# ADEQUACEY OF PUBLIC SERVICING REPORT

## 3996 Innes Road, Ottawa

Prepared by

**EAU Structural & Environmental Services**

Ottawa, Ontario, K1Y 4P9
Phone: 613 869 0523
Email: derrick.r.clark@rogers.com

Revision 2
March , 2023

# 1 Project Description:

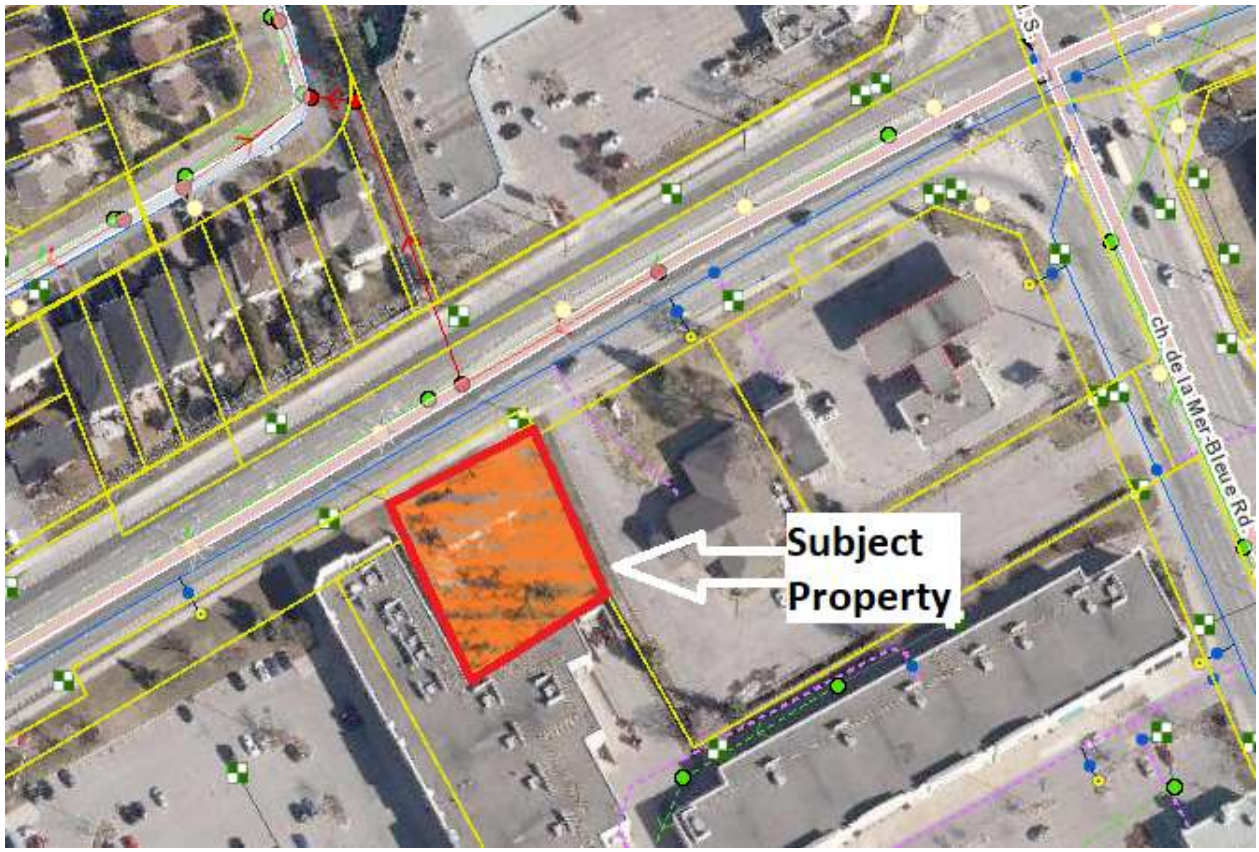
## 1.1. Introduction:

The property at 3996 Innes Road is located close to intersection of Mer Bleue Road and Innes Rd. The existing lot is 0.15 hectare, currently, contains a one story buildings built in circa 1970. It is proposed that the existing building to be demolished and a new 5-storey commercial/residential building be constructed. Property at 3996 Innes Road is currently zoned as AM (Arterial Mainstreet Zoning) which suits for the purpose of proposed development.

This report will address the servicing requirements associated with the proposed development located at 3996 Innes Road within the City of Ottawa. This report is prepared in response to the request from City of Ottawa Planning department.

## 1.2. Existing Conditions:

The property measures a total area of approximately 0.15 hectare. The site is fronting 610mm diameter DI water main, 250mm diameter PVC sanitary main and 600mm diameter concrete storm main.



## 2 Guidelines, Previous Studies, And Reports

The following studies were utilized in the preparation of this report:

- Ottawa Sewer Design Guidelines,
  City of Ottawa, SDG002, October 2012.
  (City Standards)
  - Technical Bulletin ISTB-2018-01
    City of Ottawa, March 21, 2018.
    (ISTB-2018-01)
  - Technical Bulletin ISTB-2018-04
    City of Ottawa, June 27, 2018.
    (ISTB-2018-04)

- Ottawa Design Guidelines Water Distribution
  City of Ottawa, July 2010.
  (Water Supply Guidelines)
  - Technical Bulletin ISD-2010-2
    City of Ottawa, December 15, 2010.
    (ISD-2010-2)
  - Technical Bulletin ISDTB-2014-02
    City of Ottawa, May 27, 2014.
    (ISDTB-2014-02)
  - Technical Bulletin ISTB-2018-02
    City of Ottawa, March 21, 2018.
    (ISTB-2018-02)

- Design Guidelines for Sewage Works,
  Ministry of the Environment, 2008.
  (MOE Design Guidelines)

- Stormwater Planning and Design Manual,
  Ministry of the Environment, March 2003.
  (SWMP Design Manual)

- Ontario Building Code Compendium
  Ministry of Municipal Affairs and Housing Building Development Branch,
  January 1, 2012 Update. (OBC)

- Geotechnical Report
  Prepared by Paterson Group
  Report Number: PG5925-1
  Dated, November 17, 2021

# 3 Water Supply

## Residential Water Demand:

The water demand is calculated based on the City of Ottawa Water Distribution Design Guidelines as follows:

| Demand Type | Amount | Units |
|---|---|---|
| | | |
| Commercial and Institutional | | |
| - Shopping Centres | 2500 | L/(1000m$^2$/d) |
| - Hospitals | 900 | L/(bed/day) |
| - Schools | 70 | L/(Student/d) |
| - Trailer Parks no Hook-Ups | 340 | L/(space/d) |
| - Trailer Parks with Hook-Ups | 800 | L/(space/d) |
| - Campgrounds | 225 | L/(campsite/d) |
| - Mobile Home Parks | 1000 | L/(Space/d) |
| - Motels | 150 | L/(bed-space/d) |
| - Hotels | 225 | L/(bed-space/d) |
| - Tourist Commercial | 28,000 | L/gross ha/d |
| - Other Commercial | 28,000 | L/gross ha/d |
| | | |
| ***Maximum Daily Demand*** | | |
| Residential | 2.5 x avg. day | L/c/d |
| Industrial | 1.5 x avg. day | L/gross ha/d |
| Commercial | 1.5 x avg. day | L/gross ha/d |
| Institutional | 1.5 x avg. day | L/gross ha/d |
| | | |
| ***Maximum Hour Demand*** | | |
| Residential | 2.2 x avg. day | L/c/d |
| Industrial | 1.8 x avg. day | L/gross ha/d |
| Commercial | 1.8 x avg. day | L/gross ha/d |
| Institutional | 1.8 x avg. day | L/gross ha/d |

- Residential occupancy :

1.4 persons per 18 bedroom apartment
2.1 persons per 2 bedroom apartment

 18 x 1.4 + 2 x 2.1 = 29.4

Total Residential Occupancy = 29.4 persons rounded up to 30 persons

Residential Average Daily Demand = 280 L/c/d.
 Average daily demand of 280 L/c/day x 30 persons =8400 Liters/day

- Commercial occupancy :

 28000 x 0.15 = 4200 L/d

Total Demand : 8400 + 4200 = 12,600 L/d or 0.15 L/s

- Maximum daily demand (factor of 2.5) is 0.15 L/s x 2.5 = 0.375 L/s
- Peak hourly demand (factor of 2.2) = 0.375 L/s x 2.2 = 0.825 L/s

**Fire Fighting Requirement**

**Based on Fire Underwriter Survey Method**

Fire flow protection requirements were calculated as per the Fire Underwriter's Survey (FUS). Please see next page.

Based on calculation, 145 L/S required duration 2.5 hours. In fact, any fire hydrant in the City of Ottawa has minimum of 150L/S capacity. Knowing the fact that the closest fire hydrant is 30m from the frontage property lines, we can assure that there is enough capacity for the proposed development. The boundary condition is requested and here is the result:

| Demand Scenario | Head (m) | Pressure[1] (psi) | KPa |
|---|---|---|---|
| Maximum HGL | 130.3 | 56.5 | 390 |
| Peak Hour | 127.0 | 51.8 | 358 |
| Max Day plus Fire #1 | 128.5 | 53.9 | 372 |
| Max Day plus Fire #2 | 127.6 | 52.7 | 363 |

1. Consult proposed connection to the 610mm transmission main with Drinking Water Services

Analyzing results:

- Ground Elevation = 90.50 m

| Floor Elevation | Head (m) | Pressure (KPa) at Each Floor |
|---|---|---|
| Ground Floor EL. = 90.50m | 127 | 358 |
| Second Floor EL. = 92.90m | 124.6 | 334 |
| Third Floor EL. = 95.30m | 122.2 | 311 |
| Fourth Floor EL. = 97.70m | 119.8 | 287 |
| Fifth Floor EL. = 100.10m | 117.4 | 264 |

Based on City of Ottawa Design Guidelines – Water Distribution, minimum water pressure of 275KPa is required for domestic use. From the above table, the fifth floor water pressure is slightly less that the minimum requirement. Note that due to the presence of the sprinkler, the size of water later is proposed to be 100mm diameter connecting to existing 610mm diameter DI water main on Innes road. Due to a large lateral connect for this size of the building, the water supply would adequate for the entire development.

## Fire Flow Calculations as per Fire Underwriter's Survey Guidelines

**F=220C√A**

where

F= Required fire flow in L/min

C= Coefficient related to the type of construction

A= Total floor area in m²

Address:

File No.:

**C**

| Coefficient Related to Type of Construction | | C-Value |
|---|---|---|
| • Wood Frame Construction | ☐ | 1.5 |
| • Ordinary Construction | ☑ | 1.0 |
| • Non-Combustible Construction | ☐ | 0.8 |
| • Fire-Resistive Construction | ☐ | 0.6 |
| | **C =** | **1.0** |

**A**

**Total Floor Area (m²)**

32095.5 ft² ◄► **2981.77** m²

**F**

**Required Fire Flow (L/min)**

= 220·C·√A

= **12013** L/min

**Occupancy Reductions or Surcharges**

| | | |
|---|---|---|
| • Non-Combustible | ☑ | -25% |
| • Limited Combustible | ☐ | -15% |
| • Combustible | ☐ | 0% |
| • Free Burning | ☐ | 15% |
| • Rapid Burning | ☐ | 25% |
| | | -25% |
| | **9010** | **L/min** |

**Sprinkler Reduction**

| | | |
|---|---|---|
| • Adequately Designed System | ☑ | -30% |
| • Water Supply is Standard | ☐ | -10% |
| • Fully Supervised System | ☐ | -10% |
| | | -30% |

| | |
|---|---|
| | 9010 L/min |
| Reduction: | 2703 L/min |
| Fire Flow | **6307 L/min** |

**Exposure Surcharge**

| Distance | Charge | # of Sides | |
|---|---|---|---|
| • 0 to 3m | 25% | | |
| • 3.1 to 10m | 20% | 1 | 20% |
| • 10.1 to 20m | 15% | | |
| • 20.1 to 30m | 10% | 1 | 10% |
| • 30.1 to 45m | 5% | 2 | 10% |
| | | | 40% |

| | |
|---|---|
| | 6307 L/min |
| Surcharge: | 2523 L/min |
| Fire Flow: | **8830 L/min** |

**REQUIRED FIRE FLOW**

Cannot exceed 45,000 L/min nor be less than 2,000 L/min

**8830 L/min**

or 147 L/s

or 1942 IGPM

# 4 Sanitary Sewage

## Sanitary Sewage Calculation

### Design Flows

- Residential occupancy :

1.4 persons per 18 bedroom apartment
2.1 persons per 2 bedroom apartment

 18 x 1.4 + 2 x 2.1 = 29.4

Total Residential Occupancy = 29.4 persons rounded up to 30 persons

Residential Average Daily Demand = 280 L/c/d.
 Average daily demand of 280 L/c/day x 30 persons =8400 Liters/day

- Commercial occupancy :

 28000 x 0.15 = 4200 L/d

Total: 8400 + 4200 = 12,600 L/d or 0.15 L/s

Peaking Factor = 1 + 14/( 4 + (7/ 1000)^0.5)*0.8 = 3.54 *use 4 maximum

Q Peak Domestic = 0.15 L/sec x 4.0 = 0.6 L/sec

### Infiltration

Q Infiltration = 0.33 L/S/Gross hectare x 0.15 ha = 0.05 L/sec

### Total Peak Sanitary Flow = 0.6 + 0.05 = 0.65 L/sec

The Ontario Building Code specifies minimum pipe size and maximum hydraulic loading for sanitary sewer pipe. OBC 7.4.10.8 (2) states "Horizontal sanitary drainage pipe shall be designed to carry no more than 65% of its full capacity." A 200mm diameter sanitary service with a minimum slope of 1.0% has a capacity of 65.0 Litres per second. The maximum peak sanitary flows for the site is 0.65 L/s. Since 0.65 L/s is much less than 0.65 x65.0 = 42.3 L/s, therefore, 200mm diameter PVC pipe will be satisfactory.

Sewage discharges will be domestic in type and in compliance with the Ontario Building Code. The proposed service connection from the proposed building will be made to the existing sanitary sewer on Innes Road. The proposed service will be a 200mm diameter PVC pipe installed at a minimum slope of 1%.

The peak sanitary flow from the proposed development is less than 10 percent of the capacity of the existing sanitary. As such the proposed increase in sanitary flow as a result of the construction of the proposed building is negligible and there is sufficient available capacity for the proposed development.

## 5 Geotechnical Report Recommendation

The Geotechnical report, prepared by Patersongroup Inc., recommends that a perimeter foundation drainage system be provided for the proposed structures. The system should consist of a 100 to 150 mm diameter perforated, corrugated plastic pipe which is surrounded on all sides by 150 mm of 19 mm clear crushed stone and is placed at the footing level around the exterior perimeter of the structure.All other Geotechnical recommendation shall be implemented on its entire context.

## 6 Conclusions

This report addresses the storm water management of the proposed site. The following list below itemizes the conclusions of this report.

- The allowable release rate for the site and required storage volume for 5year and 100year storm event calculated.
- Runoff from the roof and parking area will be retained in the parking and driveway area then discharged to the City storm system via an ICD
- During all construction activities, erosion and sedimentation shall be controlled be techniques outlined in this report.

Should you have any question, do not hesitate to let us know.


Yours truly,
Derrick R. Clark, P. Eng.

# APPENDIX A:

## GeoOttawa Map


NORTH
ch. de la Mer-Bleue Rd
ch. de la Mer-Bleue Rd

# APPENDIX B:

## Correspondents

# Boundary Conditions
# 3996 Innes Road

## Provided Information

| Scenario | Demand | |
|---|---|---|
| | L/min | L/s |
| Average Daily Demand | 9 | 0.15 |
| Maximum Daily Demand | 22.5 | 0.375 |
| Peak Hour | 49.5 | 0.825 |
| Fire Flow Demand #1 | 8700 | 145 |
| Fire Flow Demand #2 | 12000 | 200 |

## Location


## Results

**Connection 1 – Innes Road**

| Demand Scenario | Head (m) | Pressure[1] (psi) |
|---|---|---|
| Maximum HGL | 130.3 | 56.5 |
| Peak Hour | 127.0 | 51.8 |
| Max Day plus Fire #1 | 128.5 | 53.9 |
| Max Day plus Fire #2 | 127.6 | 52.7 |

Ground Elevation = 90.5 m

## Results

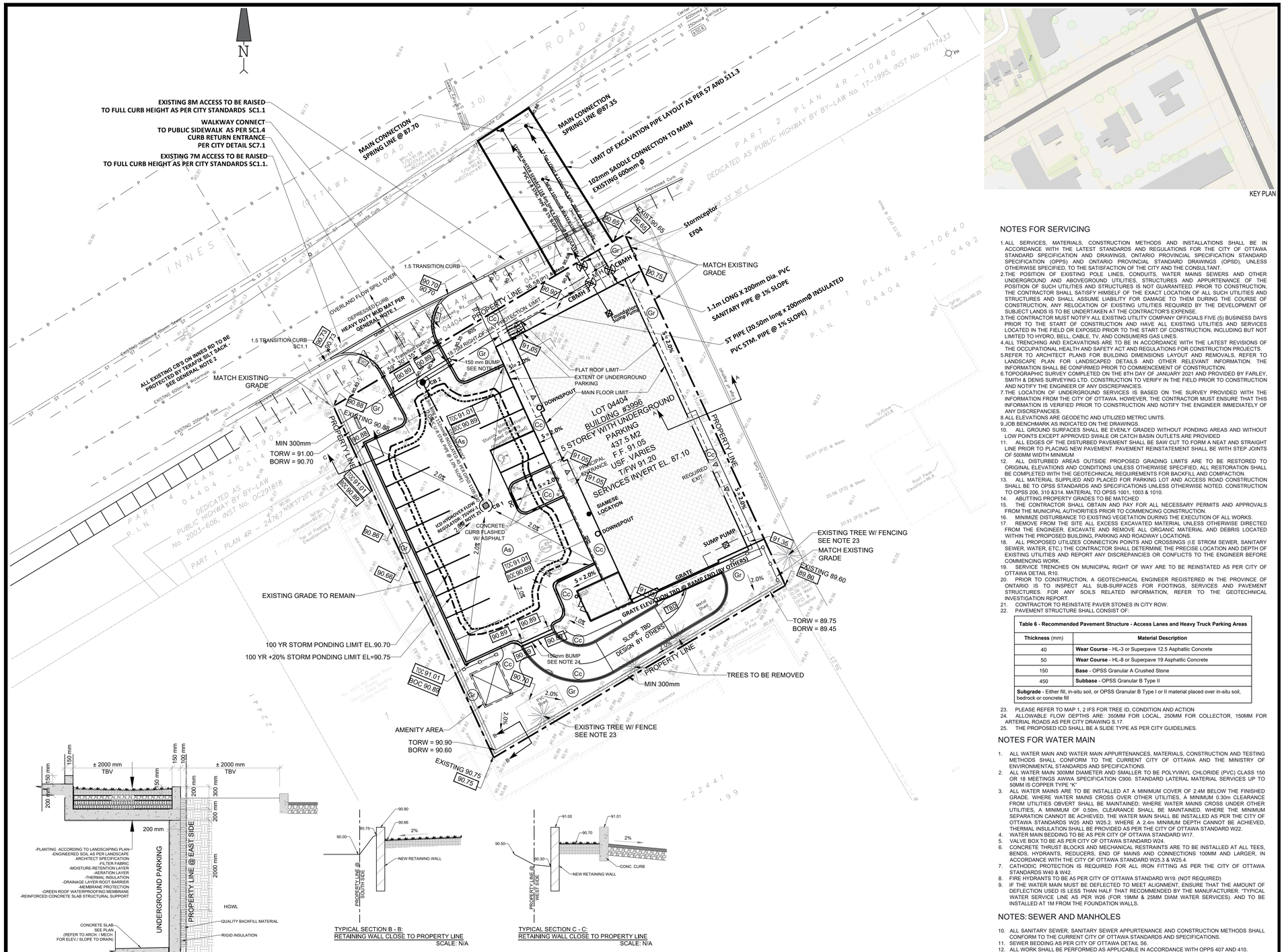
1. Consult proposed connection to the 610mm transmission main with Drinking Water Services

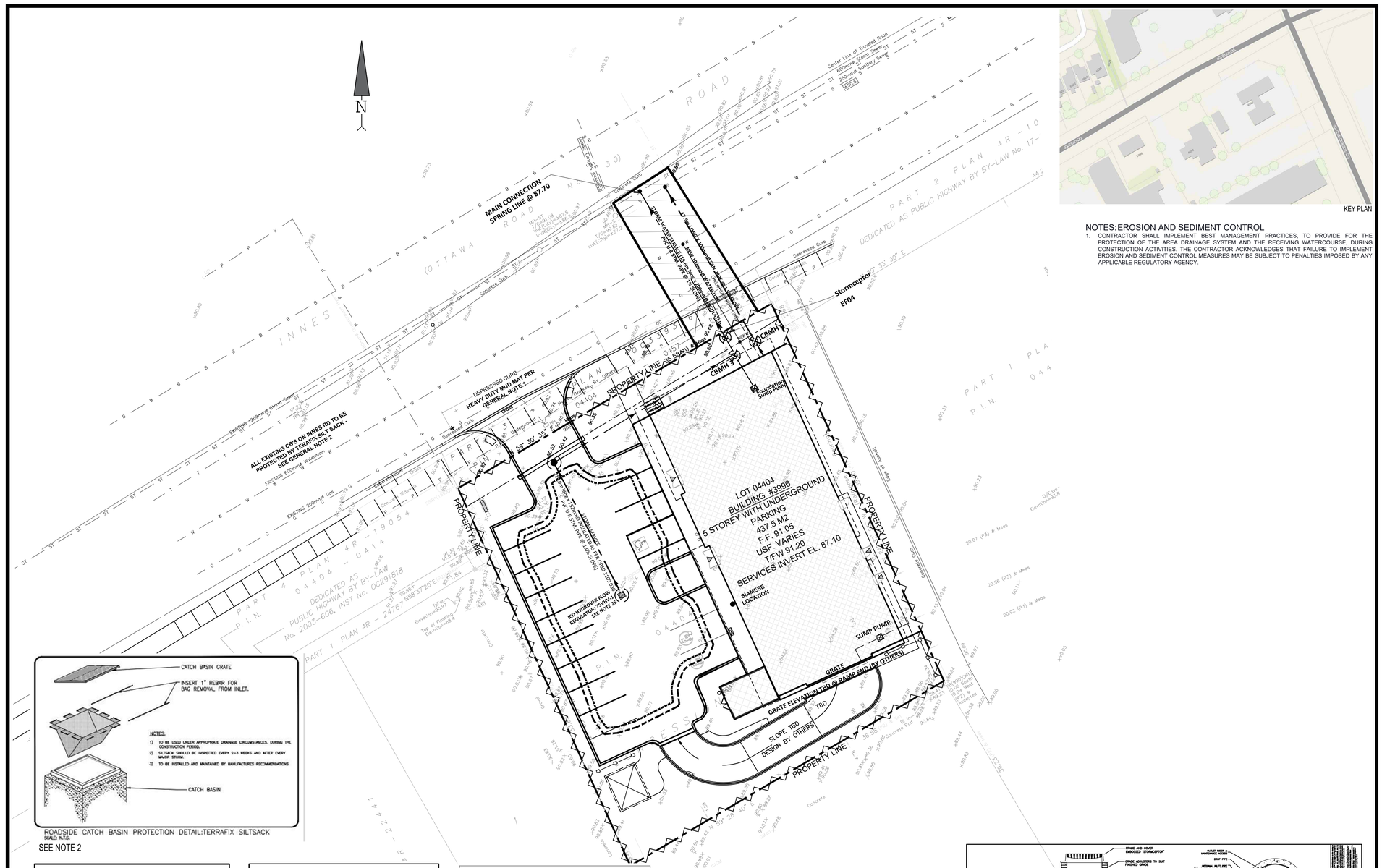
**Disclaimer**

*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. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.*

# APPENDIX C:

## Engineering Drawings


EXISTING 8M ACCESS TO BE RAISED TO FULL CURB HEIGHT AS PER CITY STANDARDS SC1.1
WALKWAY CONNECT TO PUBLIC SIDEWALK AS PER SC1.4
CURB RETURN ENTRANCE PER CITY DETAIL SC7.1
EXISTING 7M ACCESS TO BE RAISED TO FULL CURB HEIGHT AS PER CITY STANDARDS SC1.1.
MAIN CONNECTION SPRING LINE @ 87.70
MAIN CONNECTION SPRING LINE @87.35
LIMIT OF EXCAVATION PIPE LAYOUT AS PER S7 AND S11.3
102mm SADDLE CONNECTION TO MAIN
EXISTING 600mm Ø
ASPHALT WALKWAY SLOPE TO CATCH BASIN AT 2.0% MIN. SLOPE
Stormceptor EF04
MATCH EXISTING GRADE
1.1m LONG X 200mm Dia. PVC SANITARY PIPE @ 1% SLOPE
ST PIPE (20.50m long x 200mmØ INSULATED PVC STM. PIPE @ 1% SLOPE)
1.5 TRANSITION CURB
OVERLAND FLOW SPILL OVER
DEPRESSED CURB
HEAVY DUTY MUD MAT PER GENERAL NOTE 1
1.5 TRANSITION CURB SC1.1
ALL EXISTING CB'S ON INNES RD TO BE PROTECTED BY TERRAFIX SILT SACK SEE GENERAL NOTE 2
MATCH EXISTING GRADE
PROPERTY LINE
SETBACK LIMIT
18.75M HEIGHT OF MAIN
150 mm BUMP SEE NOTE 24
FLAT ROOF LIMIT EXTENT OF UNDERGROUND PARKING
MAIN FLOOR LIMIT
DOWNSPOUT
LOT 04404
BUILDING #3996
5 STOREY WITH UNDERGROUND PARKING
437.5 M2
F.F. 91.05
USF. VARIES
T/RW 91.20
SERVICES INVERT EL. 87.10
PRINCIPAL ENTRANCE
SIAMESE LOCATION
REQUIRED EXIT
SUMP PUMP
GRATE
GRATE ELEVATION TBD @ RAMP END (BY OTHERS)
SLOPE TBD DESIGN BY OTHERS
EXISTING TREE W/ FENCING SEE NOTE 23
MATCH EXISTING GRADE
EXISTING 89.60
TORW = 89.75
BORW = 89.45
TREES TO BE REMOVED
MIN 300mm
EXISTING GRADE TO REMAIN
100 YR STORM PONDING LIMIT EL.90.70
100 YR +20% STORM PONDING LIMIT EL=90.75
150mm BUMP SEE NOTE 24
AMENITY AREA
TORW = 90.90
BORW = 90.60
EXISTING 90.75
EXISTING TREE W/ FENCE SEE NOTE 23
MIN 300mm TORW = 91.00 BORW = 90.70
EXISTING 90.88
CONCRETE CURB FLASHED W/ ASPHALT
ICD HYDROVEX FLOW REGULATOR, TRIVAL 1 SEE NOTE 21
CB 1
CB 2
CBMH #2
CBMH #3
CBMH #4
INV=87.70
INV=87.58
INV=87.05
INV=86.92
INV=86.80
INV=86.68
INV=86.55
INV=86.43
INV=86.30
INV=86.18
INV=86.05
INV=85.93
INV=85.80
INV=85.68
INV=85.55
INV=85.43
INV=85.30
INV=85.18
INV=85.05
INV=84.93
INV=84.80
INV=84.68
INV=84.55
INV=84.43
INV=84.30
INV=84.18
INV=84.05
INV=83.93
INV=83.80
INV=83.68
INV=83.55
INV=83.43
INV=83.30
INV=83.18
INV=83.05
INV=82.93
INV=82.80
INV=82.68
INV=82.55
INV=82.43
INV=82.30
INV=82.18
INV=82.05
INV=81.93
INV=81.80
INV=81.68
INV=81.55
INV=81.43
INV=81.30
INV=81.18
INV=81.05
INV=80.93
INV=80.80
INV=80.68
INV=80.55
INV=80.43
INV=80.30
INV=80.18
INV=80.05
INV=79.93
INV=79.80
INV=79.68
INV=79.55
INV=79.43
INV=79.30
INV=79.18
INV=79.05
INV=78.93
INV=78.80
INV=78.68
INV=78.55
INV=78.43
INV=78.30
INV=78.18
INV=78.05
INV=77.93
INV=77.80
INV=77.68
INV=77.55
INV=77.43
INV=77.30
INV=77.18
INV=77.05
INV=76.93
INV=76.80
INV=76.68
INV=76.55
INV=76.43
INV=76.30
INV=76.18
INV=76.05
INV=75.93
INV=75.80
INV=75.68
INV=75.55
INV=75.43
INV=75.30
INV=75.18
INV=75.05
INV=74.93
INV=74.80
INV=74.68
INV=74.55
INV=74.43
INV=74.30
INV=74.18
INV=74.05
INV=73.93
INV=73.80
INV=73.68
INV=73.55
INV=73.43
INV=73.30
INV=73.18
INV=73.05
INV=72.93
INV=72.80
INV=72.68
INV=72.55
INV=72.43
INV=72.30
INV=72.18
INV=72.05
INV=71.93
INV=71.80
INV=71.68
INV=71.55
INV=71.43
INV=71.30
INV=71.18
INV=71.05
INV=70.93
INV=70.80
INV=70.68
INV=70.55
INV=70.43
INV=70.30
INV=70.18
INV=70.05
INV=69.93
INV=69.80
INV=69.68
INV=69.55
INV=69.43
INV=69.30
INV=69.18
INV=69.05
INV=68.93
INV=68.80
INV=68.68
INV=68.55
INV=68.43
INV=68.30
INV=68.18
INV=68.05
INV=67.93
INV=67.80
INV=67.68
INV=67.55
INV=67.43
INV=67.30
INV=67.18
INV=67.05
INV=66.93
INV=66.80
INV=66.68
INV=66.55
INV=66.43
INV=66.30
INV=66.18
INV=66.05
INV=65.93
INV=65.80
INV=65.68
INV=65.55
INV=65.43
INV=65.30
INV=65.18
INV=65.05
INV=64.93
INV=64.80
INV=64.68
INV=64.55
INV=64.43
INV=64.30
INV=64.18
INV=64.05
INV=63.93
INV=63.80
INV=63.68
INV=63.55
INV=63.43
INV=63.30
INV=63.18
INV=63.05
INV=62.93
INV=62.80
INV=62.68
INV=62.55
INV=62.43
INV=62.30
INV=62.18
INV=62.05
INV=61.93
INV=61.80
INV=61.68
INV=61.55
INV=61.43
INV=61.30
INV=61.18
INV=61.05
INV=60.93
INV=60.80
INV=60.68
INV=60.55
INV=60.43
INV=60.30
INV=60.18
INV=60.05
INV=59.93
INV=59.80
INV=59.68
INV=59.55
INV=59.43
INV=59.30
INV=59.18
INV=59.05
INV=58.93
INV=58.80
INV=58.68
INV=58.55
INV=58.43
INV=58.30
INV=58.18
INV=58.05
INV=57.93
INV=57.80
INV=57.68
INV=57.55
INV=57.43
INV=57.30
INV=57.18
INV=57.05
INV=56.93
INV=56.80
INV=56.68
INV=56.55
INV=56.43
INV=56.30
INV=56.18
INV=56.05
INV=55.93
INV=55.80
INV=55.68
INV=55.55
INV=55.43
INV=55.30
INV=55.18
INV=55.05
INV=54.93
INV=54.80
INV=54.68
INV=54.55
INV=54.43
INV=54.30
INV=54.18
INV=54.05
INV=53.93
INV=53.80
INV=53.68
INV=53.55
INV=53.43
INV=53.30
INV=53.18
INV=53.05
INV=52.93
INV=52.80
INV=52.68
INV=52.55
INV=52.43
INV=52.30
INV=52.18
INV=52.05
INV=51.93
INV=51.80
INV=51.68
INV=51.55
INV=51.43
INV=51.30
INV=51.18
INV=51.05
INV=50.93
INV=50.80
INV=50.68
INV=50.55
INV=50.43
INV=50.30
INV=50.18
INV=50.05
INV=49.93
INV=49.80
INV=49.68
INV=49.55
INV=49.43
INV=49.30
INV=49.18
INV=49.05
INV=48.93
INV=48.80
INV=48.68
INV=48.55
INV=48.43
INV=48.30
INV=48.18
INV=48.05
INV=47.93
INV=47.80
INV=47.68
INV=47.55
INV=47.43
INV=47.30
INV=47.18
INV=47.05
INV=46.93
INV=46.80
INV=46.68
INV=46.55
INV=46.43
INV=46.30
INV=46.18
INV=46.05
INV=45.93
INV=45.80
INV=45.68
INV=45.55
INV=45.43
INV=45.30
INV=45.18
INV=45.05
INV=44.93
INV=44.80
INV=44.68
INV=44.55
INV=44.43
INV=44.30
INV=44.18
INV=44.05
INV=43.93
INV=43.80
INV=43.68
INV=43.55
INV=43.43
INV=43.30
INV=43.18
INV=43.05
INV=42.93
INV=42.80
INV=42.68
INV=42.55
INV=42.43
INV=42.30
INV=42.18
INV=42.05
INV=41.93
INV=41.80
INV=41.68
INV=41.55
INV=41.43
INV=41.30
INV=41.18
INV=41.05
INV=40.93
INV=40.80
INV=40.68
INV=40.55
INV=40.43
INV=40.30
INV=40.18
INV=40.05
INV=39.93
INV=39.80
INV=39.68
INV=39.55
INV=39.43
INV=39.30
INV=39.18
INV=39.05
INV=38.93
INV=38.80
INV=38.68
INV=38.55
INV=38.43
INV=38.30
INV=38.18
INV=38.05
INV=37.93
INV=37.80
INV=37.68
INV=37.55
INV=37.43
INV=37.30
INV=37.18
INV=37.05
INV=36.93
INV=36.80
INV=36.68
INV=36.55
INV=36.43
INV=36.30
INV=36.18
INV=36.05
INV=35.93
INV=35.80
INV=35.68
INV=35.55
INV=35.43
INV=35.30
INV=35.18
INV=35.05
INV=34.93
INV=34.80
INV=34.68
INV=34.55
INV=34.43
INV=34.30
INV=34.18
INV=34.05
INV=33.93
INV=33.80
INV=33.68
INV=33.55
INV=33.43
INV=33.30
INV=33.18
INV=33.05
INV=32.93
INV=32.80
INV=32.68
INV=32.55
INV=32.43
INV=32.30
INV=32.18
INV=32.05
INV=31.93
INV=31.80
INV=31.68
INV=31.55
INV=31.43
INV=31.30
INV=31.18
INV=31.05
INV=30.93
INV=30.80
INV=30.68
INV=30.55
INV=30.43
INV=30.30
INV=30.18
INV=30.05
INV=29.93
INV=29.80
INV=29.68
INV=29.55
INV=29.43
INV=29.30
INV=29.18
INV=29.05
INV=28.93
INV=28.80
INV=28.68
INV=28.55
INV=28.43
INV=28.30
INV=28.18
INV=28.05
INV=27.93
INV=27.80
INV=27.68
INV=27.55
INV=27.43
INV=27.30
INV=27.18
INV=27.05
INV=26.93
INV=26.80
INV=26.68
INV=26.55
INV=26.43
INV=26.30
INV=26.18
INV=26.05
INV=25.93
INV=25.80
INV=25.68
INV=25.55
INV=25.43
INV=25.30
INV=25.18
INV=25.05
INV=24.93
INV=24.80
INV=24.68
INV=24.55
INV=24.43
INV=24.30
INV=24.18
INV=24.05
INV=23.93
INV=23.80
INV=23.68
INV=23.55
INV=23.43
INV=23.30
INV=23.18
INV=23.05
INV=22.93
INV=22.80
INV=22.68
INV=22.55
INV=22.43
INV=22.30
INV=22.18
INV=22.05
INV=21.93
INV=21.80
INV=21.68
INV=21.55
INV=21.43
INV=21.30
INV=21.18
INV=21.05
INV=20.93
INV=20.80
INV=20.68
INV=20.55
INV=20.43
INV=20.30
INV=20.18
INV=20.05
INV=19.93
INV=19.80
INV=19.68
INV=19.55
INV=19.43
INV=19.30
INV=19.18
INV=19.05
INV=18.93
INV=18.80
INV=18.68
INV=18.55
INV=18.43
INV=18.30
INV=18.18
INV=18.05
INV=17.93
INV=17.80
INV=17.68
INV=17.55
INV=17.43
INV=17.30
INV=17.18
INV=17.05
INV=16.93
INV=16.80
INV=16.68
INV=16.55
INV=16.43
INV=16.30
INV=16.18
INV=16.05
INV=15.93
INV=15.80
INV=15.68
INV=15.55
INV=15.43
INV=15.30
INV=15.18
INV=15.05
INV=14.93
INV=14.80
INV=14.68
INV=14.55
INV=14.43
INV=14.30
INV=14.18
INV=14.05
INV=13.93
INV=13.80
INV=13.68
INV=13.55
INV=13.43
INV=13.30
INV=13.18
INV=13.05
INV=12.93
INV=12.80
INV=12.68
INV=12.55
INV=12.43
INV=12.30
INV=12.18
INV=12.05
INV=11.93
INV=11.80
INV=11.68
INV=11.55
INV=11.43
INV=11.30
INV=11.18
INV=11.05
INV=10.93
INV=10.80
INV=10.68
INV=10.55
INV=10.43
INV=10.30
INV=10.18
INV=10.05
INV=9.93
INV=9.80
INV=9.68
INV=9.55
INV=9.43
INV=9.30
INV=9.18
INV=9.05
INV=8.93
INV=8.80
INV=8.68
INV=8.55
INV=8.43
INV=8.30
INV=8.18
INV=8.05
INV=7.93
INV=7.80
INV=7.68
INV=7.55
INV=7.43
INV=7.30
INV=7.18
INV=7.05
INV=6.93
INV=6.80
INV=6.68
INV=6.55
INV=6.43
INV=6.30
INV=6.18
INV=6.05
INV=5.93
INV=5.80
INV=5.68
INV=5.55
INV=5.43
INV=5.30
INV=5.18
INV=5.05
INV=4.93
INV=4.80
INV=4.68
INV=4.55
INV=4.43
INV=4.30
INV=4.18
INV=4.05
INV=3.93
INV=3.80
INV=3.68
INV=3.55
INV=3.43
INV=3.30
INV=3.18
INV=3.05
INV=2.93
INV=2.80
INV=2.68
INV=2.55
INV=2.43
INV=2.30
INV=2.18
INV=2.05
INV=1.93
INV=1.80
INV=1.68
INV=1.55
INV=1.43
INV=1.30
INV=1.18
INV=1.05
INV=0.93
INV=0.80
INV=0.68
INV=0.55
INV=0.43
INV=0.30
INV=0.18
INV=0.05
INV=-0.07
INV=-0.20
INV=-0.32
INV=-0.45
INV=-0.57
INV=-0.70
INV=-0.82
INV=-0.95
INV=-1.07
INV=-1.20
INV=-1.32
INV=-1.45
INV=-1.57
INV=-1.70
INV=-1.82
INV=-1.95
INV=-2.07
INV=-2.20
INV=-2.32
INV=-2.45
INV=-2.57
INV=-2.70
INV=-2.82
INV=-2.95
INV=-3.07
INV=-3.20
INV=-3.32
INV=-3.45
INV=-3.57
INV=-3.70
INV=-3.82
INV=-3.95
INV=-4.07
INV=-4.20
INV=-4.32
INV=-4.45
INV=-4.57
INV=-4.70
INV=-4.82
INV=-4.95


N
MAIN CONNECTION SPRING LINE @ 87.70
ALL EXISTING CB'S ON INNES RD TO BE PROTECTED BY TERAFIX SILT SACK - SEE GENERAL NOTE 2
REPRESSED CURB
HEAVY DUTY MUD MAT PER GENERAL NOTE 1
PROPERTY LINE
PROPERTY LINE 36.58m
Stormceptor EF04
CBMH 1
CBMH 3
Sump Pump
LOT 04404
BUILDING #3996
5 STOREY WITH UNDERGROUND PARKING
437.5 M2
F.F. 91.05
USF. VARIES
T/FW 91.20
SERVICES INVERT EL. 87.10
SIAMESE LOCATION
SUMP PUMP
GRATE
GRATE ELEVATION TBD @ RAMP END (BY OTHERS)
SLOPE TBD DESIGN BY OTHERS
TBD
PROPERTY LINE
INNES ROAD
(OTTAWA ROAD NO. 30)
DEDICATED AS PUBLIC HIGHWAY BY-LAW No. 17-
PART 2 PLAN 4R - 10
PART 1 PLAN 4R - 19054
PART 4 PLAN 4R - 0414
DEDICATED AS PUBLIC HIGHWAY BY-LAW No. 2003-606, INST No. OC291815
PART 1 PLAN 4R - 24767
PART 1 PLAN 4R - 22441
P.I.N.
Concrete Curb
Depressed Curb
Center Line of Traveled Road
Existing 400mmø Storm Sewer
Existing 450mmø Sanitary Sewer
Existing 350mmø Gas
Existing 400mmø Watermain
Concrete Pad
Concrete Walk
Top of Footing Elevation=88.4
Top of Footing Elevation=88.90
Invert Out Elevation=87.70
Invert In Elevation=87.79
Invert Out Elevation=87.79
Invert In Elevation=87.84
Invert Out Elevation=87.84
Invert In Elevation=87.89
Invert Out Elevation=87.89
Invert In Elevation=87.94
Invert Out Elevation=87.94
Invert In Elevation=87.99
Invert Out Elevation=87.99
Invert In Elevation=88.04
Invert Out Elevation=88.04
Invert In