



March 1, 2024

MTE File No.: C42128-101

Alison Curtis, MA  
Planner 1, Subdivision Planning  
Planning and Development, Planning and Economic Development  
City of London  
300 Dufferin Avenue  
London, ON N6A 4L9

Dear Alison:

**RE: Preliminary Water Servicing Brief  
735 Southdale Rd West**

This preliminary water servicing brief has been prepared to support the proposed development at 735 Southdale Rd West in the City of London. The purpose of this brief is to confirm that the existing and proposed watermain network will meet demands of the development.

There is an existing 400mm water on north side of Southdale Rd West. The domestic and fire-fighting servicing 735 Southdale Rd West will be provided from this existing watermain. This is a preliminary report to support the rezoning and draft plan process. During the future site plan process, an updated water report and detailed engineering drawings will be completed.

**DOMESTIC WATER DEMAND**

As presented on attached Site Plan by Zedd Architecture, the proposed development consists of three 12-storey buildings (Buildings B, C and D) and one building (Building A) that is combination of 9-storey and 6-storey. The domestic water demand was calculated as per City of London Design Specifications and Requirements Manual (DS&RM), considering number of units in each building, population of 1.6 people per unit and an average daily domestic demand of 255 L/cap/day.

**Table 1 – Domestic Water Demand**

<b>Proposed Building ID</b>	<b>*Number of Units</b>	<b>Population (People)</b>	<b>Average Day Demand (L/s)</b>	<b>Max Day Demand (L/s)</b>	<b>Max Hour Demand (L/s)</b>
Building A	254	407	1.20	4.20	9.37
Building B	207	332	0.98	3.43	7.64
Building C	184	295	0.87	3.05	6.79
Building D	233	373	1.10	3.85	8.59
Totals:	878	1407	4.15	14.53	32.39

\*As per Site Plan by Zedd Architecture

## WATER SUPPLY FOR FIRE PROTECTION

The proposed buildings will be protected with sprinkler systems. Therefore, the fire flow requirements should be determined as per NFPA-13.

Based on the past experience, typical high rise building sprinkler demands range from 500 USGPM to 1000 USGPM. Although review of NFPA-13 indicates that the sprinkler demand for high rise building with underground parking is close to 500 USGPM, we adopted conservative approach as the sprinkler design is not yet completed. Therefore, the high range of 1000 USGPM (63.09 l/s) plus maximum daily water demand was used as the maximum demand for each proposed building. This flow rate is considered conservative and is intended to be higher than the actual sprinkler design requirements when they become available. This will need to be verified by the mechanical engineer once the sprinkler design for each building is completed.

**Table 2 – Max Day Plus Fire Demand at Each Building**

Proposed Building ID	Max Day Demand (L/s)	Sprinkler System Firefighting Flow (L/s)	Max. Day Plus Fire Demand at Each Building (L/s)
Building A	4.20	63.09	67.29
Building B	3.43	63.09	66.52
Building C	3.05	63.09	66.14
Building D	3.85	63.09	66.94

The total fire flow requirements presented in above table were used to confirm the adequacy of the proposed 200mm water services to each building. The distance between the proposed hydrants and the proposed Fire Department connections shall be less than 45 meters. As required by City’s DS&RM, the distance between the proposed hydrant and the buildings shall be more than 12.2 m and maximum hydrant lead length shall be 6 m. As shown on attached MTE’s Preliminary Water Distribution Plan, the proposed two hydrant locations adhere to these requirements.

## WATER DISTRIBUTION MODELING RESULTS

The water distribution modelling for the proposed development was completed using EPANET 2.2. As shown on attached preliminary water distribution plan, the water supply (both domestic and firefighting supply) for each of the proposed buildings will be provided by separate 200mm water services from the existing 400mm watermain on Southdale Rd West. The water distribution modelling was completed using the local HGL of 335 masl (Sprinkbank/Westmount/Pond Mills PS) as per City’s Water Supply Pressure Zones Map.

As shown in the below summary (Table 3), the existing 400mm municipal watermain, the proposed 200mm water services and the proposed two fire hydrants meet the requirements of the City of London, the Ontario Building Code and the NFPA.

Detailed modelling is attached.

**Table 3 – Water Modelling Summary Results**

Scenario	Velocity (m/s)		Pressure (kPa)		Water Quality Turnover (hours)	
	Provided*	Required Maximum	Provided*	Required Minimum	Provided*	Required
Average Day	0.04	1.5	519.7	275	1.30	72
Max Hour	0.30	1.5	519.4	275	n/a	n/a
Max Day plus Fire Flow	2.14	2.4	491.2	140	n/a	n/a

\*The worst case

As previously noted, this is a preliminary report to support the rezoning and draft plan process. The locations of the building siamese connections, the site fire hydrants and the watermain servicing layout are conceptual only. These items will be finalized during the future site plan process. During the future site plan process, an updated water report and detailed engineering drawings will be completed. We trust this meets your requirements. Should you have any questions or require anything further, please do not hesitate to contact the undersigned.

Yours Truly,  
**MTE Consultants Inc.**



**Bogdan Pavlovic, P. Eng., MEng.**

Design Engineer  
 519-204-6510 ext. 2266  
[bpavlovic@mte85.com](mailto:bpavlovic@mte85.com)

BXP:azp  
 Encl. Site Plan, Preliminary Water Distribution Plan, Results.

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**461 TOTAL UNITS @ 1,000SF AVERAGE**  
**507 CARS PROVIDED (1:1.1)**

**417 TOTAL UNITS @ 1,000SF AVERAGE**  
**461 CARS PROVIDED (1:1.1)**

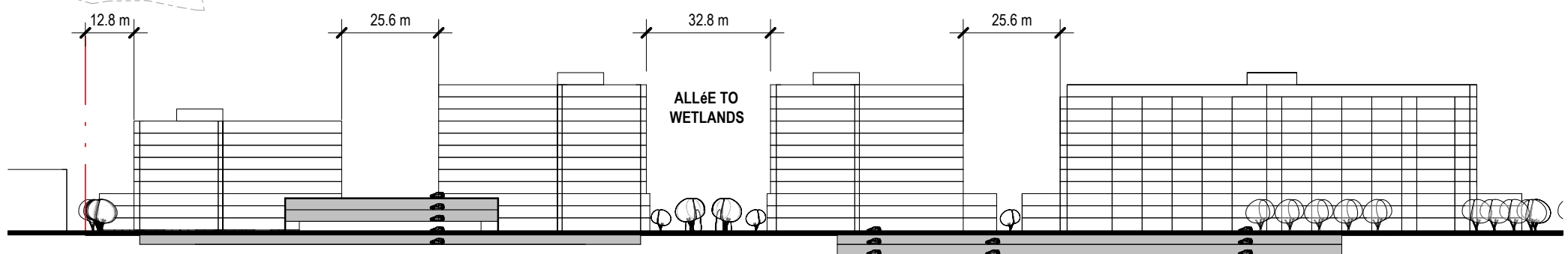
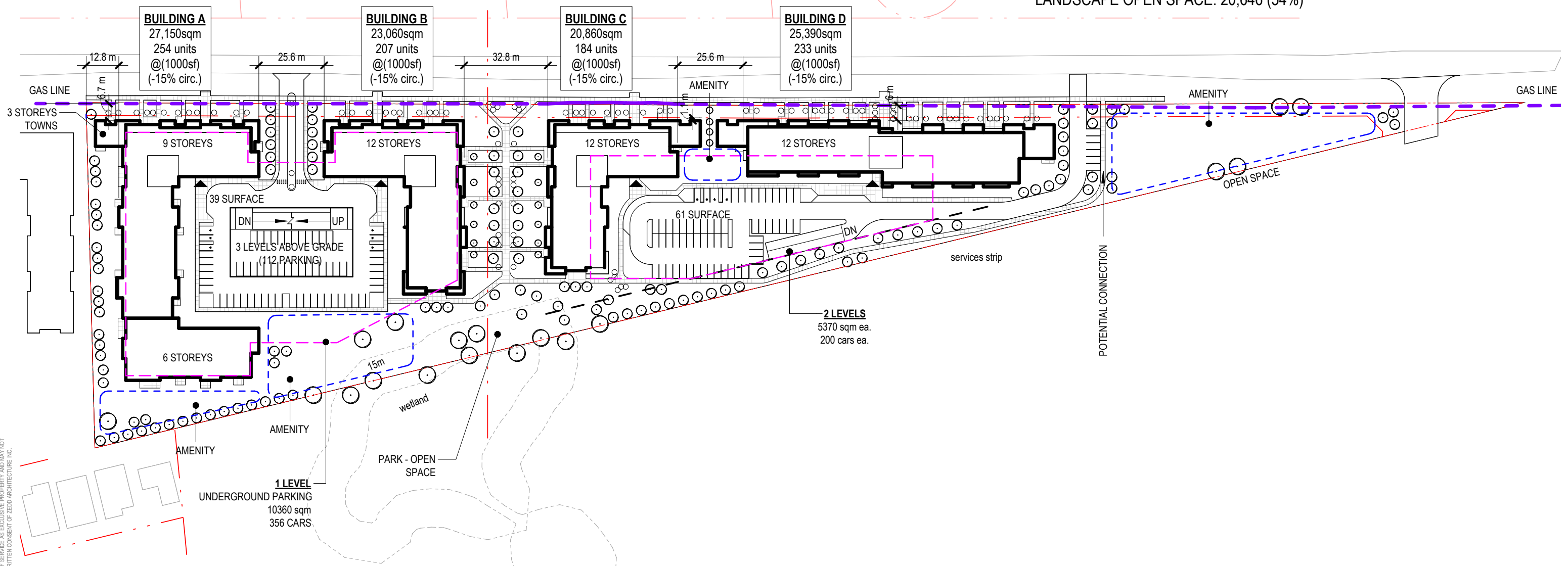
SITE AREA: 38,035 (3.8ha)  
 DENSITY: 878 UNITS (231uph)  
 COVERAGE: 10,360sqm (27.2%)  
 LANDSCAPE OPEN SPACE: 20,646 (54%)

**BUILDING A**  
 27,150sqm  
 254 units  
 @ (1000sf)  
 (-15% circ.)

**BUILDING B**  
 23,060sqm  
 207 units  
 @ (1000sf)  
 (-15% circ.)

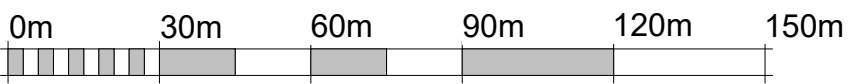
**BUILDING C**  
 20,860sqm  
 184 units  
 @ (1000sf)  
 (-15% circ.)

**BUILDING D**  
 25,390sqm  
 233 units  
 @ (1000sf)  
 (-15% circ.)

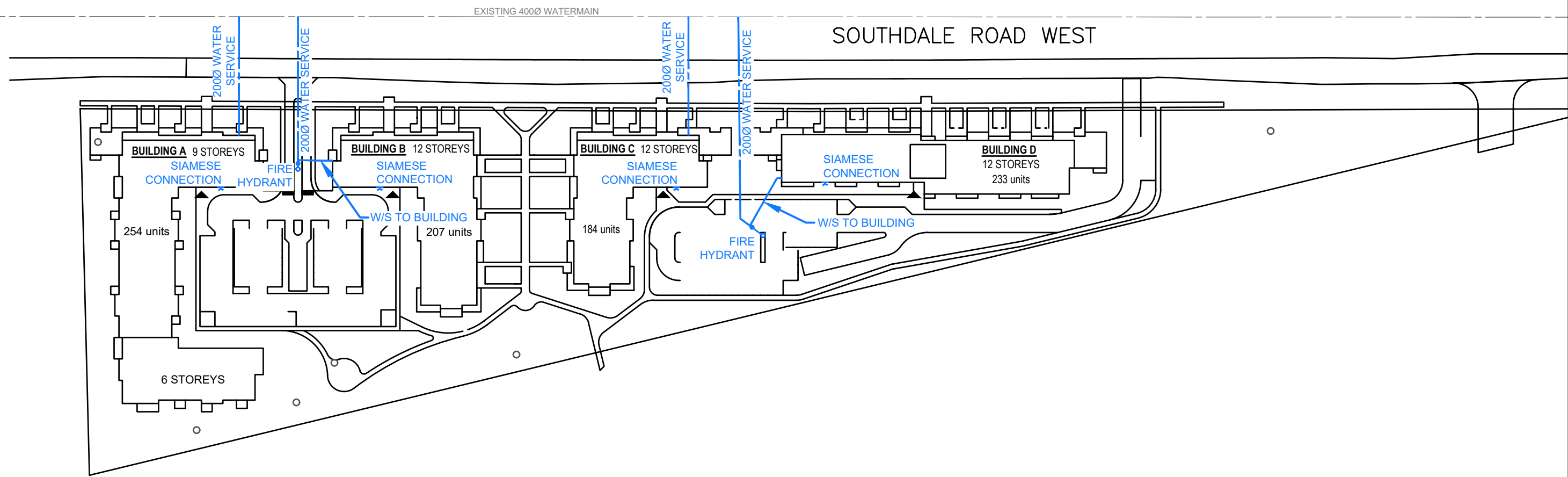


**SECTION**





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VISUAL SCALE 1:1500 @ 11X17  
 Scale : 1 : 1500




**LEGEND**

-  WATER MAIN
-  FIRE HYDRANT
-  WATER VALVE
-  ASSUMED FUTURE SIAMESE CONNECTION

**FIGURE 1** Date: FEB.21/24  
Scale: 1:1500

**PRELIMINARY WATER DISTRIBUTION PLAN**

**735 SOUTHDALE ROAD**



Engineers, Scientists, Surveyors

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*****
*                               E P A N E T                               *
*                               Hydraulic and Water Quality                 *
*                               Analysis for Pipe Networks                   *
*                               Version 2.2                                 *
*****
    
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Input File: Maximum Day Demand+FF.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	Bld.A	1	43.8	200
2	2	6	73.7	200
3	6	Bld.B	25.73	200
4	3	Bld.C	43.8	200
5	4	9	141.77	200
6	9	Bld.D	21.8	200

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
Bld.A	67.29	333.67	51.67	0.00
6	0.00	332.81	51.56	0.00
Bld.B	66.52	332.05	50.55	0.00
Bld.C	66.14	333.71	53.21	0.00
9	0.00	330.75	51.00	0.00
Bld.D	66.94	330.09	50.09	0.00
1	-67.29	335.00	0.00	0.00 Reservoir
2	-66.52	335.00	0.00	0.00 Reservoir
3	-66.14	335.00	0.00	0.00 Reservoir
4	-66.94	335.00	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-67.29	2.14	30.30	Open
2	66.52	2.12	29.66	Open
3	66.52	2.12	29.66	Open
4	66.14	2.11	29.35	Open
5	66.94	2.13	30.01	Open
6	66.94	2.13	30.01	Open

\*\*\*\*\*  
 \* E P A N E T \*  
 \* Hydraulic and Water Quality \*  
 \* Analysis for Pipe Networks \*  
 \* Version 2.2 \*  
 \*\*\*\*\*

Input File: Maximum Hour Demand.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	Bld.A	1	43.8	200
2	2	6	73.7	200
3	6	Bld.B	25.73	200
4	3	Bld.C	43.8	200
5	4	9	141.77	200
6	9	Bld.D	21.8	200

Node Results:

Node ID	Demand LPS	Head m	Pressure m	Quality
Bld.A	9.37	334.97	52.97	0.00
6	0.00	334.96	53.71	0.00
Bld.B	7.64	334.95	53.45	0.00
Bld.C	6.79	334.98	54.48	0.00
9	0.00	334.91	55.16	0.00
Bld.D	8.59	334.89	54.89	0.00
1	-9.37	335.00	0.00	0.00 Reservoir
2	-7.64	335.00	0.00	0.00 Reservoir
3	-6.79	335.00	0.00	0.00 Reservoir
4	-8.59	335.00	0.00	0.00 Reservoir

Link Results:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-9.37	0.30	0.79	Open
2	7.64	0.24	0.54	Open
3	7.64	0.24	0.54	Open
4	6.79	0.22	0.43	Open
5	8.59	0.27	0.67	Open
6	8.59	0.27	0.67	Open

\*\*\*\*\*  
 \* E P A N E T \*  
 \* Hydraulic and Water Quality \*  
 \* Analysis for Pipe Networks \*  
 \* Version 2.2 \*  
 \*\*\*\*\*

Input File: Average Day Demand.net

Link - Node Table:

Link ID	Start Node	End Node	Length m	Diameter mm
1	Bld.A	1	43.8	200
2	2	6	73.7	200
3	6	Bld.B	25.73	200
4	3	Bld.C	43.8	200
5	4	9	141.77	200
6	9	Bld.D	21.8	200

Node Results at 0:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.00
6	0.00	335.00	53.75	0.00
Bld.B	0.98	335.00	53.50	0.00
Bld.C	0.87	335.00	54.50	0.00
9	0.00	335.00	55.25	0.00
Bld.D	1.10	335.00	55.00	0.00
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

Link Results at 0:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 48:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir



4                    -1.10    335.00    0.00    0.00 Reservoir

Link Results at 48:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 96:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

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Link Results at 96:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 144:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

Link Results at 144:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open

4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 192:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir

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Node Results at 192:00 Hrs: (continued)

Node ID	Demand LPS	Head m	Pressure m	Quality hours
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

Link Results at 192:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 240:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

Link Results at 240:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 288:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

Link Results at 288:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open

Node Results at 336:00 Hrs:

Node ID	Demand LPS	Head m	Pressure m	Quality hours
Bld.A	1.20	335.00	53.00	0.32
6	0.00	335.00	53.75	0.66
Bld.B	0.98	335.00	53.50	0.89
Bld.C	0.87	335.00	54.50	0.44
9	0.00	335.00	55.25	1.12
Bld.D	1.10	335.00	55.00	1.30
1	-1.20	335.00	0.00	0.00 Reservoir
2	-0.98	335.00	0.00	0.00 Reservoir
3	-0.87	335.00	0.00	0.00 Reservoir
4	-1.10	335.00	0.00	0.00 Reservoir

Link Results at 336:00 Hrs:

Link ID	Flow LPS	Velocity m/s	Unit Headloss m/km	Status
1	-1.20	0.04	0.02	Open
2	0.98	0.03	0.01	Open
3	0.98	0.03	0.01	Open
4	0.87	0.03	0.01	Open
5	1.10	0.04	0.01	Open
6	1.10	0.04	0.02	Open