



22 January, 2022

Frank Belerique
Horizon Marco Polo LP
By its General Partner
Horizon Marco Polo Inc.

Marco Polo 100 Residential Development Fourth St, Gananoque – Water Servicing Options

Dear Frank,

Pursuant to your request and following the discussion with Town of Gananoque Planning and Public Works staff, Groundwork Engineering Limited (GEL) has completed a review of three water servicing options for the Marco Polo 100 residential development. It is understood that the municipality wish to ensure that the safety of the drinking water be maintained and that options be reviewed that offer the opportunity for future development of the area. A sketch of the three options considered is attached.

The nearest existing municipal water main is located on Fourth Street and the Gananoque Waterfront Trail – Lions Loop at the northeast corner of the Marco Polo development. It is our intent to extend the 200mm water main from this point along Fourth Street to the entrance of the development. Valving and a short stub of water main will allow for future extension of the pipe network to the west.

Option 1 entails installation of a 200mm private water service to the first hydrant, reducing the service to 150mm and extending the service to a flushing hydrant at the emergency vehicle turn-around. Each dwelling will be provided with a 38mm service. The water service will remain private for its entirety and since there is not a continuous loop will require regular flushing and chlorine residual sampling to ensure the required disinfection levels are maintained. Maintenance of the service will be responsibility of the developer. Future expansion of the Marco Polo development will require the 150mm water service be extended southward. The pipe could then be terminated at the Third Street unopened road allowance property line. This would allow the service to be tied into any future development of utilities along Third Street and eliminate a dead end in the network.

Option 2 entails extension of the 150mm water service approximately 100m to the east and connection to the water network servicing Gananoque Family Housing Inc. at 334 Victoria Avenue. This option assumes the adjacent property owner will approve the connection.

Option 3 entails extension of the 200mm water main on Fourth Street to the Birch Street unopened road allowance and then southward on the road allowance approximately 200m to the Third Street unopened road allowance. Since there would be no continuous loop to the network a flushing hydrant would be installed at the end of the main. Individual services will be extended to each dwelling unit in the development. Fire hydrants will be extended to the property boundary of the Birch Street

unopened road allowance. Since the water main and hydrants are on public property it would be the requirement of the municipality to maintain and service this infrastructure.

Option 3 requires that the Birch Street unopened road allowance be cleared and grubbed and the grade raised with imported fill prior to installation of the water main and hydrants. Since this is a low area, it will require a large amount of fill and dewatering during placement of the fill. It is understood that the municipality has some fill available however the cost to transport and place the fill will be considerable. The water main and appurtenances will be on public property therefore the municipality will assume responsibility for maintenance and operation once fully constructed, tested and disinfected. This option requires the longest length of pipe be installed and the most work for the developer. We would assume that some degree of cost sharing would be required to make this option viable for the developer.

Option 2 would allow the pipe network to be looped. This would negate the requirement for regular sampling and flushing. Approval and agreement with the adjacent property owner would be required to enable this option. This will take some time and may delay the project. The developer would be required to carry all the cost of the additional 100m of water main and appurtenances and reinstatement of the disturbed area. Future development of the Marco Polo site would still require that the water service be extended southward to the Third Street unopened road allowance.

Option 1 does not allow for immediate looping of the water network. It entails the installation of the shortest length of pipe for the development. Since this service is located entirely on private property it will require regular maintenance and sampling from a flushing hydrant located at the furthest southern extent of the service by the developer. The pipe can be extended in future expansion of the Marco Polo development to Third Street and provide the recommended looping of the network with a connection to the future municipal water main on Third Street.

We recommend Option 1 as it provides for a safe and regularly maintained water service with the shortest length of pipe installed. Future development of the site will allow for extension of the service to Third Street and looping of the network with the municipally owned and operated infrastructure.

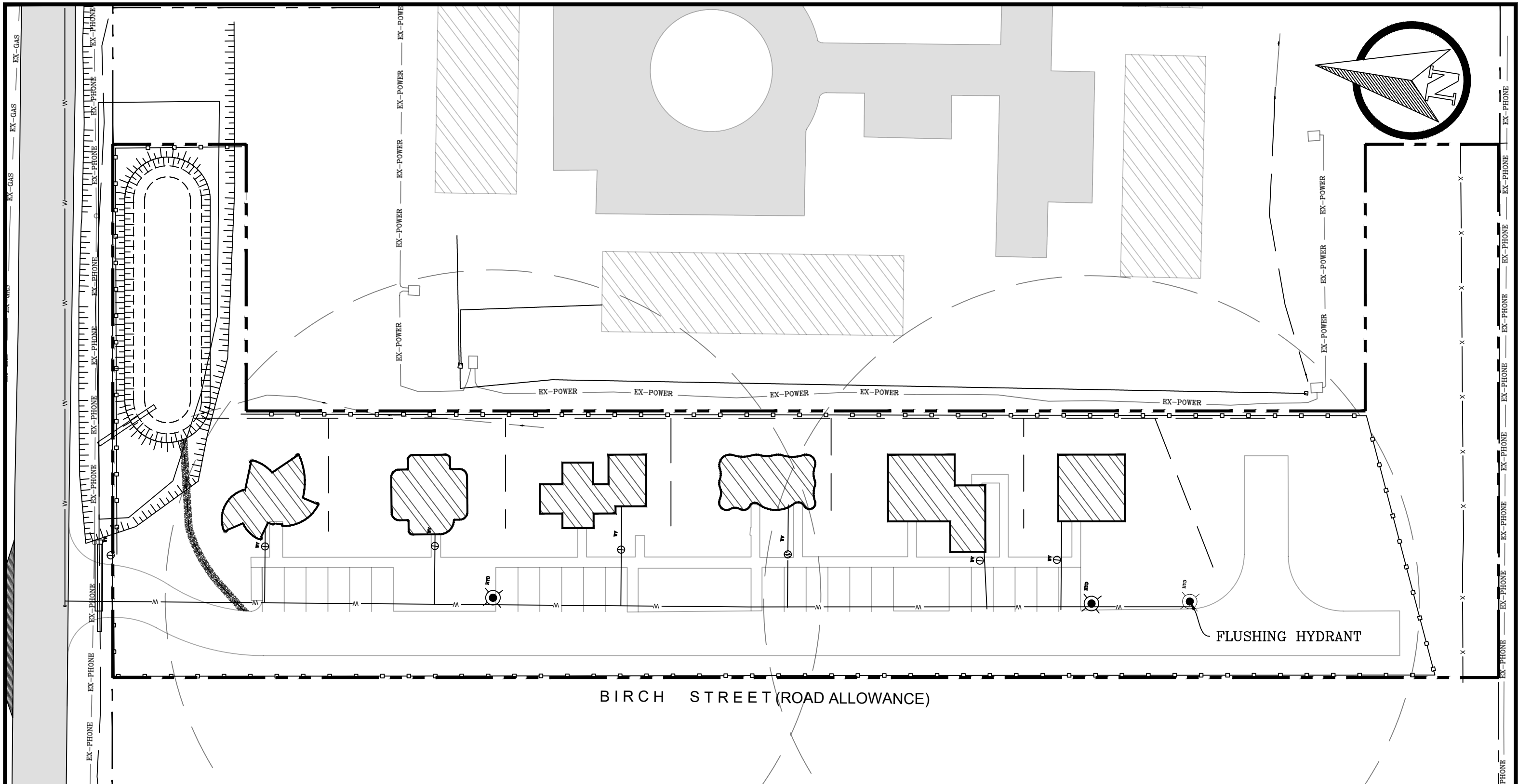
We trust this is satisfactory for your purposes. Should you require further information, or have any questions please do not hesitate to contact the undersigned.

Sincerely,



Martin Burger
M.Eng., P.Eng.

Attachment: Water Servicing Options Sketches



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Client / Land Owner:
**HORIZON
LEGACY**

Project:
MARCO POLO 100 DESIGN CHALLENGE

GANANOQUE ONTARIO

Drawing Title:
WATER SERVICE OPTION 1

Project Number:
GW-21050

Drawing Number:
OPT 1

SHEET 1 of 1

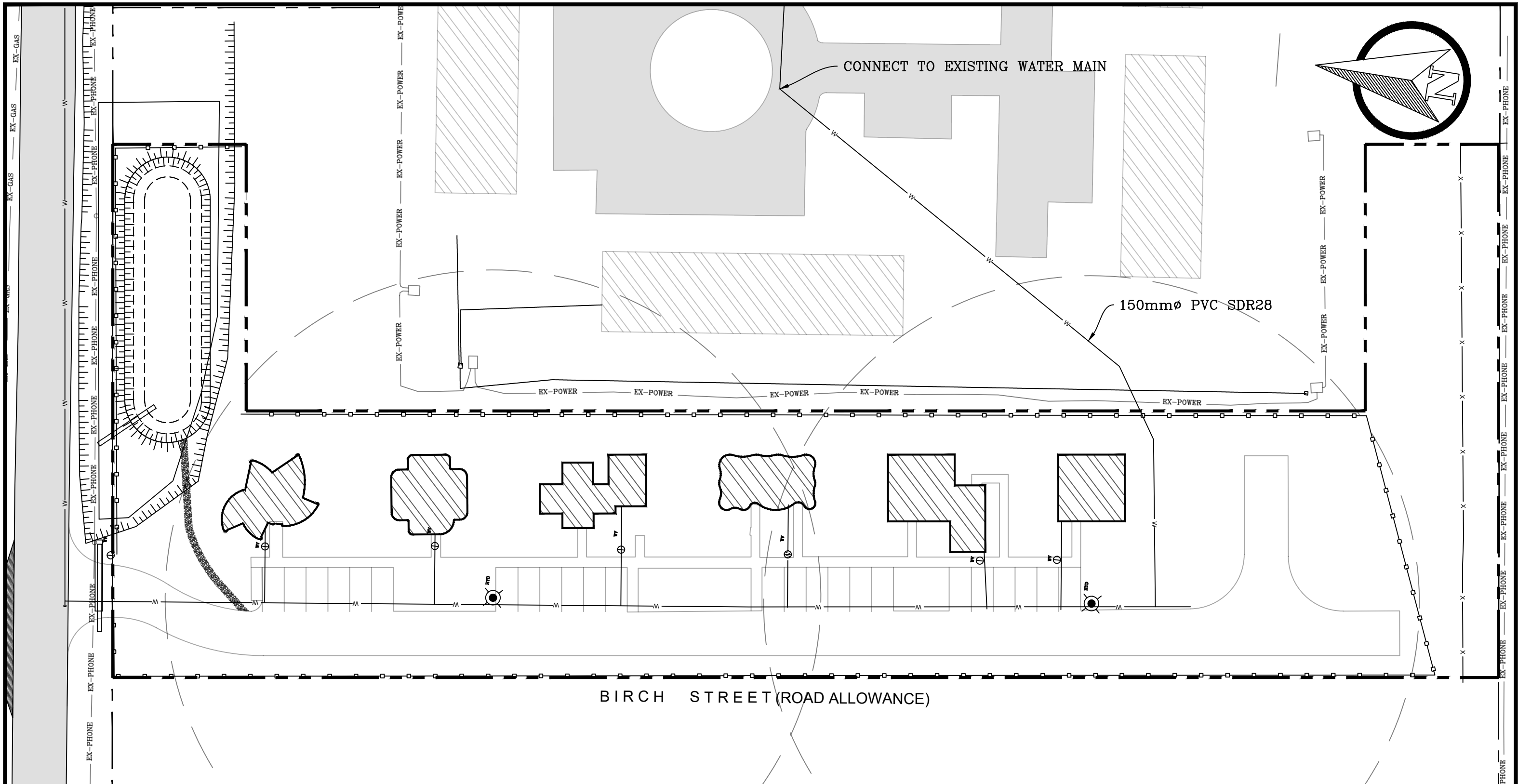
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Checked By: **MB**

Scale: **1:500**

Date: **OCT 26, 2021**

REVISIONS		
No.	Description	Date
1.	ISSUED FOR DISCUSSION	2022/01/05



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Drawing Title:
WATER SERVICE OPTION 2

Project Number:
GW-21050

Drawing Number:
OPT 2

SHEET 1 of 1

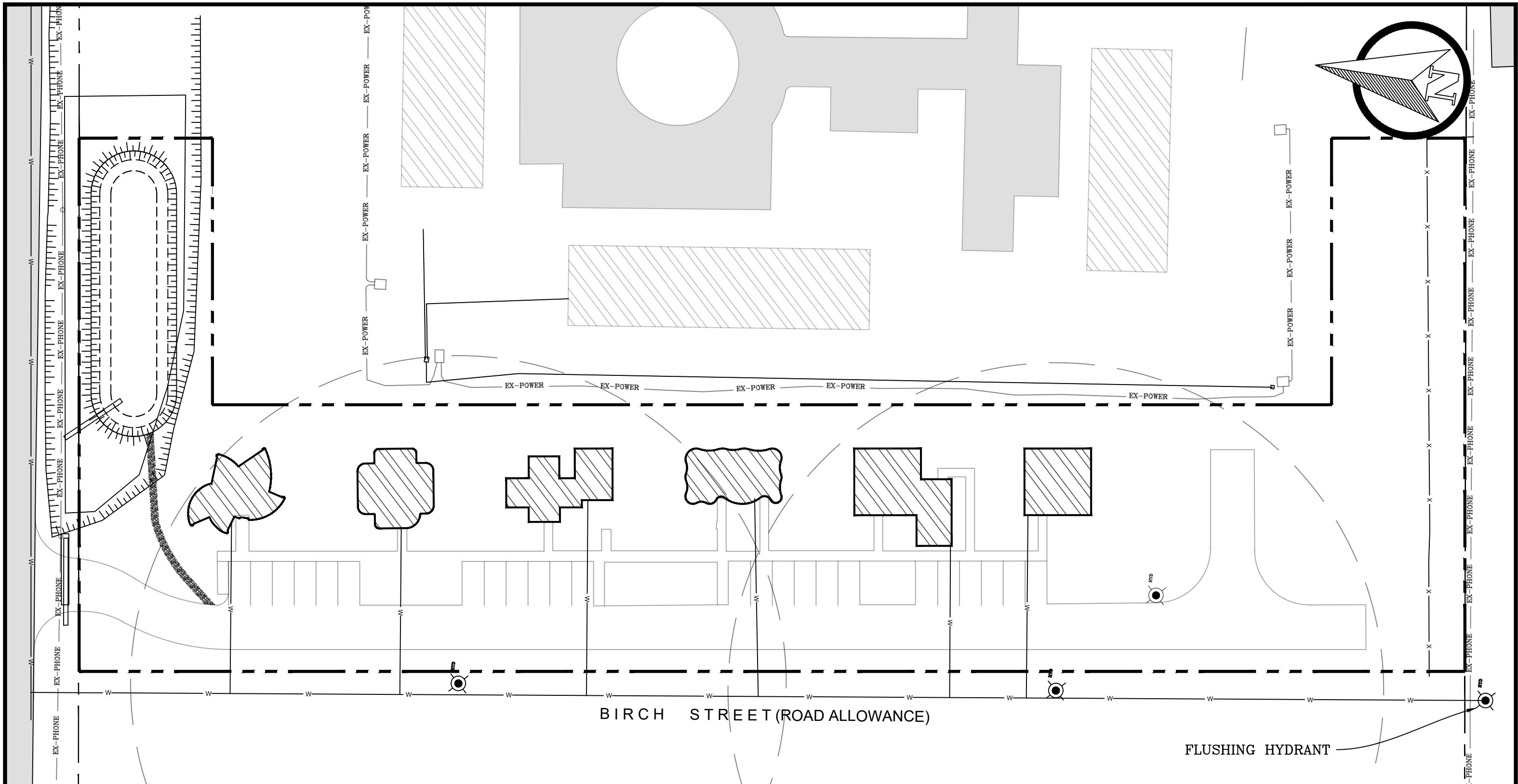
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Drawing Title:
WATER SERVICE OPTION 3

Project Number:
GW-21050

Drawing Number:
OPT 3

SHEET 1 of 1

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