November 29, 2024 File: 24203r1

Attention: Building Department – City of Barrie

City of Barrie
70 Collier Street
Barrie, ON L4M 4T5

Re: Functional Servicing Brief - Revised
County of Simcoe – Rapid Response Housing
445 Blake Street, City of Barrie

1. Introduction

PEARSON Engineering Ltd. (Pearson) has been retained by the Simcoe County Housing Corporation (SCHC) (Client) to complete a Functional Servicing Brief (Brief) in support of the Rapid Response Housing (Project) located at 445 Blake Street in the City of Barrie (City) in Simcoe County (County). The subject property was previously a car dealership, is approximately 1.13 hectares in size and fronts onto Blake Street to the west, Penetanguishene Road to the north and east and an existing multi-storey low-income housing building to the south.

The Project proposes the addition of two modular facility, each made up of 6 modular units, to be placed in the existing eastern parking lot of the site primarily on the existing asphalt area. This Brief assesses the existing municipal infrastructure in the vicinity of the site to service the proposed Project. The Project's proposed occupancy for modular facility 1 is December 2024 for a duration of 5+ years and the modular facility will be relocated from 20 Rose Street where it has been operational since the end of 2022. Modular facility 2 is anticipated to be installed shortly after.

2. Proposed Design Population

The Project will provide 14 beds and 3 staff in the modular facility 1 and 15 beds and 3 staff in modular facility 2. The existing building is also being proposed as a warming shelter through a separate application. The warming shelter has been proposed to provide 20 spots and would have 4 staff. Those spots have been included in the total population in order to provide a conservative estimate of the demands for the site. Based on these figures, a design population of 59 persons is estimated for the Project site.

3. Water Supply and Servicing

As shown on the Site Servicing Drawing in Appendix B, there is an existing municipal 300mm diameter PVC watermain fronting the site on the opposite side of Blake Street. The existing municipal fire hydrants on Blake Street and Penetanguishene Road were tested by Vipond in October 2024 and were found to have a static pressure of 100 PSI on Blake and 96 PSI on Penetanguishene. The hydrant flow tests can be found in Appendix A.

In order to determine the impact of the proposed usage conversion on the existing water infrastructure, the pre-development and post-development demands were calculated. An existing 50 mm diameter water service provides domestic water for the site and is connected to the existing watermain on Blake Street. The existing municipal fire hydrants are located approximately 50 m (Penetanguishene) and 56 m (Blake Street) from modular facility 1 and 17 m (Penetanguishene) and 38 m (Blake Street) from modular facility 2. The fire route is proposed through the Project site as shown on the architectural site plan. Given the proposed building and existing hydrant locations the existing hydrants will continue to provide adequate fire protection coverage for the temporary building.

A commercial water use of 28,000 L/ha/d was utilized to determine the existing allowable demands as per City guidelines. A design population of 59 people and a residential usage of 225 L/cap/day was utilized to determine the proposed demands as per City Guidelines. Table 1 below summarizes the Average Day Demand, Max Day Flow and Peak Hour Demands for both existing and proposed conditions. Calculations for the domestic water requirements for the existing and proposed conditions can be found in Appendix A.

Table 1: Summary of Existing and Proposed Water Flow Calculations

	Existing	Proposed
Average Daily Demand	0.37 L/s	0.15 L/s
Max Day Flow (MDF)	0.73 L/s	0.31 L/s
Peak Hour Demand (PHD)	1.46 L/s	0.61 L/s

As per Table 1 and the supporting calculations the existing PHD is higher than the proposed and it is assumed the municipal water system can supply the domestic demands for the building with no negative impacts to the existing infrastructure.

The Modular buildings will be serviced by connecting to the existing 50 mm diameter water service after the meter in the building and extending a 50 mm diameter service to the proposed building location. One water service connection to each of modular building will be provided as shown on the drawing SS-1 in Appendix B.

4.1. Fire Flow Requirements

As per City of Barrie Standards, the City minimum required fire flow demands shall be used unless the Fire Underwriters Survey (FUS) calculations require a higher fire flow. Using City of Barrie Standards requirements, we have assumed Residential for the modular building use which is a minimum required fire flow of 100 L/s and Commercial for the existing building use which is a minimum required fire flow of 283 L/s. The required fire flow for the modular buildings and existing building were calculated as per the FUS assessment and was determined to be approximately 117 L/s based on the building area and the building construction consisting of a non-sprinklered water system and combustible construction materials (modular building) and ordinary construction materials (existing building). The higher requirement is commercial and therefore, the City Standards requirements govern. Calculations included in Appendix A were completed based on the 2020 Fire Underwriters Survey guide.

As noted, hydrant fire flow tests were completed on both Penetanguishene and Blake Street hydrants by Vipond in October 2024 indicating that static pressures of 96 and 100 PSI are available. These flow tests also resulted in available flows of approximately 2,997 GPM (189 L/s) and 4,775 GPM (301 L/s) at a residual pressure of 20 psi, which are expected to be sufficient for fire protection. Hydrant flow test results are provided in Appendix A.

4. Sanitary Servicing

There is an existing 525mm diameter sanitary sewer fronting the site on Blake Street and an existing 150mm sanitary service to the existing building. Refer to Drawing SS-1 for the approximate location of the existing sanitary servicing layout.

A sanitary flow rate of 28,000 L/ha/d was utilized to determine the existing allowable demands as per City guidelines. A design population of 59 people and a residential usage of 225 L/cap/day was utilized to determine the proposed demands as per City Guidelines. Using a Peaking Factor of 4.00 for this project and an infiltration allowance of 0.11 L/s/ha Table 2 below summarizes the sanitary calculations for both existing and proposed conditions. Calculations for the sanitary requirements for the existing and proposed conditions can be found in Appendix A.

Table 2: Summary of Existing and Proposed Sanitary Flow Calculations

	Existing	Proposed
Average Daily Flows (ADF)	0.37 L/s	0.15 L/s
Peak Flow including Infiltration Allowance	1.58 L/s	0.73 L/s

Based on Table 2 the existing Peak Flow is higher than the proposed and it is assumed the municipal sanitary system can supply the demands for the building with no negative impacts to the existing infrastructure. Calculations for the sanitary requirements for existing and proposed can be found attached in Appendix A.

The Modular building will be serviced by connecting to the existing manhole within the Project site and extending a 150 mm diameter sanitary service to the proposed building location. Each of the modular units will be provided with a sanitary service connection as shown on the drawing SS-1 in Appendix B.

5. STORMWATER MANAGEMENT

A key component of the development is the need to address environmental and related SWM issues. These are examined in a framework aimed at meeting the City, County, Lake Simcoe Region Conservation Authority (LSRCA) and the Ministry of the Environment, Conservation and Parks (MECP) requirements.

2.1. EXISTING STORM DRAINAGE SYSTEM

The existing site was previously developed around 2004 complete with SWM controls through an onsite SWM Pond. The existing site mostly drains southeast by overland flow towards the existing onsite dry SWM Pond and a swale along the southern property line. The SWM Pond outlets via a control manhole to the storm sewer on Penetanguishene Road and an emergency rip rap spillway.

2.2. PROPOSED STORM DRAINAGE SYSTEM

The proposed modular buildings are being placed primarily on the existing asphalt in the eastern parking lot of the Project site. Modular facility 2 will be partially over existing grassed area and a car display area is being removed within the front boulevard area. A new gazebo and gravel walkway have been proposed adjacent to the building. The total impervious area increase is approximately 230 m² and therefore less than the major development classification of 500 m². Given the negligible impact from the proposed development no SWM controls, low impact design (LID), phosphorus or water balance measures are being proposed. The post-development storm drainage for the project will generally follow pre-development conditions with minimal grading revisions. The site grading plan SG-1 and site removals plan REM-1 can be found in Appendix B.

6. Conclusions

The above assessment of the stormwater and site servicing demonstrates that the proposed water and sanitary peak flows are less than the existing flows and the impervious area is only nominally increasing with passive additions. The existing site services are expected to have sufficient capacity to accommodate the proposed flows and convey them to the existing municipal infrastructure.

If you have any questions regarding the above or require any further information, please feel free to call me at (705) 719-4785 ext. 233.

All of which is respectfully submitted,

Pearson Engineering Ltd.

April Cleaves, B.A. Tech., C.E.T.
Senior Project Manager

Mike Dejean, P.Eng.
Partner, Manager of Engineering Services

Appendix A
Sanitary and Water Calculations

445 Blake Street, City of Barrie
Sanitary Flow Calculations - Existing Design Flows

Design Criteria:

Flow per Capita (Q):	28,000	L/cap/day	*as per City of Barrie Commercial Flows
Demand per Capita (Q):	225	L/cap/day	*City of Barrie Residential Average Water Consumption Rates
Peak Flow:	Qp = P * Q * M / 86,400 + I * A		
Peaking Factor (Harmon Formula):	M = 1 + (14 / (4 + (P / 1000) ^ 0.5)		Where: 2.0 <= "M" <= 4.0
Extraneous Flow:	0.10	L/s/ha	*as per City of Barrie Standards

Site Data:

Description	Density		Population		Flow Rate	
Commercial Space	1.13	hectares	1	units	28,000	L/ha/d

Calculate Average Daily Flows

ADF (L/s)	=	Flow Rate	x	Area (ha)	
ADF (L/s)	=	28,000	x	1.13	
ADF (L/s)	=	31,640	L/day		
ADF (L/s)	=	0.37	L/s		

Calculate Equivalent Population

*For Peaking Factor Only	=	Flow Rate	/	Residential Demand Equivalent	
	=	28,000	/	225	
	=	124	people	x 1.13	hectares
	=	141	people		

Calculate Peaking Factor

$$M = 1 + \frac{14}{4 + \left(\frac{141}{1{,}000}\right)^{0.5}}$$

M	=	4.20
Use Max Peaking Factor	=	4.00

Calculate Peak Flow

Qp	=	ADF (L/s)	x	Peaking Factor	
Qp	=	0.37	x	4.00	
	=	1.46	L/s		
Infiltration Allowance	=	Extraneous Flow	x	Area (ha)	
	=	0.10	x	1.13	
	=	0.11	L/s		
Qp (Inc. Infiltration Allowance)	=	1.58	L/s		

445 Blake Street, City of Barrie
Sanitary Flow Calculations - Proposed Residential

Design Criteria:

Flow per Capita (Q):	225	L/cap/day	*City of Barrie Residential Average Water Consumption Rates
Peak Flow:	Qp = P * Q * M / 86,400 + I * A		
Peaking Factor (Harmon Formula):	M = 1 + (14 / (4 + (P / 1000) ^ 0.5))		Where: 2.0 <= "M" <= 4.0
Extraneous Flow:	0.10	L/s/ha	*as per City of Barrie Standards

Site Data:

Description		Density		Population		Flow Rate		Peak Factor	
Residential Units	1.00	people/bed	59	people	225	L/cap/d	MAX DAY FACTOR*	2.00
			Modular 1 14 beds + 3 staff				PEAK RATE FACTOR*	4.00
			Modular 2 15 beds + 3 staff					
			Ex Bldg 20 spots + 4 staff					

Calculate Population

Pop. Residential	=	Density	x	People
Pop. Residential	=	1.00	x	59
Pop.	=	59	people	

Calculate Average Daily Flows

ADF (L/s)	=	Flow Rate	x	Pop.
ADF	=	225	x	59
ADF	=	13,275	L/day	
ADF	=	0.15	L/s	

Calculate Peaking Factor

$$M = 1 + \frac{14}{4 + \left(\frac{59}{1{,}000}\right)^{0.5}}$$

M	=	4.30
Use Max Peaking Factor	=	4.00

Calculate Peak Flow

Qp	=	ADF (L/s)	x	Peaking Factor
Qp	=	0.15	x	4.00
	=	0.61	L/s	

Infiltration Allowance	=	Extraneous Flow	x	Area (ha)
	=	0.10	x	1.13
	=	0.11	L/s	

Qp (Inc. Infiltration Allowance)	=	0.73	L/s

445 Blake Street, City of Barrie
Water Flow Calculations - Existing Design Flows

Design Criteria

Demand per Capita (Q):	28,000	L/ha/day	(Section 4.3.1: City of Barrie Water Policies & Design Standards)
Demand per Capita (Q):	225	L/cap/day	*City of Barrie Residential Average Water Consumption Rates
Peak Rate Factor (Max. Hour)	4.00		(Table 3-3: Peaking Factors, MECP Design Guidelines for Drinking-Water Systems)
Max. Day Factor	2.00		

Site Data:

Description	Density		Population		Flow Rate		Peaking Factors	
Commercial Space	1.13	hectares	1	units	28,000	L/ha/d	Peak Rate Factor*	4.00

Calculate Average Day Demand (ADD)

ADD	=	Flow Rate	x	Pop.
ADD	=	28,000	x	1.13
ADD	=	31,640	L/day	
ADD	=	0.37	L/s	

Calculate Max Day Flow (MDF)

MDF	=	ADD	x	Max. Day Factor
MDF	=	0.37	x	2.00
MDF	=	0.73	L/s	

Calculate Peak Hour Demand (PHD)

PHD	=	MDF	x	Peak Rate Factor
PHD	=	0.37	x	4.00
PHD	=	1.46	L/s	

445 Blake Street, City of Barrie
Water Flow Calculations - Proposed Residential

Design Criteria

Demand per Capita (Q):	225	L/cap/day	*City of Barrie Residential Average Water Consumption Rates
Peak Rate Factor (Max. Hour)	4.00		(Table 3-3: Peaking Factors, MOE Design Guidelines for Drinking-Water Systems)
Max. Day Factor	2.00		

Site Data:

Description		Density		Population		Flow Rate		Peaking Factors	
Residential	1.00	people/bed	59	people	225	L/cap/d	MAX DAY FACTOR*	2.00
							PEAK RATE FACTOR*	4.00

Modular 1 14 beds + 3 staff
Modular 2 15 beds + 3 staff
Ex Bldg 20 spots + 4 staff

Calculate Average Day Demand (ADD)

ADD	=	Flow Rate	x	Pop.
ADD	=	225	x	59
ADD	=	13,275	L/day	
ADD	=	0.15	L/s	

Calculate Max Day Flow (MDF)

MDF	=	ADD	x	Max. Day Factor
MDF	=	0.15	x	2.00
MDF	=	0.31	L/s	

Calculate Peak Hour Demand (PHD)

PHD	=	MDF	x	Peak Rate Factor
PHD	=	0.15	x	4.00
PHD	=	0.61	L/s	

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445 Blake Street, City of Barrie
Fire Flow Calculations - Modular Building 1

Required fire flow calculations as per the Fire Underwritors Survey's Water Supply for Public Fire Protection - 2020:

Location:	445 Blake Street, Barrie	
OBC Occupancy:	Residential Occupancies - Class C	
Building Foot Print:	410 m^2	
# of Stories:	1	**Modular Building**

Date: 2024-11-28
Project: SCHC
Project Number: 24203

Type	Construction Class	Charge
5	Wood Frame	1.50
4	Heavy Timber (A-D)	0.80 - 1.50
3	Ordinary	1.00
2	Non-Combustible	0.80
1	Fire Resistive	0.60

Construction Class: Type 5 — Wood Frame

Automated Sprinkler Protection:

		Credit	Total
NFPA 13 sprinkler standard	No	30%	0%
Standard Water Supply	No	10%	
Fully Supervised System	No	10%	

Contents	Charge
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Contents Factor: Limited Combustible — **Charge:** -15%

Exposure Side & Building	Length - Height Ratio	Distance to Exposure Building (m)	Charge
North Blake Street	54	> 30.1	0%
East Penetanguishene Road	63	> 30.1	0%
South Ex. Residential	54	> 30.1	0%
West Ex. 445 Blake Building	63	3.1 to 10	18%
		Total:	**18%**

Note: the max Exposure Adjustment Charge is 75%

Separation Distance	Charge
0.0 - 3.0 m	20% -25%
3.1 - 10.0 m	15% - 20%
10.1 - 20.0 m	10% - 15%
20.1 - 30.0 m	0% - 10%
> 30.1 m	0%

Note: As per FUS 2020 Table 6, Charges for Type III were used for Ordinary Construction

Are Buildings Contigious? No

Fire Resistant Building: Are vertical openings and exterior vertical communications protected with a minimum one (1) hr rating? No

Calculations: *C* = 1.5 — Wood Frame

Required Fire Flow: ***RFF = 220 x C x √A***

Where: *RFF* = required fire flow in liters per minute
C = Coefficient related to the type of construction
A= the total floor area in square meters (excluding basements in building considered)

Total Effective Area: *A* = 410 m²

RFF = 6,682 L/min

Round to Nearest 1000 L/min: RFF = 7,000 L/min

* Must be > 2000 L/min or < 45,000 L/min

Correction Factors:

Contents Charge		-1,050	L/min
RFF Adjusted for Contents	**E =**	5,950	L/min
Reduction For Sprinkler	**F =**	0	L/min
RFF w/ Sprinkler Reduction		5,950	L/min
Exposure Charge	**G =**	1,071	L/min
RFF w/ Exposure Charge		7,021	L/min

As per "Water Supply for Public Fire Protection" pg.20 note H:
RFF **= E - F + G**

RFF = 5950 L/min - 0 L/min + 1071 L/min
RFF = 7021 L/min

Required Fire Flow: **RFF =** 7,021 L/min

Round to Nearest 1000 L/min: **RFF = 7,000 L/min**

RFF= 1,848 GPM

RFF = 117 L/s

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445 Blake Street, City of Barrie
Fire Flow Calculations - Modular Building 2

Required fire flow calculations as per the Fire Underwritors Survey's Water Supply for Public Fire Protection - 2020:

Location:	445 Blake Street, Barrie	
OBC Occupancy:	Residential Occupancies - Class C	
Building Foot Print:	410 m^2	
# of Stories:	1	**Modular Building**

Date: 2024-11-28
Project: SCHC
Project Number: 24203

Type	Construction Class	Charge
5	Wood Frame	1.50
4	Heavy Timber (A-D)	0.80 - 1.50
3	Ordinary	1.00
2	Non-Combustible	0.80
1	Fire Resistive	0.60

Construction Class: Type 5 — Wood Frame

Automated Sprinkler Protection:

		Credit	Total
NFPA 13 sprinkler standard	No	30%	0%
Standard Water Supply	No	10%	
Fully Supervised System	No	10%	

Contents	Charge
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Contents Factor: Limited Combustible **Charge:** -15%

Exposure Side & Building	Length - Height Ratio	Distance to Exposure Building (m)	Charge
North Blake Street	54	> 30.1	0%
East Penetanguishene Road	63	> 30.1	0%
South Modular 1	54	10.1 to 20	12%
West Ex. 445 Blake Building	63	> 30.1	0%
		Total:	**12%**

Note: the max Exposure Adjustment Charge is 75%

Separation Distance	Charge
0.0 - 3.0 m	20% -25%
3.1 - 10.0 m	15% - 20%
10.1 - 20.0 m	10% - 15%
20.1 - 30.0 m	0% - 10%
> 30.1 m	0%

Note: As per FUS 2020 Table 6, Charges for Type III were used for Ordinary Construction

Are Buildings Contigious? No

Fire Resistant Building: Are vertical openings and exterior vertical communications protected with a minimum one (1) hr rating? No

Calculations: *C* = 1.5 Wood Frame

Required Fire Flow ***RFF = 220 x C x √A***

Where: *RFF* = required fire flow in liters per minute
C = Coefficient related to the type of construction
A= the total floor area in square meters (excluding basements in building considered)

Total Effective Area *A* = 410 m²

RFF = 6,682 L/min

Round to Nearest 1000 L/min RFF = 7,000 L/min * Must be > 2000 L/min or < 45,000 L/min

Correction Factors:

Contents Charge		-1,050	L/min
RFF Adjusted for Contents	**E =**	5,950	L/min
Reduction For Sprinkler	**F =**	0	L/min
RFF w/ Sprinkler Reduction		5,950	L/min
Exposure Charge	**G =**	714	L/min
RFF w/ Exposure Charge		6,664	L/min

As per "Water Supply for Public Fire Protection" pg.20 note H:
RFF **= E - F + G**

RFF = 5950 L/min - 0 L/min + 714 L/min
RFF = 6664 L/min

Required Fire Flow: **RFF =** 6,664 L/min

Round to Nearest 1000 L/min **RFF = 7,000 L/min**

RFF= 1,848 GPM

RFF = 117 L/s

PEARSON ENGINEERING

445 Blake Street, City of Barrie
Fire Flow Calculations - Existing Building

Required fire flow calculations as per the Fire Underwritors Survey's Water Supply for Public Fire Protection - 2020:

Location:	445 Blake Street, Barrie	
OBC Occupancy:	Commercial Occupancies - Class E	
Building Foot Print:	934 m^2	
# of Stories:	1	**Existing Building**

Date: 2024-11-28
Project: SCHC
Project Number: 24203

Type	Construction Class	Charge
5	Wood Frame	1.50
4	Heavy Timber (A-D)	0.80 - 1.50
3	Ordinary	1.00
2	Non-Combustible	0.80
1	Fire Resistive	0.60

Construction Class: Type 3 — Ordinary

Automated Sprinkler Protection:

		Credit	Total
NFPA 13 sprinkler standard	No	30%	0%
Standard Water Supply	No	10%	
Fully Supervised System	No	10%	

Contents	Charge
Non-Combustible	-25%
Limited Combustible	-15%
Combustible	0%
Free Burning	15%
Rapid Burning	25%

Contents Factor: Limited Combustible **Charge:** -15%

Exposure Side & Building	Length - Height Ratio	Distance to Exposure Building (m)	Charge
North Blake Street	144	> 30.1	0%
East Modulars	234	3.1 to 10	20%
South Ex. Residential	144	> 30.1	0%
West Parking Lot	234	> 30.1	0%
		Total:	**20%**

Note: the max Exposure Adjustment Charge is 75%

Separation Distance	Charge
0.0 - 3.0 m	20% -25%
3.1 - 10.0 m	15% - 20%
10.1 - 20.0 m	10% - 15%
20.1 - 30.0 m	0% - 10%
> 30.1 m	0%

Note: As per FUS 2020 Table 6, Charges for Type III were used for Ordinary Construction

Are Buildings Contigious? No

Fire Resistant Building: Are vertical openings and exterior vertical communications protected with a minimum one (1) hr rating? No

Calculations: *C* = 1.0 Ordinary

Required Fire Flow ***RFF = 220 x C x √A***

Where: *RFF* = required fire flow in liters per minute
C = Coefficient related to the type of construction
A= the total floor area in square meters (excluding basements in building considered)

Total Effective Area *A* = 934 m²

RFF = 6,724 L/min

Round to Nearest 1000 L/min RFF = 7,000 L/min * Must be > 2000 L/min or < 45,000 L/min

Correction Factors:

Contents Charge		-1,050	L/min
RFF Adjusted for Contents	**E =**	5,950	L/min
Reduction For Sprinkler	**F =**	0	L/min
RFF w/ Sprinkler Reduction		5,950	L/min
Exposure Charge	**G =**	1,190	L/min
RFF w/ Exposure Charge		7,140	L/min

As per "Water Supply for Public Fire Protection" pg.20 note H:
RFF = **E - F + G**

RFF = 5950 L/min - 0 L/min + 1190 L/min
RFF = 7140 L/min

Required Fire Flow: **RFF =** 7,140 L/min

Round to Nearest 1000 L/min **RFF = 7,000 L/min**

RFF= 1,848 GPM

RFF = 117 L/s

Construction Coefficient (C)

Note that the construction typology used by the insurance industry and public fire protection differs from the terms of reference in the National Building Code of Canada (NBC).

The following Construction Types and Coefficients are used in the required fire flow formula:

C	=	1.5 for **Type V** Wood Frame Construction
	=	0.8 for **Type IV-A** Mass Timber Construction
	=	0.9 for **Type IV-B** Mass Timber Construction
	=	1.0 for **Type IV-C** Mass Timber Construction
	=	1.5 for **Type IV-D** Mass Timber Construction
	=	1.0 for **Type III** Ordinary Construction
	=	0.8 for **Type II** Noncombustible Construction
	=	0.6 for **Type I** Fire Resistive Construction

When determining the predominate Construction Coefficient of a building, the following reference terms are used by fire underwriters and fire departments.

Wood Frame Construction (Type V)
A building is considered to be of Wood Frame construction (Type V) when structural elements, walls, arches, floors, and roofs are constructed entirely or partially of wood or other material.

Note: Includes buildings with exterior wall assemblies that are constructed with any materials that do not have a fire resistance rating that meets the acceptance criteria of CAN/ULC-S114. May include exterior surface brick, stone, or other masonry materials where they do not meet the acceptance criteria.

Mass Timber (Type IV)
Mass timber construction, including Encapsulated Mass Timber, Heavy Timber and other forms of Mass Timber are considered as one of the following sub-types relating to the fire resistance ratings of assemblies as follows:

- Type IV-A (Encapsulated Mass Timber)
    - A building is considered to be of Mass Timber Type IV-A (Encapsulated Mass Timber) construction when structural elements, walls, arches, and floors have a minimum 2-hour fire resistance rating and the roof has a minimum 1 hour fire resistance rating. Additionally all elements of the building must meet the requirements set out for Encapsulated Mass Timber Construction within the 2020 National Building Code of Canada . For types of mass timber construction that do not fully meet these criteria, treat as Type IV-B, Type IV-C or Type IV-D.
- Type IV-B (Rated Mass Timber)
    - A building is considered to be of Mass Timber Type IV-B (Rated Mass Timber) construction when the building assemblies include mass timber construction elements and all structural elements, exterior walls, interior bearing walls and roof have a minimum 1-hour fire resistance rating.

- Type IV-C (Ordinary Mass Timber)
    - A building is considered to be of Mass Timber Type IV-C (Partially Rated Mass Timber) construction when exterior walls are of Mass Timber construction with a minimum 1-hour fire resistance rating. Other structural elements, interior bearing walls and the roof may not have a fire resistance rating.
- Type IV-D (Un-Rated Mass Timber)
    - A building is considered to be of Mass Timber Type IV-D (Un-Rated Mass Timber) construction when exterior walls do not have a minimum 1-hour fire resistance rating, regardless of the fire resistance rating of other structural elements, interior bearing walls and the roof.

Ordinary Construction (Type III also known as joisted masonry)

A building is considered to be of Ordinary construction (Type III) when exterior walls are of masonry construction (or other approved material) with a minimum 1-hour fire resistance rating, but where other elements such as interior walls, arches, floors and/or roof do not have a minimum 1 hour fire resistance rating.

Noncombustible Construction (Type II)

A building is considered to be of Noncombustible construction (Type II) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 1-hour fire resistance rating and are constructed with noncombustible materials.

Fire-Resistive Construction (Type I)

A building is considered to be of Fire-resistive construction (Type I) when all structural elements, walls, arches, floors, and roofs are constructed with a minimum 2-hour fire resistance rating, and all materials used in the construction of the structural elements, walls, arches, floors, and roofs are constructed with noncombustible materials.

Items of Note Regarding Construction Coefficients

i. Unprotected noncombustible construction (example unprotected steel) should be considered within ordinary construction or noncombustible construction based on the minimum fire resistance rating of the structural elements, exterior walls, and interior bearing walls;
    - If minimum fire resistance rating of exterior walls is 1 hr, apply Ordinary Construction Coefficient (1.0)
    - If minimum fire resistance rating of all structural elements, walls, arches, floors, and roofs is 1 hr, apply Noncombustible Construction Coefficient (0.8).

ii. If a building cannot be defined within a single Construction Coefficient, the Construction Coefficient is determined by the predominate Construction Coefficient that makes up more than 66% or over of the Total Floor Area.

Total Effective Area (A)

To determine a required fire flow for an individual building, the Total Effective Area that would be affected during the design fire must be determined. The Total Effective Area is the largest Floor Area (in square metres) plus the following percentages of the total area of the other floors:

1) For a building classified with a Construction Coefficient from 1.0 to 1.5:
   a) 100% of all Floor Areas are considered in determining the Total Effective Area to be used in the formula.
2) For a building classified with a Construction Coefficient below 1.0:
   a) if any vertical openings in the building (ex. interconnected floor spaces, atria, elevators, escalators, etc.) are unprotected, consider the two largest adjoining floor areas plus 50% of all floors immediately above them up to a maximum of eight; or
   b) if all vertical openings and exterior vertical communications are properly protected in accordance with the National Building Code, consider only the single largest Floor Area plus 25% of each of the two immediately adjoining floors.

Protection requirements:

The protection requirements for vertical openings are only applicable in buildings with a Construction Coefficient below 1.0. The type of protection for vertical openings shall be based on the construction of the enclosure walls and the type of opening or other device used for the protection of openings in the enclosure. See also NBC Division B, Section 3.5. Vertical Transportation.

Protected openings:

i. Enclosures shall have walls of masonry or other limited or noncombustible construction with a fire resistance rating of not less than one hour.
ii. Openings including doors shall be provided with automatic closing devices
iii. Elevator doors shall be of metal or metal-covered construction, so arranged that the doors must normally be closed for operation of the elevator.

Unprotected openings:

i. Any opening through horizontal separations that are unprotected or otherwise have closures that do not meet the minimum requirements for protected openings, above.

High One Storey Buildings

When a building has large single storey spaces (ex. warehouses, atria, etc.) exceeding 3 m in height, the number of storeys to be used in determining the total effective area depends upon the use being made of the building. For example, consider a 1=3 storey building. If the building is being used for high piled stock, or for rack storage, the building would be considered as 3 storeys. However, if the building is being used for steel fabrication and the extra height is provided only to facilitate movement of objects by a crane, the building should be considered as a one storey.

Each normal height (3m) storey included in the formula provides for additional fire loading. In the case of normal height storeys this fire loading comes from the structure, walls, floors, ceilings/roofs as well as the contents.

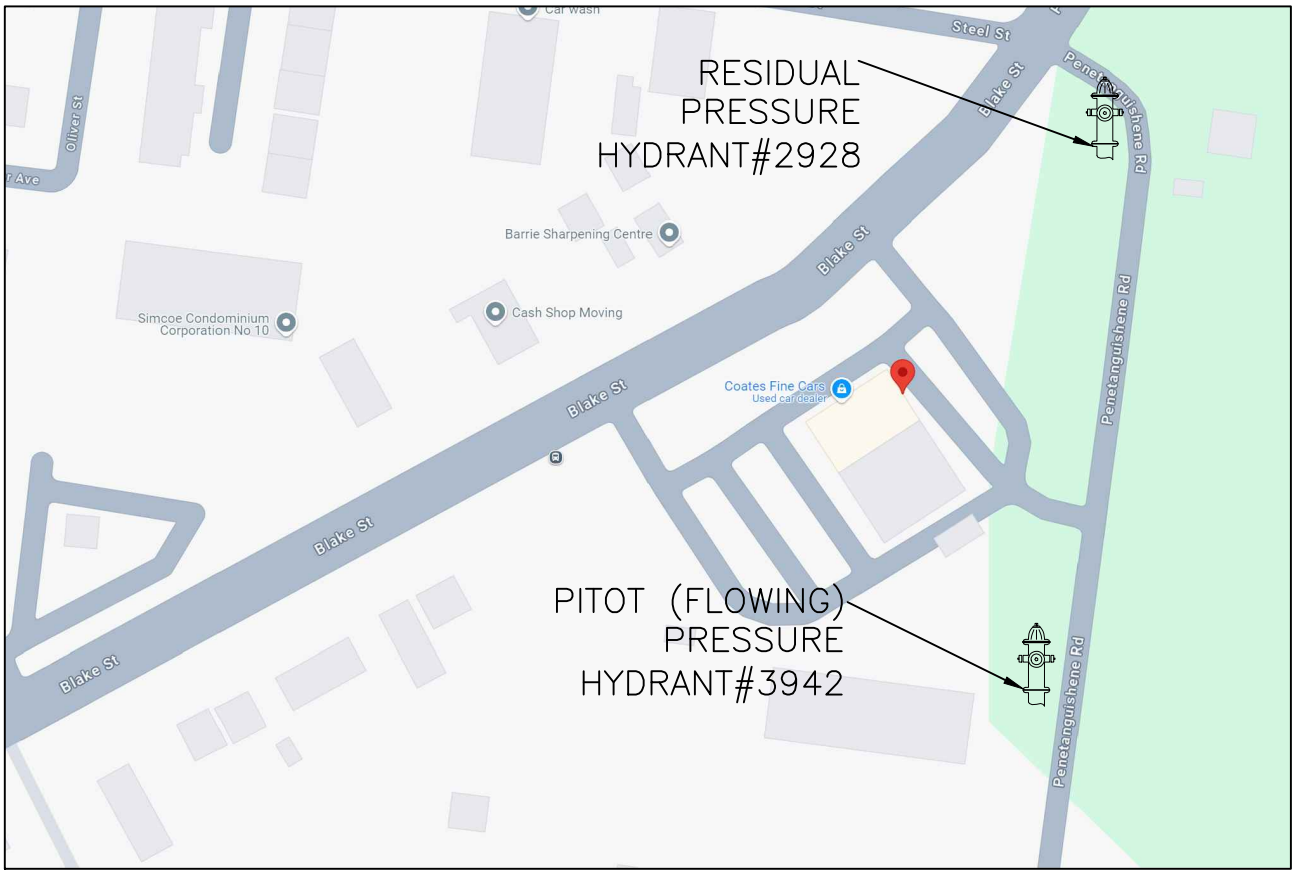
FLOW TEST RESULTS

FIRST FOR FIRE, LIFE SAFETY & SECURITY
VIPOND INC
est. 1945

DATE : OCT-22-2024

LOCATION : PENETANGUISHENE ROAD
BARRIE
ONTARIO

TEST BY : LEN. K



STATIC PRESSURE : 96 PSI

TEST NO.	NO. OF NOZZLES	NOZZLE DIAMETER (INCHES)	DISCHARGE CO-EFFICIENT	RESIDUAL PRESSURE (PSI)	PITOT PRESSURE (PSI)	DISCHARGE (U.S.GPM)
1	1	1-1/8	0.97	96	98	363
2	1	1-3/4	0.90	92	74	762
3	1	2-1/2	0.90	86	50	1193
4	2	2-1/2	0.90	80	40	2134

AVAILABLE FIRE FLOW AT 20PSI RESIDUAL PRESSURE = 2996.506 USGPM

FIRST FOR FIRE, LIFE SAFETY & SECURITY

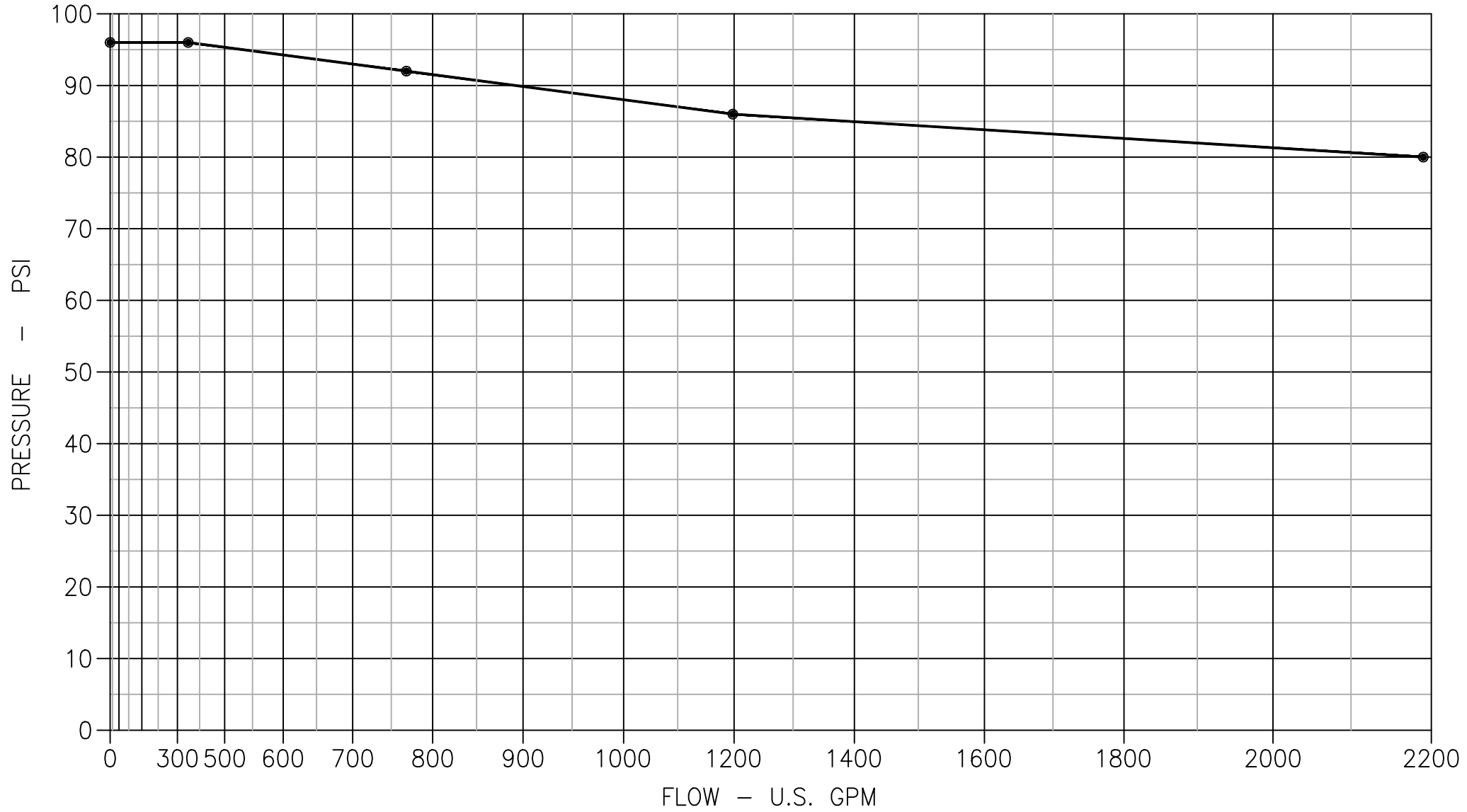
VIPOND INC

est. 1945

PENETANGUISHENE ROAD	BY : LEN K.
BARRIE	OFFICE : BARRIE
ONTARIO	TEST BY : VIPOND
	DATE : OCT-22-2024

STATIC: 96 PSI

	RESIDUAL:		FLOW:
TEST#1	96 PSI	@	363 GPM
TEST#2	92 PSI	@	762 GPM
TEST#3	86 PSI	@	1193 GPM
TEST#4	80 PSI	@	2134 GPM



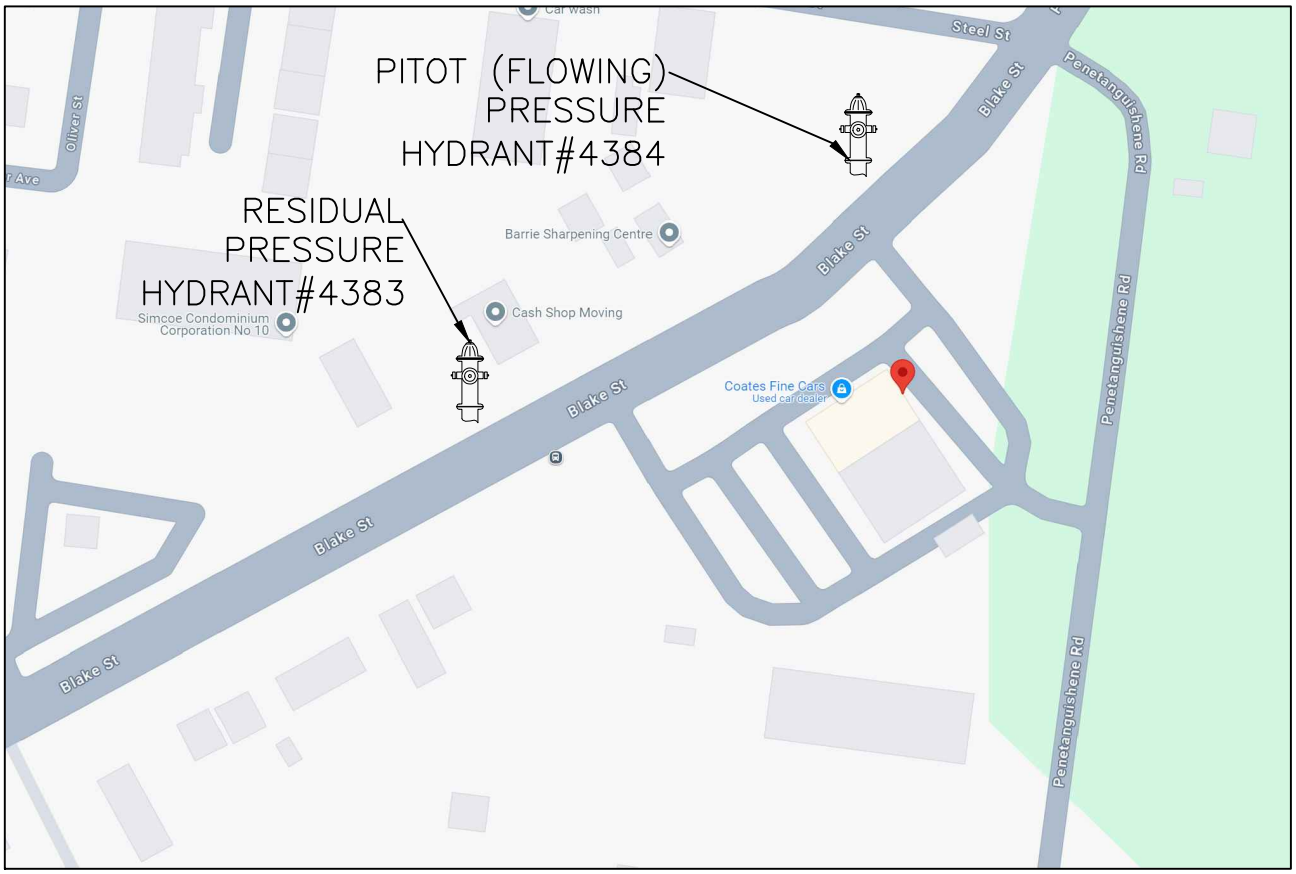
FLOW TEST RESULTS

FIRST FOR FIRE, LIFE SAFETY & SECURITY
VIPOND INC
est. 1945

DATE : OCT-22-2024

LOCATION : 435 BLAKE ST
BARRIE
ONTARIO

TEST BY : LEN. K



STATIC PRESSURE : 100 PSI

TEST NO.	NO. OF NOZZLES	NOZZLE DIAMETER (INCHES)	DISCHARGE CO-EFFICIENT	RESIDUAL PRESSURE (PSI)	PITOT PRESSURE (PSI)	DISCHARGE (U.S.GPM)
1	1	1-1/8	0.97	96	92	351
2	1	1-3/4	0.90	94	94	859
3	1	2-1/2	0.90	90	46	1144
4	2	2-1/2	0.90	82	40	2134

AVAILABLE FIRE FLOW AT 20PSI RESIDUAL PRESSURE = 4775.467 USGPM

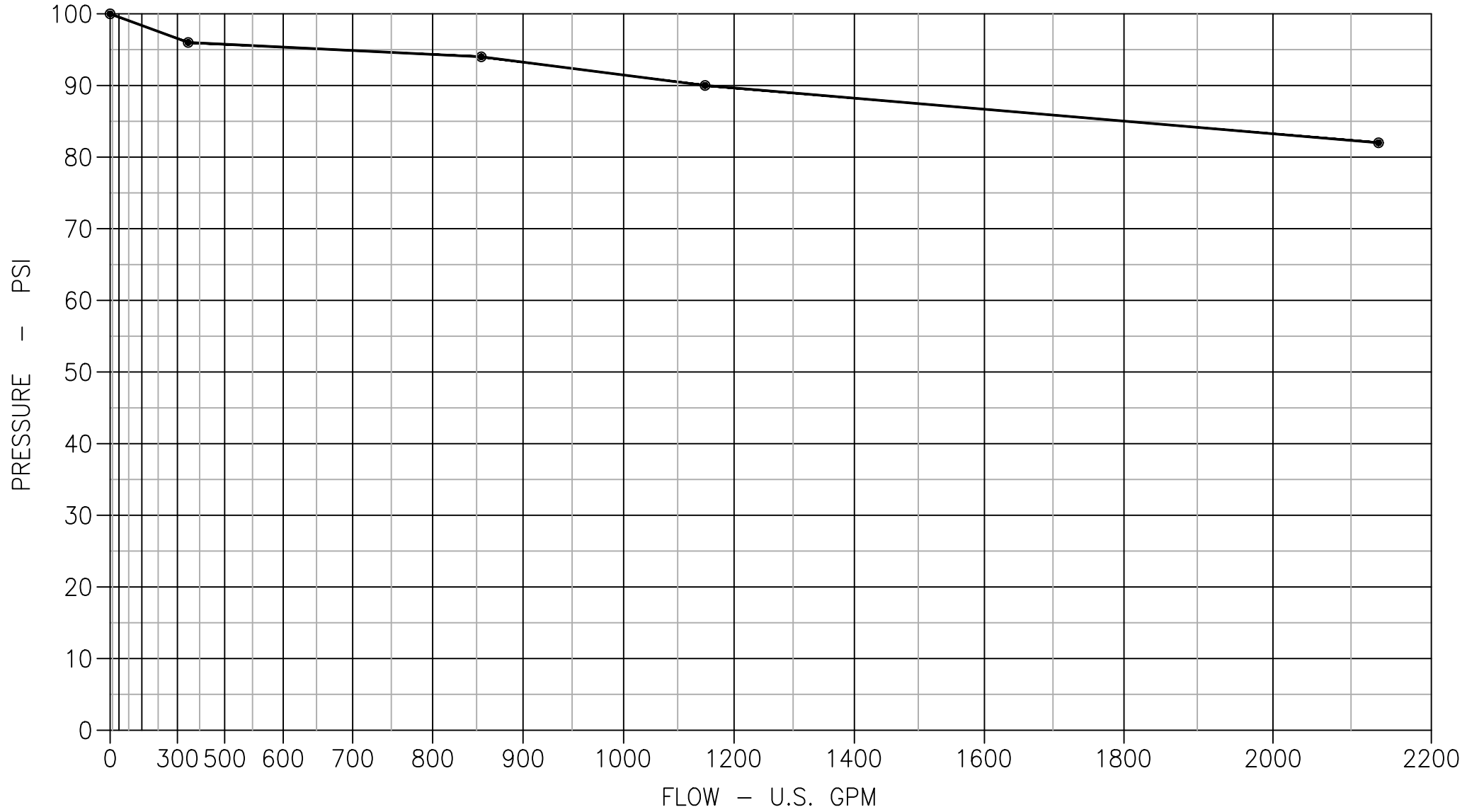
FIRST FOR FIRE, LIFE SAFETY & SECURITY

VIPOND INC

est. 1945

435 BLAKE ST	BY : LEN K.
BARRIE	OFFICE : BARRIE
ONTARIO	TEST BY : VIPOND
	DATE : OCT-22-2024

STATIC:	RESIDUAL:		FLOW:	
100 PSI	TEST#1	96 PSI	@	351 GPM
	TEST#2	94 PSI	@	859 GPM
	TEST#3	90 PSI	@	1144 GPM
	TEST#4	82 PSI	@	2134 GPM



Appendix B
Pearson Engineering Drawings

1. SANITARY SEWER

A. MAXIMUM PIPE DEFLECTION FROM COMBINED LIVE AND DEAD LOADING SHALL NOT EXCEED ANY CSA, OPS OR MANUFACTURERS RECOMMENDED SPECIFICATIONS. FLEXIBLE PIPE SHALL BE PVC DR35 OR APPROVED EQUIVALENT, WITH RUBBER GASKET TYPE JOINTS AND SHALL CONFORM TO CSA (8-182.2, 3, 4). RIGID PIPE SHALL BE REINFORCED CONCRETE WITH STRENGTH OF 100N/mm/m CONFORMING TO CSA STANDARD A257.2-M1982 CLASS 100D. PIPE JOINTS TO BE RUBBER GASKET AS PER CSA STANDARD A257.3.

B. FLEXIBLE SEWERS SHALL BE CONSTRUCTED WITH BEDDING AND BACKFILL AS PER OPSD 802.010 (GRANULAR "A" FOR BEDDING, AND COVER MATERIAL TO BE SAND, GRANULAR 'A' OR QUARRY SCREENINGS PENDING A REVIEW BY THE ENGINEER). RIGID SEWERS SHALL BE CONSTRUCTED WITH CLASS "B" BEDDING (GRANULAR "A" MATERIAL) AS PER OPSD 802.030, 802.031 AND 802.032 AS APPLICABLE. MATERIAL MAY BE REPLACED ONLY BY APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.

C. THE EXISTING SANITARY FLOWS ARE TO BE MAINTAINED AT ALL TIMES BY A METHOD APPROVED BY THE MUNICIPALITY.

2. WATERMAIN

A. WATERMAIN MATERIAL TO BE POLYVINYL CHLORIDE (PVC) CLASS 150 (DR18) OR DUCTILE IRON CLASS 52. TRACER WIRE (#12 TWU) SHALL BE INSTALLED ALONG THE ENTIRE LENGTH OF PVC WATERMAIN, BROUGHT UP AT EACH VALVE BOX, CHAMBER, AND HYDRANT, AND CONNECTED TO A FLANGE. TAPE IS TO BE USED TO AFFIX THE WIRE TO THE PIPE.

B. PVC PUSH-ON FITTINGS MEETING AWWA SPECIFICATION C-907 AND CSA B137.2 MAY BE USED ON PVC WATERMAIN 150mm TO 200mm IN DIAMETER. DUCTILE IRON FITTINGS SHALL BE IN ACCORDANCE WITH AWWA C153 OR AWWA C110. MECHANICAL JOINTS SHALL CONFORM TO AWWA C111.

C. ALL MECHANICAL JOINT FITTINGS SHALL HAVE SACRIFICIAL ANODES "PROTECTO CAPS" INSTALLED ON EVERY BOLT.

D. WATERMAIN TO BE LOCATED AS SHOWN ON THE CONTRACT DRAWINGS.

E. THE MINIMUM HORIZONTAL SEPARATION BETWEEN THE WATERMAIN AND THE SANITARY/STORM SEWER IS TO BE 2.5m.

F. A MINIMUM OF 0.5m VERTICAL CLEARANCE BETWEEN THE WATERMAIN AND ALL UTILITIES MUST BE KEPT WHILE STILL MAINTAINING A MINIMUM DEPTH OF COVER AT ALL TIMES.

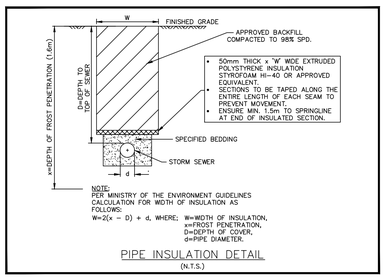
G. WATERMAINS SHALL BE INSTALLED WITH A MINIMUM COVER OF 1.9m OVER THE MAINS. 75mm OF STYROFOAM H160 OR APPROVED EQUAL INSULATION TO BE PROVIDED TO PROTECT WATERMAIN AT ALL STORM AND CB LEAD CROSSINGS WITHIN 300mm FREE TO FACE.

H. THE CONTRACTOR SHALL INFORM THE TOWN OF COLLINGWOOD A MINIMUM OF 48 HOURS IN ADVANCE OF COMMENCING WORK.

I. WATERMAIN SHALL BE CONSTRUCTED WITH BEDDINGS AS PER OPSD 802.010 (GRANULAR 'A' EMBEDMENT MATERIAL) FOR FLEXIBLE PIPES AND OPSD 802.030 OR 802.031 CLASS 'B' (GRANULAR "A" BEDDING) FOR RIGID PIPE UNLESS OTHERWISE APPROVED BY THE DIRECTOR OF PUBLIC WORKS. COVER MATERIAL TO BE SAND, GRANULAR 'A' OR QUARRY SCREENINGS PENDING A REVIEW BY THE ENGINEER.

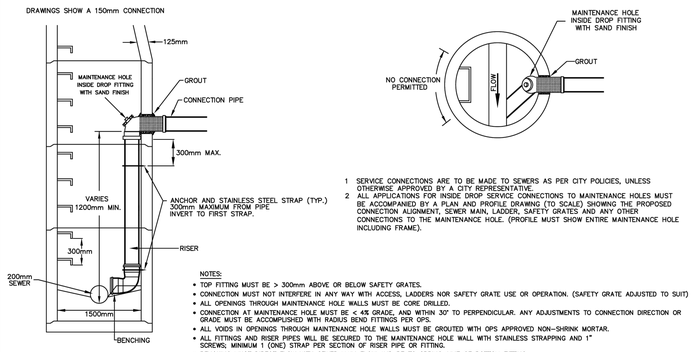
J. COPPER SERVICES 19mm TO 50mm IN DIAMETER SHALL BE EMBEDDED IN SAND 100mm ABOVE AND BELOW TO CONFORM TO OPSS 1004.05.05.

K. ALL FILL AREAS SHALL BE FILLED TO SUB-GRADE PRIOR TO INSTALLATION. FILL AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY PRIOR TO THE INSTALLATION OF THE WATERMAIN.



PIPE INSULATION DETAIL
(N.T.S.)

AS SPECIFIED FOR CONVENTIONAL SEWER CONNECTIONS, OWNERS ARE RESPONSIBLE FOR MAINTENANCE OF THE CONNECTION FROM THE SEWER TO THE BUILDING. THIS INCLUDES ALL FITTINGS AND PIPE FROM THE MAINTENANCE HOLE BENCHING TO THE BUILDING.



NOTES:
- TOP FITTING MUST BE > 300mm ABOVE OR BELOW SAFETY GRATES.
- CONNECTION MUST NOT INTERFERE IN ANY WAY WITH ACCESS, LADDERS NOR SAFETY GRATE USE OR OPERATION. (SAFETY GRATE ADJUSTED TO SUIT)
- ALL OPENINGS THROUGH MAINTENANCE HOLE WALLS MUST BE CORE DRILLED.
- CONNECTION AT MAINTENANCE HOLE MUST BE < 45 GRADE, AND WITHIN 30° TO PERPENDICULAR. ANY ADJUSTMENTS TO CONNECTION DIRECTION OR GRADE MUST BE ACCOMPLISHED WITH RADIUS BEND FITTINGS PER OPS.
- ALL VOIDS IN OPENINGS THROUGH MAINTENANCE HOLE WALLS MUST BE GROUTED WITH OPS APPROVED NON-SHRINK MORTAR.
- ALL FITTINGS AND RISER PIPES WILL BE SECURED TO THE MAINTENANCE HOLE WALL WITH STAINLESS STRAPPING AND 1" SCREWS; MINIMUM 1 (ONE) STRAP PER SECTION OF RISER PIPE OR FITTING.
- BENCHING MUST DIRECT FLOW WITH SEWER MAIN FLOW AND BE TO SPRING-LINE OF BOTTOM FITTING.

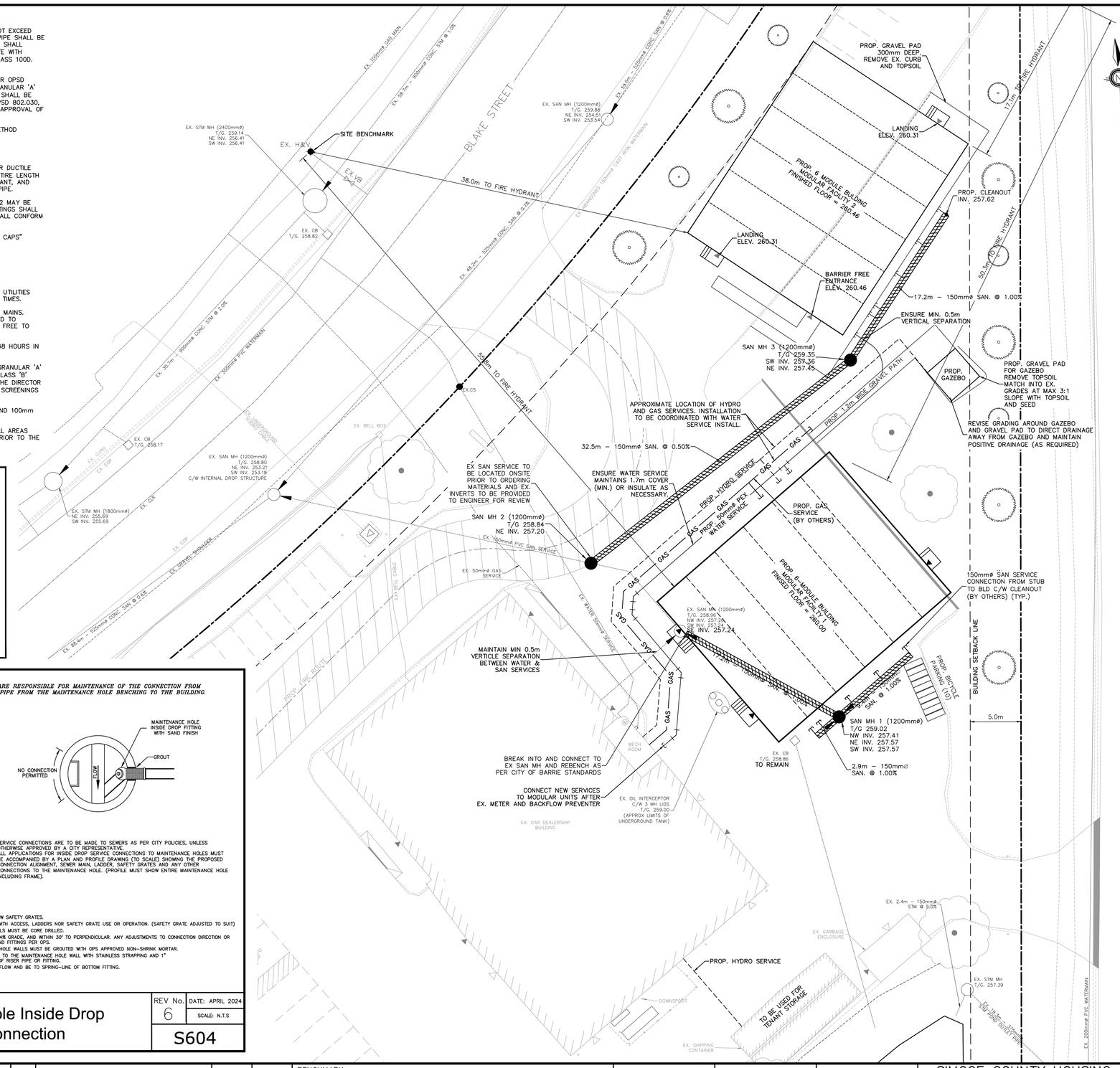
1 SERVICE CONNECTIONS ARE TO BE MADE TO SEWERS AS PER CITY POLICIES, UNLESS OTHERWISE APPROVED BY A CITY REPRESENTATIVE.
2 ALL APPLICATIONS FOR INSIDE DROP SERVICE CONNECTIONS TO MAINTENANCE HOLES MUST BE ACCOMPANIED BY A PLAN AND PROFILE DRAWING (TO SCALE) SHOWING THE PROPOSED CONNECTION ALIGNMENT, SEWER MAIN, LADDER, SAFETY GRATES AND ANY OTHER CONNECTIONS TO THE MAINTENANCE HOLE. (PROFILE MUST SHOW ENTIRE MAINTENANCE HOLE INCLUDING FRAME).

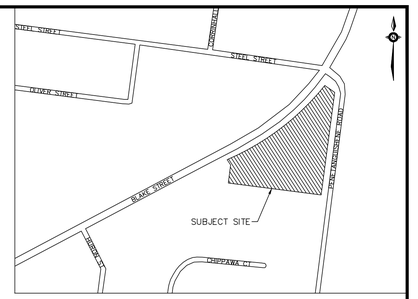
Barrie

Maintenance Hole Inside Drop Service Connection

REV No. 6 | DATE: APRIL 2024 | SCALE: N.T.S

S604





KEYMAP
N.T.S.

LEGEND

- STM CB — PROPOSED CATCH BASIN
- EX. CB — EXISTING CATCH BASIN
- STM DCB — PROPOSED DOUBLE CATCH BASIN
- STM MH — PROPOSED STORM MANHOLE
- EX. STM MH — EXISTING STORM MANHOLE
- SAN MH — PROPOSED SANITARY MANHOLE
- EX. SAN MH — EXISTING SANITARY MANHOLE
- HYD. — PROPOSED FIRE HYDRANT
- Ex. H&V — EXISTING FIRE HYDRANT
- VB — WATER VALVE
- BACK OF CURB
- EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
-) (— HIGH POINT
- PROPERTY LINE
- LIMIT OF WORK
- PERSON DOOR
- OVERHEAD DOOR
- W — EX. WATER METER AND AND BACKFLOW PREVENTER
- PROP. FIRE ROUTE
- PROP. ASPHALT RESTORATION AREA MATCH EX. GRADES
- PROP. PIPE INSULATION

CONTRACTOR TO ENSURE SANITARY SERVICE IS INSTALLED PRIOR TO INSTALLATION OF THE PROPOSED BUILDING.

CONTRACTOR TO ENSURE GAS AND HYDRO SERVICE INSTALLATION IS COORDINATED WITH WATER SERVICE INSTALLATION.

EXISTING SERVICE LOCATIONS ARE APPROXIMATE.

CONTRACTOR TO CONFIRM LOCATION, ELEVATION, AND SIZE OF SERVICES IN THE FIELD PRIOR TO ORDERING MATERIALS FOR CONSTRUCTION.

CONTRACTOR TO ENSURE WATER SERVICE MAINTAINS MINIMUM 1.7m COVER OR INSULATE AS NECESSARY. ENSURE WATER SERVICE MAINTAINS MINIMUM 0.5m VERTICAL SEPARATION AT ALL SANITARY CROSSING LOCATIONS.

SCALE BAR 1:200
0 5 15

NO.	REVISION NOTE	DATE	BY
2	AS PER CITY COMMENTS	12/02/24	AMC
1	REVISED SITE PLAN – SECOND MODULES	11/29/24	AMC

BENCHMARK

TOP NUT OF FIRE HYDRANT LOCATED IN FRONT OF 444 BLAKE STREET.
ELEV = 260.16

TOP NUT OF FIRE HYDRANT LOCATED IN FRONT OF 109 PENETANGUISHENE ROAD.
ELEV = 261.02

LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
Dec 2, 2024
PROVINCE OF ONTARIO

SIMCOE COUNTY HOUSING CORP
RAPID RESPONSE HOUSING
445 BLAKE STREET, CITY OF BARRIE

SITE SERVICING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AMC	HORIZ SCALE	1: 200
DRAWN BY	JC	VERT SCALE	N/A
CHECKED BY	MWD	DATE	OCTOBER 2024
PROJECT #	24203		
DRAWING #	SS-1		
REVISION #	2		

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1. GENERAL

A. ALL WORK TO BE DONE TO CITY OF BARRIE STANDARDS AND OPSS. WHERE CONFLICT OCCURS CITY OF BARRIE STANDARDS GOVERN.

B. THE CONTRACTOR IS RESPONSIBLE FOR LAYOUT. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF, AND FOR THE COST OF REPLACING, LAYOUT STAKES, BENCHMARKS AND SURVEY BARS

C. THE CONTRACTOR IS REQUIRED TO CONFIRM EXISTING GRADES AND REPORT ANY DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING WORK.

D. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING INFORMATION IN REGARD TO EXACT LOCATION OF BURIED UTILITIES. THIS SHALL INCLUDE EXCAVATION OF INSPECTED HOLES IF NECESSARY. THE CONTRACTOR MUST EXERCISE NECESSARY CONSTRUCTION OPERATIONS INCLUDING IF NECESSARY HAND DIGGING TO SAFEGUARD UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL ARRANGE FOR TEMPORARY SUPPORT OF UTILITY POLES AS MAY BE REQUIRED TO COMPETE TIES. THE CONTRACTOR IS LIABLE FOR ALL DAMAGE TO UTILITIES OCCURRING WITHIN OR OUTSIDE THE CONTRACT LIMITS CAUSE HIS OPERATIONS.

E. THE CONTRACTOR IS TO SUBMIT SAMPLES AND A GRADATION ANALYSIS OF THE PROPOSED GRANULAR MATERIALS FOR APPROVAL BY THE ENGINEER PRIOR TO PLACING.

F. TRAFFIC CONTROL AND SIGNAGE DURING CONSTRUCTION SHALL CONFORM TO MUNICIPAL REQUIREMENTS AND THE MOST CURRENT ONTARIO CONSTRUCTION REGULATIONS INCLUDING REGULATION No. 213 UNDER OHSA AND REFERENCE TO MTO TEMPORARY CONDITIONS MANUAL BOOK No. 7.

G. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE REINSTATED TO EXISTING CONDITION OR BETTER.

H. THE CONTRACTOR SHALL SUPPLY ALL NECESSARY WATER AND/OR CALCIUM CHLORIDE AS REQUIRED FOR COMPACTION AND/OR DUST CONTROL.

I. FOR THE DURATION OF THE CONTRACT, MATERIAL THAT BECOMES CONTAMINATED DUE TO CONTRACTORS ACTIVITY SHALL BE REMOVED AND REPLACED AT NO EXTRA COST TO THE CONTRACT.

J. DEWATERING TO BE CARRIED OUT IN ACCORDANCE WITH OPSS 517 AND 518 TO MAINTAIN ALL TRENCHES IN A DRY CONDITION.

K. ALL ENGINE DRIVEN PUMPS TO BE ADEQUATELY SILENCED, SUITABLE FOR OPERATION IN A RESIDENTIAL OR INDUSTRIAL AREA.

L. ALL CONNECTIONS TO SANITARY SEWERS AND WATER MAIN REQUIRE APPROVED FACTORY MADE TEES OR SADDLES.

M. PIPE DEFLECTIONS SHALL NOT EXCEED MANUFACTURES SPECIFICATIONS.

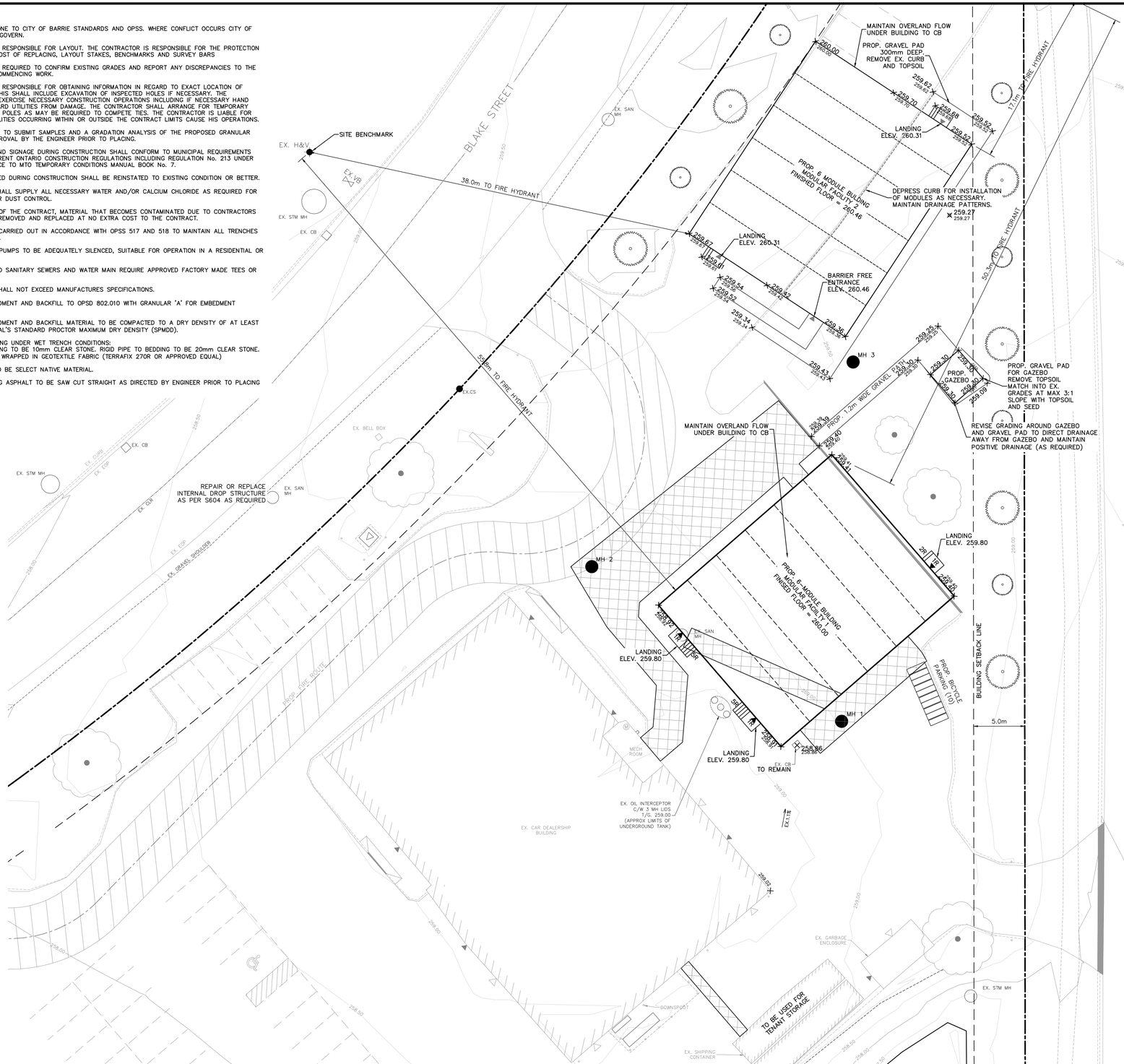
N. FLEXIBLE PIPE EMBEDMENT AND BACKFILL TO OPSD 802.010 WITH GRANULAR 'A' FOR EMBEDMENT MATERIAL.

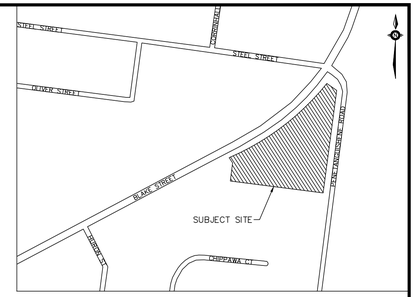
O. FLEXIBLE PIPE EMBEDMENT AND BACKFILL MATERIAL TO BE COMPACTED TO A DRY DENSITY OF AT LEAST 95% OF THE MATERIAL'S STANDARD PROCTOR MAXIMUM DRY DENSITY (SPMDD).

P. MODIFIED PIPE BEDDING UNDER WET TRENCH CONDITIONS:
FLEXIBLE PIPE BEDDING TO BE 10mm CLEAR STONE. RIGID PIPE TO BEDDING TO BE 20mm CLEAR STONE. ALL STONE BEDDING WRAPPED IN GEOTEXTILE FABRIC (TERRAFIX 270R OR APPROVED EQUAL)

Q. TRENCH BACKFILL TO BE SELECT NATIVE MATERIAL.

R. JOINTS WITH EXISTING ASPHALT TO BE SAW CUT STRAIGHT AS DIRECTED BY ENGINEER PRIOR TO PLACING NEW ASPHALT.





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- HYD. — PROPOSED FIRE HYDRANT
- EX. H&V — EXISTING FIRE HYDRANT
- VB — WATER VALVE
- × 254.63 — PROPOSED ELEVATION
- 254.09 — EXISTING ELEVATION
- 1.5% — PROPOSED DIRECTION AND GRADE
- BACK OF CURB
- EDGE OF PAVEMENT
- PROP. CURB CUT LOCATION
- EX. CURB CUT LOCATION
-) (— HIGH POINT
- PROPERTY LINE
- LIMIT OF WORK
- PERSON DOOR
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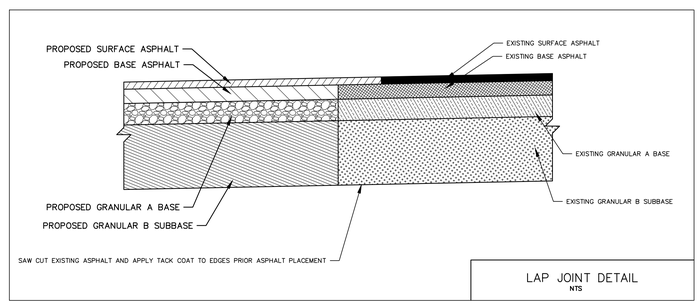
- PROP. ASPHALT RESTORATION AREA MATCH EX. GRADES



LAP JOINT DETAIL
NTS

SCALE BAR 1:200
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NO.	REVISION NOTE	DATE	BY
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1	REVISED SITE PLAN – SECOND MODULES	11/29/24	AMC

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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
Dec 2, 2024
PROVINCE OF ONTARIO

SIMCOE COUNTY HOUSING CORP
RAPID RESPONSE HOUSING
445 BLAKE STREET, CITY OF BARRIE

SITE GRADING PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AMC	HORIZ SCALE	1:200
DRAWN BY	JC	VERT SCALE	N/A
CHECKED BY	MWD	DATE	OCTOBER 2024
PROJECT #	24203		
DRAWING #	SG-1		
REVISION #	2		

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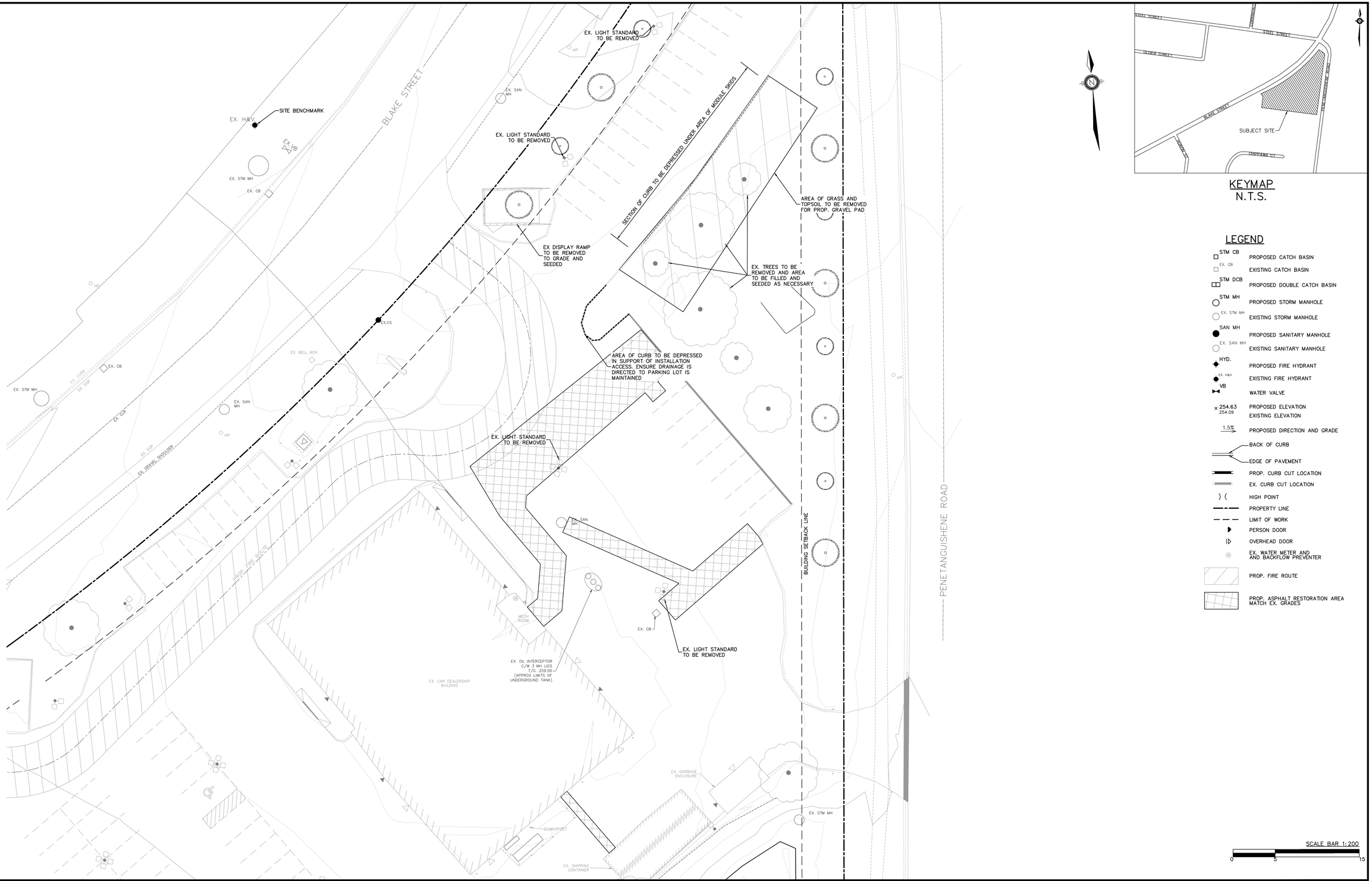

NO.	REVISION NOTE	DATE	BY
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1	REVISED SITE PLAN – SECOND MODULES	11/29/24	AMC

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LICENCED PROFESSIONAL ENGINEER
M.W. DEJEAN
Dec 2, 2024
PROVINCE OF ONTARIO

SIMCOE COUNTY HOUSING CORP
RAPID RESPONSE HOUSING
445 BLAKE STREET, CITY OF BARRIE

SITE REMOVALS PLAN

PEARSON ENGINEERING
PEARSONENG.COM PH. 705.719.4785

DESIGNED BY	AMC	HORIZ SCALE 1:200	PROJECT # 24203
DRAWN BY	JC	VERT SCALE N/A	DRAWING # SG–1
CHECKED BY	MWD	DATE OCTOBER 2024	REVISION # 2

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