-3	266.05	570.49	49.9
J-5	265.41	40.09	50.5
J-6	265.40	2.03	50.6
J-10	265.16	38.69	50.3
J-12	265.45	4.13	49.9
J-14	265.09	53.90	50.5
J-15	264.52	80.11	51.6
J-16	262.96	24.88	55.1
J-17	267.44	77.38	47.0
J-19	267.87	37.28	46.3
J-21	270.06	234.86	42.9
J-22	270.87	267.93	41.7
J-24	266.36	41.42	48.6
J-26	267.37	80.11	47.0
J-28	269.25	53.90	44.2
J-30	268.26	45.55	45.6
J-32	267.74	58.03	46.4
J-34	268.73	58.03	45.0
J-37	268.30	29.02	45.6
J-38	264.52	33.15	51.6

Sunset Creek & W3 Subdivision

Active Scenario: Max Hour

Label	Elevation (m)	Demand (L/min)	Pressure (psi)
J-39	264.52	34.55	51.5
J-40	265.37	20.75	50.0
J-41	265.39	12.40	50.0
J-42	265.15	20.75	50.3
J-43	265.42	4.13	50.0
J-44	271.38	24.88	41.0
J-45	272.04	49.76	40.1
J-46	272.74	62.17	39.0
J-47	273.11	24.88	38.5
J-48	273.11	12.40	38.5
J-49	272.78	29.02	39.0
J-50	272.21	58.03	39.8
J-51	271.64	20.75	40.6
J-52	271.54	16.61	40.8
J-53	269.65	0.00	43.5
J-54	274.34	227.53	36.8
J-55	273.65	(N/A)	(N/A)
J-80	265.02	0.00	52.2
J-81	264.00	435.08	52.7
J-82	263.50	58.03	53.2
J-83	262.92	66.30	53.7
J-84	263.00	45.55	53.4
J-85	262.00	127.06	54.8
J-86	266.00	780.47	49.0
J-87	266.88	211.38	47.7
J-88	268.42	0.00	45.5
J-89	269.03	82.91	44.6
J-90	269.50	53.90	43.9
J-91	269.00	0.00	44.7
J-92	264.63	0.00	51.1
J-93	265.11	0.00	50.4
J-94	263.10	207.17	53.2
J-95	263.58	157.48	52.6
J-96	264.00	0.00	52.7
J-97	266.00	338.44	49.1
J-98	269.01	89.78	44.7
J-99	268.53	0.00	45.3

Sunset Creek & W3 Subdivision
Active Scenario: Age - Full Occupancy
Current Time: 336.00 hours

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)	Age (Calculated) (hours)
P-1	12	R-1	J-1	300.0	120.0	416.86	0.10	0.000
P-2	104	J-1	HYD1	300.0	120.0	413.85	0.10	0.199
P-3	154	HYD1	J-3	300.0	120.0	374.71	0.09	0.591
P-4	16	J-3	HYD2	300.0	120.0	301.57	0.07	0.881
P-5	136	HYD2	J-5	300.0	120.0	299.44	0.07	1.200
P-7	34	J-5	HYD3	300.0	120.0	294.04	0.07	1.543
P-8	170	HYD3	HYD4	300.0	120.0	290.50	0.07	1.949
P-9	169	HYD4	HYD5	300.0	120.0	263.58	0.06	2.672
P-10	91	HYD5	J-10	200.0	110.0	-21.87	0.01	3.249
P-12(1)	64	HYD9	J-40	200.0	110.0	5.31	0.00	7.321
P-12(2)(1)	22	J-40	J-43	200.0	110.0	1.86	0.00	13.640
P-12(2)(2)	13	J-43	J-12	200.0	110.0	0.53	0.00	23.415
P-13(1)	9	J-10	J-42	200.0	110.0	-65.62	0.03	2.112
P-13(2)	61	J-42	HYD10	200.0	110.0	-77.84	0.04	1.856
P-14	28	HYD10	J-14	200.0	110.0	-82.09	0.04	1.565
P-15	151	J-14	J-15	200.0	110.0	-89.00	0.05	1.028
P-16(1)	123	J-15	HYD18	200.0	110.0	-183.80	0.10	0.412
P-16(2)	67	HYD18	J-16	200.0	110.0	-193.36	0.10	0.145
P-17	10	J-16	R-2	200.0	110.0	-196.55	0.10	0.000
P-18	94	HYD5	J-17	300.0	120.0	155.03	0.04	3.504
P-19	73	J-17	HYD6	300.0	120.0	145.11	0.03	4.156
P-20	13	HYD6	J-19	200.0	110.0	145.11	0.08	4.499
P-21(1)	132	J-19	J-99	200.0	110.0	60.43	0.03	5.120
P-21(2)	27	J-99	HYD7	200.0	110.0	88.34	0.05	7.188
P-22	101	HYD7	J-21	200.0	110.0	82.50	0.04	7.580
P-23	75	J-21	J-22	250.0	110.0	78.64	0.03	8.903
P-24	85	J-10	HYD8	250.0	110.0	38.80	0.01	3.055
P-25	14	HYD8	J-24	200.0	110.0	38.80	0.02	4.047
P-26	146	J-24	HYD19	200.0	110.0	-64.16	0.03	2.527
P-27	80	J-24	J-26	200.0	110.0	97.64	0.05	3.722
P-28	91	J-26	J-19	200.0	110.0	-31.64	0.02	5.299
P-29	51	J-21	HYD13	200.0	110.0	-26.25	0.01	9.946
P-29(1)	6	HYD13	J-53	200.0	110.0	-26.25	0.01	9.388
P-30	87	J-28	J-53	200.0	110.0	73.85	0.04	9.017
P-31	79	J-28	HYD12	200.0	110.0	-39.77	0.02	6.321
P-33	90	J-30	J-26	200.0	110.0	-73.52	0.04	4.773
P-34	28	J-26	HYD11	200.0	110.0	45.49	0.02	4.614
P-35	96	HYD11	J-32	200.0	110.0	45.49	0.02	5.327
P-36	75	J-32	HYD15	200.0	110.0	38.05	0.02	6.395
P-38	98	J-34	HYD16	200.0	110.0	-18.35	0.01	7.773
P-39	57	HYD16	J-30	200.0	110.0	-23.13	0.01	5.736
P-40	15	J-34	HYD14	200.0	110.0	40.99	0.02	9.318
P-41	86	HYD14	J-28	200.0	110.0	40.99	0.02	9.967
P-42	78	HYD15	J-37	200.0	110.0	33.80	0.02	7.511
P-43	65	J-37	J-34	200.0	110.0	30.08	0.02	8.684

Sunset Creek & W3 Subdivision
Active Scenario: Age - Full Occupancy
Current Time: 336.00 hours

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)	Age (Calculated) (hours)
P-48	51	HYD12	AF1	200.0	110.0	-44.55	0.02	5.495
P-49	7	AF1	J-30	200.0	110.0	-44.55	0.02	5.142
P-50	63	J-38	J-15	200.0	110.0	-4.25	0.00	4.443
P-51(1)	29	J-15	HYD17	200.0	110.0	80.28	0.04	0.680
P-51(2)	70	HYD17	J-39	200.0	110.0	80.28	0.04	1.001
P-52	103	HYD19	J-39	200.0	110.0	-75.85	0.04	1.579
P-53	50	J-6	J-5	200.0	110.0	-0.26	0.00	51.350
P-55(1)	29	J-40	J-41	50.0	100.0	0.79	0.01	11.104
P-55(2)	28	J-41	J-43	50.0	100.0	-0.80	0.01	17.355
P-56	38	J-42	HYD9	200.0	110.0	9.56	0.01	3.103
P-57	26	J-22	HYD20	250.0	110.0	44.29	0.02	9.529
P-58	15	HYD20	J-44	250.0	110.0	41.10	0.01	9.913
P-59	82	J-44	J-45	250.0	110.0	50.72	0.02	11.350
P-60	71	J-45	HYD21	250.0	110.0	44.34	0.02	12.667
P-61	66	HYD21	J-46	250.0	110.0	37.43	0.01	14.049
P-62	57	J-46	J-47	250.0	110.0	29.46	0.01	15.566
P-63	34	J-47	HYD24	200.0	110.0	-2.90	0.00	31.842
P-64	44	HYD24	J-48	200.0	110.0	-5.03	0.00	26.488
P-65	74	J-48	J-49	200.0	110.0	-6.62	0.00	21.270
P-66	38	J-49	HYD23	200.0	110.0	-10.34	0.01	17.399
P-67	75	HYD23	J-50	200.0	110.0	-15.65	0.01	15.187
P-68	88	J-50	HYD22	200.0	110.0	-23.09	0.01	12.930
P-69	76	HYD22	J-51	200.0	110.0	-30.00	0.02	11.268
P-70	19	J-51	J-52	200.0	110.0	-32.66	0.02	10.454
P-71	89	J-53	J-52	200.0	110.0	47.60	0.03	9.813
P-72	59	J-52	J-44	200.0	110.0	12.81	0.01	11.508
P-73	128	J-47	HYD25	250.0	110.0	29.17	0.01	19.819
P-74	124	HYD25	J-54	300.0	120.0	29.17	0.01	24.127
P-75	105	J-55	J-54	300.0	120.0	(N/A)	(N/A)	(N/A)
P-76	71	R-3	J-55	300.0	120.0	(N/A)	(N/A)	(N/A)
P-80	20	R-4	J-80	600.0	120.0	195.46	0.01	0.192
P-81	133	J-80	J-81	200.0	110.0	195.46	0.10	0.611
P-82	69	J-81	J-82	200.0	110.0	139.68	0.07	0.921
P-83	87	J-82	J-83	200.0	110.0	132.24	0.07	1.222
P-84	218	J-83	J-84	200.0	110.0	55.60	0.03	2.419
P-85	74	J-84	J-85	200.0	110.0	49.76	0.03	3.834
P-86	200	J-85	J-86	200.0	110.0	54.86	0.03	6.031
P-87	144	J-86	J-87	200.0	110.0	35.79	0.02	6.128
P-88	108	J-87	J-88	200.0	110.0	8.69	0.00	10.432
P-89	106	J-88	J-89	200.0	110.0	45.45	0.02	8.425
P-90	51	J-89	J-90	200.0	110.0	34.82	0.02	9.417
P-91	49	J-88	J-91	200.0	110.0	0.00	0.00	333.441
P-92	75	J-85	J-92	200.0	110.0	-21.39	0.01	6.151
P-93	31	J-92	J-93	200.0	110.0	0.00	0.00	331.510
P-94	55	J-92	J-94	200.0	110.0	-21.39	0.01	4.551

Sunset Creek & W3 Subdivision
Active Scenario: Age - Full Occupancy
Current Time: 336.00 hours

Label	Length (m)	Start Node	Stop Node	Diameter (mm)	Hazen-Williams C	Flow (L/min)	Velocity (m/s)	Age (Calculated) (hours)
P-95	164	J-94	J-95	200.0	110.0	-47.95	0.03	2.978
P-96	90	J-95	J-83	200.0	110.0	-68.14	0.04	1.739
P-97	63	J-81	J-96	200.0	110.0	0.00	0.00	333.943
P-98	79	J-86	J-97	200.0	110.0	-81.00	0.04	3.524
P-99	75	J-88	J-98	200.0	100.0	-36.76	0.02	5.896
P-100	48	J-98	J-19	250.0	110.0	-48.27	0.02	4.957
P-101	18	J-97	HYD5	250.0	110.0	-124.39	0.04	3.213
P-102	19	J-90	J-99	200.0	110.0	27.91	0.01	9.980

**P-90, P-93, and P-97 are connections to future north developments. An automatic flusher with appropriate settings shall be installed and calculated during the detailed design stage.*

Sunset Creek & W3 Subdivision
Active Scenario: Age - Full Occupancy
Current Time: 336.00 hours

Label	Elevation (m)	Demand (L/min)	Pressure (psi)	Age (Calculated) (hours)
AF1	268.33	0.00	47.5	5.242
HYD1	266.83	39.14	49.6	0.397
HYD2	265.97	2.13	50.8	0.981
HYD3	266.31	3.54	50.3	1.653
HYD4	267.78	26.92	48.3	2.343
HYD5	266.98	6.02	49.4	3.197
HYD6	267.80	0.00	48.2	4.499
HYD7	268.66	5.84	47.0	7.309
HYD8	266.18	0.00	50.5	3.998
HYD9	265.22	4.25	51.9	4.194
HYD10	265.10	4.25	52.1	1.699
HYD11	267.27	0.00	49.0	4.823
HYD12	268.83	4.78	46.8	5.847
HYD13	269.69	0.00	45.5	9.490
HYD14	268.73	0.00	46.9	9.465
HYD15	268.01	4.25	47.9	6.958
HYD16	268.49	4.78	47.2	6.430
HYD17	264.52	0.00	52.9	0.821
HYD18	263.51	9.56	54.3	0.282
HYD19	266.40	11.69	50.2	1.983
HYD20	271.42	3.19	43.1	9.814
HYD21	272.56	6.91	41.5	13.375
HYD22	272.08	6.91	42.1	11.979
HYD23	272.90	5.31	41.0	16.492
HYD24	273.18	2.13	40.6	28.839
HYD25	273.28	0.00	40.4	21.667
J-1	264.27	3.01	53.3	0.100
J-3	266.05	73.14	50.7	0.881
J-5	265.41	5.14	51.6	1.515
J-6	265.40	0.26	51.6	101.285
J-10	265.16	4.96	52.0	2.212
J-12	265.45	0.53	51.6	30.098
J-14	265.09	6.91	52.1	1.522
J-15	264.52	10.27	52.9	0.634
J-16	262.96	3.19	55.1	0.100
J-17	267.44	9.92	48.7	3.910
J-19	267.87	4.78	48.1	4.599
J-21	270.06	30.11	45.0	8.564
J-22	270.87	34.35	43.9	9.340
J-24	266.36	5.31	50.3	3.556
J-26	267.37	10.27	48.8	4.501
J-28	269.25	6.91	46.2	8.758
J-30	268.26	5.84	47.6	5.142
J-32	267.74	7.44	48.3	5.931
J-34	268.73	7.44	46.9	9.269
J-37	268.30	3.72	47.5	8.164

Sunset Creek & W3 Subdivision
Active Scenario: Age - Full Occupancy
Current Time: 336.00 hours

Label	Elevation (m)	Demand (L/min)	Pressure (psi)	Age (Calculated) (hours)
J-38	264.52	4.25	52.9	8.352
J-39	264.52	4.43	52.9	1.275
J-40	265.37	2.66	51.7	10.548
J-41	265.39	1.59	51.6	14.897
J-42	265.15	2.66	52.0	2.112
J-43	265.42	0.53	51.6	16.832
J-44	271.38	3.19	43.1	10.742
J-45	272.04	6.38	42.2	12.057
J-46	272.74	7.97	41.2	14.822
J-47	273.11	3.19	40.7	18.070
J-48	273.11	1.59	40.7	24.236
J-49	272.78	3.72	41.1	18.404
J-50	272.21	7.44	41.9	13.981
J-51	271.64	2.66	42.8	10.656
J-52	271.54	2.13	42.9	10.349
J-53	269.65	0.00	45.6	9.374
J-54	274.34	29.17	38.9	26.688
J-55	273.65	(N/A)	(N/A)	(N/A)
J-80	265.02	0.00	52.2	0.480
J-81	264.00	55.78	53.6	0.836
J-82	263.50	7.44	54.3	1.096
J-83	262.92	8.50	55.2	1.442
J-84	263.00	5.84	55.0	3.495
J-85	262.00	16.29	56.5	5.128
J-86	266.00	100.06	50.8	5.123
J-87	266.88	27.10	49.5	7.233
J-88	268.42	0.00	47.3	7.863
J-89	269.03	10.63	46.5	9.085
J-90	269.50	6.91	45.8	9.846
J-91	269.00	0.00	46.5	336.012
J-92	264.63	0.00	52.7	5.278
J-93	265.11	0.00	52.0	336.013
J-94	263.10	26.56	54.9	3.921
J-95	263.58	20.19	54.2	2.135
J-96	264.00	0.00	53.6	336.012
J-97	266.00	43.39	50.8	3.316
J-98	269.01	11.51	46.5	5.414
J-99	268.53	0.00	47.2	7.151

**J-90, J-93, and J-96 are connections to future north developments. An automatic flusher with appropriate settings shall be installed and calculated during the detailed design stage.*

Sunset Creek & W3 Subdivision

Active Scenario: Max Day + Fire @ All Junctions

Label	Fire Flow (Available) (L/min)	Pressure (Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (m/s)
J-80	40,157.32	20.0	J-54	P-80	2.40
J-81	6,012.02	20.0	J-54	P-81	2.40
J-82	6,676.67	20.0	J-54	P-81	2.40
J-83	7,569.01	20.0	J-54	P-81	2.40
J-84	7,355.94	20.0	J-54	P-85	2.40
J-85	8,412.56	20.0	J-54	P-86	2.40
J-86	8,734.21	20.0	J-54	P-101	2.40
J-87	8,889.49	20.0	J-54	P-88	2.40
J-88	8,973.94	20.0	J-54	P-20	2.40
J-89	8,251.67	20.0	J-54	P-20	2.40
J-90	7,388.26	20.0	J-54	P-102	2.40
J-92	6,831.92	20.0	J-54	P-92	2.40
J-94	7,689.56	20.0	J-92	P-92	2.40
J-95	6,948.21	20.0	J-54	P-96	2.40
J-97	5,933.92	20.0	J-54	P-101	2.40
J-98	7,124.12	20.0	J-54	P-100	2.40
J-99	7,891.80	20.0	J-54	P-20	2.40

**Up sizing of watermain system may be required during detailed design stage to meet fire flows for commercial Block20*

Sunset Creek & W3 Subdivision

Active Scenario: Rated Hydrant Capacity @ All Junctions

Label	Fire Flow (Available) (L/min)	Pressure (Residual Lower Limit) (psi)	Junction w/ Minimum Pressure (System)	Pipe w/ Maximum Velocity	Velocity of Maximum Pipe (m/s)
J-80	100,000.01	20.0	J-54	P-80	5.89
J-81	14,880.93	20.0	J-82	P-81	5.57
J-82	13,309.17	20.0	J-83	P-81	4.53
J-83	12,586.15	20.0	J-95	P-81	3.81
J-84	11,200.23	20.0	J-92	P-85	3.67
J-85	12,353.45	20.0	J-92	P-86	3.54
J-86	16,023.01	20.0	J-54	P-98	4.28
J-87	12,533.28	20.0	J-54	P-88	3.39
J-88	13,331.19	20.0	J-54	P-20	3.51
J-89	11,721.17	20.0	J-54	P-20	3.34
J-90	11,595.64	20.0	J-54	P-102	3.76
J-92	10,499.71	20.0	J-94	P-92	3.68
J-94	10,401.73	20.0	J-92	P-92	3.24
J-95	10,607.28	20.0	J-94	P-96	3.63
J-97	15,590.54	20.0	J-54	P-101	4.27
J-98	13,417.68	20.0	J-54	P-20	4.15
J-99	11,374.94	20.0	J-54	P-20	3.36