

# PROPOSED GAS STATION

1480 DERRY ROAD EAST

MISSISSAUGA, ONTARIO

## FUNCTIONAL SERVICING REPORT

FEBRUARY 21, 2020

Prepared by:



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## **Appendix A**

Figure 1 - Site Map

Figure 2 – Survey

## **Appendix B**

Table B1 – Fire Flows - FUS Calculations

Table B2 - Sanitary Design Sheet

## **Appendix C**

DR101 – Existing Conditions

DR102 - Storm Drainage Plan

C1- Site Grading Plan

C2 & C2a - Site Servicing Plan

## 1.0 Background

n Architecture Inc. has been retained by Vicky Aulakh, Probh Aulakh Ltd. to prepare a Functional Servicing Report for the 1480 Derry Road East, Mississauga ON, a commercial located at the corner of the south side of Derry Road East and the west of Dixie Road in city of Mississauga.

The purpose of the Functional Servicing Report (FSR) is to evaluate the servicing demands and propose feasible connection and disposal points for municipal services. The report also evaluates the impact of proposed development in terms of stormwater requirements as per city and region criteria.

The subject site is bounded by Derry Road East to the north side, Dixie Road on the east side, existing commercial property on the west side and vacant land on the south side. Refer to location shown below as Figure 1.

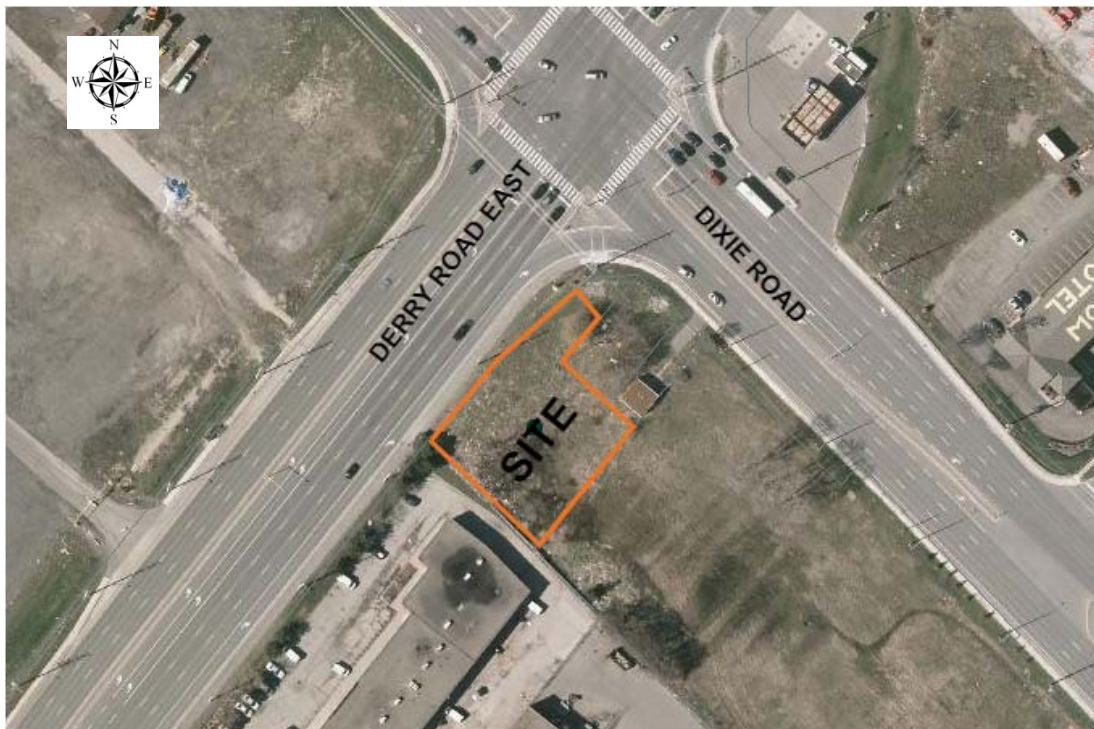


Figure 1 - Site Location Plan

## 2.0 Existing Site Condition



Figure 2 – Existing Condition

## 3.0 Land Use & Legal Description

The project site area is 0.42 acres (0.17 hectares). Currently the site has a parking lot covered with gravel and partly covered with grass.

The subject site's legal description is Part of LOT 10, COSESSION 3, EAST OF HURONTARIO STREET, 43R31711, PTS 5,6 (Geographical Township of Toronto), City of Mississauga, Regional Municipality of Peel. (Refer to Plan of Survey dated June 12, 2017 attached in Appendix A).

## 4.0 Drainage & Topography

Existing topography shows that this is relatively flat land with the north-east corner slopes towards south-west corner of the site. The difference between elevations of north-east to south-west is around 0.08m.

### 4.1 Existing Services

Existing water and storm services are located on Derry Road East. There are no sanitary services along the property line of Derry Road East and Dixie Road. Closest sanitary sewer is on Derry

Road East around 200m east of the property line. Record drawings obtained from Region of Peel and City of Mississauga shows drawings show existing services in plan and profile as summarized below in Table 1.

**Table 1 – Existing Services Summary**

Service	Size & Material	Location
Water	750m CONC.	Dixie Road (50 mm Plug on Site)
Storm	450mm CONC.	Derry Road East, South Side
Sanitary	1050mm CONC.	Derry Road East Approx. 200m East of Property Limit

## 5.0 Proposed Development

The development proposal is for a 3 pump canopied gas station with two story C-store and office building parking spaces. The site layout is shown on Figure A 1.0 in Appendix C.

### 5.1 Design Criteria

The summary of design criteria shown in Table 2 has been used for the water demand and sanitary flow calculations expected from the proposed development.

## 6.0 Servicing Demand Calculations

### 6.1 Domestic Water Demands

As per Region of Peel – a custom demand calculation method followed considering the nature of the development. To calculate site specific water demand, OBC guideline used as follows:

- (1) Average water demand for Office Space: 950 L/day per Washroom  
*O.B.C (8.2.1.3.B.12.v)*  
No of Washroom 1  
Average Water Demand: 950 L/day
  
- (3) Average flow a Store Per m<sup>2</sup> of floor area: 5 L/Day

	<i>O.B.C (8.2.1.3.B.20)</i>	
	Proposed C-Store Area:	192.57 m <sup>2</sup>
	Average Water Demand:	192.57 x 5 = 962.85 L/ day
(3)	Average flow per Nozzle:	560 l /nozzle/day
	<i>O.B.C (8.2.1.3. B.19. i)</i>	
	Number of Nozzle:	6
	Average Water Demand:	560 x 6 L/day = 3360 L/day

Total Average water demand = 950 + 962.85 + 3360 = 5272.3 L/day

As per MOECC standards, a Maximum Day Factor of 2.0 and peak hourly demand Factor of 4.5 will be applied to the average day flows;

Maximum day demand = 5272.3 x 2.0 = 10544.6 L/day = 0.122 L/sec

Maximum hour demand (AM) = 5272.3 x 4.5 = 23725.35 L/day = 0.275 L/sec

**Table 2 – Water & Sanitary Design Criteria**

<b>WATER SYSTEM DESIGN CRITERIA</b>	
Commercial Average Demand	300 Lpcd <sup>1</sup>
Max Day Factor	2.0
Peak Flow	Max Day + Fire Flow
Fire Flow Calculation Method	FUS Method
Min System Pressure	20 psi under Max day +
<b>WASTEWATER SYSTEM DESIGN CRITERIA</b>	
Generation Rate	0.013 m <sup>3</sup> /sec. <sup>2</sup>
Peaking Factor	Included
Equivalent Population for Commercial Development	50 person per hectare <sup>3</sup>

<sup>1</sup> Section 2.3, page 4, Region of Peel watermain design criteria

<sup>2</sup> Region of Peel STD DWG 2-9-2 ( Sewage Flows (excluding Infiltration, Region of Peel Design Criteria Manual – Sanitary Sewer

<sup>3</sup> Section 2.1, page3, Region of Peel Design Criteria Manual – Sanitary Sewer

Extraneous Flows (I/I)	0.0002 m <sup>3</sup> /sec/ha <sup>4</sup>
Allowance for Maintenance Hole	0.000028 m <sup>3</sup> /sec/mh

### 6.1.1 Fire Flow

A fire flow demand for the proposed building has been calculated as per guidelines of Fire Underwriter Survey. Based on the type of construction, total floor areas and other fire suppression related information, fire flow demands have been calculated as 2000 L/min (33 l/sec). Refer to Table B1, Appendix B for detailed analysis.

### 6.1.2 Peak Flow

The peak flow calculated by adding Max Day Flow + Fire Flow = 0.122 + 33.0 = 33.122 L /sec.

## 7.0 Waste Water Generation

Based on the Region of Peel's criteria, waste water flow calculated as follows:

- (1) Commercial waste water generation rate: 0.013 m<sup>3</sup>/sec.
- (2) Extraneous Flow: 0.0002 m<sup>3</sup>/sec/ha
- (3) Lot Area: 0.17 m<sup>2</sup>
- (4) Site's extraneous flow: 0.0002 x 0.17 = 0.000034 m<sup>3</sup>/sec
- (5) Maintenance Hole allowance: 0.000028 m<sup>3</sup>/sec/MH
- (6) No. of MH: 4
- (7) Total Maintenance Hole allowance: 0.000028 x 4 = 0.000192 m<sup>3</sup>/sec
- (8) Waste water flow from the site including infiltration allowance is calculated (1) + (4) + (7) as 1142.72 L/day (**0.0132 L/sec**).

<sup>4</sup> Section 2.3, page 4, Region of Peel Design Criteria Manual – Sanitary Sewer  
n Architecture Inc. Architects and Civil Engineers



## 8.0 Proposed Servicing

The following service connections are proposed from the existing municipal infrastructure on Derry Road East. The services will be installed according to city/Region standards.

### 8.1 New Sanitary Connection

A new sanitary connection will be provided from the existing 1050mm diameter sanitary main on Derry Road. Two manholes along with 300 diameter sewer on Derry Road proposed to install to connect the site. The location of proposed sanitary service connection is shown in Figure C2 and Figure C2a (Appendix C). Sanitary Design Sheet attached in Appendix C.

### 8.2 New Domestic / Fire Water Connection

New 50mm service connections are proposed to be connecting to existing water connection plug on Derry Street East. The location of proposed water service connections are shown on Figure C2, Appendix C.

## 8.0 Stormwater Management

The preliminary storm water development is based on the requirements of the City of Waterloo Engineering Design Manual.

**Table 3 – Storm Design Criteria**

<b>STORM MANAGEMENT DESIGN CRITERIA</b>	
Quantity Control	Post development storm discharge is to be controlled to pre-development levels of for year through 100 years
Quality Control	MOE Level 1 Enhanced Protection
Water Balance	Retain first 5mm from each rainfall through on-site infiltration, filtration, evapo-transpiration and/or rainwater reuse

The following storm water management approach is proposed for the development.

- Post Development Flows to be controlled to pre-development levels with the help of onsite detention.
- Quality improvement to be achieved using oil/grit separator.
- Water Balance to be achieved through landscape areas and infiltration chambers.

## 8.1 Proposed Quantity Control

The pre-development land use breakdown and runoff coefficient calculation is as per Table 4 below. Pre-development landuse are shown in figure DR101, Appendix C.

**Table 4 – Pre-Development Runoff Coefficient Calculations**

AREA TYPE	AREA (M <sup>2</sup> )	RUNOFF COEFFICIENT "C"	AREA x C
ASPHALT/CONC.		0.90	0.00
BUILDING ROOF		0.90	0.00
LANDSCAPED AREA	192.570	0.25	48.14
GRAVEL	1570.130	0.50	785.07
		ΣAREA X C	833.21
		WEIGHTED AVERAGE "C"	<b>0.47</b>
		AREA "A" (Hectares)	0.1763

Post development land use breakdown and runoff coefficient calculation is as per Table 5 below.

Post-development landuse are shown in figure DR102, Appendix C.

**Table 5 – Post Development Runoff Coefficient Calculations**

AREA TYPE	AREA (M <sup>2</sup> )	RUNOFF COEFFICIENT "C"	AREA x C
ASPHALT/CONC.	1268.680	0.90	1141.81
LANDSCAPED AREA	301.450	0.25	75.36
BUILDING	192.570	0.90	173.31
		ΣAREA X C	1390.49
		WEIGHTED AVERAGE "C"	<b>0.79</b>
		AREA "A" (Hectares)	0.1763

Quantity control through onsite detention (parking lot ponding) will limit the post-development runoff release to the allowable pre-development level. To provide quantity control of up to 100-year design storm, the controlled release rate shall be less than or equal to post development flow rate.

**Table 6 – Comparison of Existing and Proposed Release Rates**

<b>Return Period (Years)</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>
Pre-Development Allowable Flow (L/sec)	13.97	18.78	23.14	26.57	29.66	32.82
Post-Development Peak Flow (L/sec)	23.32	31.35	38.61	48.78	59.40	68.47
Orifice Controlled Flow (L/sec)	13.36	14.90	16.29	22.95	26.06	26.88

## 8.2 Required Onsite Detention

Require detention storage caused by flow restriction calculated for 2, 5, 10, 25, 50 and 100 years rainfall events and presented Table 6. Maximum depth of 0.15m will create total storage on paved surface of 29.22 m<sup>3</sup> (Refer: Drawing C1, Ponding Storage Table) and additional storage available in pipes, catch basin and manholes will be 3.86m<sup>3</sup>. (Refer; Stormwater Management Report, Appendix C, Table 3)

**Table 6 – Detention Storage Summary**

<b>Return Period (Years)</b>	<b>2</b>	<b>5</b>	<b>10</b>	<b>25</b>	<b>50</b>	<b>100</b>
Detention Storage Required (m <sup>3</sup> )	8.99	14.84	20.13	19.31	21.16	25.18
Storage Used in Pipe (m <sup>3</sup> )	1.74	1.74	1.74	1.74	1.74	1.74
Storage Used in MH (m <sup>3</sup> )	2.36	2.36	2.36	2.36	2.36	2.36
Storage Used in Ponding (m <sup>3</sup> )	4.89	10.74	16.03	15.21	17.06	21.08
<b>Total Available Storage</b>	<b>30.78</b>	<b>30.78</b>	<b>30.78</b>	<b>30.78</b>	<b>30.78</b>	<b>30.78</b>

## 9.0 Water Balance

According to City’s SWM Guidelines retain storm water on-site, to the extent practicable, to achieve the same level of annual volume of overland runoff allowable from the development site under pre-development conditions. Site volume requirements for water balance are calculated at 5mm rainfall depth for catchment areas. Initial abstraction for the site calculated and presented in Table 4 below:

**Table 7 – Detention Storage Summary**

Catchment	Area (m <sup>2</sup> )	IA (mm)	Retention(m <sup>3</sup> )
Rooftop	192.57	1	0.19
Asphalt/Concrete Surface	1,268.68	1	1.27
Landscaped Surface	301.45	5	1.51
<b>Total</b>	<b>2.97 m<sup>3</sup></b>		

According to City’s guideline, required quantity for water balance was calculated as follows:

$$\text{Post Development Water Balance Quantity} = \text{Site Area} \times 5\text{mm} = 1762.7 \times (5/1000) = 8.81 \text{ m}^3$$

Stormtech storage tank (DC-780) recommended as shown in Drawing C2. Bed size of the chamber is 12m<sup>2</sup> (5.55 m x 2.09m) with a capacity of 6.0 m<sup>3</sup>. Water Balance calculations are summarized below in Table 8:

**Table 8: Water Balance Quantity**

Required Water Balance Quantity ( m <sup>3</sup> )	8.81
Water Balance Available:	
1) Initial Abstraction (m <sup>3</sup> )	2.97
2) Storm chamber (MC3500) (m <sup>3</sup> )	6.0

Total Water Balance Quantity Available (m <sup>3</sup> )	8.97
--	------

Water balance deficit will be met through the infiltration chambers proposed on the north-east driveway as shown in Drawing C2, Appendix C.

## 10.0 Summary & Conclusions

The report presents analysis of existing infrastructure, proposed development concept and servicing demands. The surrounding streets contain water and sanitary services at adequate depths. A stormwater management strategy has been proposed which provides the required quality and quantity controls.

Conceptual servicing and stormwater management plan have been included in support of the proposed development.

Respectfully submitted,



A handwritten signature in black ink, appearing to read 'R. Mehraban'.

**Abu S Ziauddin** P. Eng. M.Eng  
PROJECT MANAGER

**Ramyar Mehraban** M.Eng. EIT  
MUNICIPAL PROJECT DESIGNER

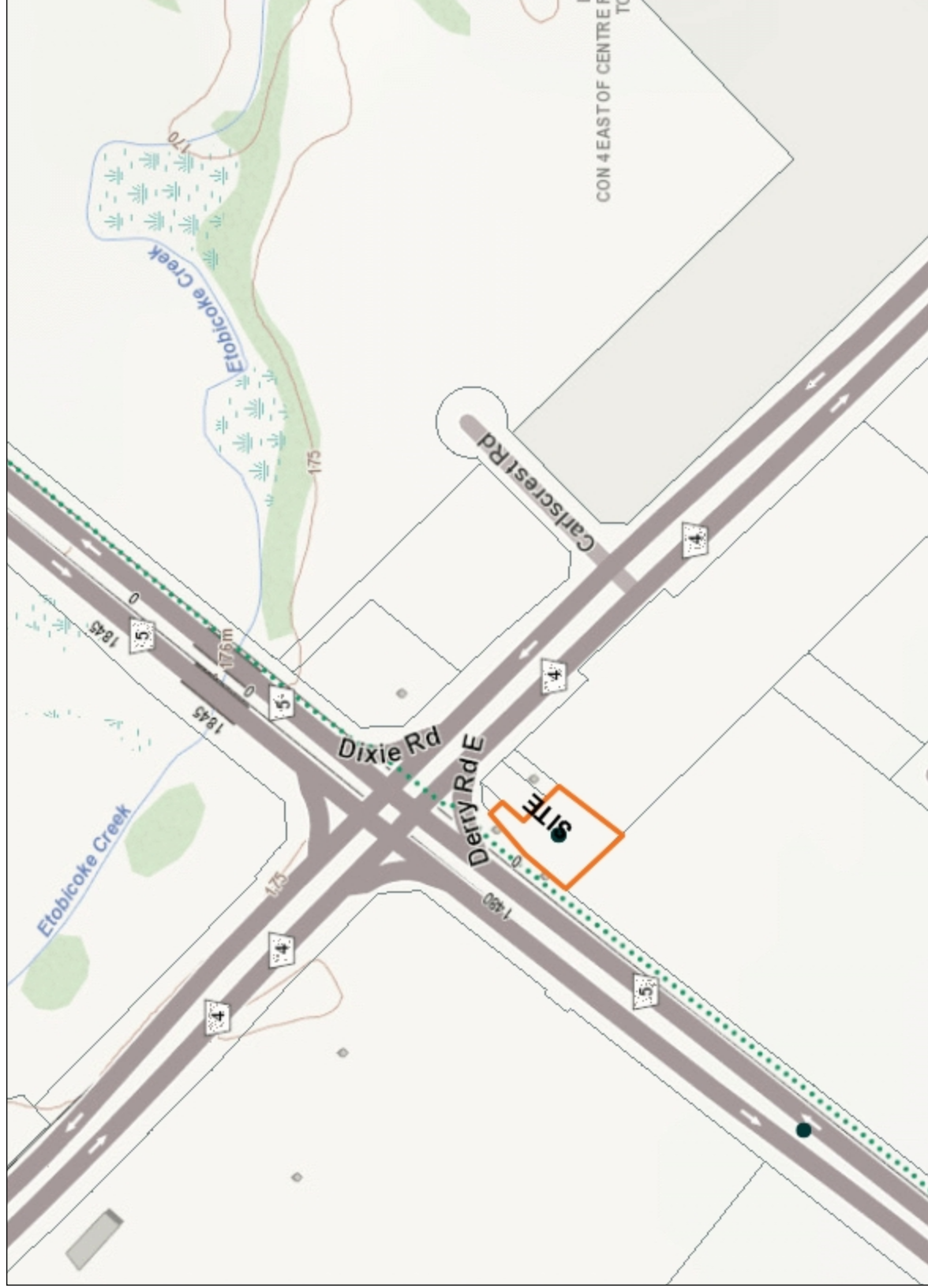
**n Architecture Inc**

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## Appendix A

# Proposed Gas Station

Notes:  
1480 Derry Road East, Mississauga



0 0.2 km

Projection: Web Mercator

Imagery Copyright Notices: Ontario Ministry of Natural Resources and Forestry; NASA Landsat Program; First Base Solutions Inc.; Aero-Photo (1961) Inc.; DigitalGlobe Inc.; U.S. Geological Survey.

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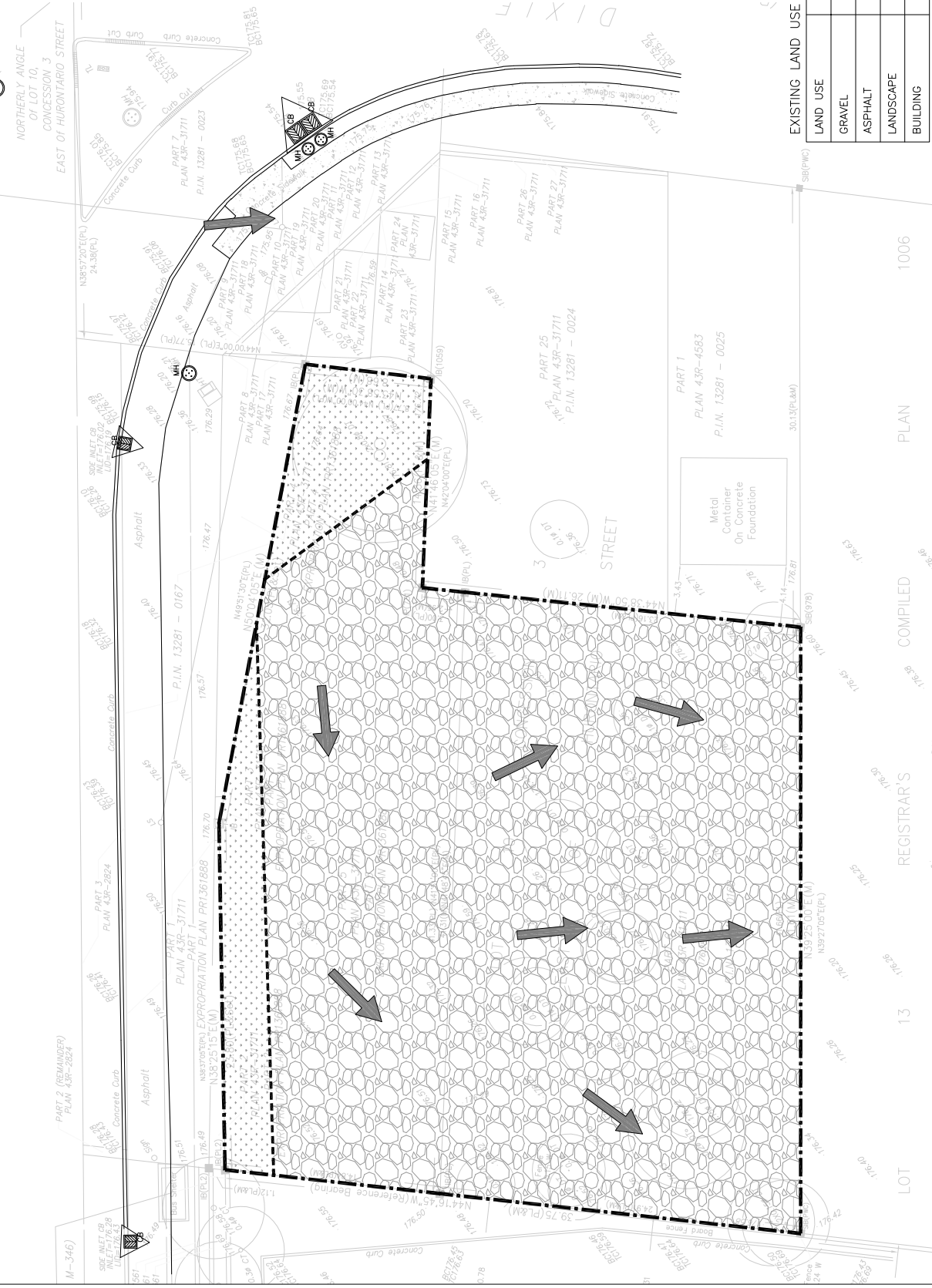




# DERRY ROAD EAST

Lawrence Between Lots 10 & 11 Concession 3 East Of Hurontario Street

P.I.N. 14028 - 0293



**LEGEND**

DRAINAGE AREA IDENTIFICATION

RUNOFF COEFFICIENT

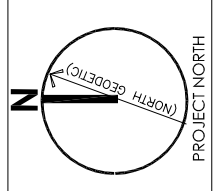
SITE BOUNDARY

EX. DRAINAGE BOUNDARY

EXIST. DIRECTION FLOW

EXISTING LAND USE TABLE

LAND USE	HATCH	AREA (SQ.M.)	CO-EFFICIENT
GRAVEL		1570.130	0.5
ASPHALT		-	-
LANDSCAPE		192.57	0.25
BUILDING		-	-



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 CHECKED BY: AZ  
 PROJECT NO.: **16-90**  
 DATE: 2019-05-15  
 SCALE: 1:400  
 DRAWING NO.: **DR-101**

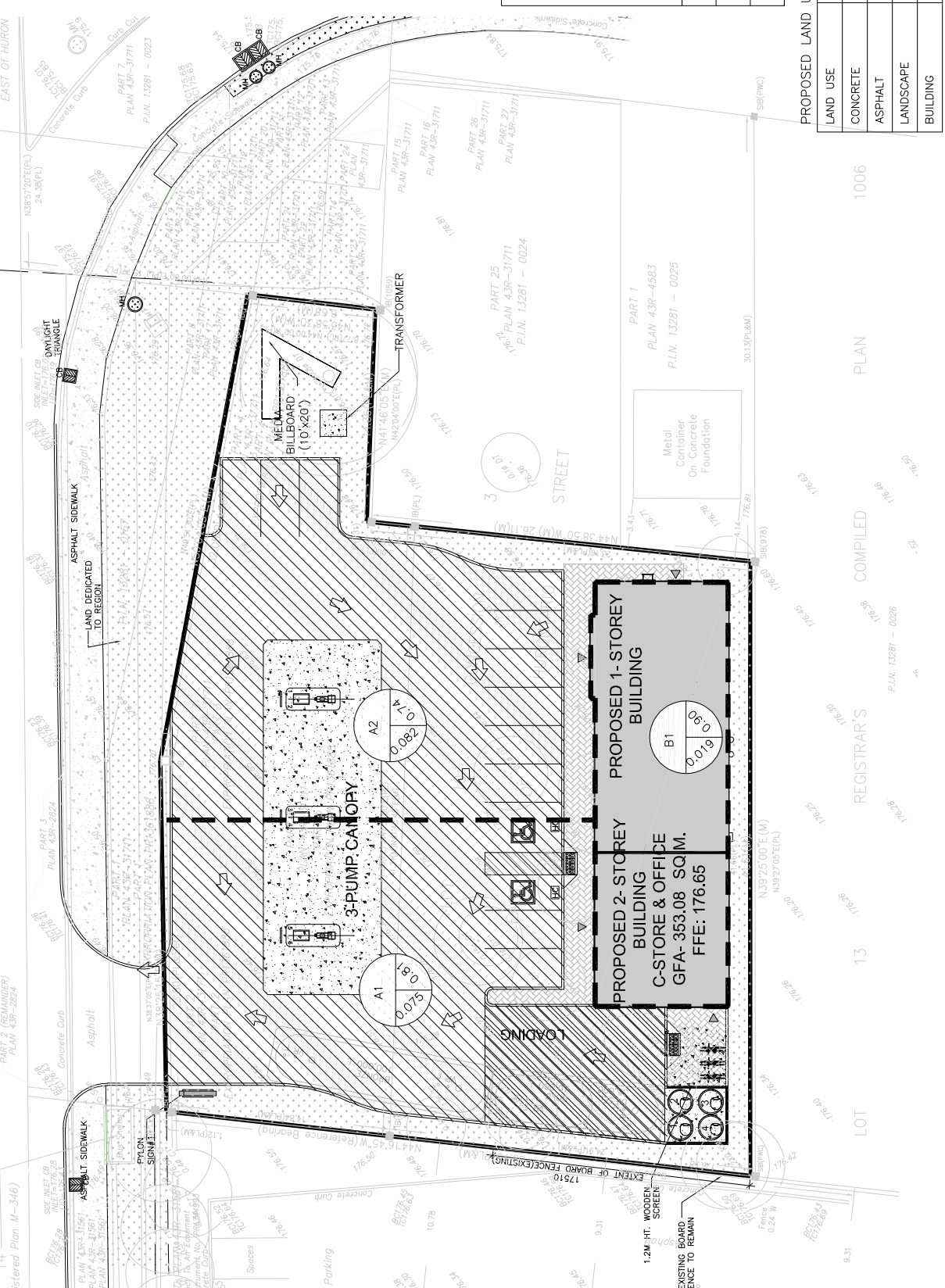
**PRE-DEVELOPMENT  
 LAND USE & DRAINAGE  
 PATTERN**

**PROPOSED  
 GAS STATION  
 1480 DERRY ROAD EAST,  
 MISSISSAUGA, ON.**

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# DERRY ROAD EAST



**LEGEND**

DRAINAGE AREA IDENTIFICATION  
 AREA IN HA.  
 RUNOFF COEFFICIENT

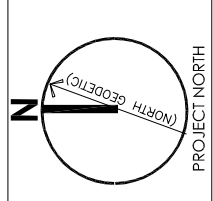
SITE BOUNDARY  

 DRAINAGE BOUNDARY  

 MAJOR OVERLAND FLOW

**PROPOSED LAND USE TABLE**

LAND USE	AREA (SQ.M)	HATCH	RUN OFF CO-EFFICIENT
CONCRETE	292.58		0.90
ASPHALT	936.1		0.90
LANDSCAPE	273.86		0.25
BUILDING	260.16		0.90



DRAWN BY: AZ	DATE: 2019-05-15
CHECKED BY: AZ	SCALE: 1:400
PROJECT NO.:	DRAWING NO.:
<b>16-90</b>	<b>DR-102</b>

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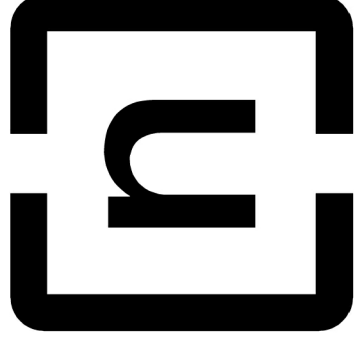
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SITE DRAINAGE PLAN**

**PROJECT:**

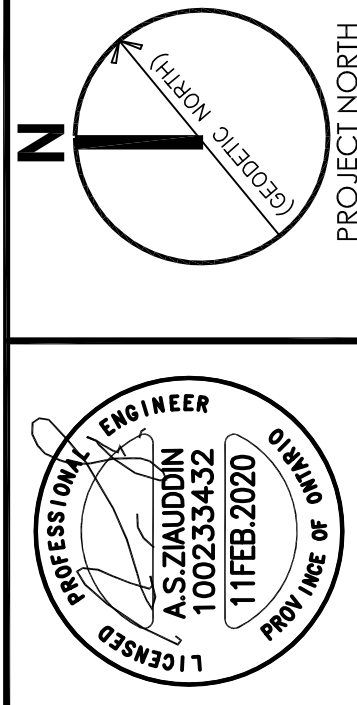
**PROPOSED  
GAS STATION  
1480 DERRY ROAD EAST,  
MISSISSAUGA, ON.**

**n Architecture Inc**  
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## Appendix B

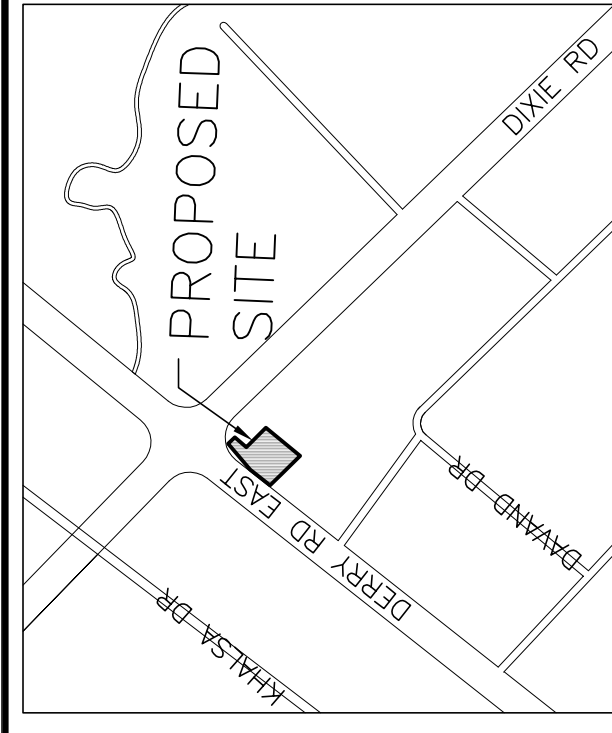


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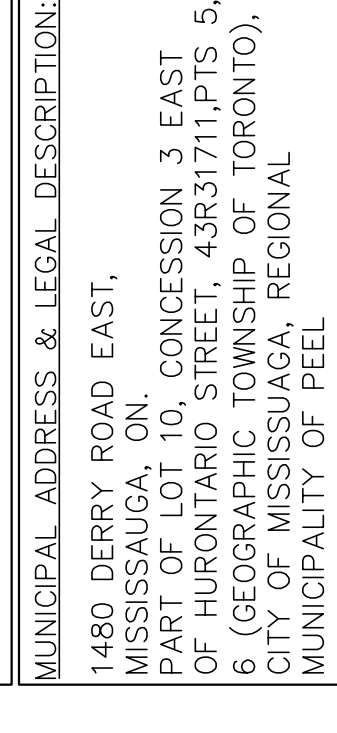
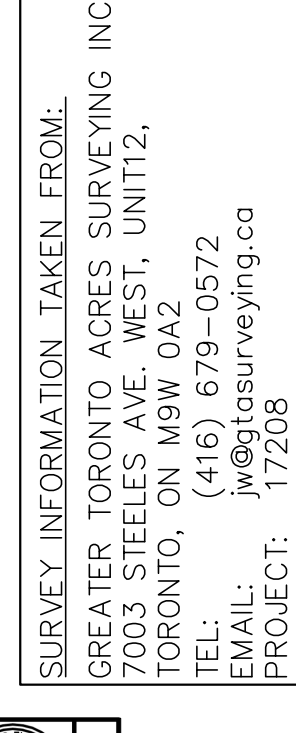
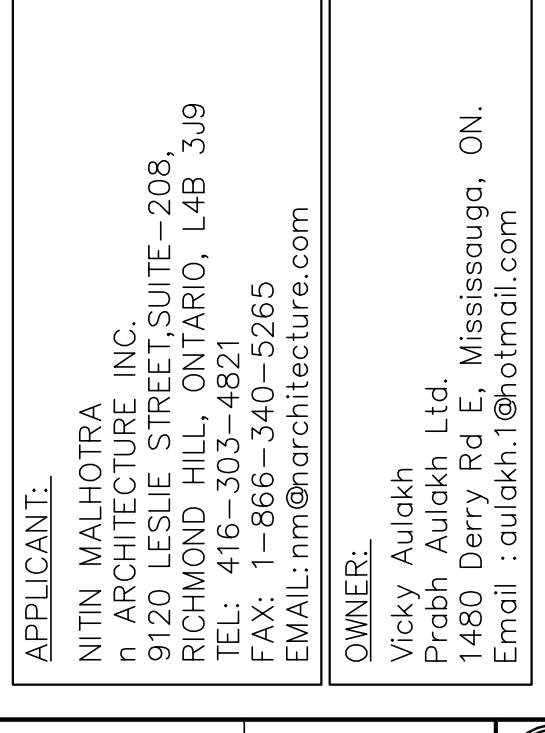
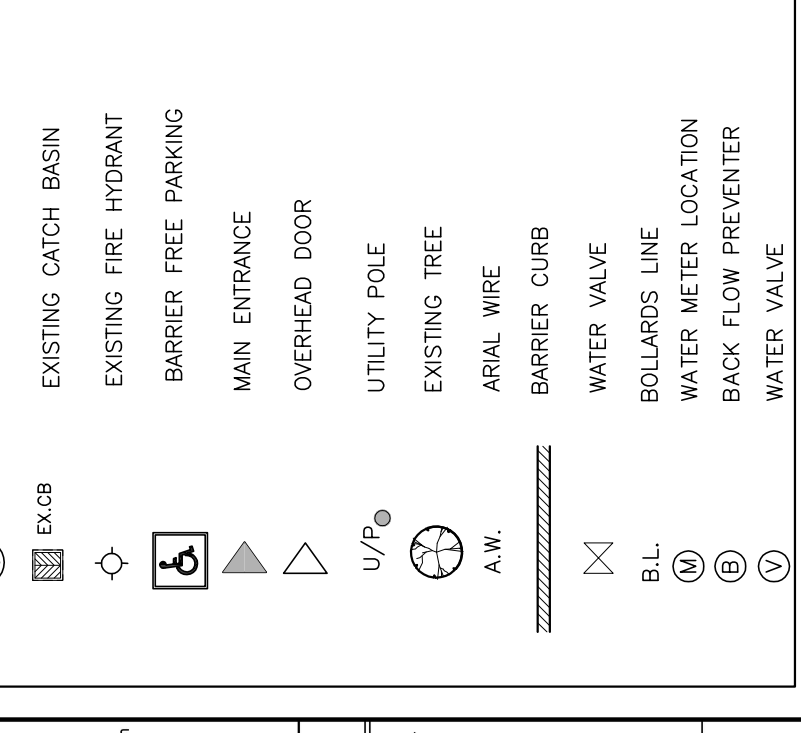
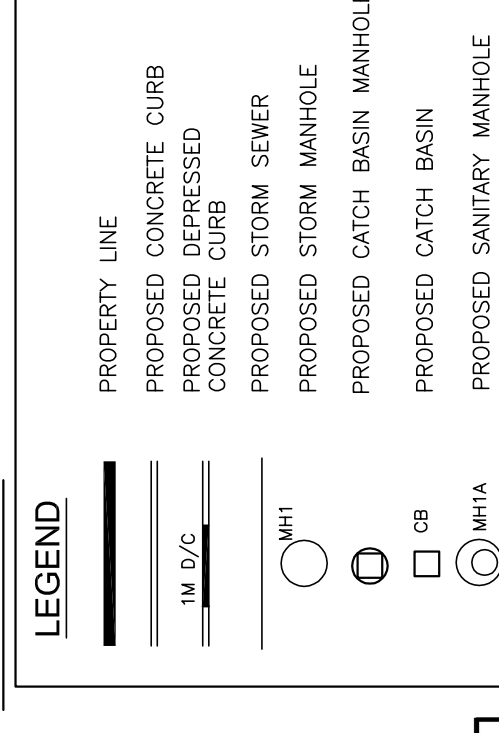


PROJECT NORTH

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**KEY PLAN**



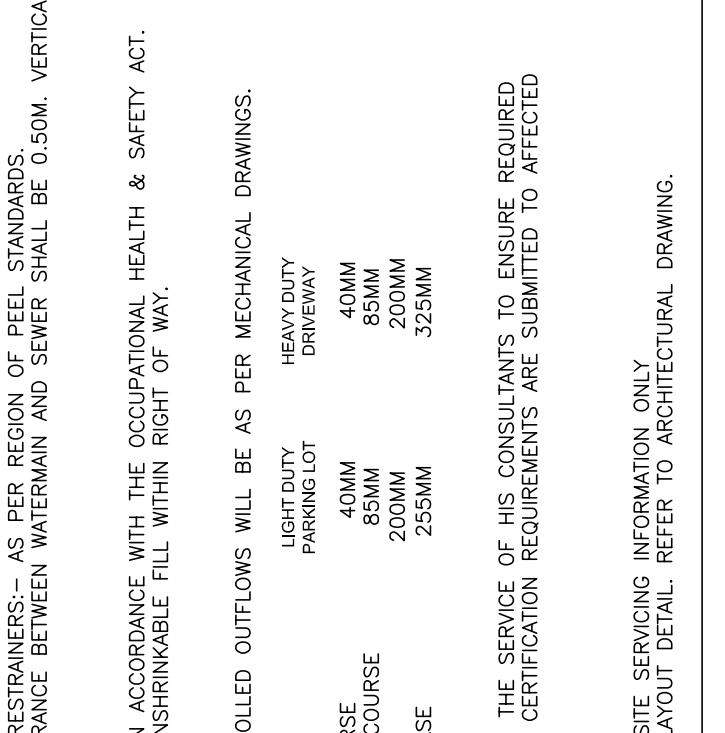
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Contractor must verify all job dimensions drawings, details and specifications and report any discrepancies to designer before proceeding with work.

**PROPOSED GAS STATION**

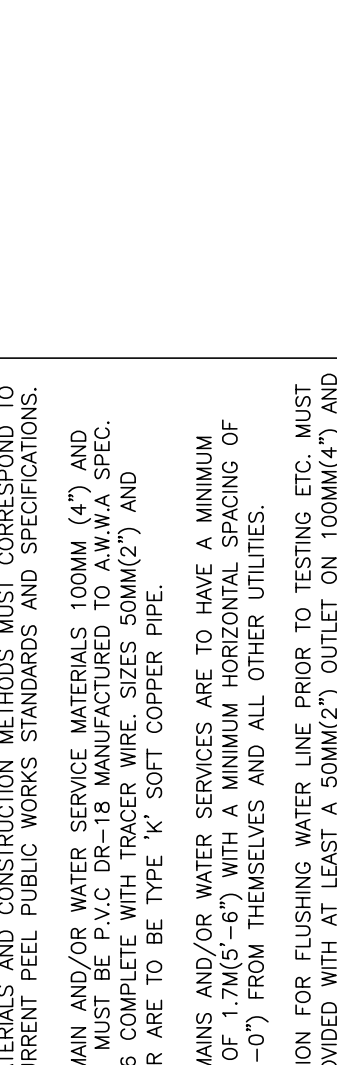
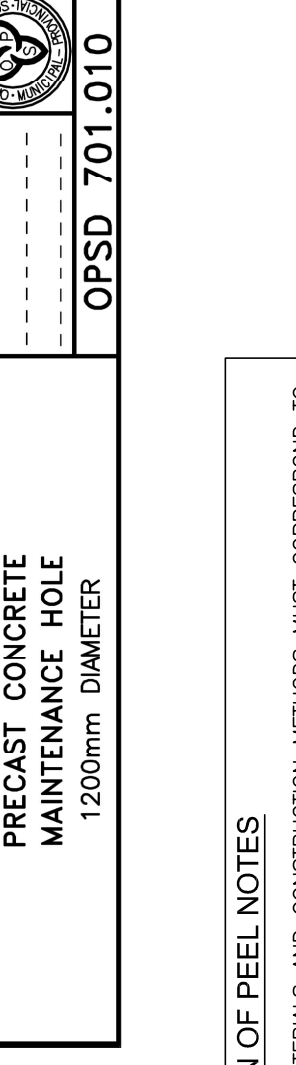
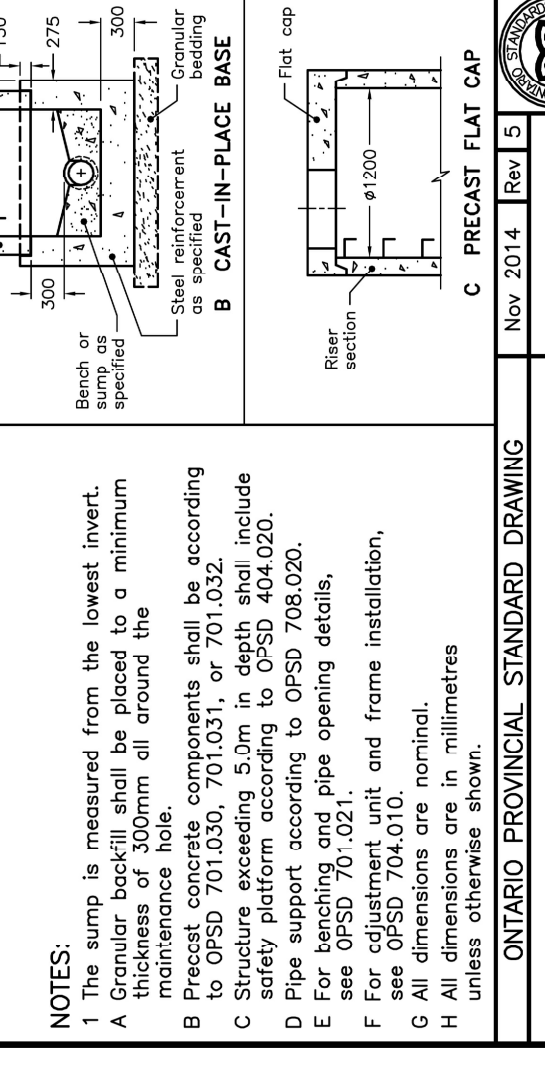
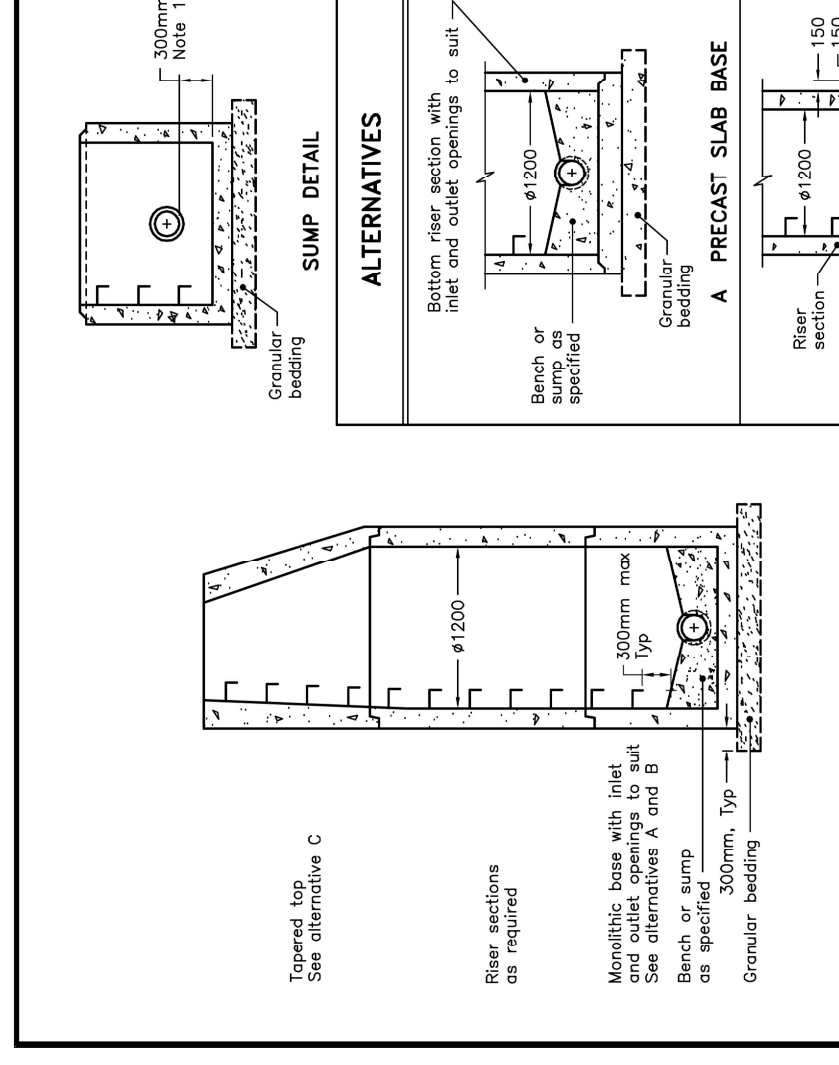
**1480 DERRY ROAD EAST, MISSISSAUGA, ON.**

**SITE SERVICING PLAN**



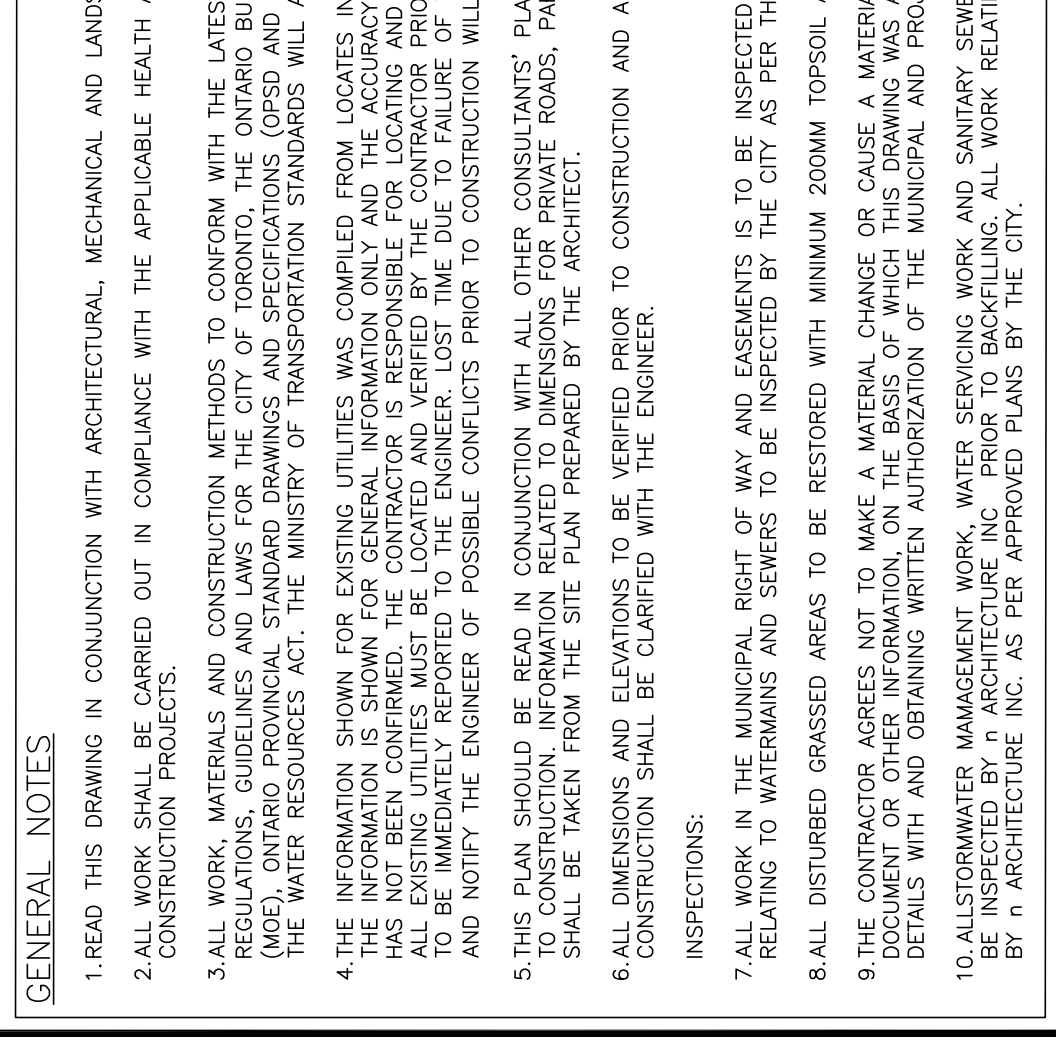
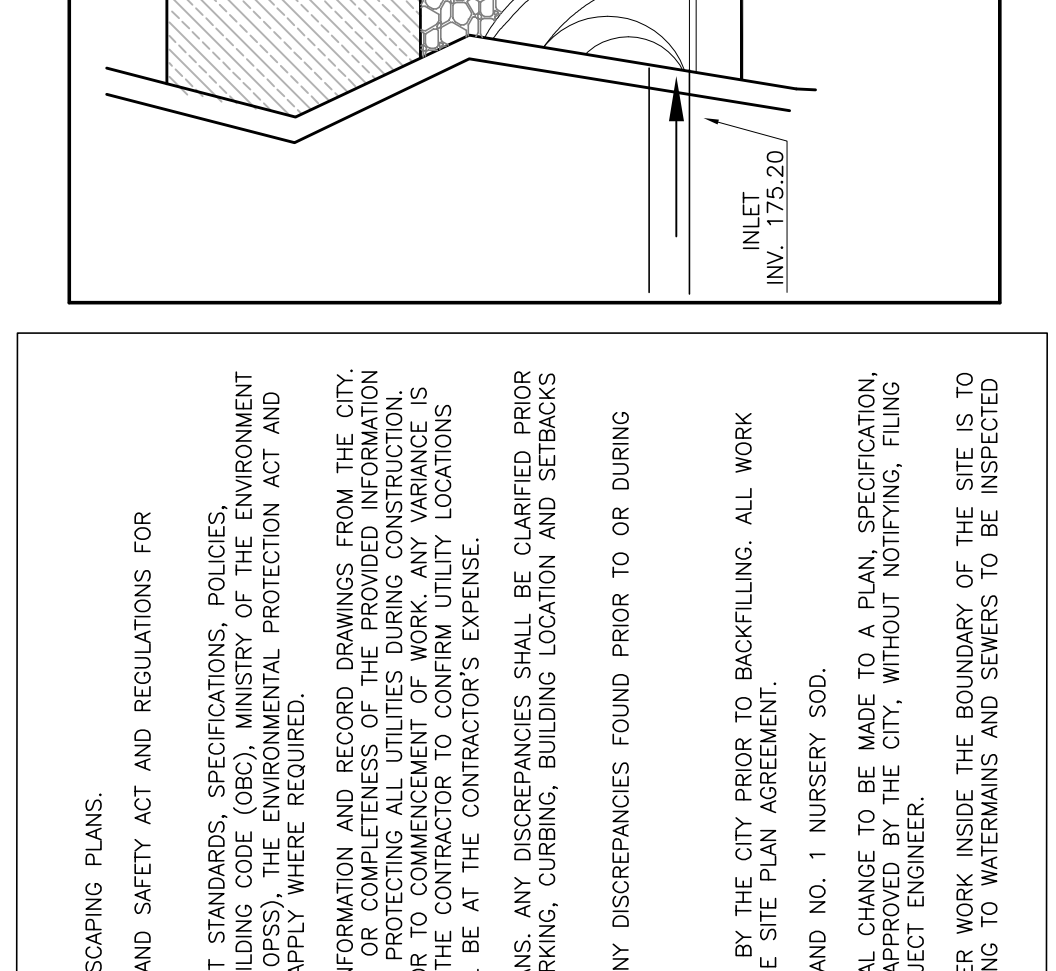
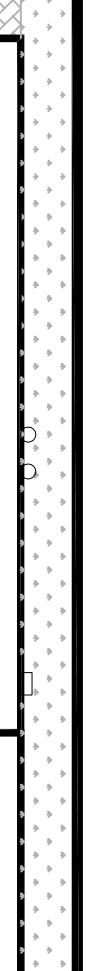
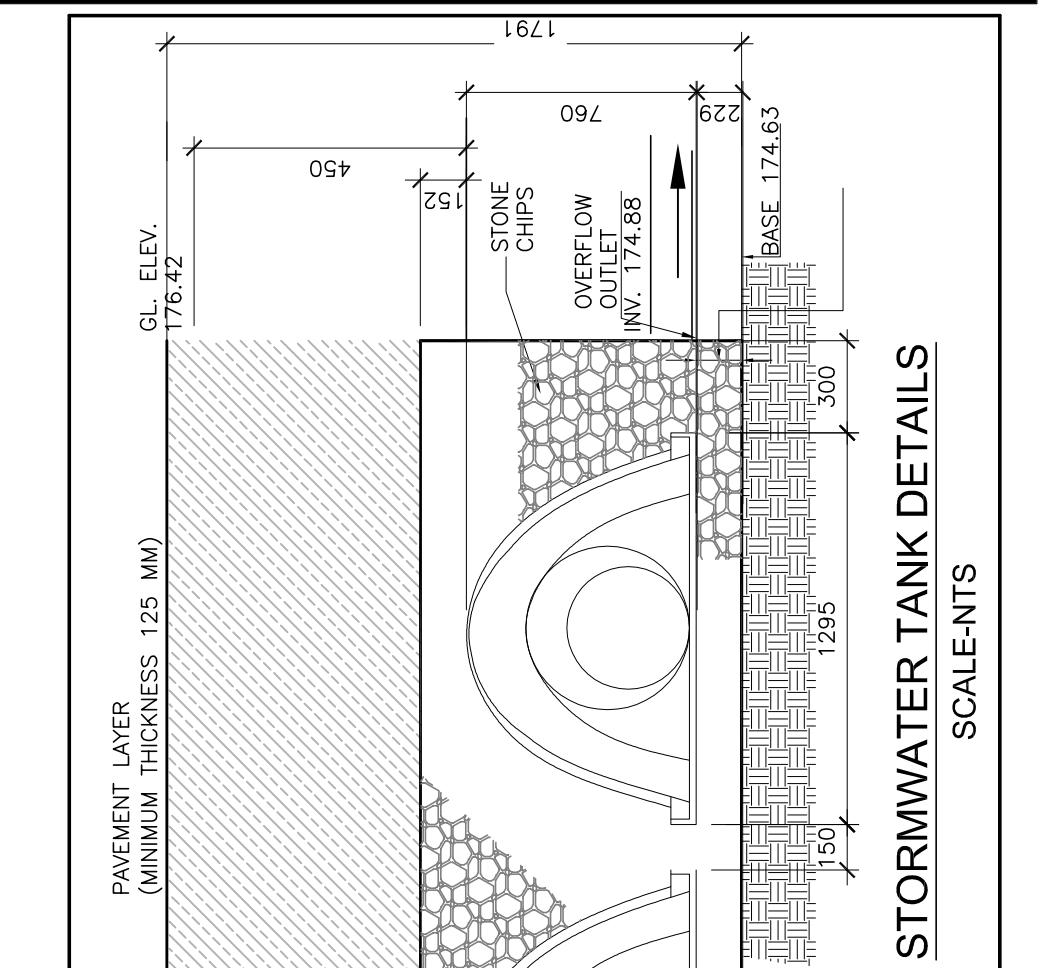
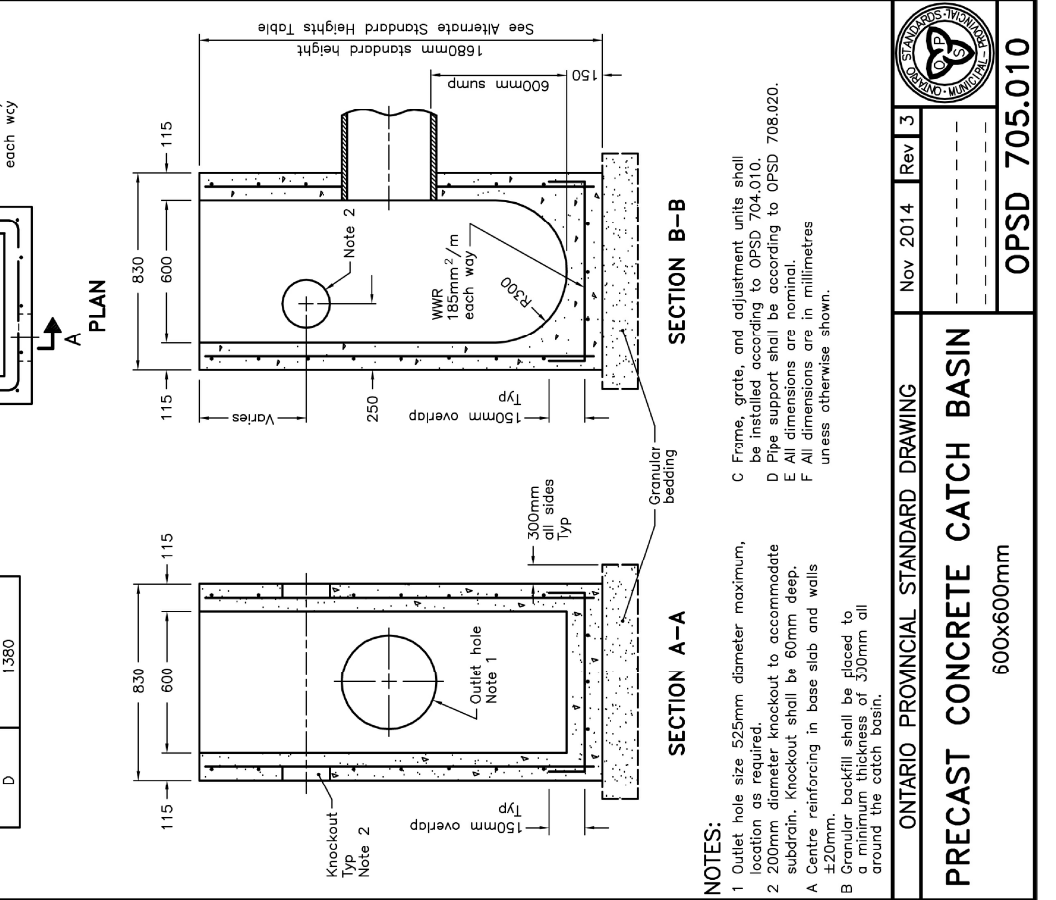
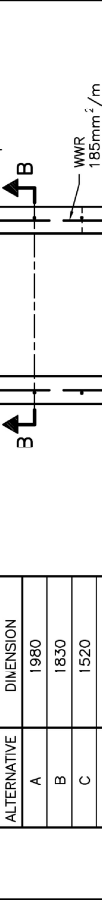
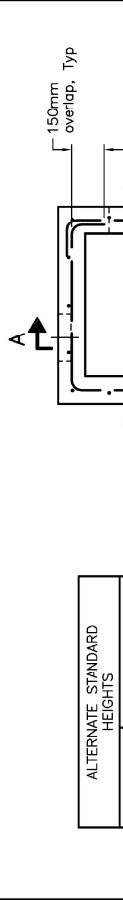
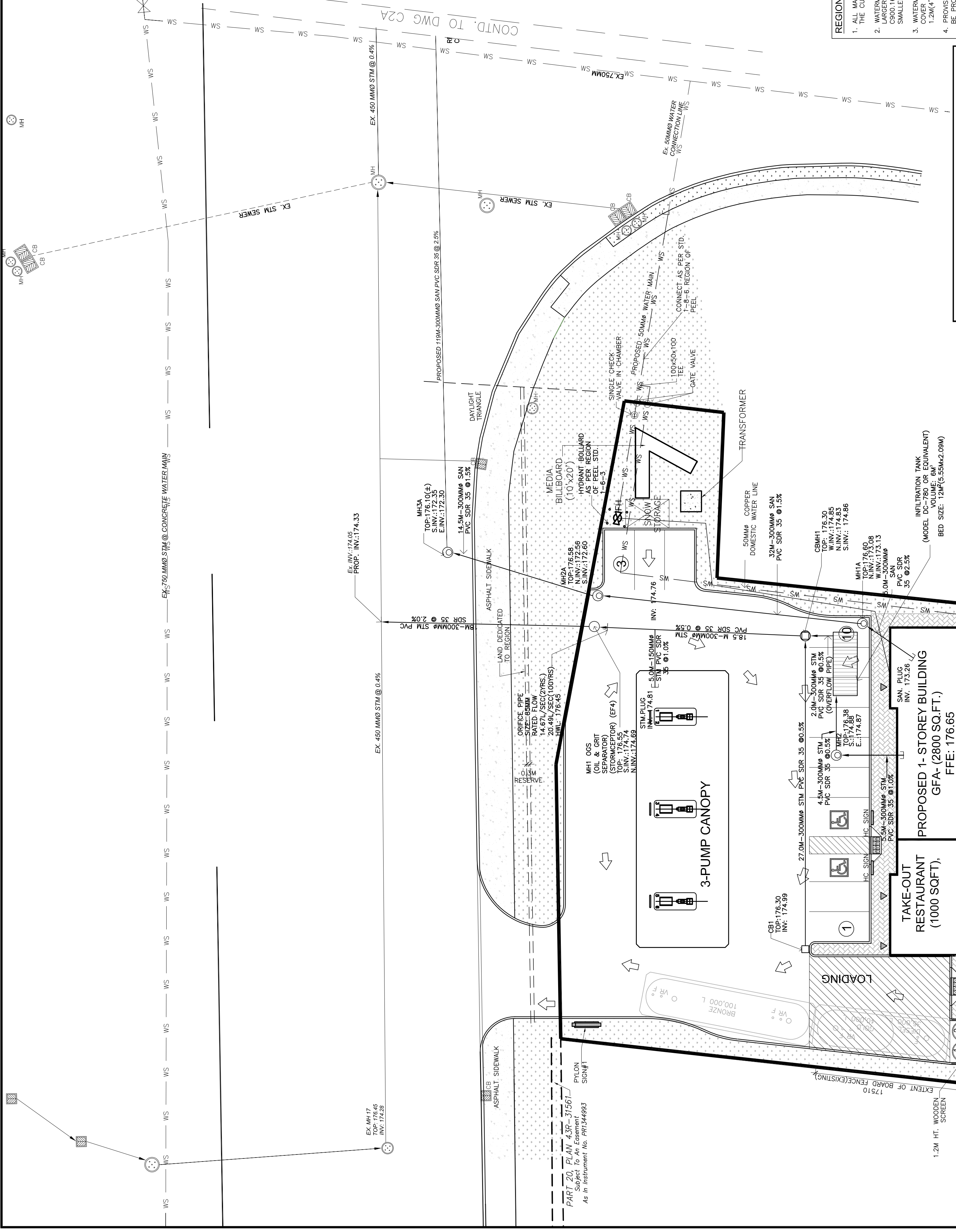
**CITY TRANSPORTATION AND WORKS DEVELOPMENT ENGINEERING NOTES**

- ALL SURFACE DRAINAGE WILL BE SELF CONTAINED, COLLECTED AND DISCHARGED AT A LOCATION TO BE APPROVED PRIOR TO THE BEGINSING OF CONSTRUCTION.
- THE PORTIONS OF THE DRIVEWAY WITHIN THE MUNICIPAL BOUNDARY WILL BE PAVED BY THE APPLICANT TO CITY.
- ALL EXCESS EXCAVATED MATERIAL WILL BE REMOVED FROM THE SITE.
- THE EXISTING DRAINAGE PATTERN WILL BE MAINTAINED EXCEPT WHERE NOTED.
- BEFORE ANY CONSTRUCTION WORK BEGINS, THE APPLICANT SHALL OBTAIN ALL REQUIRED CONSENTS FROM THE CITY OF MISSISSAUGA AND THE MUNICIPAL ENGINEER PRIOR TO THE INSTALLATION OF HOARDING WITHIN THE MUNICIPAL RIGHT OF WAY.
- ALL HOARDING SHALL BE MAINTAINED THROUGHOUT ALL CONSTRUCTION ACTIVITIES AND SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
- SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS MUST BE STRICTLY ADHERED TO THROUGHOUT ALL CONSTRUCTION ACTIVITIES.
- SHOULD ANY WORKS BE REQUIRED WITHIN THE MUNICIPAL RIGHT OF WAY, A ROAD OCCUPANCY PERMIT WILL BE REQUIRED. PUZZLE CONTACT THE P.U.C.C./PERMIT TECHNOLOGIST, LOCATED AT 3185 MAINS ROAD.



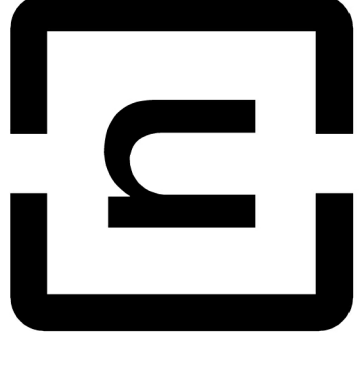
**REGION OF PEEL NOTES**

- ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
- WATERMAN AND/OR WATER SERVICE MATERIALS 100MM (4") AND LARGER MUST BE P.V.C. DR-18 MANUFACTURED TO A.M.W.A. SPEC. SMALLER DIAMETERS MUST BE MANUFACTURED TO A.M.W.A. SPEC. SMALLER ARE TO BE TYPE 'K' SOFT COPPER PIPE.
- WATERMAN AND/OR WATER SERVICES ARE TO HAVE A MINIMUM 0.3M(12") OVER AND 0.50M(20") UNDER SEWERS AND ALL OTHER UTILITIES.
- PROVISION FOR FLUSHING WATER LINE PRIOR TO TESTING, ETC. MUST BE PROVIDED WITH AT LEAST A 50MM(2") OUTLET ON 100MM(4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE DOWN DRAIN ON FIRE LINES. FLUSHING TO BE DRAIN INTO A PARKING LOT OR MINIMUM ON A FIRE HYDRANT.
- ALL CURB STOPS TO BE 3.0M(10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
- HYDRANT AND VALVE SET TO REGION STANDARD 1-6-1, DIMENSIONS 'A' AND 'B' 0.70M(27) AND 0.90M(35) AND TO HAVE PUMPER NOZZLE.
- WATERMANS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED DRAWINGS. ALL WATERMANS SHALL BE INSTALLED TO GRADES AS SHOWN ON APPROVED DRAWINGS PRIOR TO THE COMMENCEMENT OF WORK, WHERE REQUESTED BY THE INSPECTOR.
- WATERMANS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3M(12") OVER AND 0.50M(20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
- ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING CHLORINATION FROM EXISTING SYSTEMS.
- ALL LIVE TAPPING AND OPERATION OF REGION WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTRACTING THE OPERATIONS AND MAINTENANCE DIVISION.
- LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATING EXISTING UTILITIES AND IDENTIFYING THEM ON A UNDERGROUND CONSTRUCTION IN THE AREA OF HIS WORK WHETHER SHOWN ON THE DRAWINGS OR NOT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE RESULTING FROM DAMAGE TO SAME.
- HIGHWAYS SHALL BE PROTECTED BY THE CONTRACTOR(S) TO BE 7.2 M(23.6') FROM THE EDGE OF THE ROADWAY TO THE CENTERLINE OF THE ROADWAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
- ALL PROPOSED WATER PIPING SHALL BE INSTALLED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE SYSTEM FOR BACKFLOW PREVENTION OF THE ACTIVE DISTRIBUTION SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1-7-7 OR 1-7-8.

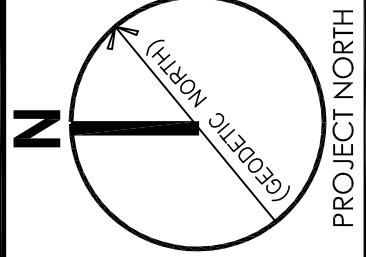
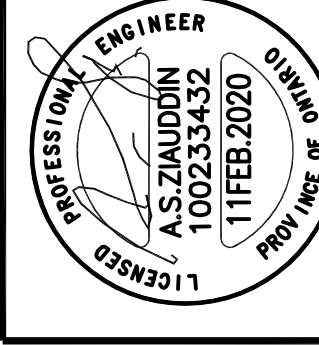


**GENERAL NOTES**

- READ THIS DRAWING IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL AND LANDSCAPING PLANS.
- ALL WORK SHALL BE CARRIED OUT IN COMPLIANCE WITH THE APPLICABLE HEALTH AND SAFETY ACT AND REGULATIONS FOR CONSTRUCTION PROJECTS.
- ALL WORK MATERIALS AND CONSTRUCTION METHODS TO CONFORM WITH THE LATEST STANDARDS, SPECIFICATIONS, POLICES, REGULATIONS, GUIDELINES AND LAWS FOR THE CITY OF TORONTO, THE ONTARIO BUILDING CODE (OBC), MINISTRY OF THE ENVIRONMENT (MOE), ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS (OPSD AND OPS), THE ENVIRONMENTAL PROTECTION ACT AND THE WATER RESOURCES ACT, THE MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY WHERE REQUIRED.
- THE INFORMATION SHOWN FOR EXISTING UTILITIES WAS COMPILED FROM LOCATES INFORMATION AND RECORD DRAWINGS FROM THE CITY. THE INFORMATION IS SHOWN FOR GENERAL INFORMATION ONLY AND THE ACCURACY OR COMPLETENESS OF THE PROVIDED INFORMATION IS NOT GUARANTEED. ALL EXISTING UTILITIES MUST BE LOCATED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. ANY VARIANCE IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTOR TO CONFIRM UTILITY LOCATIONS AND NOTIFY THE ENGINEER OF POSSIBLE CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT THE CONTRACTOR'S EXPENSE.
- THIS PLAN SHOULD BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' PLANS. ANY DISCREPANCIES SHALL BE CLARIFIED PRIOR TO CONSTRUCTION. INFORMATION RELATED TO DIMENSIONS FOR PRIVATE ROADS, PARKING, CURBING, BUILDING LOCATION AND SETBACKS SHALL BE TAKEN FROM THE SITE PLAN PREPARED BY THE ARCHITECT.
- ALL DIMENSIONS AND ELEVATIONS TO BE VERIFIED PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.
- INSPECTIONS:
  - ALL WORK IN THE MUNICIPAL RIGHT OF WAY AND EASEMENTS IS TO BE INSPECTED BY THE CITY PRIOR TO BACKFILLING. ALL WORK RELATING TO WATERMANS AND SEWERS TO BE INSPECTED BY THE CITY AS PER THE SITE PLAN AGREEMENT.
  - ALL DISTURBED GRASSES ARE TO BE RESTORED WITH MINIMUM 200MM TOPSOIL AND NO. 1 NURSERY SOIL.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF MISSISSAUGA.
  - ALL MATERIALS AND CONSTRUCTION METHODS TO CONFORM WITH THE LATEST STANDARDS, SPECIFICATIONS, POLICES, REGULATIONS, GUIDELINES AND LAWS FOR THE CITY OF TORONTO, THE ONTARIO BUILDING CODE (OBC), MINISTRY OF THE ENVIRONMENT (MOE), ONTARIO PROVINCIAL STANDARD DRAWINGS AND SPECIFICATIONS (OPSD AND OPS), THE ENVIRONMENTAL PROTECTION ACT AND THE WATER RESOURCES ACT, THE MINISTRY OF TRANSPORTATION STANDARDS WILL APPLY WHERE REQUIRED.
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    - ALL EXISTING UTILITIES MUST BE LOCATED AND VERIFIED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. ANY VARIANCE IS TO BE IMMEDIATELY REPORTED TO THE ENGINEER. LOST TIME DUE TO FAILURE OF THE CONTRACTOR TO CONFIRM UTILITY LOCATIONS AND NOTIFY THE ENGINEER OF POSSIBLE CONFLICTS PRIOR TO CONSTRUCTION WILL BE AT THE CONTRACTOR'S EXPENSE.
    - THIS PLAN SHOULD BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' PLANS. ANY DISCREPANCIES SHALL BE CLARIFIED PRIOR TO CONSTRUCTION. INFORMATION RELATED TO DIMENSIONS FOR PRIVATE ROADS, PARKING, CURBING, BUILDING LOCATION AND SETBACKS SHALL BE TAKEN FROM THE SITE PLAN PREPARED BY THE ARCHITECT.
    - ALL DIMENSIONS AND ELEVATIONS TO BE VERIFIED PRIOR TO CONSTRUCTION AND ANY DISCREPANCIES FOUND PRIOR TO OR DURING CONSTRUCTION SHALL BE CLARIFIED WITH THE ENGINEER.



**n Architecture Inc**  
 PRINCIPAL: NITIN MALHOTRA, ARCHITECT.  
 9120 Leslie Street, Suite-208  
 Richmond Hill, Ontario, L4B 3J9  
 T: 416 303 4821 F: 1 866 340 5265  
 E: info@narchitecture.com  
 www.narchitecture.com



NOT FOR CONSTRUCTION

No.	Date	Version	Dwn.
1.	11 FEB. 2020	ISSUED FOR SPA	AZ

This drawing is copyright property of n Architecture Inc. Not to be reproduced.

Contractor must verify all job dimensions, drawings, details and specifications and report any discrepancies to designer before proceeding with work.

PROJECT:

### PROPOSED GAS STATION 1480 DERRY ROAD EAST, MISSISSAUGA, ON.

### SANITARY CONNECTION AND NOTES

DRAWING TITLE:

DRAWN BY: AZ

CHECKED BY: AZ

DATE: MAY 15 2018

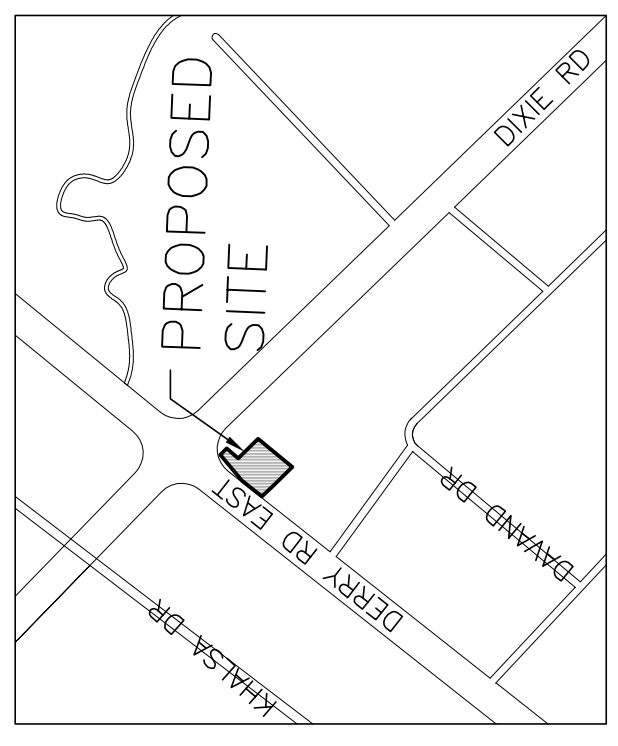
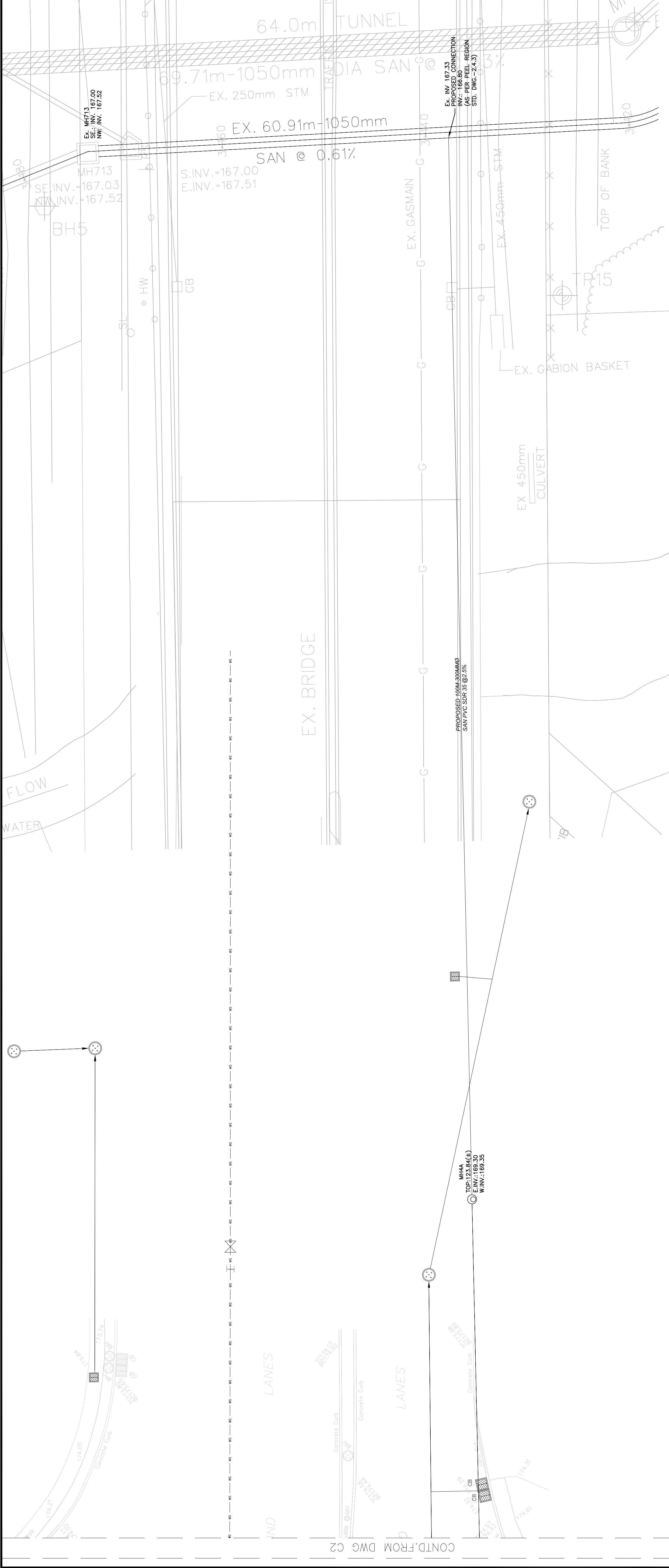
SCALE: 1:200

PROJECT NO.:

16-90

DRAWING NO.:

C2A



LEGEND	
	PROPERTY LINE
	PROPOSED CONCRETE CURB
	PROPOSED DEPRESSED CONCRETE CURB
	PROPOSED STORM SEWER
	PROPOSED STORM MANHOLE
	PROPOSED CATCH BASIN MANHOLE
	PROPOSED CATCH BASIN
	PROPOSED SANITARY MANHOLE
	EXISTING CATCH BASIN
	EXISTING FIRE HYDRANT
	BARRIER FREE PARKING
	MAIN ENTRANCE
	OVERHEAD DOOR
	UTILITY POLE
	EXISTING TREE
	AERIAL WIRE
	BARRIER CURB
	WATER VALVE
	BOLLARDS LINE
	WATER METER LOCATION
	BACK FLOW PREVENTER
	WATER VALVE

#### REGION OF PEEL NOTES

- ALL MATERIALS AND CONSTRUCTION METHODS MUST CORRESPOND TO THE CURRENT PEEL PUBLIC WORKS STANDARDS AND SPECIFICATIONS.
- WATERMAIN AND/OR WATER SERVICE MATERIALS (100MM (4") AND LARGER) MUST BE P.V.C. DR-18 MANUFACTURED TO A.W.W.A. SPEC. 5000.16 COMPLETE WITH TRACER WIRE. SIZES 50MM(2") AND SMALLER ARE TO BE TYPE 'K' SOFT COPPER PIPE.
- WATERMANS AND/OR WATER SERVICES ARE TO HAVE A MINIMUM BURIED COVER OF 1.0M(4'-0") FROM THEMSELVES AND ALL OTHER UTILITIES.
- OPENING FOR FLUSHING WATER LINE FROM TESTING ETC. MUST BE PROVIDED WITH AT LEAST A 50MM(2") OUTLET ON 100MM(4") AND LARGER LINES. COPPER LINES ARE TO HAVE FLUSHING POINTS AT THE MANHOLES AND AT THE END OF EACH LINE. THE FLUSHING POINTS ARE TO BE PIPED TO ALLOW THE WATER TO DRAIN INTO A PARKING LOT OR DOWN A DRAIN, ON FIRE LINES, FLUSHING OUTLET TO BE 100MM(4") MINIMUM ON A FIRE HYDRANT.
- ALL CURB STOPS TO BE 3.0M(10') OFF THE FACE OF THE BUILDING UNLESS OTHERWISE NOTED.
- HYDRANT AND VALVE SET TO REGION STANDARD 1-6-1, DIMENSIONS 'A' AND 'B' 0.70M(2') AND 0.90M(3') AND TO HAVE PUMPER NOZZLE.
- WATERMANS TO BE INSTALLED TO GRADES AS SHOWN ON APPROVED SANITARY CONNECTION DRAWINGS. ALL WORK MUST BE SUPERVISED BY THE INSPECTOR PRIOR TO THE COMMENCEMENT OF WORK, WHERE REQUESTED BY THE INSPECTOR.
- WATERMANS MUST HAVE A MINIMUM VERTICAL CLEARANCE OF 0.3M(12") OVER AND 0.50M(20") UNDER SEWERS AND ALL OTHER UTILITIES WHEN CROSSING.
- ALL PROPOSED WATER PIPING MUST BE ISOLATED FROM EXISTING UTILITIES BY THE CONTRACTOR. ALL PRESSURE TESTING AND CHARACTERIZATION FROM EXISTING SYSTEMS.
- ALL LINE TAPPING AND OPERATION OF RESERV. WATER VALVES SHALL BE ARRANGED THROUGH THE REGIONAL INSPECTOR ASSIGNED OR BY CONTACTING THE OPERATIONS AND MAINTENANCE DIVISION.
- LOCATION OF ALL EXISTING UTILITIES IN THE FIELD TO BE ESTABLISHED BY THE CONTRACTOR.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE FOR LOCATING, EXPOSING, SUPPORTING AND PROTECTING OF ALL UNDERGROUND AND EXISTING UTILITIES. THE CONTRACTOR(S) SHALL BE RESPONSIBLE FOR CONSTRUCTION IN THE AREA OF HIS WORK, WHETHER SHOWN ON PLANS OR NOT, AND FOR ALL REPAIRS AND CONSEQUENCES RESULTING FROM DAMAGE TO SAME.
- THE CONTRACTOR(S) SHALL BE SOLELY RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS AND INSURANCE FOR THE DURATION OF THE PROJECT. THE INSPECTION WILL BE FOR THE PURPOSE OF THE CONCERNED UTILITIES. FOR THE PURPOSE OF INSPECTION BY THE CONCERNED UTILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ARISING FROM SUCH INSPECTION.
- ALL PROPOSED WATER PIPING MUST BE ISOLATED THROUGH A TEMPORARY CONNECTION THAT SHALL INCLUDE AN APPROPRIATE CROSS CONNECTION BACKFLOW PREVENTER CONSISTENT WITH THE REGIONAL STANDARD FOR BACKFLOW PREVENTERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF SUCH SYSTEM, CONFORMING TO REGION OF PEEL STANDARDS 1-7-7 OR 1-7-8.

#### SURVEY INFORMATION TAKEN FROM:

GREATER TORONTO ACRES SURVEYING INC.  
 7003 STEELES AVE. WEST, UNIT12,  
 TORONTO, ON M9W 0A2  
 TEL: (416) 679-0572  
 EMAIL: jm@gtsurveying.ca  
 PROJECT: 17208

#### MUNICIPAL ADDRESS & LEGAL DESCRIPTION:

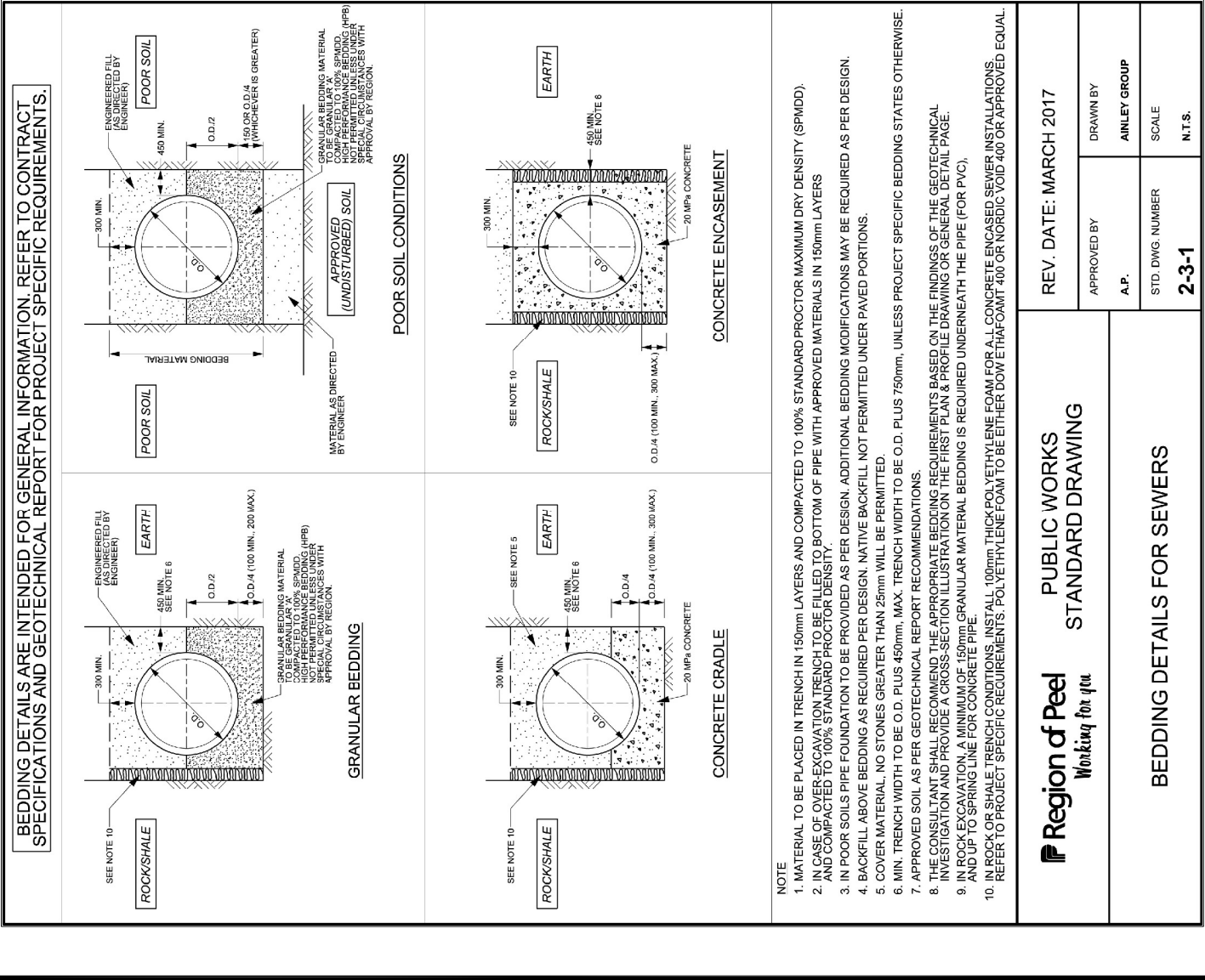
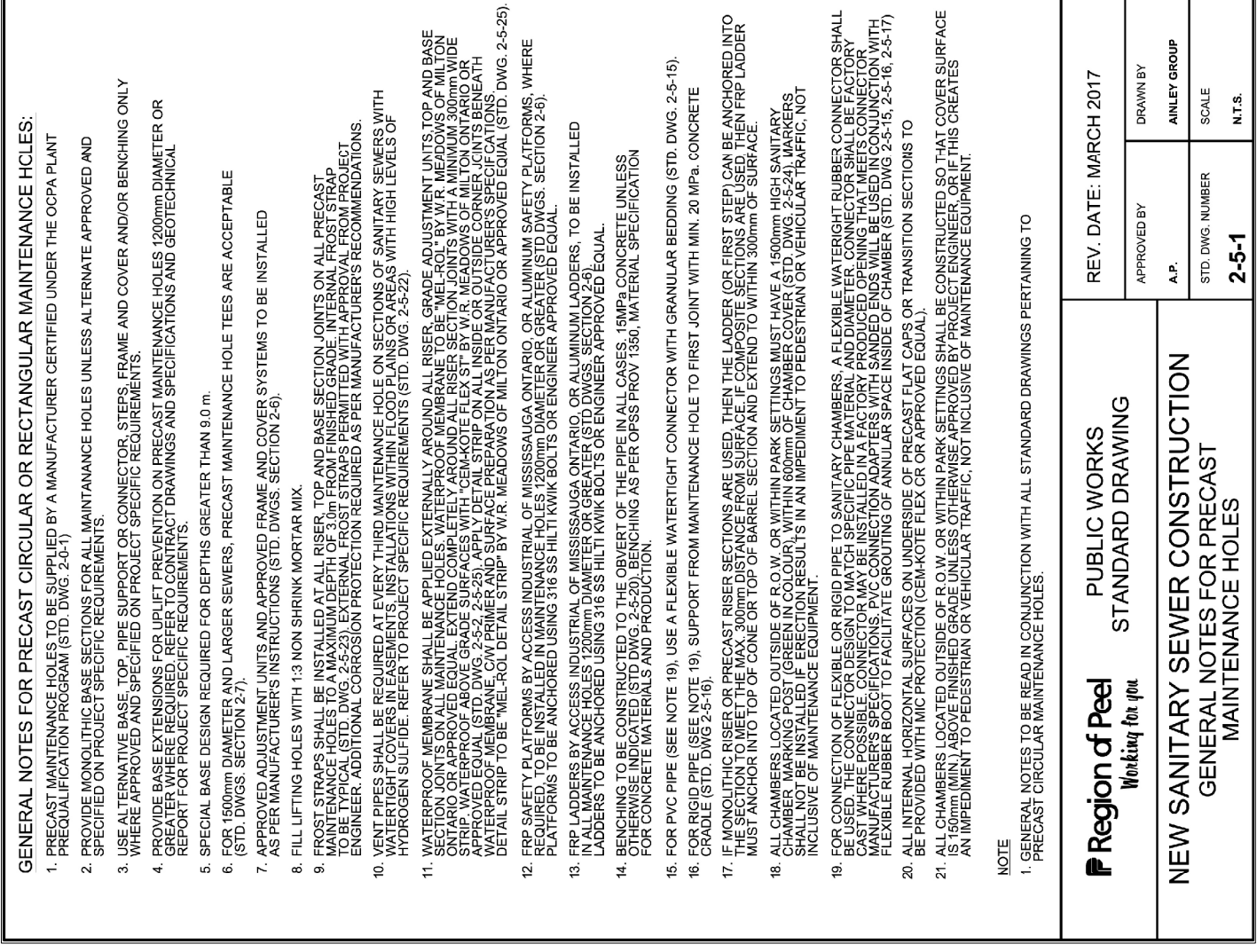
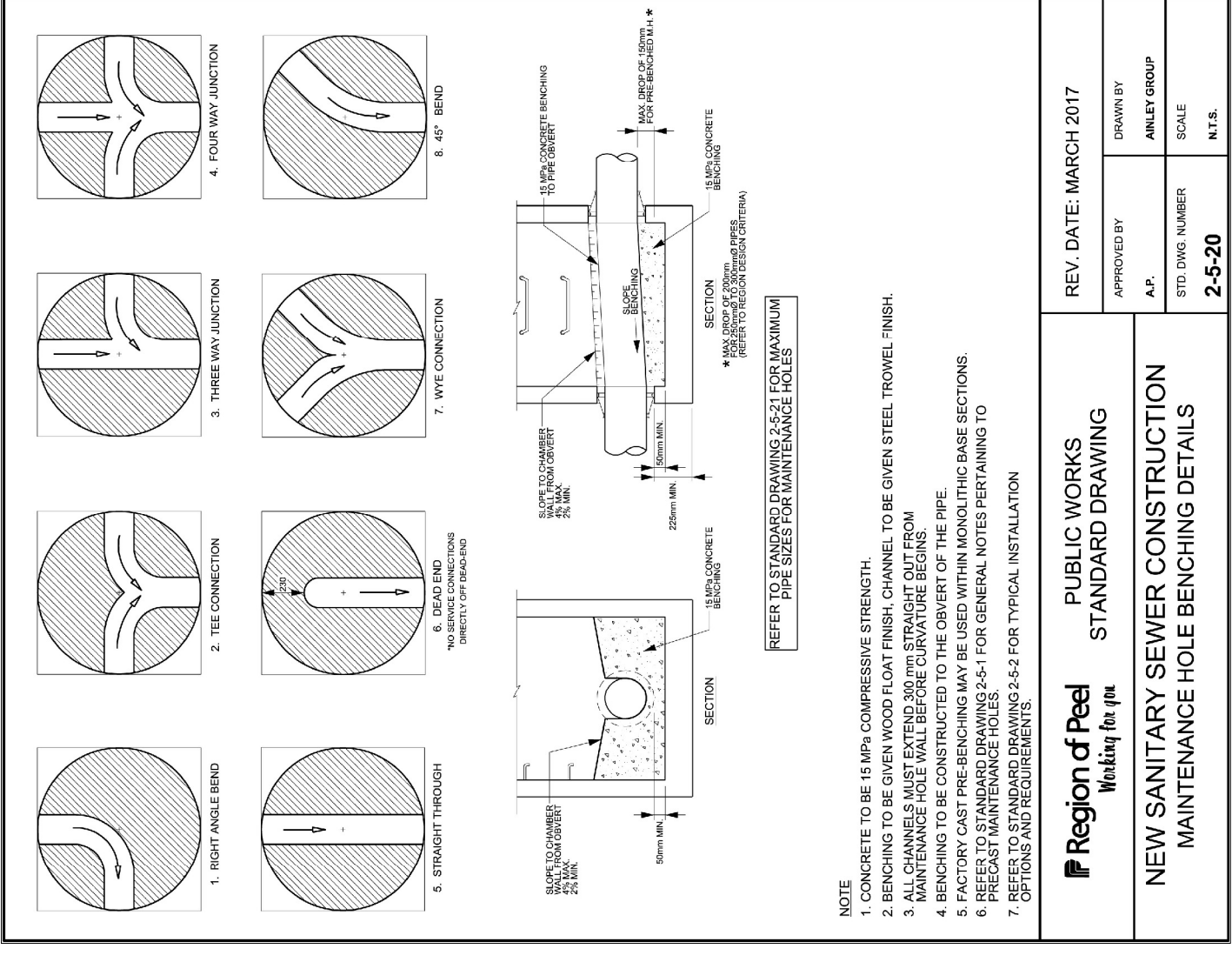
1480 DERRY ROAD EAST,  
 MISSISSAUGA, ON.  
 PART OF LOT 10, CONGRESSION 3 EAST  
 OF HURONTARIO STREET, 4.3R31711, PTS 5,  
 6 (GEOGRAPHIC TOWNSHIP OF TORONTO),  
 CITY OF MISSISSAUGA, REGIONAL  
 MUNICIPALITY OF PEEL

#### APPLICANT:

NITIN MALHOTRA  
 n ARCHITECTURE INC.  
 9120 LESLIE STREET, SUITE-208  
 RICHMOND HILL, ONTARIO, L4B 3J9  
 TEL: (416) 303-4821  
 FAX: 1-866-340-5265  
 EMAIL: info@narchitecture.com

#### OWNER:

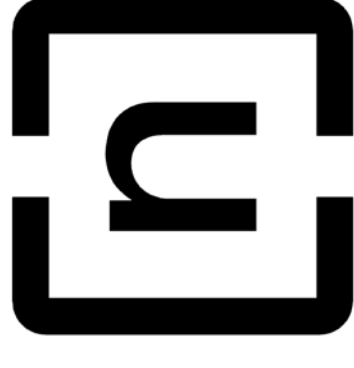
Vicky Aulakh  
 Prabh Aulakh Ltd.  
 1480 Derry Rd E, Mississauga, ON.  
 Email: v.aulakh.1@hotmail.com



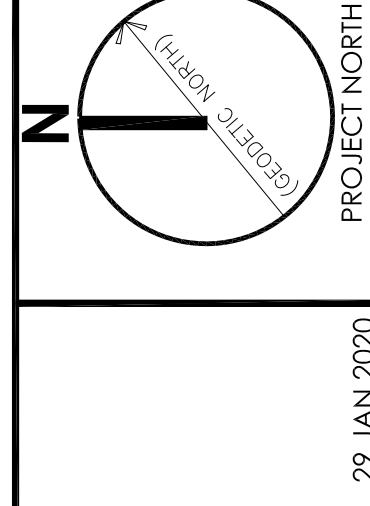
**Region of Peel**  
 Public Works  
 Standard Drawing  
 NEW SANITARY SEWER CONSTRUCTION  
 MAINTENANCE HOLES  
 REV. DATE: MARCH 2017  
 DRAWN BY: ANLEY GROUP  
 APPROVED BY: ANLEY GROUP  
 SCALE: N.T.S.  
 SHEET NO.: 2-5-1

**Region of Peel**  
 Public Works  
 Standard Drawing  
 BEDDING DETAILS FOR SEWERS  
 REV. DATE: MARCH 2017  
 DRAWN BY: ANLEY GROUP  
 APPROVED BY: ANLEY GROUP  
 SCALE: N.T.S.  
 SHEET NO.: 2-3-1

## Appendix C



**n Architecture Inc**  
 PRINCIPAL: NITIN MALHOTRA, ARCHITECT.  
 9120 Leslie Street, Suite-208  
 Richmond Hill, Ontario, L4B 3J9  
 T: 416 303 4821 F: 1 866 340 5265  
 E: info@narchitecture.com  
 www.narchitecture.com



29 JAN. 2020

PROJECT NORTH

NOT FOR CONSTRUCTION  
 ISSUED FOR ZBA  
 13 FEB. 2020

PROJECT STATISTICS

ADDRESS- 1480 DERRY ROAD EAST, MISSISSAUGA, ONTARIO  
 ZONING - D, TABLE BASED ON ZONE C5 STANDARDS

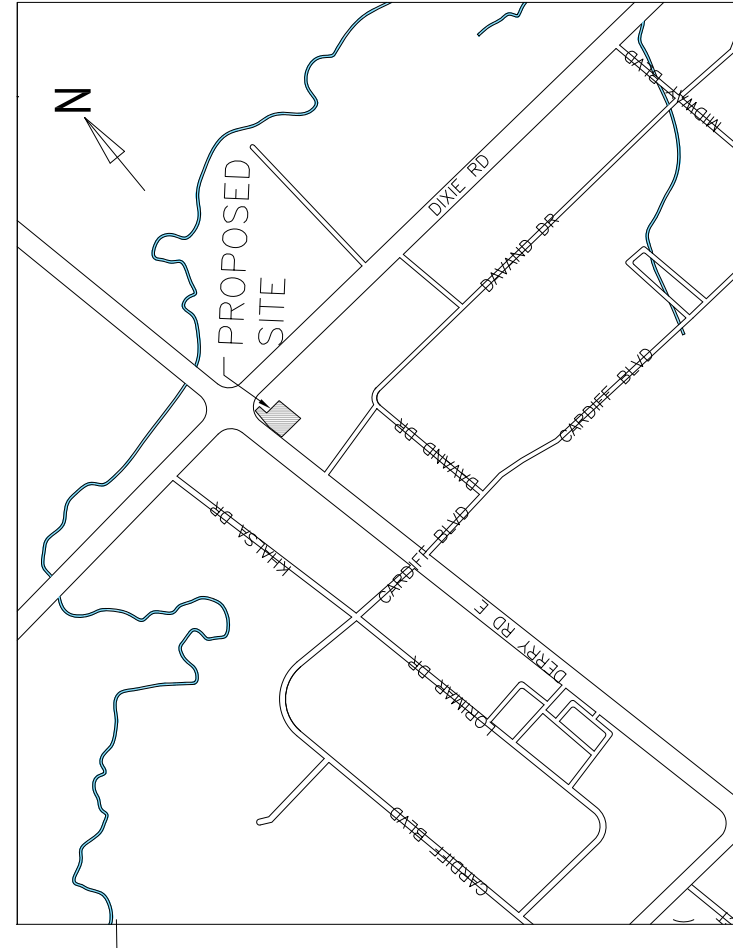
MIN. LOT AREA	REQUIRED-MIN.	PROVIDED
1762.70SQM. (0.43acre)	N/A	1762.70SQM. (0.43acre)
MIN. LOT FRONTAGE	48.0M	55.57M
PROPOSED C-STORE	-	167.25 SQM.
PROPOSED TAKE OUT RESTAURANT	-	92.90 SQM.
MAX. GROSS FLOOR AREA (G.F.A.)	N/A	260.15 SQM. (16,317%)
LANDSCAPED AREA	-	260.15 SQM. (14,75%)
BUILDING COVERAGE	6M	1 STOREY (5.9M)
MAX. BUILDING HEIGHT	-	1215.04 (68.93%)
PAVED AND ASPHALT AREA	-	0.14 < 0.45
FLOOR SPACE INDEX : GROSS FLOOR AREA / LOT AREA	260.15 / 1762.70 =	0.14 < 0.45
MAX INT SIDE YARD	4.5M	10.25 ON WEST, 1.35M ON EAST
MAX REAR YARD	4.5M	1.5M
MIN. BUFFER STRIP REQUIRED FROM THE STREET LINE	4.5M	1.5M
MIN. BUFFER STRIP REQUIRED FROM ADJACENT EMPLOYMENT USE	3.0M	1.5M

BUILDING SETBACK

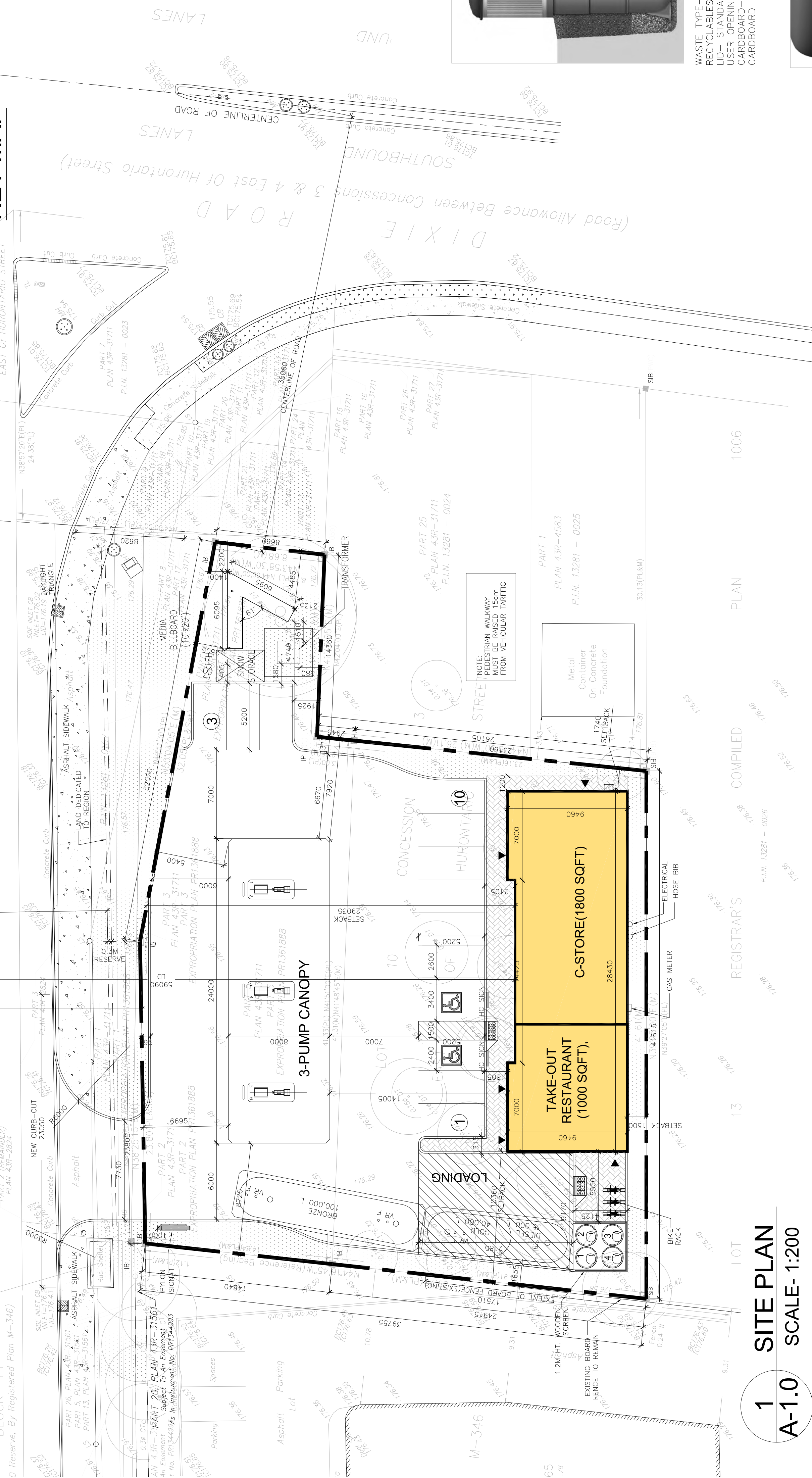
FRONT YARD (NORTH)	REQUIRED-MIN.	PROVIDED
4.5 M.	4.5 M.	28.60 M.
REAR YARD (SOUTH)	4.5 M.	1.50 M.
SIDE YARD (WEST)	4.5 M.	10.25 M.
SIDE YARD (EAST)	4.5 M.	1.74 M.

PARKING CALCULATIONS

REQUIRED-MIN.	PROVIDED
C-STORE (5.4/100 SQM.)	9
TAKE-OUT RESTAURANT (6/100 SQM.)	6
TOTAL	15
BARRIER FREE PARKING	2
LOADING SPACE MIN.	1



KEY MAP



1 SITE PLAN  
 A-1.0 SCALE- 1:200

- All pedestrian walkways must be raised approximately 15cm (6 in.) from vehicular traffic to provide definition & protection for pedestrian.
- I hereby certify that this drawing conforms in all respects to the site development plans as approved by the City of Mississauga under file number [redacted] Architect's or Engineer's Signature (if applicable) and Professional Seal
- All proposed curbing within the municipal boulevard area for the site is to suit as follows:  
 \* for Industrial, Commercial & condominium developments, all entrances to the site are to be in accordance with O.P.S.D. 350.0.10.  
 The site plan is to be read in conjunction with the "site statistics details & specifications" plan prepared by n Architecture Inc. & grading plan prepared by C.Ramanathan
- Fire access route will be designed to support a load of not less than 11 363kg per axle and have a change in gradient of not more than 1 in 12.5 over a minimum distance of 15.0m.  
 \* fire route will be designed as per by-law-1036-81 as amended
- Note: If the final course of asphalt paving is delayed, install a temporary lift of asphalt and ramps or curb cuts to provide barrier free access.
- Only shielded exterior lighting fixtures will be used except as required for compliance with the Ontario Building Code or recommendations of the Illuminating Engineering Society of North America (IESNA) lighting handbook for uses and/or activities.

- It is recommended that the applicant contact this Department to determine our position on the variances.
- \*The City Of Mississauga requires that all working drawings submitted to the Building Division as part of an application for the issuance of a building permit shall be certified by the architect or engineer as being in conformity with the site development plan as approved by the City Of Mississauga.\*
- \*All roof top mechanical units shall be screened from view by the applicant.\*
- \*All Exterior lighting will be directed onto the site and will not infringe upon the adjacent properties.\*
- Only "shielded" lighting fixtures are permitted.
- The Owner covenants and agrees to install "shielded" lighting fixtures on the subject lands.
- The applicant will be responsible for ensuring that all plans conform to Transport Canada's restrictions.
- The applicant is responsible for ensuring that tree protection hoarding is maintained throughout all phases of demolition and construction in the location and condition as approved by the Planning and Building Department. No materials (building materials, soil, etc.) may be stockpiled within the area of hoarding failure to maintain the hoarding as originally approved or the storage of materials within the hoarding will be cause for the Letter of Credit to be held for two (2) years following completion of all site works. Hoarding must be prior to the removal of any tree hoarding from the site.

**LEGEND**

- EXISTING BUILDING
- PROP. BUILDING
- LANDSCAPING
- PAINTED LINES
- NO PARKING
- ASPHALT DRIVEWAY
- CONCRETE STAMP
- CONCRETE WALKWAY
- 150 MM RAISED SETBACK
- HANDICAP PARKING
- MAN DOOR
- OVERHEAD DOOR
- FIRE ROUTE
- CATCH BASIN
- PERMEABLE PAVING (ALL SIDEWALKS PERMEABLE)

**2 GARBAGE ENCLOSURES**  
 A-1.0 MOLOK DEEP COLLECTION - M5000

WASTE TYPE- MIXED WASTE, PAPER, MIXED RECYCLABLES, CARDBOARD  
 USER OPENING- FULL OPEN- 69 cm DIAMETER  
 CARDBOARD- LID MODIFIED WITH SLOT OPENING FOR CARDBOARD

LIFTING BAG- HARD-SIDED LIFTING CONTAINER

LID- STANDARD  
 USER OPENING- FULL OPEN- 69 cm DIAMETER  
 FRAMING- WOOD FRAMING

**MUNICIPAL ADDRESS & LEGAL DESCRIPTION:**  
 1480 Derry Road East, Mississauga, ON  
 Part of LOT 10, CONCESSION 3 EAST OF HURONTARIO STREET, 43R31711 PTS 5, 6 (Geographic Township Of Toronto) CITY OF MISSISSAUGA, Regional Municipality Of Peel

**OWNER:**  
 Vicky Aulakh (Gurwinder Singh Aulakh)  
 P. Aulakh & Co. Ltd.  
 1480 Derry Road East, Mississauga, ON.  
 Email : aulakh.v@notmail.com

**APPLICANT:**  
 NITIN MALHOTRA  
 n ARCHITECTURE INC.  
 9120 LESLIE STREET, SUITE-208,  
 RICHMOND HILL, ONTARIO, L4B 3J9  
 TEL: 416-303-4821  
 FAX: 1-866-340-5265  
 EMAIL: nm@narchitecture.com

**SURVEY INFORMATION TAKEN FROM:**  
 GREATER TORONTO AGRES SURVEYING INC.  
 7003 STEELES AVE. WEST, UNIT12, TORONTO ON M9W 0A2  
 TEL: (416) 679-0572  
 EMAIL: jw@greatersurveying.ca  
 PROJECT: 17208

**PROJECT:** 1480 DERRY ROAD EAST, MISSISSAUGA, ONTARIO

**DATE:** 21 NOV. 2019  
**SCALE:** AS NOTED  
**DRAWING NO.:**  
**16-90**  
**A-1.0**

**PROJECT** Gas Station  
**CONSULTANT** n Architecture Inc.  
**PROJECT NO.** n 1690  
**CITY OF MISSISSAUGA**  
**DESIGN CHART S1: SANITARY SEWER DESIGN SHEET**

AREA (Land Use Type)	UPSTREAM MH	DOWNSTREAM MH	FLOW			DESIGN FLOW			PIPE							
			Area (ha.)	AVG. FLOW (L/s)	TOTAL AREA (ha.)	INFILTRATION FLOW (L/s)	TOTAL FLOW (L/s)	DESIGN FLOW (L/s)	LENGTH	SIZE	GRADE	CAP.	(DES.)CA P. (%)	EXTR. CAP. (%)	DES. VEL.F ULL	EXTR. VEL. FULL
1480 (Commercial)	<b>BUILDING PLUG</b>	<b>SAN MH1A</b>	0.170	13.00	0.170	0.034	13.03	13.03	9.0	300	2.50	152.9	9%	0%	0.98	2.19
	SAN MH1A	SAN MH2A						13.03	18.5	300	0.50	68.4	19%			
	SAN MH2A	SAN MH3A						13.03	14.5	300	1.50	118.4	11%			
	SAN MH 3A	SAN MH4A						13.03	119.0	300	2.50	152.9	9%			
	SAN MH4A	Ex Pipe						13.03	100.0	300	2.50	152.9	9%			



**TABLE B2: Fire Flow ( FIRE FLOW CALCULATION as per FIRE UNDERWRITERS SURVEY (1999)**

**PROJECT:** 1480 Derry Road East  
City of Mississauga, ON

**1. Fire Flow Equation**

$$F = 220 C \sqrt{A}$$

where F is the required fire flow [LPM]  
C is the coefficient determined by type of construction [unitless]  
A is the total protection area [sq.m]

**2. Architecture Information**

Type of Construction	Fire-resistive
Fire Rating, Vertical Separation	Inadequate
Sprinkler Provided (Y/N)	No
<b>Total Floor Area [sq.m]</b>	179
Coefficient, C [1]	0.8
Fire Flow, F [LPM]	2352
Fire Flow, F [LPM]	2000

Round to nearest 1000

**3. Occupancy Reduction**

Occupancy Adjustment	0.85
Fire Flow, F [LPM]	1700

Limited Combustible

**4. Sprinkler Reduction**

Sprinkler Reduction	0.00
Sprinkler Reduction [LPM]	0

**5. Exposure Adjustment**

North	0%
East	0%
South	0%
West	15%
<b>Total</b>	<b>15%</b>
Exposure Adjustment [LPM]	255

**6. Required Fire Flow, Duration & Volume**

Fire Flow, F [LPM]	1700
Sprinkler Reduction [LPM]	0
Exposure Adjustment [LPM]	255
Required Fire Flow [LPM]	1955
Required Fire Flow [LPM]	<b>2000</b>
Required Fire Flow [LPS]	<b>33</b>

Round to nearest 1000

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