



MINTO COMMERCIAL PROPERTIES INC.

**SITE SERVICING BRIEF
ARCADIA - MIXED USE LANDS
KANATA WEST**

Project: 30805-5.2.2

AUGUST 2011



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Water Model Schematics and Output

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30805-501	Sanitary Drainage Area Plan
	Sanitary Sewer Design Sheet

Appendix C:

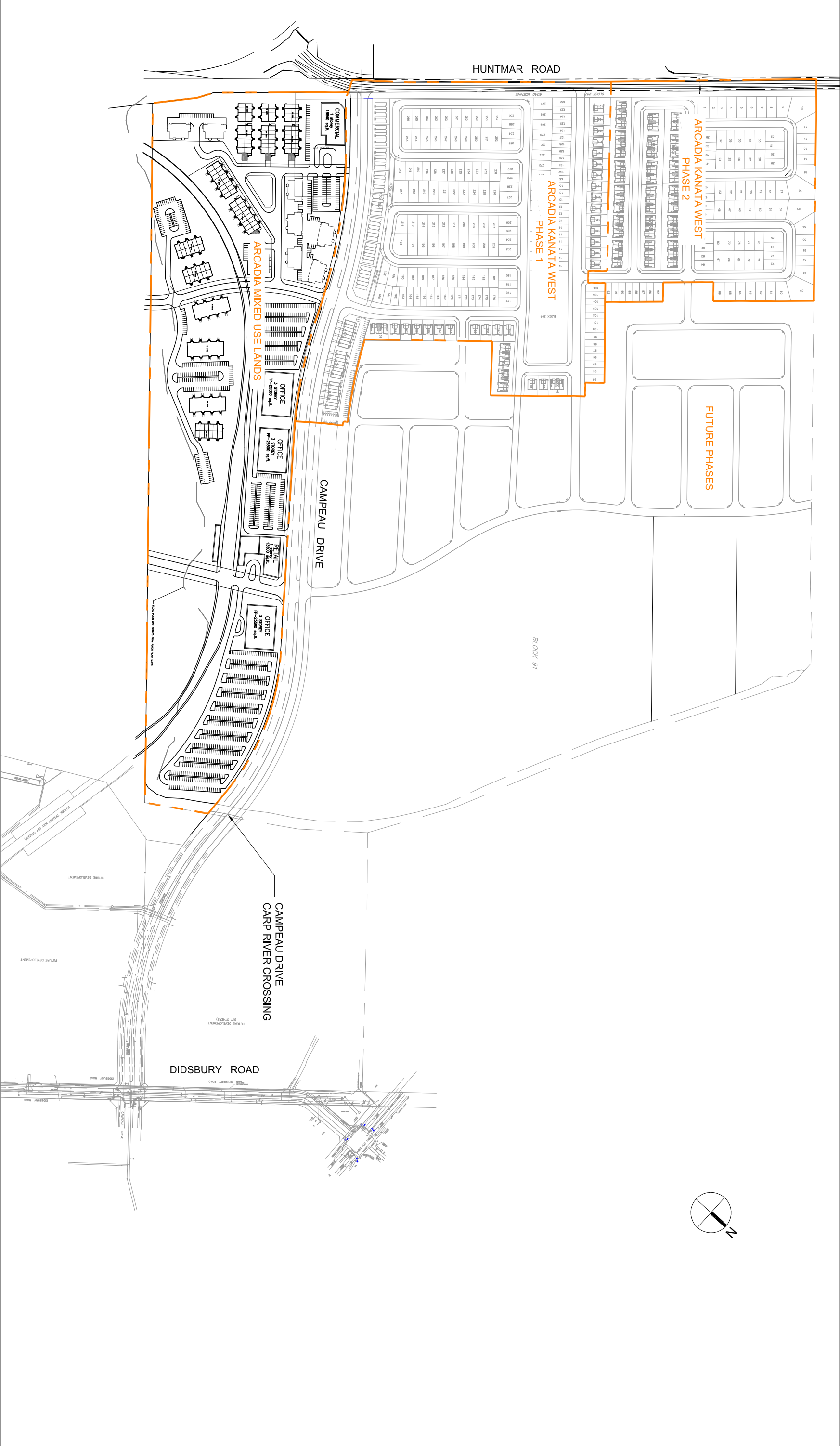
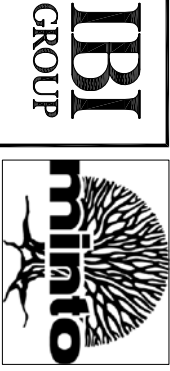
	Stormwater System
30805-500	Storm Drainage Area Plan
	Storm Sewer Design Sheet

1. INTRODUCTION

The purpose of this report is to provide a review of the adequacy of public services needed to support development of the subject property. Conceptual design of the site has been undertaken in accordance with the following reports:

- Kanata West Master Servicing Study prepared by Stantec Consulting CCL/IBI Group, June 2006.
- Site Servicing Report, Stormwater Management Plan and Erosion and Sediment Control Plan, Arcadia – Kanata West Phases 1 & 2, prepared by IBI Group, November 2010.
- Signature Ridge Pump Station – Sanitary Sewer Emergency Overflow Analysis prepared by Stantec Consulting, June 2008.
- Supplementary Geotechnical Investigation – Arcadia-Kanata West Lands, Huntmar Road to Carp River, Ottawa (Kanata), Ontario, prepared by Paterson Group Inc. July 2007.
- Arcadia Stormwater Management Report and Interim SWMF Design Brief prepared by IBI Group, July 2011.
- Signature Ridge Pump Station Hydraulic Grade Line Analysis prepared by IBI Group, July 2011.

The Arcadia mixed use lands are identified on the key plan Figure 1. Assuming that Huntmar Road runs approximately north/south, then the site is bounded by the Campeau Drive extension to the north, Carp River to east, Feedmill Creek to the south and Huntmar Road to the west. The site consists of multi use residential commercial and office building with the future transitway corridor passing through the site. The proposed Arcadia residential subdivision is located immediately north of the Campeau Drive extension.



ARCADIA MIXED USE LANDS

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KEY PLAN

FIGURE 1

2. WATER DISTRIBUTION

2.1 Existing Water System

Water supply for this development is provided by a 610 mm diameter trunk watermain on the future Campeau Drive right-of-way. As part of this overall Arcadia development, the watermain will be extended from Didsbury Road across the Carp River ending at Huntmar Road.

2.2 Water Demand Parameters

Water consumption rates are taken from the Ottawa Design Guidelines – Water Distribution for subdivisions 501 to 3,000 persons and are summarized as follows.

Average Day Demand

▪ Residential	350 L/c/d
▪ Commercial (Business Park)	35,000 L/gross ha/d
▪ Industrial (Employment Area)	50,000 L/gross ha/d

Maximum Daily Demand

▪ Residential	875 L/c/day
▪ Commercial (Business Park)	52,500 L/gross ha/d
▪ Industrial (Employment Area)	75,000 L/gross ha/d

Peak Hour Demand

▪ Residential	1,925L/c/day
▪ Commercial (Business Park)	94,500 L/gross ha/d
▪ Industrial (Employment Area)	135,000 L/gross ha/d

In addition, the following fire flow demands are used based on examples from the “Water Supply for Public Fire Protection” by the Fire Underwriters Survey.

Single Family	6,000 l/min (100 l/s)
Townhouses	8,000 l/min (133.3 l/s)
Industrial, Commercial	13,000 l/min (216.7 l/s)

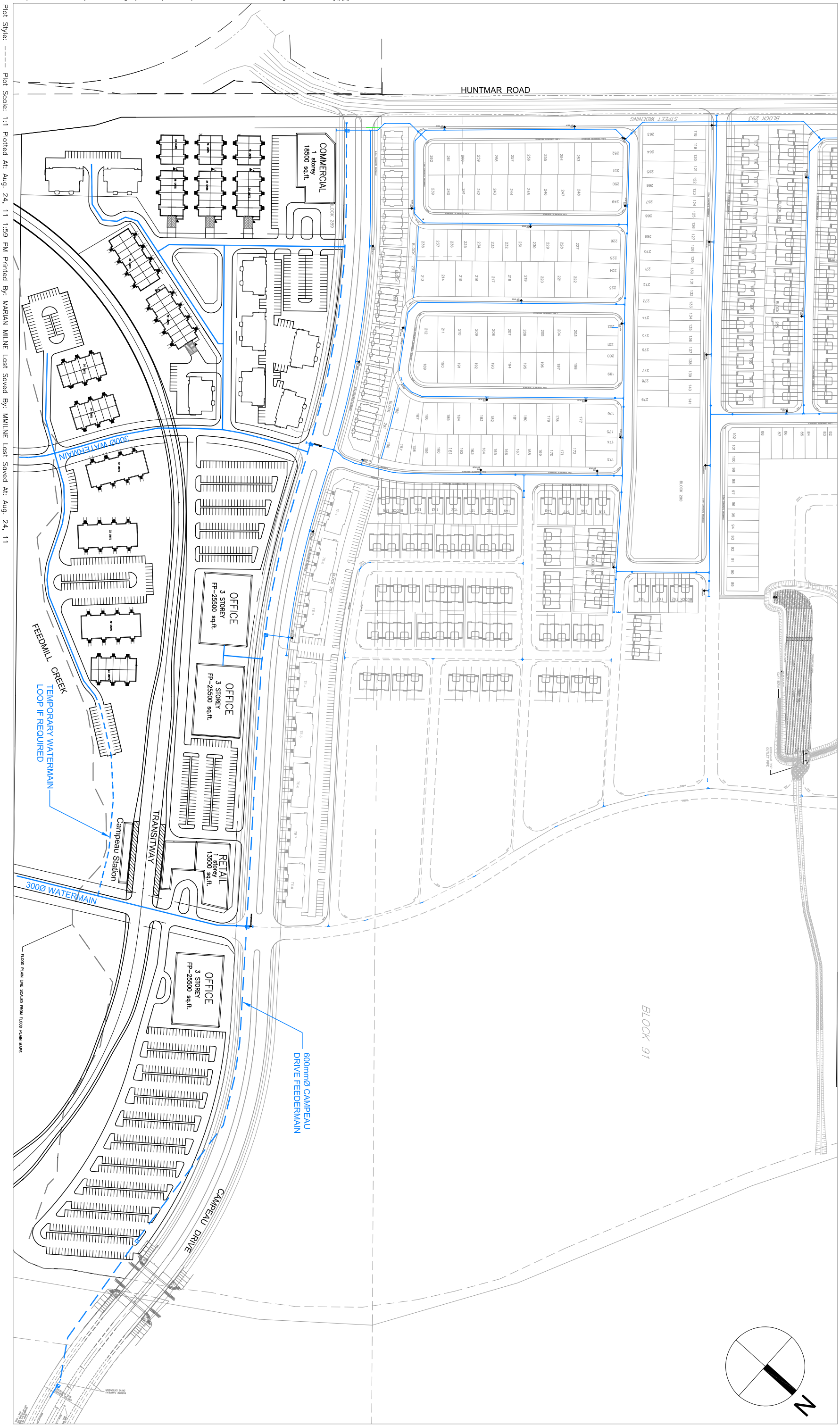
The fire flows are added to the maximum daily demands at each node to confirm the system’s fire fighting capabilities.

The projected water sub-areas and calculated demands for all nodes are tabulated in Appendix A.

2.3 Hydraulic Modelling

A computer model of the water distribution network for the Arcadia subdivision and expanded to include the mixed use lands was developed using the H20MAP water program provided by MWH Soft Inc. Water demands as described in Section 2.2 and boundary conditions were incorporated into the model.

Pipe sizes of the watermain network were confirmed by analyzing repeated interactions of the model to provide sufficient hydraulic grade line to ensure a minimum of 275 kPa during maximum hourly event and a minimum of 140 kPa during the maximum daily and fire flow events.



Scale

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ARCADIA MIXED USE LANDS

WATERMAIN PLAN

FIGURE 2

The City has provided the following hydraulic grade line (HGL) boundary conditions at the intersection of Campeau Drive and Terry Fox Drive.

Max Pressure Check	161.5 m
Max Day with Fire	154.6 m
Peak Hour	152.9 m

Three connections to the Campeau Drive trunk watermain are proposed as shown on Figure 2. As per the Master Servicing Study, the easterly and westerly connections are extended to service the lands to the south which will create a watermain loop. Depending on timing, a temporary watermain loop can be provided by extending the watermain between the Transitway and Feedmill Creek; the hydraulic modeling was carried out with the temporary loop.

Results of the hydraulic modelling are included in Appendix A. Peak hour pressures are above 275 kPa and fire flow criteria is met at all nodes. Basic day pressures exceed 550 kPa at ground level at all locations requiring pressure reducing valves.

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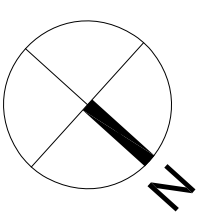


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ARCADIA MIXED USE LANDS

SANITARY SEWER PLAN

FIGURE 3



3.4 Emergency Overflow

As outlined in the Signature Ridge Pump Station – Hydraulic Grade Line Analysis Report, an emergency overflow is required from the sanitary sewer system to the stormwater pond. The report includes the mixed use development to the south. Based on the ground evaluations all building slabs and underside of footing elevations in the mixed use lands will be above the emergency sanitary hydraulic grade line with adequate free board.

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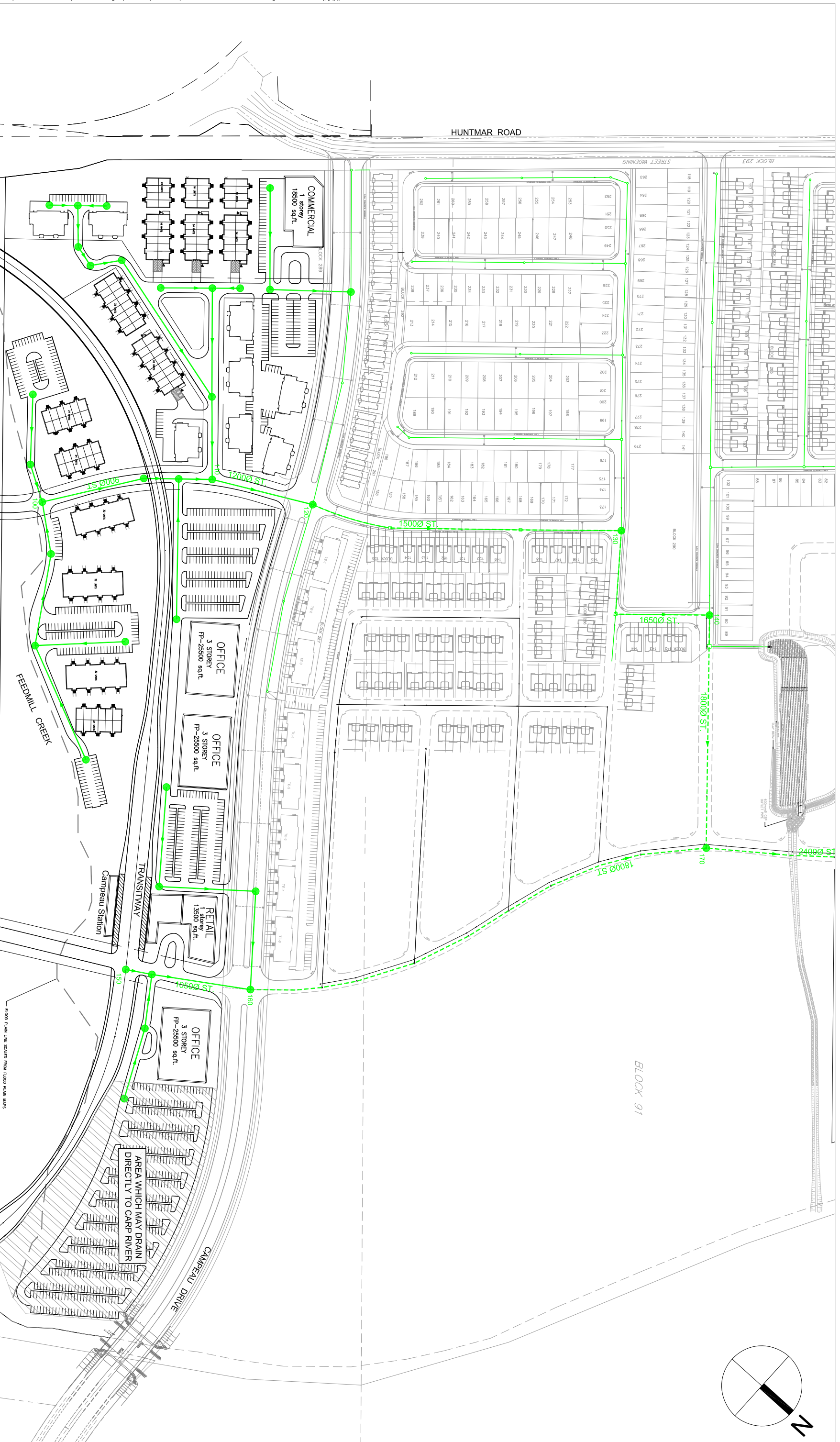


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ARCADIA MIXED USE LANDS

STORM SEWER PLAN

FIGURE 4



1:1500 PLAN LINE SCALES FROM 1:1000 PLAN MAPS

An allowance for Huntmar Road drainage from a future four lane arterial section is included in the design. The storm sewer drainage area plan for the mixed use lands along with a storm sewer design sheet is included in Appendix C.

4.4 Major System

Stormwater flows in excess of the 5 year storm frequency will be stored on the mixed use lands site and released into the minor system after the storm event. Storage will be accomplished by ponding on parking lots and rooftops by restricting flow into the minor system with inlet control devices on catchbasins and roof drains. Parking lots and roads will be graded to allow a maximum depth of ponding of 0.3 m. The site will also be graded to direct the storm water away from buildings should the ponding areas over top.

4.5 Hydraulic Grade Line

In the design of the permanent and interim stormwater management pond, the obvert of the storm sewer outletting into the pond will be above the 100 year water level. This will ensure that the 100 year hydraulic grade line in the minor system will be below the obvert of the sewers. As per City of Ottawa guidelines, the minimum underside of footing for each residential unit is 0.3 m above the obvert of the connecting storm sewer.

4.6 Fill Constraints

The geotechnical report for this development identifies a grade raise restriction. At the east end of the site, where the existing ground is the lowest, it is not possible to drain the parking area into the pond without exceeding the maximum grade raise. The same condition applies to a portion of Campeau Drive adjacent to the Carp River. While it is possible to grade the parking area to drain in the storm sewer by preloading the site or providing lightweight fill, it is also possible to drain this area to the adjacent Carp River. As per the Stormwater Management report, water quality treatment will be required but quantity control will not. The quality treatment could be provided for both the parking area and portion of Campeau Drive in the form of a stormceptor system of a small pond.

5. SEDIMENT AND EROSION CONTROL PLAN

5.1 General

During construction, existing stream and conveyance systems can be exposed to significant sediment loading. Although construction is only a temporary situation, it is propped to introduce a number of mitigative construction techniques to reduce unnecessary construction sediment loadings. These will include:

- Until the local storm sewer and storm pond are constructed, groundwater in trenches will be pumped into a filter mechanism prior to release to the environment. After construction of the storm water facility, any construction dewatering will be routed to the nearest storm sewer;
- bulkhead barriers will be constructed in any temporary drainage ditches;
- seepage barriers will be constructed in any temporary drainage ditches;
- filter cloths will remain on open surface structures such as maintenance holes and catchbasins until these structures are commissioned and put into use; and
- silt fence on the site perimeter.

5.2 Trench Dewatering

Although little groundwater is expected during construction of municipal services, any trench dewatering using pumps will be discharged into a filter trap made up of geotextile filters and straw bales similar in design to the OPSD 219.240 Dewatering Trap. These will be constructed in a bowl shape with the fabric forming the bottom and the straw bales forming the sides. Any pumped groundwater will be filtered prior to release to the existing surface runoff. The contractor will inspect and maintain the filters as needed, including sediment removal and disposal and material replacement as needed.

5.3 Bulkhead Barriers

Although the storm sewers eventually outlet into a sediment forebay, a ½ diameter bulkhead will be constructed over the lower half of the outletting sewers to reduce sediment loadings during construction. These bulkheads will trap any sediment laden flows, thus preventing any construction-related contamination into existing sewers. The bulkheads will be inspected and maintained including periodic sediment removal as needed.

5.4 Seepage Barriers

In order to further reduce sediment loading to the stormwater management facility, seepage barriers will be installed on any surface water course at appropriate locations that may become evident during construction. These barriers will be similar to either the Light Duty Straw Bale Barrier as per OPSD 219.100 or the Light Duty Silt Fence Barrier as per OPSD 219.110. They are typically made of layers of straw bales or geotextile fabric staked in place. All seepage barriers will be inspected and maintained as needed.

5.5 Surface Structure Filters

All catchbasins, and to a lesser degree, manholes, convey surface water to sewers. However, until the surrounding surface has been completed, these structures should be covered in some fashion to prevent sediment from entering the minor sewer system.

Until streets are asphalted and curbed, all catchbasins and manholes will be constructed with a geotextile filter fabric between the structure frame and cover. These will stay in place and be maintained during construction and build until it is appropriate to remove same.

6. CONCLUSIONS

As demonstrated in this report, the water, wastewater and stormwater systems are adequate to allow development of the mixed use lands.

Adherence to the sediment and erosion control plan during construction will minimize harmful impacts on surface water.

Prepared by:



Lance Erion, P. Eng.
Associate

APPENDIX A

Water Distribution

Lance Erion

From: Cole, Bruce [Bruce.Cole@ottawa.ca]
Sent: August 13, 2009 1:49 PM
To: lerion@ibigroup.com
Cc: Julien, Louis
Subject: RE: 2009-07-30 Kanata West Master Servicing Study - Watermain analysis for Arcadia

The following are boundary conditions, HGL, for hydraulic analysis at the intersection of Campeau Drive and Terry Fox Drive. The analysis was done at the end of the 610 mm, the watermain reduces in size to a 406 watermain on Campeau Drive west of Terry Fox Drive and terminates at Didsbury Road. This analysis assumes that the pressure zone will be extended west to Huntmar Road.

Max_Day + FF = 154.6 m assumed a flow of 225 l/s

Peak_Hour = 152.9.4 m

Max Pressure Check = 161.5 m, the estimated ground elevation is 95.9 m, the maximum pressure is estimated to be 94 PSI which is greater than 80 PSI. A pressure check at completion of construction is recommended to determine if pressure control is required.

These are for current conditions and are based on computer model simulation.

Disclaimer: The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation.

Bruce Cole P. Eng.
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fax.: (613)-560-6068
e-mail: Bruce.Cole@ottawa.ca

-----Original Message-----

From: Lance Erion [mailto:lerion@ibigroup.com]
Sent: July 30,2009 8:38 AM
To: Cole, Bruce
Subject: 2009-07-30 Kanata West Master Servicing Study - Watermain analysis for Arcadia

We are completing the detailed design of the first two phases of the Arcadia site located east of Huntmar Road and north of the Campeau Drive extension as shown on the attached. For the watermain analysis could we get a boundary condition for the 610 mm watermain on Campeau Drive.

Thank You



IBI GROUP
333 PRESTON STREET
OTTAWA, ON
K1S 5N4

WATERMAIN DEMAND CALCULATION SHEET

PROJECT : ARCADIA MIXED USE LANDS
LOCATION : CITY OF OTTAWA
DEVELOPER : MINTO

FILE: 30805.5.7
DATE PRINTED: 24-Aug-11
DESIGN: LE
PAGE : 1 OF 4

NODE	RESIDENTIAL				NON-RESIDENTIAL			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	UNITS			POP'N	INDTRL (ha.)	COMM. (ha.)	INST. (ha.)	Res.	Non-res.	Total	Res.	Non-res.	Total	Res.	Non-res.	Total	
	SF	SD & TH	ST														
MIXED USE LANDS																	
100						0.8		0.00	0.32	0.32	0.00	0.49	0.49	0.00	0.88	0.88	13,000
105			88	202				0.82	0.00	0.82	2.05	0.00	2.05	4.51	0.00	4.51	13,000
110			56	129				0.52	0.00	0.52	1.30	0.00	1.30	2.87	0.00	2.87	13,000
115			16	37				0.15	0.00	0.15	0.37	0.00	0.37	0.82	0.00	0.82	13,000
120			40	92				0.37	0.00	0.37	0.93	0.00	0.93	2.05	0.00	2.05	13,000
125			32	74				0.30	0.00	0.30	0.75	0.00	0.75	1.64	0.00	1.64	13,000
130			56	129				0.52	0.00	0.52	1.30	0.00	1.30	2.87	0.00	2.87	13,000
135			24	55				0.22	0.00	0.22	0.56	0.00	0.56	1.23	0.00	1.23	13,000
140			32	74				0.30	0.00	0.30	0.75	0.00	0.75	1.64	0.00	1.64	13,000
145			56	129				0.52	0.00	0.52	1.30	0.00	1.30	2.87	0.00	2.87	13,000
150					22.1			0.00	12.81	12.81	0.00	19.21	19.21	0.00	34.58	34.58	13,000
155					3.0	0.5		0.00	1.90	1.90	0.00	2.85	2.85	0.00	5.13	5.13	13,000
160					2.4			0.00	1.38	1.38	0.00	2.07	2.07	0.00	3.73	3.73	13,000
CAMPEAU																	
C-120				0	65.40	19.10		0.00	45.58	45.58	0.00	68.38	68.38	0.00	123.08	123.08	13,000
ARCADIA PHASE 1																	
PH1-100		12		32				0.13	0.00	0.13	0.33	0.00	0.33	0.72	0.00	0.72	8,000
PH1-110		18		49				0.20	0.00	0.20	0.49	0.00	0.49	1.08	0.00	1.08	8,000
PH1-120		12		32				0.13	0.00	0.13	0.33	0.00	0.33	0.72	0.00	0.72	8,000
PH1-130		6	16	53				0.21	0.00	0.21	0.54	0.00	0.54	1.18	0.00	1.18	8,000
PH1-140			16	37				0.15	0.00	0.15	0.37	0.00	0.37	0.82	0.00	0.82	8,000
PH1-150			16	37				0.15	0.00	0.15	0.37	0.00	0.37	0.82	0.00	0.82	8,000
PH1-160	8	12		60				0.24	0.00	0.24	0.60	0.00	0.60	1.33	0.00	1.33	8,000
PH1-170	8	8		49				0.20	0.00	0.20	0.49	0.00	0.49	1.09	0.00	1.09	8,000
TOTALS	16	68	448	1268	92.89	19.10		5.13	61.99	67.12	12.83	93.00	105.83	28.26	167.40	195.66	

ASSUMPTIONS			
RESIDENTIAL DENSITIES		AVG. DAILY DEMAND	
- Single Family (SF)	3.4 p / p / u	- Residential	350 l / cap / day
- Semi Detached (SD) & Townhouse (TH)	2.7 p / p / u	- Industrial (Employment Area)	50,000 l / ha / day
- Stacked Townhouse (ST)	2.3 p / p / u	- Commercial (Business Park)	35,000 l / ha / day
		MAX. DAILY DEMAND	
		- Residential	875 l / cap / day
		- Industrial (Employment Area)	75,000 l / ha / day
		- Commercial (Business Park)	52,500 l / ha / day
		MAX. HOURLY DEMAND	
		- Residential	1,925 l / cap / day
		- Industrial (Employment Area)	135,000 l / ha / day
		- Commercial (Business Park)	94,500 l / ha / day
		FIRE FLOW	
		- SF	6,000 l / min
		- SD, TH & ST	8,000 l / min
		- ICI	13,000 l / min



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WATERMAIN DEMAND CALCULATION SHEET

PROJECT : ARCADIA MIXED USE LANDS
LOCATION : CITY OF OTTAWA
DEVELOPER : MINTO

FILE: 30805.5.7
DATE PRINTED: 24-Aug-11
DESIGN: LE
PAGE : 2 OF 4

NODE	RESIDENTIAL				NON-RESIDENTIAL			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	UNITS			POP'N	INDTRL (ha.)	COMM. (ha.)	INST. (ha.)	Res.	Non-res.	Total	Res.	Non-res.	Total	Res.	Non-res.	Total	
	SF	SD & TH	ST														
ARCADIA PHASE 1																	
PH1-180	3	4		21				0.09	0.00	0.09	0.21	0.00	0.21	0.47	0.00	0.47	8,000
PH1-190	9			31				0.12	0.00	0.12	0.31	0.00	0.31	0.68	0.00	0.68	6,000
PH1-200	12			41				0.17	0.00	0.17	0.41	0.00	0.41	0.91	0.00	0.91	6,000
PH1-210	11			37				0.15	0.00	0.15	0.38	0.00	0.38	0.83	0.00	0.83	6,000
PH1-220	6			20				0.08	0.00	0.08	0.21	0.00	0.21	0.45	0.00	0.45	6,000
PH1-230	6			20				0.08	0.00	0.08	0.21	0.00	0.21	0.45	0.00	0.45	6,000
PH1-240	10			34				0.14	0.00	0.14	0.34	0.00	0.34	0.76	0.00	0.76	6,000
PH1-250	13			44				0.18	0.00	0.18	0.45	0.00	0.45	0.98	0.00	0.98	6,000
PH1-260	10			34				0.14	0.00	0.14	0.34	0.00	0.34	0.76	0.00	0.76	6,000
PH1-270	17			58				0.23	0.00	0.23	0.59	0.00	0.59	1.29	0.00	1.29	6,000
PH1-280	11			37				0.15	0.00	0.15	0.38	0.00	0.38	0.83	0.00	0.83	6,000
PH1-290		14		38				0.15	0.00	0.15	0.38	0.00	0.38	0.84	0.00	0.84	8,000
PH1-300	8	3		35				0.14	0.00	0.14	0.36	0.00	0.36	0.79	0.00	0.79	8,000
PH1-310	12	8		62				0.25	0.00	0.25	0.63	0.00	0.63	1.39	0.00	1.39	8,000
PH1-320	11	14		75				0.30	0.00	0.30	0.76	0.00	0.76	1.68	0.00	1.68	8,000
PH1-330	7	8		45				0.18	0.00	0.18	0.46	0.00	0.46	1.01	0.00	1.01	8,000
ARCADIA PHASE 2																	
PH2-100	8	12		60				0.24	0.00	0.24	0.60	0.00	0.60	1.33	0.00	1.33	8,000
PH2-110	2	6		23				0.09	0.00	0.09	0.23	0.00	0.23	0.51	0.00	0.51	8,000
PH2-120	3	5		24				0.10	0.00	0.10	0.24	0.00	0.24	0.53	0.00	0.53	8,000
PH2-130	5	11		47				0.19	0.00	0.19	0.47	0.00	0.47	1.04	0.00	1.04	8,000
PH2-140	4	9		38				0.15	0.00	0.15	0.38	0.00	0.38	0.84	0.00	0.84	8,000
PH2-150		21		57				0.23	0.00	0.23	0.57	0.00	0.57	1.26	0.00	1.26	8,000
PH2-160		32		86				0.35	0.00	0.35	0.88	0.00	0.88	1.93	0.00	1.93	8,000
TOTALS	168	147	0	968	0.00	0.00	0.00	3.90	0.00	3.90	9.79	0.00	9.79	21.56	0.00	21.56	

ASSUMPTIONS

RESIDENTIAL DENSITIES

- Single Family (SF) 3.4 p / p / u
- Semi Detached (SD) & Townhouse (TH) 2.7 p / p / u
- Stacked Townhouse (ST) 2.3 p / p / u

AVG. DAILY DEMAND

- Residential 350 l / cap / day
- Industrial (Employment Area) 50,000 l / ha / day
- Commercial (Business Park) 35,000 l / ha / day

MAX. HOURLY DEMAND

- Residential 1,925 l / cap / day
- Industrial (Employment Area) 135,000 l / ha / day
- Commercial (Business Park) 94,500 l / ha / day

MAX. DAILY DEMAND

- Residential 875 l / cap / day
- Industrial (Employment Area) 75,000 l / ha / day
- Commercial (Business Park) 52,500 l / ha / day

FIRE FLOW

- SF 6,000 l / min
- SD, TH & ST 8,000 l / min
- ICI 13,000 l / min



IBI GROUP
333 PRESTON STREET
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K1S 5N4

WATERMAIN DEMAND CALCULATION SHEET

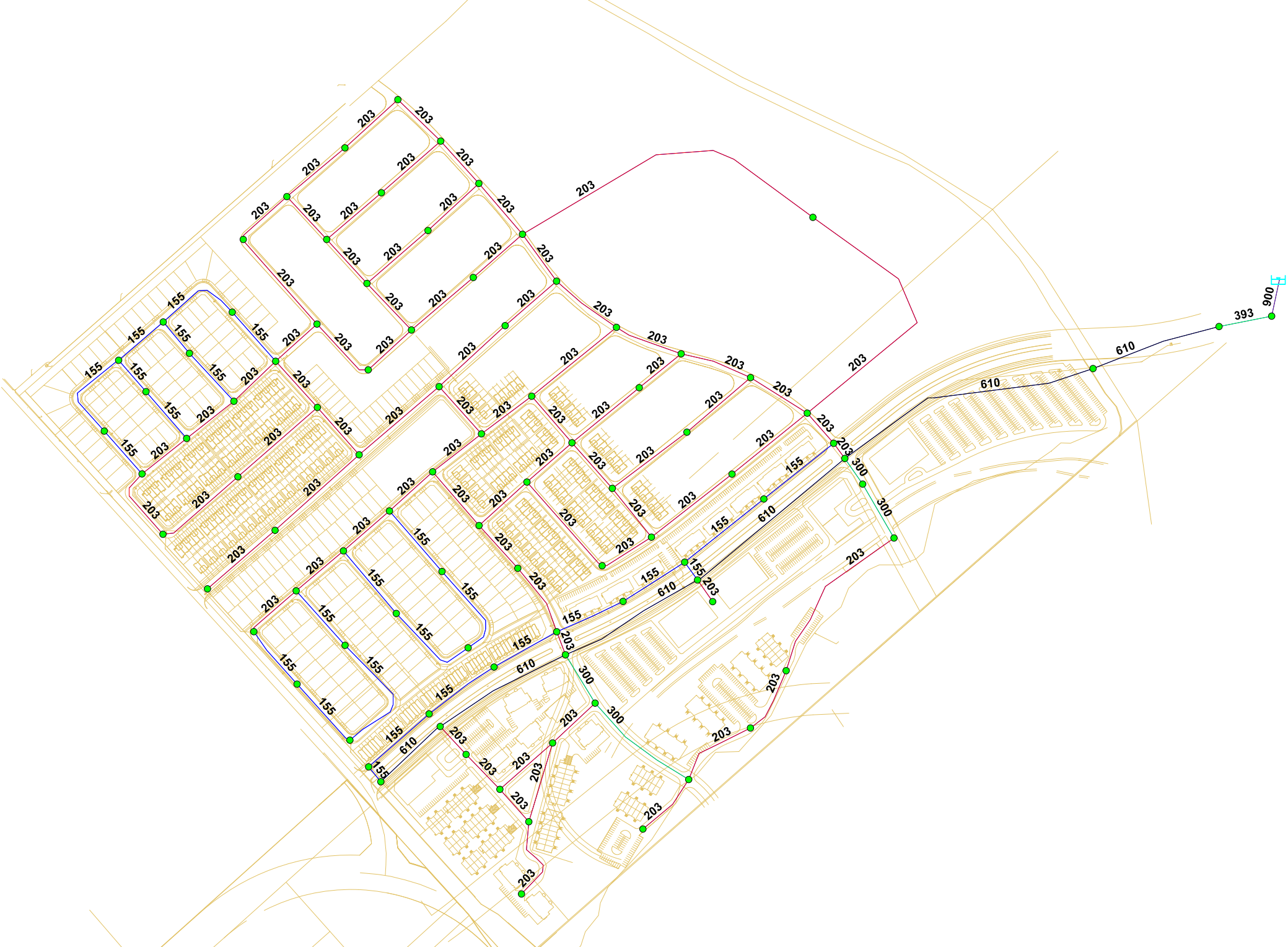
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DESIGN: LE
PAGE : 3 OF 4

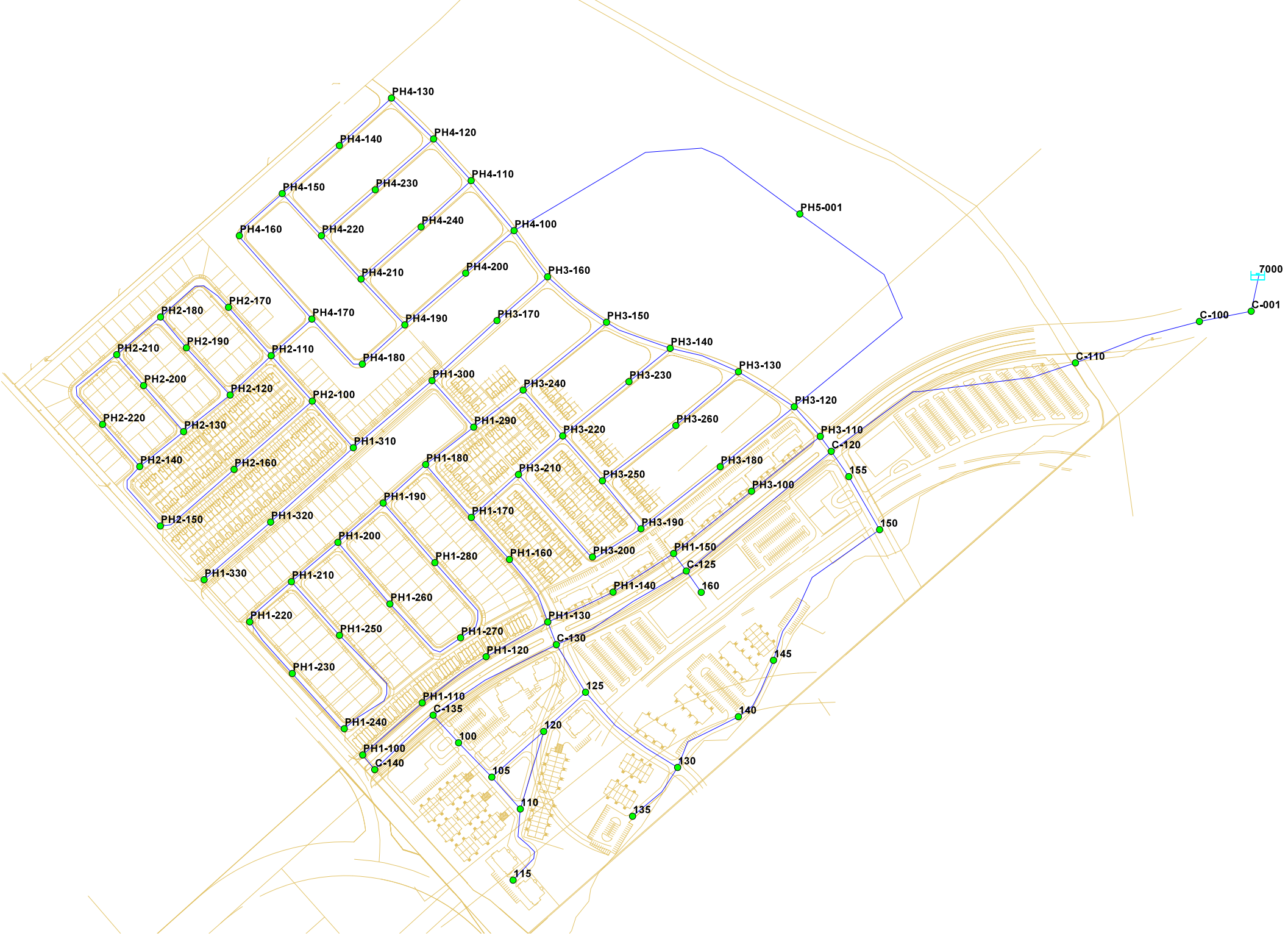
NODE	RESIDENTIAL				NON-RESIDENTIAL			AVERAGE DAILY DEMAND (l/s)			MAXIMUM DAILY DEMAND (l/s)			MAXIMUM HOURLY DEMAND (l/s)			FIRE DEMAND (l/min)
	UNITS			POP'N	INDTRL (ha.)	COMM. (ha.)	INST. (ha.)	Res.	Non-res.	Total	Res.	Non-res.	Total	Res.	Non-res.	Total	
	SF	SD & TH	ST														
ARCADIA PHASE 2																	
PH2-170	10			34				0.14	0.00	0.14	0.34	0.00	0.34	0.76	0.00	0.76	6,000
PH2-180	15			51				0.21	0.00	0.21	0.52	0.00	0.52	1.14	0.00	1.14	6,000
PH2-190	8			27				0.11	0.00	0.11	0.28	0.00	0.28	0.61	0.00	0.61	6,000
PH2-200	8			27				0.11	0.00	0.11	0.28	0.00	0.28	0.61	0.00	0.61	6,000
PH2-210	15			51				0.21	0.00	0.21	0.52	0.00	0.52	1.14	0.00	1.14	6,000
PH2-220	10			34				0.14	0.00	0.14	0.34	0.00	0.34	0.76	0.00	0.76	6,000
ARCADIA PHASE 3																	
PH3-100			48	110				0.45	0.00	0.45	1.12	0.00	1.12	2.46	0.00	2.46	8,000
PH3-110			32	74				0.30	0.00	0.30	0.75	0.00	0.75	1.64	0.00	1.64	8,000
PH3-120		8		22				0.09	0.00	0.09	0.22	0.00	0.22	0.48	0.00	0.48	8,000
PH3-130		16		43				0.18	0.00	0.18	0.44	0.00	0.44	0.96	0.00	0.96	8,000
PH3-140		8		22				0.09	0.00	0.09	0.22	0.00	0.22	0.48	0.00	0.48	8,000
PH3-150		21		57				0.23	0.00	0.23	0.57	0.00	0.57	1.26	0.00	1.26	8,000
PH3-160	4	10		41				0.16	0.00	0.16	0.41	0.00	0.41	0.90	0.00	0.90	8,000
PH3-170	6	12		53				0.21	0.00	0.21	0.53	0.00	0.53	1.18	0.00	1.18	8,000
PH3-180		17		46				0.19	0.00	0.19	0.46	0.00	0.46	1.02	0.00	1.02	8,000
PH3-190		10		27				0.11	0.00	0.11	0.27	0.00	0.27	0.60	0.00	0.60	8,000
PH3-200		16		43				0.18	0.00	0.18	0.44	0.00	0.44	0.96	0.00	0.96	8,000
PH3-210		31		84				0.34	0.00	0.34	0.85	0.00	0.85	1.86	0.00	1.86	8,000
PH3-220		18		49				0.20	0.00	0.20	0.49	0.00	0.49	1.08	0.00	1.08	8,000
PH3-230		21		57				0.23	0.00	0.23	0.57	0.00	0.57	1.26	0.00	1.26	8,000
PH3-240		19		51				0.21	0.00	0.21	0.52	0.00	0.52	1.14	0.00	1.14	8,000
PH3-250		14		38				0.15	0.00	0.15	0.38	0.00	0.38	0.84	0.00	0.84	8,000
PH3-260		25		68				0.27	0.00	0.27	0.68	0.00	0.68	1.50	0.00	1.50	8,000
TOTALS	76	246	80	1107	0	0	0	4.51	0.00	4.51	11.20	0.00	11.20	24.64	0.00	24.64	

ASSUMPTIONS			
RESIDENTIAL DENSITIES		AVG. DAILY DEMAND	
- Single Family (SF)	3.4 p/p/u	- Residential	350 l/cap/day
- Semi Detached (SD) & Townhouse (TH)	2.7 p/p/u	- Industrial (Employment Area)	50,000 l/ha/day
- Stacked Townhouse (ST)	2.3 p/p/u	- Commercial (Business Park)	35,000 l/ha/day
		MAX. DAILY DEMAND	
		- Residential	875 l/cap/day
		- Industrial (Employment Area)	75,000 l/ha/day
		- Commercial (Business Park)	52,500 l/ha/day
		MAX. HOURLY DEMAND	
		- Residential	1,925 l/cap/day
		- Industrial (Employment Area)	135,000 l/ha/day
		- Commercial (Business Park)	94,500 l/ha/day
		FIRE FLOW	
		- SF	6,000 l/min
		- SD, TH & ST	8,000 l/min
		- ICI	13,000 l/min

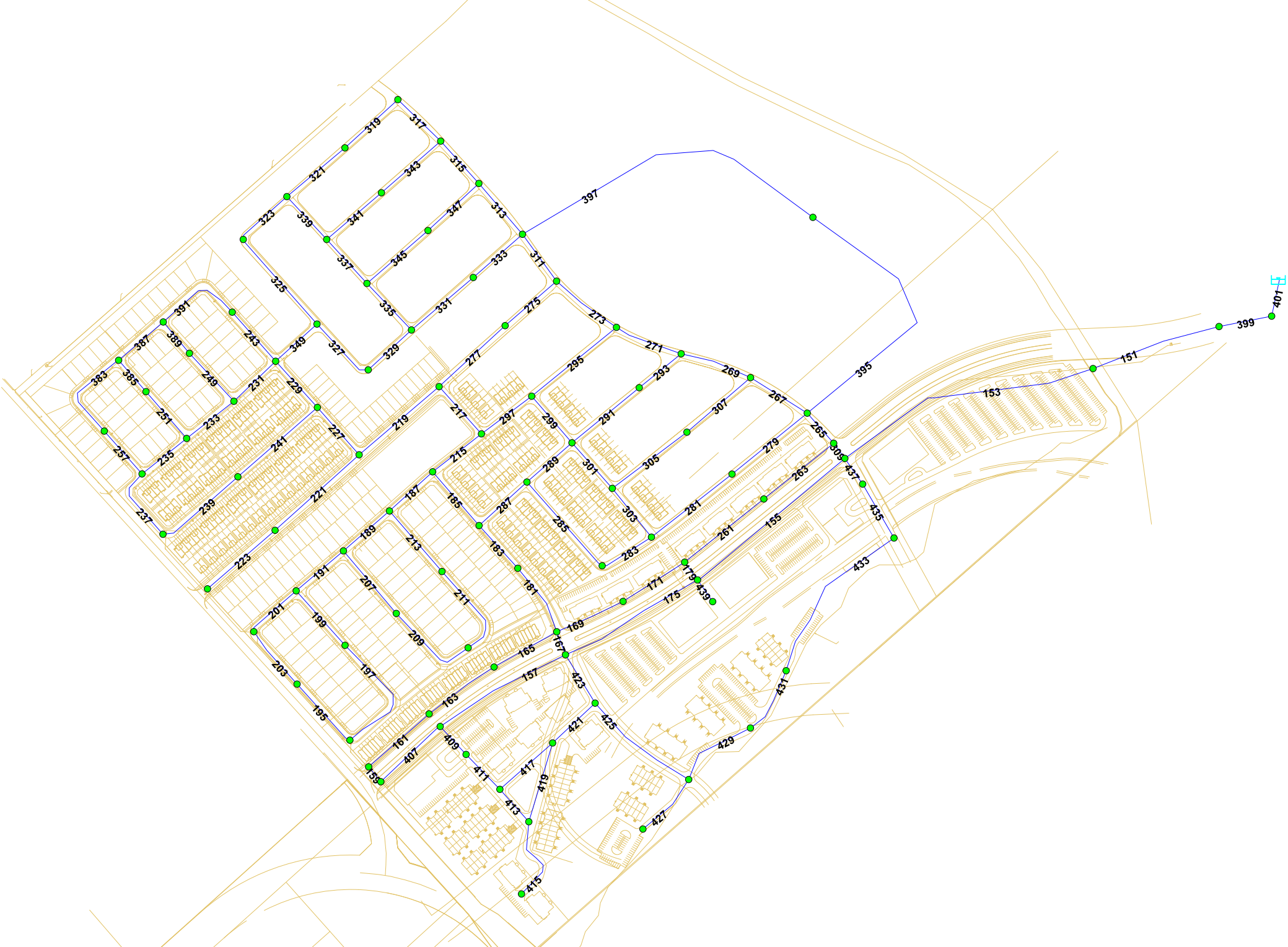
Arcadia Mixed Use Lands - Pipe Sizes



Arcadia Mixed Use Lands - Node ID's



Arcadia Mixed Use Lands - Pipe ID's












Arcadia Mixed Use Lands - Peak Hour - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	100	0.88	99.00	147.60	476.29
2	<input type="checkbox"/>	105	4.51	98.70	147.59	479.07
3	<input type="checkbox"/>	110	2.87	98.80	147.59	478.07
4	<input type="checkbox"/>	115	0.82	99.00	147.59	476.10
5	<input type="checkbox"/>	120	2.05	98.60	147.59	480.06
6	<input type="checkbox"/>	125	1.64	97.80	147.60	488.04
7	<input type="checkbox"/>	130	2.87	97.50	147.59	490.83
8	<input type="checkbox"/>	135	1.23	97.10	147.59	494.74
9	<input type="checkbox"/>	140	1.64	97.00	147.56	495.42
10	<input type="checkbox"/>	145	2.87	96.90	147.54	496.27
11	<input type="checkbox"/>	150	34.58	97.50	147.54	490.35
12	<input type="checkbox"/>	155	5.13	95.00	147.61	515.56
13	<input type="checkbox"/>	160	3.73	96.40	147.63	502.02
14	<input type="checkbox"/>	C-001	0.00	96.00	152.94	557.97
15	<input type="checkbox"/>	C-100	0.00	96.00	148.81	517.54
16	<input type="checkbox"/>	C-110	0.00	93.50	148.14	535.42
17	<input type="checkbox"/>	C-120	123.08	95.00	147.66	516.02
18	<input type="checkbox"/>	C-125	0.00	97.00	147.63	496.18
19	<input type="checkbox"/>	C-130	0.00	98.10	147.62	485.28
20	<input type="checkbox"/>	C-135	0.00	98.65	147.62	479.88
21	<input type="checkbox"/>	C-140	0.00	100.20	147.62	464.69
22	<input type="checkbox"/>	PH1-100	0.72	100.25	147.60	464.00
23	<input type="checkbox"/>	PH1-110	1.08	98.65	147.54	479.09
24	<input type="checkbox"/>	PH1-120	0.72	98.10	147.51	484.15
25	<input type="checkbox"/>	PH1-130	1.18	97.90	147.49	485.94
26	<input type="checkbox"/>	PH1-140	0.82	97.50	147.51	490.09
27	<input type="checkbox"/>	PH1-150	0.82	97.05	147.55	494.89
28	<input type="checkbox"/>	PH1-160	1.33	97.15	146.98	488.30
29	<input type="checkbox"/>	PH1-170	1.09	97.25	146.62	483.83
30	<input type="checkbox"/>	PH1-180	0.47	97.25	146.43	481.97
31	<input type="checkbox"/>	PH1-190	0.68	97.10	146.40	483.07
32	<input type="checkbox"/>	PH1-200	0.91	97.15	146.38	482.40
33	<input type="checkbox"/>	PH1-210	0.83	97.80	146.37	475.94
34	<input type="checkbox"/>	PH1-220	0.45	99.70	146.37	457.31
35	<input type="checkbox"/>	PH1-230	0.45	99.60	146.36	458.25
36	<input type="checkbox"/>	PH1-240	0.76	99.70	146.36	457.25
37	<input type="checkbox"/>	PH1-250	0.98	97.90	146.36	474.90
38	<input type="checkbox"/>	PH1-260	0.76	97.50	146.37	478.92
39	<input type="checkbox"/>	PH1-270	1.29	98.15	146.37	472.55
40	<input type="checkbox"/>	PH1-280	0.83	97.20	146.38	481.93
41	<input type="checkbox"/>	PH1-290	0.84	96.95	146.39	484.45

Arcadia Mixed Use Lands - Peak Hour - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
42	<input type="checkbox"/>	PH1-300	0.79	96.85	146.25	484.03
43	<input type="checkbox"/>	PH1-310	1.39	97.00	146.08	480.97
44	<input type="checkbox"/>	PH1-320	1.68	97.30	146.07	477.93
45	<input type="checkbox"/>	PH1-330	1.01	100.20	146.07	449.50
46	<input type="checkbox"/>	PH2-100	1.33	97.15	146.03	479.03
47	<input type="checkbox"/>	PH2-110	0.51	97.20	146.03	478.47
48	<input type="checkbox"/>	PH2-120	0.53	97.10	146.01	479.32
49	<input type="checkbox"/>	PH2-130	1.04	97.65	146.01	473.87
50	<input type="checkbox"/>	PH2-140	0.84	99.00	146.01	460.64
51	<input type="checkbox"/>	PH2-150	1.26	99.55	146.01	455.26
52	<input type="checkbox"/>	PH2-160	1.93	97.00	146.01	480.30
53	<input type="checkbox"/>	PH2-170	0.76	97.45	146.01	475.89
54	<input type="checkbox"/>	PH2-180	1.14	97.75	146.01	472.88
55	<input type="checkbox"/>	PH2-190	0.61	97.65	146.01	473.87
56	<input type="checkbox"/>	PH2-200	0.61	97.80	146.01	472.37
57	<input type="checkbox"/>	PH2-210	1.14	98.20	146.00	468.45
58	<input type="checkbox"/>	PH2-220	0.76	99.30	146.00	457.67
59	<input type="checkbox"/>	PH3-100	2.46	96.50	147.42	499.00
60	<input type="checkbox"/>	PH3-110	1.64	95.10	147.39	512.39
61	<input type="checkbox"/>	PH3-120	0.48	96.65	146.78	491.24
62	<input type="checkbox"/>	PH3-130	0.96	97.00	146.60	486.07
63	<input type="checkbox"/>	PH3-140	0.48	96.90	146.51	486.17
64	<input type="checkbox"/>	PH3-150	1.26	96.90	146.41	485.12
65	<input type="checkbox"/>	PH3-160	0.90	96.85	146.24	483.98
66	<input type="checkbox"/>	PH3-170	1.18	96.70	146.24	485.46
67	<input type="checkbox"/>	PH3-180	1.02	97.05	146.68	486.32
68	<input type="checkbox"/>	PH3-190	0.60	97.45	146.59	481.52
69	<input type="checkbox"/>	PH3-200	0.96	97.35	146.58	482.43
70	<input type="checkbox"/>	PH3-210	1.86	97.10	146.57	484.81
71	<input type="checkbox"/>	PH3-220	1.08	97.50	146.53	480.41
72	<input type="checkbox"/>	PH3-230	1.26	97.60	146.52	479.33
73	<input type="checkbox"/>	PH3-240	1.14	97.15	146.43	482.87
74	<input type="checkbox"/>	PH3-250	0.84	97.70	146.57	478.86
75	<input type="checkbox"/>	PH3-260	1.50	96.75	146.58	488.30
76	<input type="checkbox"/>	PH4-100	0.76	96.65	146.11	484.69
77	<input type="checkbox"/>	PH4-110	0.61	96.40	146.07	486.70
78	<input type="checkbox"/>	PH4-120	0.61	96.70	146.05	483.63
79	<input type="checkbox"/>	PH4-130	0.53	96.75	146.05	483.11
80	<input type="checkbox"/>	PH4-140	0.76	96.80	146.05	482.59
81	<input type="checkbox"/>	PH4-150	0.76	96.85	146.05	482.09
82	<input type="checkbox"/>	PH4-160	1.29	96.70	146.04	483.50

Arcadia Mixed Use Lands - Peak Hour - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
83		PH4-170	1.06	96.90	146.04	481.50
84		PH4-180	0.53	96.70	146.05	483.55
85		PH4-190	0.83	96.90	146.06	481.69
86		PH4-200	0.76	96.55	146.08	485.39
87		PH4-210	0.68	96.65	146.06	484.13
88		PH4-220	0.68	96.65	146.05	484.09
89		PH4-230	0.76	96.90	146.05	481.65
90		PH4-240	0.76	96.50	146.06	485.65
91		PH5-001	15.75	97.50	146.11	476.36

Arcadia Mixed Use Lands - Max Day + Fire - Fireflow Report

	ID	Total Demand (L/s)	Critical Node 1 ID	Critical Node 1 Pressure (kPa)	Critical Node 1 Head (m)	Adjusted Fire-Flow (L/s)	Available Flow @Hydrant (L/s)	Critical Node 2 ID	Critical Node 2 Pressure (kPa)	Critical Node 2 Head (m)	Adjusted Available Flow (L/s)	Design Flow (L/s)
1	100	217.16	100	418.13	141.67	445.78	445.79	100	139.96	113.28	445.79	445.78
2	105	218.72	105	401.58	139.68	408.47	408.47	105	139.96	112.98	408.47	408.47
3	110	217.97	115	362.26	135.77	351.12	352.11	115	138.00	112.88	351.12	351.12
4	115	217.04	115	106.09	109.83	207.31	207.31	115	139.96	113.28	207.31	207.31
5	120	217.60	120	407.09	140.14	416.47	416.47	120	139.96	112.88	416.47	416.47
6	125	217.42	PH1-330	458.88	144.63	685.92	609.74	125	139.97	112.08	609.74	609.74
7	130	217.97	130	444.92	142.90	490.01	490.01	130	139.96	111.78	490.01	490.01
8	135	217.23	135	250.37	122.65	258.60	258.61	135	139.96	111.38	258.61	258.60
9	140	217.42	140	364.88	134.24	340.42	340.42	140	139.96	111.28	340.42	340.42
10	145	217.97	145	345.47	132.16	321.58	321.58	145	139.96	111.18	321.58	321.58
11	150	235.88	150	459.87	144.43	568.87	568.87	150	139.97	111.78	568.87	568.87
12	155	219.52	PH1-330	460.74	142.02	705.95	672.52	150	116.28	106.87	650.56	650.56
13	160	218.74	160	421.14	139.38	414.16	414.15	160	139.96	110.68	414.16	414.16
14	C-120	241.58	PH1-330	460.79	142.02	728.33	787.19	PH1-330	85.26	103.70	728.35	728.33
15	C-125	216.67	PH1-330	459.51	143.89	690.19	721.34	PH1-100	108.17	108.04	687.78	687.78
16	C-130	216.67	PH1-330	458.64	144.90	683.39	697.04	PH1-100	119.00	110.24	675.20	675.20
17	C-140	216.67	PH1-100	457.55	146.89	656.61	655.77	C-140	139.97	114.48	655.78	655.78
18	PH1-100	133.66	PH1-100	424.84	143.60	292.05	292.05	PH1-100	139.96	114.53	292.05	292.05
19	PH1-110	133.82	PH1-110	327.25	132.05	190.72	190.73	PH1-110	139.96	112.93	190.73	190.72
20	PH1-120	133.66	PH1-120	350.82	133.90	202.20	202.20	PH1-120	139.96	112.38	202.20	202.20
21	PH1-130	133.87	PH1-330	479.66	146.85	583.62	521.55	PH1-130	139.97	112.18	521.56	521.56
22	PH1-140	133.70	PH1-140	400.11	138.33	236.15	236.15	PH1-140	139.96	111.78	236.15	236.15
23	PH1-150	133.70	PH1-150	478.37	145.87	359.26	359.26	PH1-150	139.96	111.33	359.26	359.26
24	PH1-160	133.93	PH1-330	456.36	143.72	426.24	364.48	PH1-160	139.96	111.43	364.48	364.48
25	PH1-170	133.82	PH1-330	442.30	142.39	366.94	349.21	PH1-170	139.96	111.53	349.21	349.21
26	PH1-180	133.54	PH1-240	416.06	139.71	287.61	298.13	PH1-240	115.79	109.07	287.62	287.61
27	PH1-190	100.31	PH1-240	412.66	139.21	208.08	215.96	PH1-240	114.41	108.77	208.08	208.08
28	PH1-200	100.41	PH1-240	379.67	135.89	177.27	183.80	PH1-240	114.94	108.88	177.27	177.27
29	PH1-210	100.38	PH1-240	335.60	132.05	151.03	155.15	PH1-240	121.33	110.18	151.03	151.03
30	PH1-220	100.21	PH1-220	304.18	130.74	137.75	137.75	PH1-220	139.96	113.98	137.75	137.75
31	PH1-230	100.21	PH1-230	217.97	121.84	113.84	113.84	PH1-230	139.96	113.88	113.84	113.84
32	PH1-240	100.34	PH1-240	179.30	118.00	106.61	106.61	PH1-240	139.96	113.98	106.61	106.61
33	PH1-250	100.45	PH1-250	241.77	122.57	118.40	118.40	PH1-250	139.96	112.18	118.40	118.40
34	PH1-260	100.34	PH1-260	302.93	128.41	134.22	134.22	PH1-260	139.96	111.78	134.22	134.22
35	PH1-270	100.59	PH1-270	265.84	125.28	124.48	124.49	PH1-270	139.96	112.43	124.49	124.48
36	PH1-280	100.38	PH1-280	318.35	129.69	138.95	138.95	PH1-280	139.96	111.48	138.95	138.95
37	PH1-290	133.71	PH1-330	422.49	140.06	313.29	311.84	PH1-290	139.96	111.23	311.84	311.84
38	PH1-300	133.69	PH1-330	402.53	137.93	275.85	281.85	PH1-330	126.04	109.71	275.85	275.85
39	PH1-310	133.96	PH1-330	354.43	133.17	220.51	231.04	PH1-330	108.58	108.08	220.51	220.51
40	PH1-320	134.09	PH1-330	219.01	119.65	153.36	159.84	PH1-330	111.54	108.68	153.36	153.36
41	PH1-330	133.79	PH1-330	112.81	111.71	128.64	128.64	PH1-330	139.96	114.48	128.64	128.64
42	PH2-100	133.93	PH2-150	357.53	133.64	220.67	224.03	PH2-150	129.98	110.41	220.68	220.67
43	PH2-110	133.56	PH2-220	357.35	133.67	218.94	224.00	PH2-220	124.67	109.92	218.94	218.94
44	PH2-120	133.57	PH2-220	337.26	131.52	204.14	204.57	PH2-220	138.57	111.24	204.14	204.14
45	PH2-130	133.80	PH2-220	323.12	130.62	195.42	194.31	PH2-130	139.96	111.93	194.31	194.31
46	PH2-140	133.71	PH2-140	308.64	130.50	186.51	186.51	PH2-140	139.96	113.28	186.51	186.51

Arcadia Mixed Use Lands - Max Day + Fire - Fireflow Report

	ID	Total Demand (L/s)	Critical Node 1 ID	Critical Node 1 Pressure (kPa)	Critical Node 1 Head (m)	Adjusted Fire-Flow (L/s)	Available Flow @Hydrant (L/s)	Critical Node 2 ID	Critical Node 2 Pressure (kPa)	Critical Node 2 Head (m)	Adjusted Available Flow (L/s)	Design Flow (L/s)
47	PH2-150	133.90	PH2-150	293.38	129.49	180.32	180.32	PH2-150	139.96	113.83	180.32	180.32
48	PH2-160	134.21	PH2-150	321.94	129.85	195.81	192.58	PH2-160	139.96	111.28	192.58	192.58
49	PH2-170	100.34	PH2-170	363.20	134.51	159.54	159.54	PH2-170	139.96	111.73	159.54	159.53
50	PH2-180	100.52	PH2-180	381.43	136.67	171.79	171.79	PH2-180	139.96	112.03	171.79	171.79
51	PH2-190	100.28	PH2-190	367.25	135.13	162.43	162.43	PH2-190	139.96	111.93	162.43	162.43
52	PH2-200	100.28	PH2-200	360.35	134.57	159.16	159.16	PH2-200	139.96	112.08	159.16	159.16
53	PH2-210	100.52	PH2-210	371.50	136.11	167.22	167.22	PH2-210	139.96	112.48	167.22	167.22
54	PH2-220	100.34	PH2-220	330.46	133.02	148.45	148.45	PH2-220	139.96	113.58	148.45	148.45
55	PH3-100	134.45	PH3-100	377.28	135.00	214.58	214.58	PH3-100	139.96	110.78	214.58	214.58
56	PH3-110	134.08	PH1-330	475.81	143.66	528.57	545.68	PH1-330	119.41	107.29	528.57	528.57
57	PH3-120	133.55	PH1-330	449.65	142.54	389.09	395.53	PH1-330	129.55	109.87	389.12	389.09
58	PH3-130	133.77	PH1-330	441.68	142.07	364.03	337.13	PH3-130	139.96	111.28	337.13	337.13
59	PH3-140	133.55	PH1-330	435.04	141.30	344.32	321.39	PH3-140	139.96	111.18	321.39	321.39
60	PH3-150	133.90	PH1-330	426.34	140.41	322.72	311.20	PH3-150	139.96	111.18	311.20	311.20
61	PH3-160	133.74	PH1-330	412.48	138.94	293.78	287.94	PH3-160	139.96	111.13	287.94	287.94
62	PH3-170	133.86	PH1-330	409.56	138.50	287.32	261.48	PH3-170	139.96	110.98	261.48	261.48
63	PH3-180	133.79	PH3-180	442.67	142.22	295.29	295.29	PH3-180	139.96	111.33	295.29	295.29
64	PH3-190	133.60	PH1-330	442.82	142.64	366.17	317.44	PH3-190	139.96	111.73	317.44	317.44
65	PH3-200	133.77	PH3-200	435.96	141.84	289.05	289.05	PH3-200	139.96	111.63	289.05	289.05
66	PH3-210	134.18	PH1-330	440.78	142.08	358.68	332.41	PH3-210	139.96	111.38	332.41	332.41
67	PH3-220	133.82	PH1-330	437.16	142.11	349.02	339.81	PH3-220	139.96	111.78	339.81	339.81
68	PH3-230	133.90	PH3-230	435.58	142.05	293.26	293.26	PH3-230	139.96	111.88	293.26	293.26
69	PH3-240	133.85	PH1-330	429.43	140.97	327.93	318.44	PH3-240	139.96	111.43	318.44	318.44
70	PH3-250	133.71	PH1-330	440.43	142.65	358.77	323.20	PH3-250	139.96	111.98	323.20	323.20
71	PH3-260	134.01	PH1-330	440.18	141.67	359.20	290.81	PH3-260	139.96	111.03	290.81	290.81
72	PH4-100	100.34	PH1-330	445.98	142.16	281.47	267.79	PH4-100	139.96	110.93	267.79	267.79
73	PH4-110	100.28	PH2-150	442.32	141.54	261.12	241.56	PH4-110	139.96	110.68	241.56	241.56
74	PH4-120	100.28	PH2-150	440.59	141.66	257.16	227.40	PH4-120	139.96	110.98	227.40	227.40
75	PH4-130	100.24	PH4-130	434.15	141.05	210.96	210.96	PH4-130	139.96	111.03	210.96	210.96
76	PH4-140	100.34	PH4-140	431.79	140.86	208.79	208.79	PH4-140	139.96	111.08	208.79	208.79
77	PH4-150	100.34	PH2-150	439.12	141.66	254.14	225.24	PH4-150	139.96	111.13	225.24	225.24
78	PH4-160	100.59	PH2-150	436.70	141.26	249.59	217.41	PH4-160	139.96	110.98	217.41	217.41
79	PH4-170	100.48	PH2-150	430.22	140.80	237.35	232.93	PH4-170	139.96	111.18	232.93	232.93
80	PH4-180	100.24	PH2-150	436.05	141.20	248.01	226.59	PH4-180	139.96	110.98	226.60	226.59
81	PH4-190	100.38	PH2-150	439.56	141.76	255.19	238.63	PH4-190	139.96	111.18	238.63	238.63
82	PH4-200	100.34	PH1-330	443.92	141.85	276.13	237.06	PH4-200	139.96	110.83	237.06	237.06
83	PH4-210	100.31	PH2-150	439.92	141.54	255.94	235.80	PH4-210	139.96	110.93	235.80	235.80
84	PH4-220	100.31	PH2-150	439.78	141.53	255.48	230.01	PH4-220	139.96	110.93	230.01	230.01
85	PH4-230	100.34	PH4-230	436.03	141.40	214.67	214.67	PH4-230	139.96	111.18	214.67	214.67
86	PH4-240	100.34	PH2-150	441.06	141.51	258.32	223.20	PH4-240	139.96	110.78	223.20	223.20

Arcadia Mixed Use Lands - Max Day - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	100	0.49	99.00	153.80	536.97
2	<input type="checkbox"/>	105	2.05	98.70	153.79	539.87
3	<input type="checkbox"/>	110	1.30	98.80	153.79	538.89
4	<input type="checkbox"/>	115	0.37	99.00	153.79	536.92
5	<input type="checkbox"/>	120	0.93	98.60	153.79	540.85
6	<input type="checkbox"/>	125	0.75	97.80	153.80	548.72
7	<input type="checkbox"/>	130	1.30	97.50	153.79	551.62
8	<input type="checkbox"/>	135	0.56	97.10	153.79	555.54
9	<input type="checkbox"/>	140	0.75	97.00	153.78	556.41
10	<input type="checkbox"/>	145	1.30	96.90	153.78	557.34
11	<input type="checkbox"/>	150	19.21	97.50	153.77	551.42
12	<input type="checkbox"/>	155	2.85	95.00	153.80	576.15
13	<input type="checkbox"/>	160	2.07	96.40	153.80	562.51
14	<input type="checkbox"/>	C-001	0.00	96.00	154.60	574.23
15	<input type="checkbox"/>	C-100	0.00	96.00	153.98	568.19
16	<input type="checkbox"/>	C-110	0.00	93.50	153.88	591.70
17	<input type="checkbox"/>	C-120	24.91	95.00	153.81	576.30
18	<input type="checkbox"/>	C-125	0.00	97.00	153.80	556.64
19	<input type="checkbox"/>	C-130	0.00	98.10	153.80	545.83
20	<input type="checkbox"/>	C-135	0.00	98.65	153.80	540.44
21	<input type="checkbox"/>	C-140	0.00	100.20	153.80	525.25
22	<input type="checkbox"/>	PH1-100	0.33	100.25	153.80	524.71
23	<input type="checkbox"/>	PH1-110	0.49	98.65	153.78	540.25
24	<input type="checkbox"/>	PH1-120	0.33	98.10	153.77	545.56
25	<input type="checkbox"/>	PH1-130	0.54	97.90	153.77	547.48
26	<input type="checkbox"/>	PH1-140	0.37	97.50	153.78	551.46
27	<input type="checkbox"/>	PH1-150	0.37	97.05	153.79	555.96
28	<input type="checkbox"/>	PH1-160	0.60	97.15	153.65	553.63
29	<input type="checkbox"/>	PH1-170	0.49	97.25	153.56	551.81
30	<input type="checkbox"/>	PH1-180	0.21	97.25	153.52	551.36
31	<input type="checkbox"/>	PH1-190	0.31	97.10	153.51	552.75
32	<input type="checkbox"/>	PH1-200	0.41	97.15	153.50	552.21
33	<input type="checkbox"/>	PH1-210	0.38	97.80	153.50	545.82
34	<input type="checkbox"/>	PH1-220	0.21	99.70	153.50	527.20
35	<input type="checkbox"/>	PH1-230	0.21	99.60	153.50	528.17
36	<input type="checkbox"/>	PH1-240	0.34	99.70	153.50	527.19
37	<input type="checkbox"/>	PH1-250	0.45	97.90	153.50	544.83
38	<input type="checkbox"/>	PH1-260	0.34	97.50	153.50	548.77
39	<input type="checkbox"/>	PH1-270	0.59	98.15	153.50	542.40
40	<input type="checkbox"/>	PH1-280	0.38	97.20	153.50	551.73
41	<input type="checkbox"/>	PH1-290	0.38	96.95	153.50	554.19

Arcadia Mixed Use Lands - Max Day - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
42	<input type="checkbox"/>	PH1-300	0.36	96.85	153.47	554.82
43	<input type="checkbox"/>	PH1-310	0.63	97.00	153.43	552.97
44	<input type="checkbox"/>	PH1-320	0.76	97.30	153.43	550.01
45	<input type="checkbox"/>	PH1-330	0.46	100.20	153.43	521.59
46	<input type="checkbox"/>	PH2-100	0.60	97.15	153.42	551.39
47	<input type="checkbox"/>	PH2-110	0.23	97.20	153.42	550.88
48	<input type="checkbox"/>	PH2-120	0.24	97.10	153.41	551.83
49	<input type="checkbox"/>	PH2-130	0.47	97.65	153.41	546.43
50	<input type="checkbox"/>	PH2-140	0.38	99.00	153.41	533.20
51	<input type="checkbox"/>	PH2-150	0.57	99.55	153.41	527.81
52	<input type="checkbox"/>	PH2-160	0.88	97.00	153.41	552.81
53	<input type="checkbox"/>	PH2-170	0.34	97.45	153.41	548.40
54	<input type="checkbox"/>	PH2-180	0.52	97.75	153.41	545.44
55	<input type="checkbox"/>	PH2-190	0.28	97.65	153.41	546.42
56	<input type="checkbox"/>	PH2-200	0.28	97.80	153.41	544.95
57	<input type="checkbox"/>	PH2-210	0.52	98.20	153.41	541.03
58	<input type="checkbox"/>	PH2-220	0.34	99.30	153.41	530.25
59	<input type="checkbox"/>	PH3-100	1.12	96.50	153.75	561.04
60	<input type="checkbox"/>	PH3-110	0.75	95.10	153.75	574.68
61	<input type="checkbox"/>	PH3-120	0.22	96.65	153.60	558.05
62	<input type="checkbox"/>	PH3-130	0.44	97.00	153.56	554.20
63	<input type="checkbox"/>	PH3-140	0.22	96.90	153.53	554.97
64	<input type="checkbox"/>	PH3-150	0.57	96.90	153.51	554.72
65	<input type="checkbox"/>	PH3-160	0.41	96.85	153.47	554.81
66	<input type="checkbox"/>	PH3-170	0.53	96.70	153.47	556.28
67	<input type="checkbox"/>	PH3-180	0.46	97.05	153.57	553.89
68	<input type="checkbox"/>	PH3-190	0.27	97.45	153.55	549.76
69	<input type="checkbox"/>	PH3-200	0.44	97.35	153.55	550.73
70	<input type="checkbox"/>	PH3-210	0.85	97.10	153.55	553.16
71	<input type="checkbox"/>	PH3-220	0.49	97.50	153.54	549.12
72	<input type="checkbox"/>	PH3-230	0.57	97.60	153.54	548.12
73	<input type="checkbox"/>	PH3-240	0.52	97.15	153.51	552.32
74	<input type="checkbox"/>	PH3-250	0.38	97.70	153.55	547.26
75	<input type="checkbox"/>	PH3-260	0.68	96.75	153.55	556.60
76	<input type="checkbox"/>	PH4-100	0.34	96.65	153.44	556.45
77	<input type="checkbox"/>	PH4-110	0.28	96.40	153.43	558.80
78	<input type="checkbox"/>	PH4-120	0.28	96.70	153.42	555.83
79	<input type="checkbox"/>	PH4-130	0.24	96.75	153.42	555.34
80	<input type="checkbox"/>	PH4-140	0.34	96.80	153.42	554.84
81	<input type="checkbox"/>	PH4-150	0.34	96.85	153.42	554.35
82	<input type="checkbox"/>	PH4-160	0.59	96.70	153.42	555.80

Arcadia Mixed Use Lands - Max Day - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
83	<input type="checkbox"/>	PH4-170	0.48	96.90	153.42	553.84
84	<input type="checkbox"/>	PH4-180	0.24	96.70	153.42	555.82
85	<input type="checkbox"/>	PH4-190	0.38	96.90	153.42	553.88
86	<input type="checkbox"/>	PH4-200	0.34	96.55	153.43	557.37
87	<input type="checkbox"/>	PH4-210	0.31	96.65	153.42	556.33
88	<input type="checkbox"/>	PH4-220	0.31	96.65	153.42	556.32
89	<input type="checkbox"/>	PH4-230	0.34	96.90	153.42	553.87
90	<input type="checkbox"/>	PH4-240	0.34	96.50	153.42	557.81
91	<input type="checkbox"/>	PH5-001	7.88	97.50	153.43	548.11










Arcadia Mixed Use Lands - Basic Day - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
1	<input type="checkbox"/>	100	0.32	99.00	160.91	606.71
2	<input type="checkbox"/>	105	0.82	98.70	160.91	609.64
3	<input type="checkbox"/>	110	0.52	98.80	160.91	608.66
4	<input type="checkbox"/>	115	0.15	99.00	160.91	606.70
5	<input type="checkbox"/>	120	0.37	98.60	160.91	610.62
6	<input type="checkbox"/>	125	0.30	97.80	160.91	618.47
7	<input type="checkbox"/>	130	0.52	97.50	160.91	621.39
8	<input type="checkbox"/>	135	0.22	97.10	160.91	625.31
9	<input type="checkbox"/>	140	0.30	97.00	160.91	626.24
10	<input type="checkbox"/>	145	0.52	96.90	160.90	627.19
11	<input type="checkbox"/>	150	12.81	97.50	160.90	621.27
12	<input type="checkbox"/>	155	1.90	95.00	160.91	645.87
13	<input type="checkbox"/>	160	1.38	96.40	160.92	632.20
14	<input type="checkbox"/>	C-001	0.00	96.00	161.50	641.85
15	<input type="checkbox"/>	C-100	0.00	96.00	161.04	637.39
16	<input type="checkbox"/>	C-110	0.00	93.50	160.97	661.16
17	<input type="checkbox"/>	C-120	45.58	95.00	160.92	645.94
18	<input type="checkbox"/>	C-125	0.00	97.00	160.92	626.33
19	<input type="checkbox"/>	C-130	0.00	98.10	160.92	615.54
20	<input type="checkbox"/>	C-135	0.00	98.65	160.92	610.15
21	<input type="checkbox"/>	C-140	0.00	100.20	160.92	594.96
22	<input type="checkbox"/>	PH1-100	0.13	100.25	160.91	594.46
23	<input type="checkbox"/>	PH1-110	0.20	98.65	160.91	610.11
24	<input type="checkbox"/>	PH1-120	0.13	98.10	160.91	615.49
25	<input type="checkbox"/>	PH1-130	0.21	97.90	160.91	617.44
26	<input type="checkbox"/>	PH1-140	0.15	97.50	160.91	621.37
27	<input type="checkbox"/>	PH1-150	0.15	97.05	160.91	625.80
28	<input type="checkbox"/>	PH1-160	0.24	97.15	160.88	624.53
29	<input type="checkbox"/>	PH1-170	0.20	97.25	160.87	623.38
30	<input type="checkbox"/>	PH1-180	0.09	97.25	160.86	623.28
31	<input type="checkbox"/>	PH1-190	0.12	97.10	160.85	624.74
32	<input type="checkbox"/>	PH1-200	0.17	97.15	160.85	624.24
33	<input type="checkbox"/>	PH1-210	0.15	97.80	160.85	617.87
34	<input type="checkbox"/>	PH1-220	0.08	99.70	160.85	599.25
35	<input type="checkbox"/>	PH1-230	0.08	99.60	160.85	600.23
36	<input type="checkbox"/>	PH1-240	0.14	99.70	160.85	599.25
37	<input type="checkbox"/>	PH1-250	0.18	97.90	160.85	616.89
38	<input type="checkbox"/>	PH1-260	0.14	97.50	160.85	620.81
39	<input type="checkbox"/>	PH1-270	0.23	98.15	160.85	614.44
40	<input type="checkbox"/>	PH1-280	0.15	97.20	160.85	623.75
41	<input type="checkbox"/>	PH1-290	0.15	96.95	160.85	626.20

Arcadia Mixed Use Lands - Basic Day - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
42	<input type="checkbox"/>	PH1-300	0.14	96.85	160.85	627.10
43	<input type="checkbox"/>	PH1-310	0.25	97.00	160.84	625.55
44	<input type="checkbox"/>	PH1-320	0.30	97.30	160.84	622.61
45	<input type="checkbox"/>	PH1-330	0.18	100.20	160.84	594.19
46	<input type="checkbox"/>	PH2-100	0.24	97.15	160.83	624.06
47	<input type="checkbox"/>	PH2-110	0.09	97.20	160.83	623.56
48	<input type="checkbox"/>	PH2-120	0.10	97.10	160.83	624.54
49	<input type="checkbox"/>	PH2-130	0.19	97.65	160.83	619.15
50	<input type="checkbox"/>	PH2-140	0.15	99.00	160.83	605.92
51	<input type="checkbox"/>	PH2-150	0.23	99.55	160.83	600.53
52	<input type="checkbox"/>	PH2-160	0.35	97.00	160.83	625.52
53	<input type="checkbox"/>	PH2-170	0.14	97.45	160.83	621.11
54	<input type="checkbox"/>	PH2-180	0.21	97.75	160.83	618.16
55	<input type="checkbox"/>	PH2-190	0.11	97.65	160.83	619.14
56	<input type="checkbox"/>	PH2-200	0.11	97.80	160.83	617.67
57	<input type="checkbox"/>	PH2-210	0.21	98.20	160.83	613.75
58	<input type="checkbox"/>	PH2-220	0.14	99.30	160.83	602.97
59	<input type="checkbox"/>	PH3-100	0.45	96.50	160.91	631.12
60	<input type="checkbox"/>	PH3-110	0.30	95.10	160.90	644.82
61	<input type="checkbox"/>	PH3-120	0.09	96.65	160.87	629.33
62	<input type="checkbox"/>	PH3-130	0.18	97.00	160.86	625.81
63	<input type="checkbox"/>	PH3-140	0.09	96.90	160.86	626.75
64	<input type="checkbox"/>	PH3-150	0.23	96.90	160.85	626.69
65	<input type="checkbox"/>	PH3-160	0.16	96.85	160.84	627.10
66	<input type="checkbox"/>	PH3-170	0.21	96.70	160.84	628.57
67	<input type="checkbox"/>	PH3-180	0.19	97.05	160.87	625.36
68	<input type="checkbox"/>	PH3-190	0.11	97.45	160.86	621.40
69	<input type="checkbox"/>	PH3-200	0.18	97.35	160.86	622.38
70	<input type="checkbox"/>	PH3-210	0.34	97.10	160.86	624.82
71	<input type="checkbox"/>	PH3-220	0.20	97.50	160.86	620.88
72	<input type="checkbox"/>	PH3-230	0.23	97.60	160.86	619.89
73	<input type="checkbox"/>	PH3-240	0.21	97.15	160.85	624.26
74	<input type="checkbox"/>	PH3-250	0.15	97.70	160.86	618.94
75	<input type="checkbox"/>	PH3-260	0.27	96.75	160.86	628.25
76	<input type="checkbox"/>	PH4-100	0.14	96.65	160.84	628.98
77	<input type="checkbox"/>	PH4-110	0.11	96.40	160.84	631.41
78	<input type="checkbox"/>	PH4-120	0.11	96.70	160.83	628.47
79	<input type="checkbox"/>	PH4-130	0.10	96.75	160.83	627.98
80	<input type="checkbox"/>	PH4-140	0.14	96.80	160.83	627.49
81	<input type="checkbox"/>	PH4-150	0.14	96.85	160.83	627.00
82	<input type="checkbox"/>	PH4-160	0.23	96.70	160.83	628.46

Arcadia Mixed Use Lands - Basic Day - Junction Report

		ID	Demand (L/s)	Elevation (m)	Head (m)	Pressure (kPa)
83		PH4-170	0.19	96.90	160.83	626.50
84		PH4-180	0.10	96.70	160.83	628.47
85		PH4-190	0.15	96.90	160.83	626.51
86		PH4-200	0.14	96.55	160.84	629.95
87		PH4-210	0.12	96.65	160.83	628.96
88		PH4-220	0.12	96.65	160.83	628.96
89		PH4-230	0.14	96.90	160.83	626.51
90		PH4-240	0.14	96.50	160.83	630.43
91		PH5-001	4.21	97.50	160.83	620.62

Arcadia Mixed Use Lands - Peak Hour - Pipe Report

	ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (L/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/km)
1	439	C-125	160	31.89	203.00	110.00	3.73	0.12	0.00	0.13
2	437	155	C-120	37.56	300.00	120.00	-38.36	0.54	0.05	1.26
3	435	150	155	75.03	300.00	120.00	-33.23	0.47	0.07	0.97
4	433	145	150	213.67	203.00	110.00	1.35	0.04	0.00	0.02
5	431	140	145	83.27	203.00	110.00	4.22	0.13	0.01	0.17
6	429	130	140	102.81	203.00	110.00	5.86	0.18	0.03	0.31
7	427	130	135	82.03	203.00	110.00	1.23	0.04	0.00	0.02
8	425	125	130	146.44	300.00	120.00	9.96	0.14	0.02	0.10
9	423	125	C-130	68.35	300.00	120.00	-16.34	0.23	0.02	0.26
10	421	120	125	70.11	203.00	110.00	-4.74	0.15	0.01	0.21
11	419	120	110	99.10	203.00	110.00	1.71	0.05	0.00	0.03
12	417	105	120	84.49	203.00	110.00	-0.98	0.03	0.000	0.01
13	415	110	115	106.05	203.00	110.00	0.82	0.03	0.000	0.01
14	413	105	110	52.34	203.00	110.00	1.98	0.06	0.00	0.04
15	411	100	105	58.50	203.00	110.00	5.51	0.17	0.02	0.27
16	409	C-135	100	45.76	203.00	110.00	6.39	0.20	0.02	0.36
17	407	C-135	C-140	97.81	610.00	120.00	4.59	0.02	0.0000	0.000
18	401	7000	C-001	1.00	900.00	130.00	268.99	0.42	0.000	0.19
19	399	C-100	C-001	330.00	393.00	120.00	-268.99	2.22	4.13	12.50
20	397	PH5-001	PH4-100	401.13	203.00	110.00	-0.14	0.00	0.000	0.000
21	395	PH3-120	PH5-001	355.48	203.00	110.00	15.61	0.48	0.67	1.88
22	391	PH2-180	PH2-170	107.40	155.00	100.00	-1.16	0.06	0.01	0.07
23	389	PH2-180	PH2-190	49.08	155.00	100.00	-0.66	0.03	0.00	0.02
24	387	PH2-210	PH2-180	70.75	155.00	100.00	-0.68	0.04	0.00	0.03
25	385	PH2-210	PH2-200	50.18	155.00	100.00	-0.32	0.02	0.000	0.01
26	383	PH2-220	PH2-210	121.59	155.00	100.00	0.14	0.01	0.000	0.00
27	349	PH4-170	PH2-110	66.83	203.00	110.00	3.84	0.12	0.01	0.14
28	347	PH4-240	PH4-110	83.35	203.00	110.00	-2.95	0.09	0.01	0.09
29	345	PH4-210	PH4-240	97.23	203.00	110.00	-2.19	0.07	0.00	0.05
30	343	PH4-230	PH4-120	94.69	203.00	110.00	-1.59	0.05	0.00	0.03
31	341	PH4-220	PH4-230	86.44	203.00	110.00	-0.83	0.03	0.000	0.01
32	339	PH4-220	PH4-150	70.35	203.00	110.00	2.58	0.08	0.00	0.07
33	337	PH4-210	PH4-220	71.82	203.00	110.00	2.43	0.08	0.00	0.06
34	335	PH4-190	PH4-210	77.54	203.00	110.00	0.92	0.03	0.000	0.01
35	333	PH4-200	PH4-100	78.76	203.00	110.00	-6.38	0.20	0.03	0.36
36	331	PH4-190	PH4-200	97.67	203.00	110.00	-5.62	0.17	0.03	0.28
37	329	PH4-180	PH4-190	70.73	203.00	110.00	-3.87	0.12	0.01	0.14
38	327	PH4-170	PH4-180	85.76	203.00	110.00	-3.34	0.10	0.01	0.11
39	325	PH4-160	PH4-170	135.33	203.00	110.00	1.55	0.05	0.00	0.03
40	323	PH4-150	PH4-160	74.82	203.00	110.00	2.84	0.09	0.01	0.08
41	321	PH4-140	PH4-150	91.21	203.00	110.00	1.03	0.03	0.00	0.01
42	319	PH4-130	PH4-140	86.26	203.00	110.00	1.79	0.06	0.00	0.03
43	317	PH4-120	PH4-130	71.76	203.00	110.00	2.32	0.07	0.00	0.06
44	315	PH4-110	PH4-120	68.60	203.00	110.00	4.52	0.14	0.01	0.19
45	313	PH4-100	PH4-110	80.64	203.00	110.00	8.08	0.25	0.04	0.56
46	311	PH3-160	PH4-100	69.78	203.00	110.00	15.36	0.47	0.13	1.83
47	309	PH3-110	C-120	22.55	203.00	110.00	-42.47	1.31	0.27	12.01

Arcadia Mixed Use Lands - Peak Hour - Pipe Report

	ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (L/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/km)
48	307	PH3-260	PH3-130	100.86	203.00	110.00	-4.93	0.15	0.02	0.22
49	305	PH3-250	PH3-260	112.50	203.00	110.00	-3.43	0.11	0.01	0.11
50	303	PH3-250	PH3-190	75.30	203.00	110.00	-5.58	0.17	0.02	0.28
51	301	PH3-220	PH3-250	73.20	203.00	110.00	-8.17	0.25	0.04	0.57
52	299	PH3-240	PH3-220	74.16	203.00	110.00	-12.95	0.40	0.10	1.33
53	297	PH3-240	PH1-290	75.66	203.00	110.00	7.75	0.24	0.04	0.51
54	295	PH3-150	PH3-240	131.48	203.00	110.00	-4.06	0.13	0.02	0.16
55	293	PH3-230	PH3-140	64.84	203.00	110.00	1.91	0.06	0.00	0.04
56	291	PH3-220	PH3-230	104.69	203.00	110.00	3.17	0.10	0.01	0.10
57	289	PH3-210	PH3-220	71.88	203.00	110.00	9.03	0.28	0.05	0.68
58	287	PH3-210	PH1-170	77.77	203.00	110.00	-8.68	0.27	0.05	0.63
59	285	PH3-200	PH3-210	135.62	203.00	110.00	2.21	0.07	0.01	0.05
60	283	PH3-190	PH3-200	69.33	203.00	110.00	3.17	0.10	0.01	0.10
61	281	PH3-180	PH3-190	123.12	203.00	110.00	9.35	0.29	0.09	0.73
62	279	PH3-120	PH3-180	116.54	203.00	110.00	10.37	0.32	0.10	0.88
63	277	PH3-170	PH1-300	108.11	203.00	110.00	-2.06	0.06	0.00	0.04
64	275	PH3-160	PH3-170	81.84	203.00	110.00	-0.88	0.03	0.000	0.01
65	273	PH3-150	PH3-160	91.09	203.00	110.00	15.38	0.48	0.17	1.83
66	271	PH3-140	PH3-150	84.42	203.00	110.00	12.58	0.39	0.11	1.26
67	269	PH3-130	PH3-140	88.74	203.00	110.00	11.15	0.34	0.09	1.01
68	267	PH3-120	PH3-130	80.52	203.00	110.00	17.04	0.53	0.18	2.22
69	265	PH3-110	PH3-120	48.36	203.00	110.00	43.50	1.34	0.61	12.56
70	263	PH3-100	PH3-110	107.57	155.00	100.00	2.67	0.14	0.03	0.32
71	261	PH1-150	PH3-100	121.91	155.00	100.00	5.13	0.27	0.13	1.07
72	257	PH2-220	PH2-140	68.72	155.00	100.00	-0.90	0.05	0.00	0.04
73	251	PH2-130	PH2-200	74.53	155.00	100.00	0.93	0.05	0.00	0.04
74	249	PH2-190	PH2-120	78.71	155.00	100.00	-1.27	0.07	0.01	0.08
75	243	PH2-110	PH2-170	78.80	155.00	100.00	1.92	0.10	0.01	0.17
76	241	PH2-160	PH2-100	126.91	203.00	110.00	-4.12	0.13	0.02	0.16
77	239	PH2-150	PH2-160	115.82	203.00	110.00	-2.19	0.07	0.01	0.05
78	237	PH2-140	PH2-150	94.05	203.00	110.00	-0.93	0.03	0.000	0.01
79	235	PH2-130	PH2-140	68.54	203.00	110.00	0.81	0.03	0.000	0.01
80	233	PH2-120	PH2-130	72.46	203.00	110.00	2.78	0.09	0.01	0.08
81	231	PH2-110	PH2-120	69.56	203.00	110.00	4.58	0.14	0.01	0.19
82	229	PH2-100	PH2-110	74.92	203.00	110.00	3.17	0.10	0.01	0.10
83	227	PH1-310	PH2-100	75.93	203.00	110.00	8.62	0.27	0.05	0.63
84	223	PH1-320	PH1-330	107.71	203.00	110.00	1.01	0.03	0.00	0.01
85	221	PH1-310	PH1-320	135.92	203.00	110.00	2.69	0.08	0.01	0.07
86	219	PH1-300	PH1-310	126.54	203.00	110.00	12.70	0.39	0.16	1.29
87	217	PH1-290	PH1-300	76.38	203.00	110.00	15.55	0.48	0.14	1.87
88	215	PH1-180	PH1-290	74.29	203.00	110.00	8.64	0.27	0.05	0.63
89	213	PH1-280	PH1-190	96.43	155.00	100.00	-1.92	0.10	0.02	0.17
90	211	PH1-270	PH1-280	121.67	155.00	100.00	-1.09	0.06	0.01	0.06
91	209	PH1-260	PH1-270	116.46	155.00	100.00	0.20	0.01	0.000	0.00
92	207	PH1-200	PH1-260	98.59	155.00	100.00	0.96	0.05	0.00	0.05
93	203	PH1-220	PH1-230	81.93	155.00	100.00	0.97	0.05	0.00	0.05
94	201	PH1-210	PH1-220	72.36	203.00	110.00	1.42	0.04	0.00	0.02

Arcadia Mixed Use Lands - Peak Hour - Pipe Report

	ID	From Node	To Node	Length (m)	Diameter (mm)	Roughness	Flow (L/s)	Velocity (m/s)	Headloss (m)	HL/1000 (m/km)
95	199	PH1-250	PH1-210	88.07	155.00	100.00	-1.22	0.06	0.01	0.07
96	197	PH1-240	PH1-250	163.88	155.00	100.00	-0.24	0.01	0.000	0.00
97	195	PH1-230	PH1-240	93.14	155.00	100.00	0.52	0.03	0.00	0.02
98	191	PH1-200	PH1-210	74.46	203.00	110.00	3.47	0.11	0.01	0.12
99	189	PH1-190	PH1-200	73.35	203.00	110.00	5.34	0.17	0.02	0.26
100	187	PH1-180	PH1-190	70.16	203.00	110.00	7.94	0.25	0.04	0.54
101	185	PH1-170	PH1-180	85.41	203.00	110.00	17.05	0.53	0.19	2.22
102	183	PH1-160	PH1-170	69.47	203.00	110.00	26.82	0.83	0.36	5.13
103	181	PH1-130	PH1-160	90.83	203.00	110.00	28.15	0.87	0.51	5.61
104	179	C-125	PH1-150	26.35	155.00	100.00	9.18	0.49	0.08	3.13
105	175	C-125	C-130	183.18	610.00	120.00	52.18	0.18	0.01	0.07
106	171	PH1-140	PH1-150	87.95	155.00	100.00	-3.22	0.17	0.04	0.45
107	169	PH1-130	PH1-140	87.74	155.00	100.00	-2.40	0.13	0.02	0.26
108	167	PH1-130	C-130	29.61	203.00	110.00	-24.86	0.77	0.13	4.46
109	165	PH1-120	PH1-130	86.61	155.00	100.00	2.07	0.11	0.02	0.20
110	163	PH1-110	PH1-120	96.37	155.00	100.00	2.79	0.15	0.03	0.34
111	161	PH1-100	PH1-110	96.82	155.00	100.00	3.87	0.20	0.06	0.63
112	159	C-140	PH1-100	23.15	155.00	100.00	4.59	0.24	0.02	0.86
113	157	C-130	C-135	174.09	610.00	120.00	10.98	0.04	0.000	0.00
114	155	C-120	C-125	230.71	610.00	120.00	65.08	0.22	0.02	0.11
115	153	C-110	C-120	326.33	610.00	120.00	268.99	0.92	0.48	1.47
116	151	C-100	C-110	460.00	610.00	120.00	268.99	0.92	0.68	1.47

APPENDIX B
Wastewater System



IBI Group
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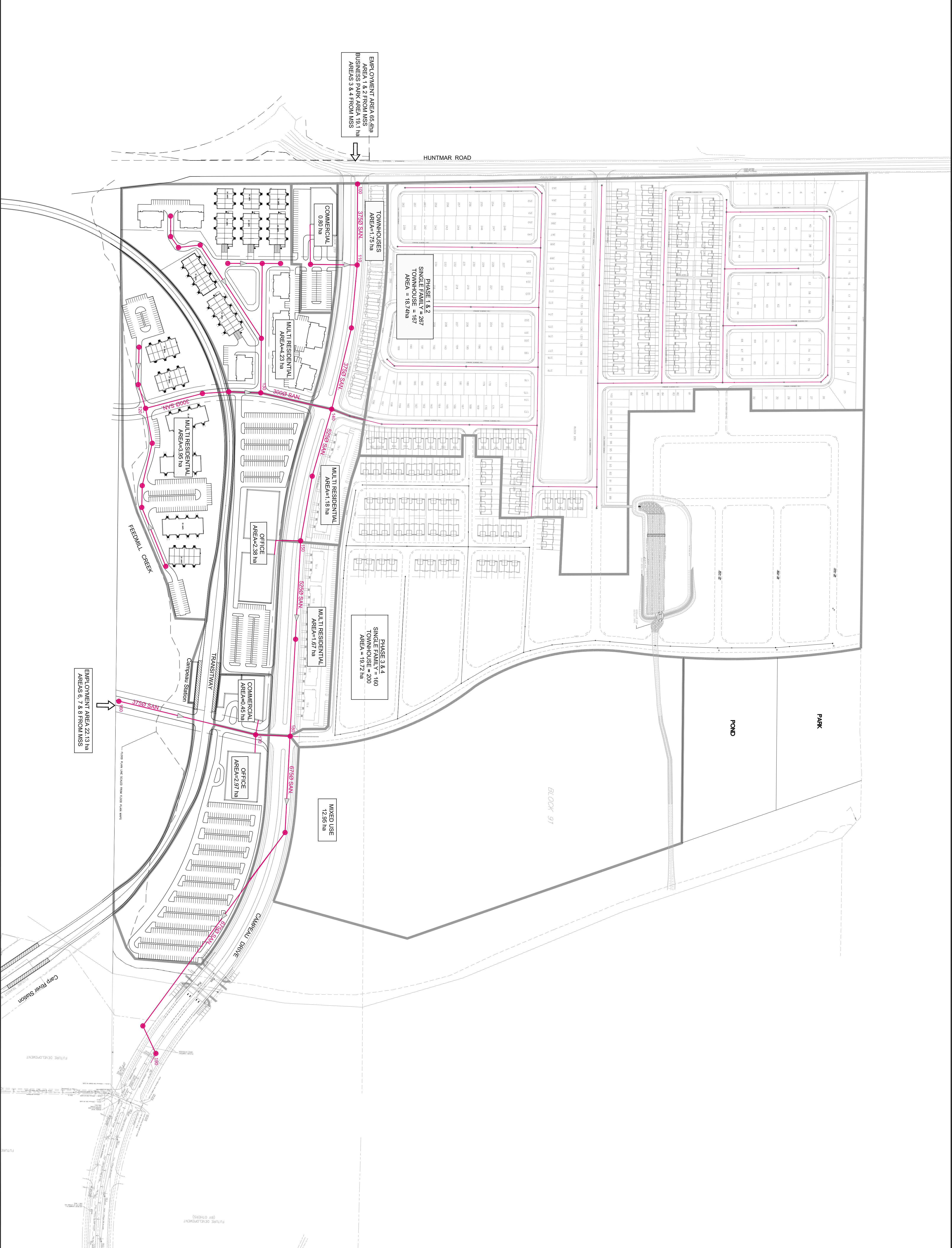
SANITARY SEWER DESIGN SHEET

PROJECT: ARCADIA MIXED USE LANDS
DEVELOPER: MINTO

JOB #: 30805-5.7
DATE PRINTED: 24-Aug-11
DESIGN: LE

LOCATION			INDIVIDUAL				CUM. RES. FLOW			INSTIT., INDUST., & COMM. FLOW						INFILTRATION			TOTAL DESIGN FLOW (l/s)	PROPOSED SEWER							
STREET	FROM MH	TO MH	RESID. UNITS			RES. AREA (Ha)	POP.	POP.	PEAK FACT.	PEAK FLOW (l/s)	Indust. AREA (Ha)	Comm. AREA (Ha)	Average FLOW (l/s)	CUM. Ave. Flow (l/s)	PEAK FACT.	PEAK FLOW (l/s)	INCR. AREA (Ha)	CUM. AREA (Ha)	FLOW (l/s)	TOTAL DESIGN FLOW (l/s)	CAP. l/s	PIPE (mm)	LGTH. (m)	SLOPE %	VEL. (full) m/s	AVAIL. CAP. (l/s)	AVAIL. CAP. (%)
			Sngls	Towns Semis	Multi																						
Campeau Drive	100	110		18		0.75	48.6	49	4.00	0.80	65.40	19.10	45.41	45.41	1.50	68.11	85.25	85.25	23.87	92.78	129.29	375	100.0	0.50	1.13	36.51	28%
Campeau Drive	110	140		30		1.00	81.0	130	4.00	2.13		0.80	0.32	45.73	1.50	68.59	1.80	87.05	24.37	95.09	129.29	375	180.0	0.50	1.13	34.19	26%
	120	130			168	3.95	386.4	386	4.00	6.34			0.00	0.00	1.50	0.00	3.95	3.95	1.11	7.44	55.24	300	145.0	0.30	0.76	47.79	87%
	130	140			248	4.23	570.4	957	3.81	14.96			0.00	0.00	1.50	0.00	4.23	8.18	2.29	17.25	55.24	300	90.0	0.30	0.76	37.99	69%
Campeau Drive	140	150	267	167	48	19.92	1469.1	2556	3.50	36.68			0.00	45.73	1.50	68.59	19.92	115.15	32.24	137.51	200.67	525	165.0	0.20	0.90	63.15	31%
Campeau Drive	150	180			80	1.67	184.0	2740	3.48	39.04	2.38		1.37	47.10	1.50	70.65	4.05	119.20	33.38	143.07	200.67	525	240.0	0.20	0.90	57.60	29%
	160	170					0.0	0	4.00	0.00	22.13		12.75	12.75	1.50	19.12	22.13	22.13	6.20	25.32	100.21	375	170.0	0.30	0.88	74.90	75%
	170	180					0.0	0	4.00	0.00	2.97	0.45	1.89	14.64	1.50	21.96	3.42	25.55	7.15	29.11	100.21	375	40.0	0.30	0.88	71.10	71%
Campeau Drive	180	190	160	200		19.72	1084.0																				
						6.48	388.8	4212	3.31	57.22	6.48		3.73	65.47	1.50	98.21	32.68	177.43	49.68	205.11	392.29	675	450.0	0.20	1.06	187.18	48%

Where Q = average daily per capita flow (350 l/cap.d.) or (0.0041 l/sec./cap)
 I = Unit of peak extraneous flow (0.28 l/sec/ha)
 M = Residential Peaking factor = Harmon Peaking Factor, $M = 1 + (14 / (4 + P^{0.5}))$, where P = population in thousands
 Population Density = 3.4 per single family, 2.7 per semi-detached and row townhouse units and 2.3 per multi residential unit
 Industrial, Employment Area - Average flow 50,000 l/day/ha (0.579 l/s/ha) with Peaking Factor = 1.5
 Commercial, Business Park - Average flow 35,000 l/day/ha (0.405 l/s/ha) with Peaking Factor = 1.5
 Gross Residential Lands = 60 persons/gross hectare

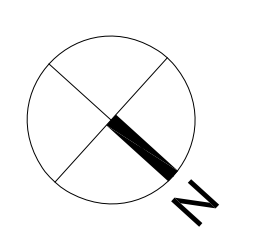
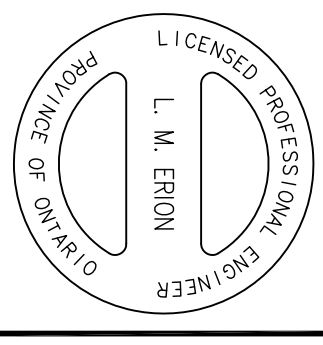


No.	1	ISSUED FOR SUBMISSION	By		Date	11-08-19
	2	REVISIONS				
	3					
	4					
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	8					
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	10					
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	13					
	14					



IBI GROUP
 333 Preston Street
 Tower 1, Suite 400
 Ottawa, Ontario
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 Tel: (613) 225-1331
 Fax: (613) 225-3568

Project Title
**ARCADIA
 MIXED USE LANDS**



Drawing Title
**SANITARY
 DRAINAGE AREA PLAN**

Scale
 1:2000

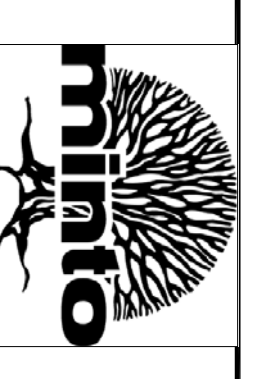
Design	L.M.E.	Date	AUGUST '11
Drawn	M.M.	Checked	R.W.W.
Project No.	30805	Drawing No.	501

APPENDIX C

Stormwater System

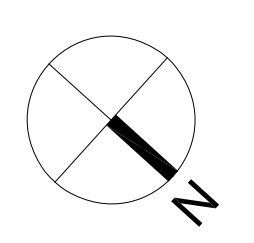
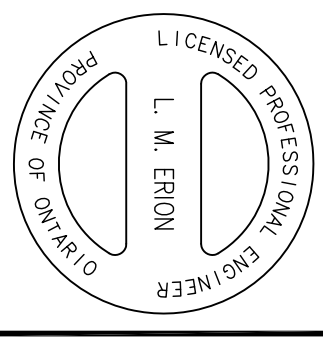


No.	REVISIONS	By	Date
1	ISSUED FOR SUBMISSION		11-08-22
2			
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 Fax: (613) 225-3668

Project Title
**ARCADIA
 MIXED USE LANDS**



Drawing Title
**STORM
 DRAINAGE AREA PLAN**

Scale
 1:2000

Design	L.M.E.	Date	AUGUST 11
Drawn	M.M.	Checked	R.W.W.
Project No.	30805	Drawing No.	500