

December 15, 2021

Environmental Approvals Branch
Manitoba Sustainable Development
1007 Century Street
Winnipeg, Manitoba R3H 0W4

Attention: Laura Pyles
Director (Acting)

Re: Portage Avenue Gravity Interceptor Sewer Replacement at Omand's Creek – Notice of Alteration

Dear Director:

On behalf of the City of Winnipeg Water and Waste Department, KGS Group has prepared this Notice of Alteration (NOA) to update you on proposed repairs to the Portage Avenue gravity wastewater sewer under the Environment Act Licence (EAL) No. 2684 RRR. The existing gravity wastewater sewer pipe is nearing the end of its service life and is scheduled for repairs in early 2022 as part of the City of Winnipeg's asset management program.

The work involves the replacement of an existing pipeline and results in no change to environmental effects.

This report provides supporting documentation to the Notice of Alteration including the:

- Project Background
- Project Schedule
- Regulatory Requirements Review
- Description of the work
- Temporary sewer by-pass requirements
- Assessment of potential environmental effects

The associated design drawings for this project are also attached as Appendix A.

1.0 BACKGROUND

KGS Group was retained by the City of Winnipeg to replace the portion of the Portage Avenue Interceptor sewer that extends across and below Omand's Creek approximately 80m east of the Empress Street East overpass. The existing sewer was installed in 1958 and conveys combined sewage (wastewater and stormwater) flows in Winnipeg. Sewage flows from three upstream sewer districts (Ferry Road, Riverbend and Tylehurst Sewer Districts) are collected in the interceptor pipe on the west side of the creek and conveyed by gravity to the Clifton Sewer district on the east side of the Creek. The Portage Avenue interceptor, including the portion across Omand's Creek, is nearing the end of its service life and is due for rehabilitation or replacement as part of the City of Winnipeg's Sewer Asset Management Program.

The interceptor sewer along Portage Avenue upstream of Omand's Creek is a 900 mm concrete sewer and was rehabilitated earlier this year (under a separate City project) using the trenchless internal inline repair method of Cured in Place Pipe (CIPP). The portion of the gravity interceptor sewer crossing Omand's Creek has several bends that restrict the use of trenchless sewer rehabilitation techniques and will require an open cut method to replace the sewer. This portion of the interceptor sewer across Omand's Creek includes approximately 77 m of 600 mm pipe.

The planned sewer replacement is impacted by or impacts other adjacent utilities and infrastructure. Much of the adjacent infrastructure was installed in 1992 as part of the Portage Avenue Culvert and Underpass project. Relevant infrastructure installed as part of that project includes two watermain crossings, a 250mm PVC main installed on the north side of the existing interceptor sewer, and a 350 mm PVC main installed on the south side. Other relevant infrastructure includes the concrete abutments and rock columns to support the bridge and surrounding area. The watermains, abutments, rock columns and other adjacent infrastructure assets are presented on the drawing in Appendix A. Several constructability conflicts exist between the planned sewer replacement and the adjacent infrastructure that are mitigated through the proposed design and described herein.

2.0 SCHEDULE

The project was tendered in late November 2021 with construction anticipated from mid-January 2022 to mid-March 2022. The work has been planned during the winter months to mitigate several project risks including:

- Department of Fisheries and Oceans (DFO) – Working under frozen conditions supports the regulatory requirements of DFO (see Section 3 for more details).

- Reduced Wastewater Flows – Temporary by-passing of the gravity sewer system is required to support the work. The sewer conveys combined sewer flows in the spring and summer months, but only conveys wastewater flows during the winter season reducing project risks (See Section 5 for more details).
- Water Demand –The existing 350 mm watermain must be temporarily removed from service to facilitate the sewer works. Reduced water demand during the winter season mitigates the impacts on the regional water distribution system (see Section 4 for more details).

3.0 REGULATORY REQUIREMENTS

This section outlines the results of KGS Group’s review of regulatory approval requirements to support the Portage Avenue Interceptor Sewer Replacement at Omand’s Creek in Winnipeg, Manitoba. KGS Group completed a screening of requirements of DFO, Transport Canada, Manitoba Conservation and Climate (MCC) and the Historic Resource Branch (HRB) as described in the following subsections.

3.1 Fisheries and Oceans Canada

The Fisheries Act provides protection of aquatic species and the habitats upon which they depend and requires that projects avoid killing fish or result in a harmful alteration, disruption or destruction (HADD) of fish habitat. Additionally, the Species at Risk Act (SARA) prohibits the killing, harming, harassment, possession, capturing or taking of a species listed as extirpated, endangered or threatened and the damage or destruction of a residence or the destruction of any part of the critical habitat of such a listed species. The mapleleaf mussel (*Quadrula quadrula*), which is listed as Threatened on Schedule 1 of SARA, is known to inhabit the Assiniboine River, which Omand’s Creek flows into approximately 380 m downstream of the site.

The proposed work at Omand’s Creek will be constructed by a combination of open-cut excavation and trenchless methods during the winter with the existing sewer either abandoned in place or removed and the new sewer installed immediately adjacent abandoned sections or in the same location. There will be no infilling of fish habitat or change in substrate conditions after the work is completed such that the project will not result in a HADD of fish habitat. The bottom elevation of Omand’s Creek at the project site is between approximately 225 to 226 m whereas the average winter water level on the Assiniboine river at the confluence of Omand’s Creek is 224.01 m. As such, it is anticipated that the creek at the project site will either be dry in the winter or any local runoff would be frozen to the bottom and therefore would not provide suitable Mapleleaf Mussel habitat. Based on this assessment the project will adhere to both the Fisheries Act and SARA and therefore submission of a Request for Review is not required.

3.2 Transport Canada

The Canadian Navigable Waters Act (CNWA) authorizes and regulates interferences with the public right to navigation. The primary purpose of the CNWA is to regulate works and obstructions that may interfere with navigation in Canada's navigable waters. In accordance with the CNWA, an application must be submitted to the Navigation Protection Program (NPP) by an owner who proposes to construct, place, alter, rebuild, remove or decommission a work, in a waterway on the list of scheduled waters, unless the work meets the criteria set out in the Minor Works Order. In cases where the work, including a designated major work, does not interfere with navigation, the owner is not required to apply to Transport Canada.

While Omand's Creek is not a scheduled waterbody it is considered navigable. However, the construction work will be conducted during the winter outside of the navigation season when the creek is dry or frozen to the bottom. Additionally, the material excavated during construction will be replaced with no proposed changes to the creek substrate and side slopes. As such the project will not interfere with navigation. Therefore, KGS Group has completed a "No Interference With Navigation Notification of Work".

3.3 Historic Resource Branch

Under Section 12(2) of The Heritage Resources Act, if the Minister of Sport, Culture and Heritage has reason to believe that heritage resources or human remains are known, or thought likely to be present, on lands that are to be developed, then a Heritage Resources Impact Assessment (HRIA) and mitigation is required to be conducted prior to the project's start. As such for projects in Manitoba that include subsurface disturbance a heritage screening request is typically prepared and submitted to the HRB to determine if there are concerns that the project might impact heritage resources and require completion of an HRIA.

Considering the level of existing sub-surface disturbance at the project site and surrounding area associated with the Portage Avenue Bridge Structure, the existing sewer and watermains and previously installed rock caissons, it is anticipated that there would no longer be any potential heritage resources or human remains present. As such a Screening Request form will not need to be submitted to HRB.

3.4 Municipal

As per City of Winnipeg Waterway By-Law No. 5888/92, a Waterway Permit to complete the repair works along Omand's Creek will be obtained prior to commencing construction. KGS Group is in process of preparing and submitting the Waterway Permit Application for this project, and the permit is expected to be in place for construction to commence in mid-January 2022.

3.5 Manitoba Conservation and Climate

This report has been issued with the Notice of Alteration to support the requirements of the Environmental License 2684 RRR and demonstrates that no change to the Environment is anticipated with the planned work on the Portage Avenue interceptor sewer.

Environmentally significant developments within the Province of Manitoba are required to be assessed and licensed under The Environment Act (C.C.S.M. c. E125). The purpose of assessment is to ensure that proposed projects are designed, constructed, and operated in an environmentally responsible manner consistent with provincial environmental legislation, policies, and guidance.

The current project involves a “Wastewater Collection System” that are considered part of a “Wastewater Treatment Plant” under C.C.S.M. c. E125 and thus would be classified as a Class 2 Development.

The sewer flows conveyed in the Portage Avenue Interceptor ultimately flow to the North End Sewage Treatment Plant (NEWPCC) in the City of Winnipeg and thus could be considered under Environmental Act License 2684 RRR.

The interceptor sewer across Omand’s Creek is being replaced as it is near the end of its design life. The replaced asset will function in the same manner as the current pipe with minor modifications to enhance serviceability and to support construction conflicts. The construction works and replaced pipe will not have a change to the Environment Effects as demonstrated in the subsequent sections of this report supporting the NOA.

4.0 DESCRIPTION OF PROPOSED REPAIRS

A replacement the existing gravity wastewater collection pipe is the recommended approach to maintain the current level of service in the Portage Interceptor Sewer. Details of the proposed pipe replacement works are shown in the issued for Tender Drawings for City of Winnipeg Tender 723-2021 (included in Appendix A). A brief description of the proposed works is provided below:

4.1 Upgrades to adjacent infrastructure to support the work:

The existing 350 mm watermain across Omand’s Creek will need to be taken out of service to support the replacement of the sewer pipes. Two new 350 mm diameter valves will be installed on the watermain at either side of the creek before construction commences to facilitate the open cut works. The portion of the 350 mm watermain across the creek will be taken out of service during construction. Water distribution in the vicinity has been evaluated by the Water and Waste Department at the City of Winnipeg and found to be adequate for this project during the winter months when water demand is reduced.

New watermain piping will be installed following the installation of the new gravity sewer with a minimum clearance of 3 m.

4.2 Temporary Sewer By-Pass

Temporary by-pass pumping is required to redirect the gravity flows around the project site while the existing sewer is being replaced. The design requirements for temporary by-pass include instrumentation and monitoring; appropriately selected pumps to support the flow; and redundant pumps to ensure flows are maintained throughout construction. This information is described further in Section 5.0.

4.3 Replacement of Gravity Sewer

Approximately 77.4 m of 600 mm diameter AWWA C905 PVC wastewater sewer will be installed across the creek. The sewer is installed with a depth of approximately 2 m of cover for frost protection and to stay above the till that is known to exist just below the exiting sewer pipe. Mechanical restraints have been included on the PVC joints across the river to provide redundant support to the sewer piping. The sewer piping is also being completely encased in stabilized concrete fill to 1 m above the pipe for the entire extents of the creek crossing.

New manholes are being installed at on both sides of the creek to support a modified alignment due to conflicts with the bridge infrastructure. The bridge abutments from the 1992 works were built over portions of the existing gravity sewer. As such the alignment of the sewer on the upstream and downstream ends are slightly modified to avoid the abutments and connect to new manholes installed as part of this project.

4.4 Removals and Abandonments

The existing sewer will be removed in the open trench as part of the new sewer installation. Portions of the existing sewer are located below the bridge abutment and cannot be removed. These sections will be filled with concrete cut and plugged at each end. The two existing manholes that are connected to the existing crossing will also be abandoned as part of the work. The abandonment will involve removal of the upper riser section and filling the lower sections with fill material.

4.5 Site Development

The following additional items have been included in the design to support the overall project site development and to mitigate regulatory requirements.

- The contractor will be required to provide proper warning signs and safety fencing around the working area to provide protection for the public during construction.
- The contractor will protect, remove, and replace trees as directed by the Engineer and in accordance with the City of Winnipeg Urban Forestry Branch.

- No stockpiling of material immediately adjacent to the creek will be permitted in accordance with the City of Winnipeg Waterways regulations.
- The contractor may not store or use fueling equipment adjacent to the creek and must have a mitigation plan in the case that a spill were to occur.
- The Contractor will restore the site to pre-construction contours, elevations, and conditions. This includes replacement and restoration of loose riprap, grouted riprap, turfstone revetment, and native grass revegetation as presented on the Drawing in Appendix A.

5.0 TEMPORARY BYPASS SYSTEM

Temporary by-pass pumping will be required to facilitate the sewer replacement works. Temporary by-pass pumping will be in accordance with the Tender specifications and Drawings, and will consist of a fully automatic pumping system that includes a minimum of two (2) non-clog submersible or two (2) non-clog suction lift pumps, each with a capacity equal to or greater than the peak dry-weather flow (PDWF) of 170 L/s that is anticipated during the winter months. Both pumps are to be installed, always connected to power and discharge piping, and be available for operation. Temporary by-pass pumping will be monitored by the Contractor throughout the project, including equipping the pumps with alarms and providing personnel to address any issues with the temporary by-pass pumping as required.

Following installation and commissioning of the replacement wastewater sewer, the temporary bypass system will be decommissioned.

6.0 EXISTING ENVIRONMENT AND EFFECTS ASSESSMENT

A description of existing environmental components, project-environment interactions, mitigation measures to be implemented in project design/construction, and resulting residual effects are provided in Table 1.

TABLE 1 PROJECT ENVIRONMENTAL INTERACTIONS, MITIGATION, AND RESIDUAL EFFECTS

Environment Component	Baseline Condition	Type of Interaction	Project Phase	Required Mitigation	Residual Effect(s)
Air Quality	In general, the City of Winnipeg has excellent air quality. The sources of airborne pollutants typically include industrial operations, vehicle and equipment emissions, fires, and other specific activities.	Emissions from equipment	Construction	<ul style="list-style-type: none"> Ensure all equipment is in good working order and is maintained throughout project Ensure all equipment is fitted with standard air emission control devices Avoid unnecessary idling of vehicles and/or heavy machinery Do not burn materials that will negatively affect air quality Comply with all permit conditions issued by Manitoba Conservation and Climate or other authority 	N/A
		Dust	Construction	<ul style="list-style-type: none"> Employ non-toxic dust control measures as required Avoid excavation activities during extremely windy periods Re-vegetate site as required Comply with all permit conditions issued by Manitoba Conservation and Climate or other authority 	
Soils	Based on previous geotechnical reporting of the site, the soil profile consist of brown and grey clays overlying till. The basement soil is a dense, consolidated till (Ref. TH-5, as shown on Drawings).	Disturbance, Compaction, Contamination	Construction	<ul style="list-style-type: none"> Limit grubbing and excavation operations to designated areas and utilize excavation boxes if possible Vehicles and machinery should use designated access roads/trails, laydown areas to avoid unnecessary compaction Ensure all equipment is in good working order, is free of fluid leaks, and is well maintained Ensure storage containers for hazardous goods are equipped with secondary containment Emergency spill kits kept on site and operators properly trained to use them so that any spills can be contained and cleaned up Ensure all fueling is completed well away from waterway (a minimum of 107 m away from waterway as per Tender specifications) All spills will be reported to the Manitoba Conservation Emergency Response Team at 204-944-4888 Comply with all permit conditions issued by Manitoba Conservation or other authorities 	N/A
Vegetation	The project site consists of landscaping (grass) and common riverbank trees, native grasses, and low shrub cover.	Loss of Vegetation	Construction	<ul style="list-style-type: none"> Refer to mitigation measures under Soils Make use of natural or existing clearings where possible Ensure appropriate firefighting equipment is on site and serviceable Protect trees near worksite as required to avoid damage Encourage natural regeneration of disturbed sites and/or revegetate site by seeding, tree planting, and shrub planting (in conjunction with City of Winnipeg Forestry, Naturalist Branch, and Parks) 	N/A
Aquatic Life	Surface water quality and flow will not be impacted by the project therefore no adverse effects on aquatic life are anticipated.	Disturbance, Contamination	Construction	<ul style="list-style-type: none"> Site to be restored to preconstruction conditions, including geometry and contours/elevations Limit grubbing and excavation operations to designated areas Vehicles and machinery should use designated access roads/trails, laydown areas Ensure all equipment is in good working order, is free of fluid leaks, and is well maintained Ensure storage containers for hazardous goods are equipped with secondary containment Emergency spill kits kept on site and operators properly trained to use them so that any spills can be contained and cleaned up 	N/A

TABLE 1 PROJECT ENVIRONMENTAL INTERACTIONS, MITIGATION, AND RESIDUAL EFFECTS

				<ul style="list-style-type: none"> All spills will be reported to the Manitoba Conservation Emergency Response Team at 204-944-4888 Comply with all permit conditions issued by Manitoba Conservation or other authorities 	
Heritage	As this is a replacement project and excavation is limited to the areas that have been previously disturbed, there is low probability of encountering any new materials; however, contractors and site inspectors will be instructed to stop work should a questionable item be observed.	Heritage Resources	Construction	<ul style="list-style-type: none"> If contractors discover any heritage resources during excavation activities, work must be stopped and the Historic Resources Branch of the Manitoba Government must be contacted immediately (204-945-2118) Comply with all permit conditions issued by Manitoba Conservation and Climate or other authority. 	N/A
Waste Management	Waste collection bins are placed nearby for pedestrian garbage collection. Waste generated by the project will be contained and disposed of off-site.	Waste Generation	Construction	<ul style="list-style-type: none"> Waste must be collected, sorted, transported, and disposed of based on its unique characteristics at a licensed facility Comply with all permit conditions issued by Manitoba Conservation and Climate or other authorities 	N/A
Socio-Economic	The adjacent Portage Avenue Bridge is located in a central area of Winnipeg. The site is well used by pedestrians and local residents. Several private residences and businesses are located adjacent to the bridge and project site.	Noise disturbance, traffic management	Construction	<ul style="list-style-type: none"> The City will notify adjacent landowners of the upcoming construction or potential traffic disruptions through letter mail. Public concerns may also be communicated through construction using the City's 311 system. 	N/A

7.0 CONCLUSION

Replacement of the portion of the Portage Avenue gravity sewer that crosses Omand's creek is required to ensure that the level of service is maintained to the Ferry Road, Riverbend and Tylehurst Sewer Districts in Winnipeg. The work has been tendered under the City of Winnipeg Tender 723-2021 using the Design and specifications described herein and in accordance with the City of Winnipeg Standard Construction Specifications. After implementation of the mitigation measures proposed, the Portage Avenue gravity interceptor sewer replacement poses no adverse environmental effects.

Prepared By:



Shaun Moffatt, M.Sc.
Senior Environmental Scientist

SM/tb

Attachment

Approved By:



Ray Offman, M.Sc., P.Eng.
Municipal Department Head

cc: Yvonne Hawryliuk, Manitoba Sustainable Development
Duane Baker, City of Winnipeg Water and Waste

STATEMENT OF LIMITATIONS AND CONDITIONS

Limitations

This report has been prepared for the City of Winnipeg in accordance with the agreement between KGS Group and the City of Winnipeg (the “Agreement”). This report represents KGS Group’s professional judgment and exercising due care consistent with the preparation of similar reports. The information, data, recommendations and conclusions in this report are subject to the constraints and limitations in the Agreement and the qualifications in this report. This report must be read as a whole and sections or parts should not be read out of context.

This report is based on information made available to KGS Group by the City of Winnipeg and unless stated otherwise, KGS Group has not verified the accuracy, completeness or validity of such information, makes no representation regarding its accuracy and hereby disclaims any liability in connection therewith. KGS Group shall not be responsible for conditions/issues it was not authorized or able to investigate or which were beyond the scope of its work. The information and conclusions provided in this report apply only as they existed at the time of KGS Group’s work.

Third Party Use of Report

Any use a third party makes of this report or any reliance on or decisions made based on it, are the responsibility of such third parties. KGS Group accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions undertaken based on this report.

APPENDIX A

Design Drawings

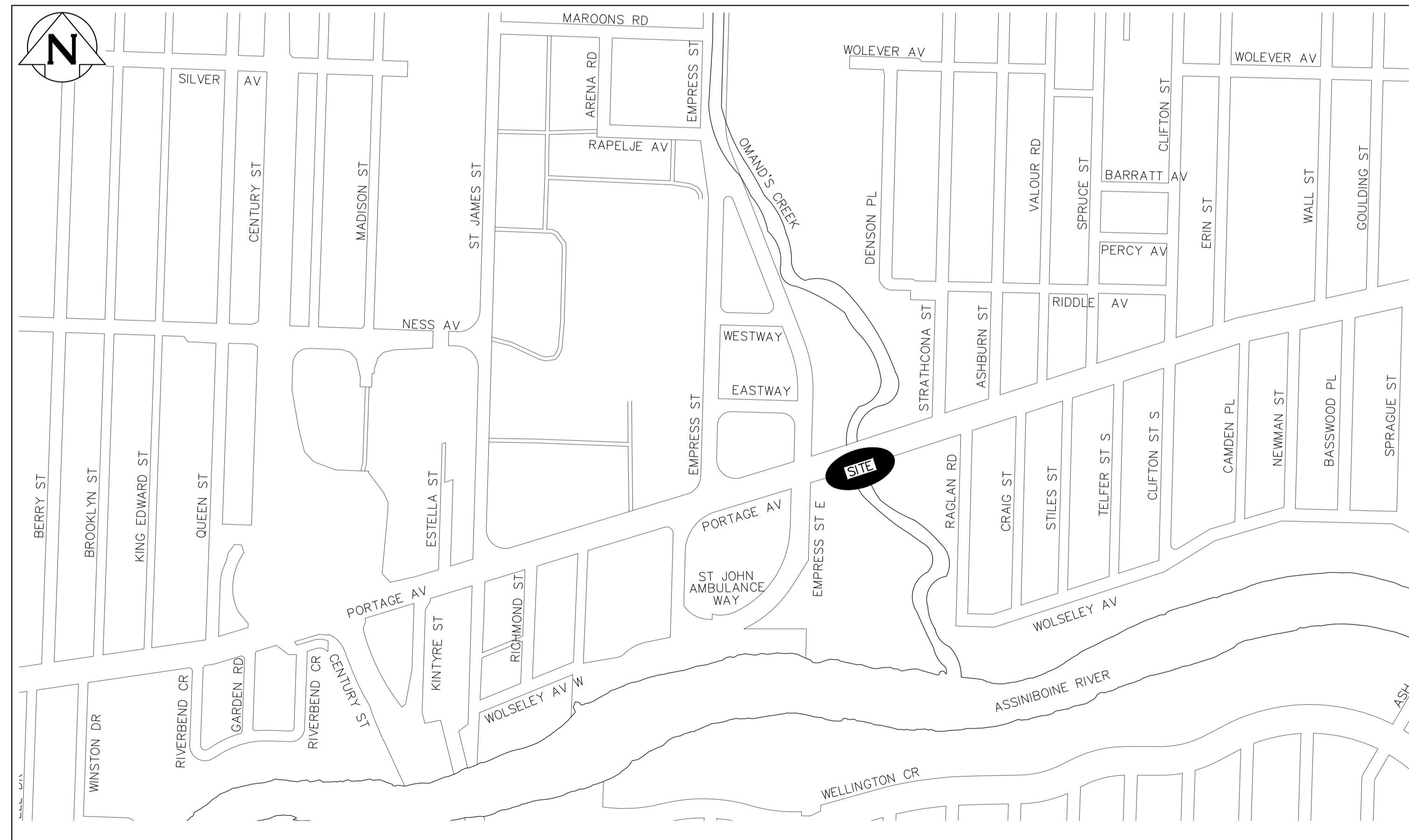


THE CITY OF WINNIPEG

WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

PORTAGE AVENUE INTERCEPTOR SIPHON REPLACEMENT AT OMAND'S CREEK

BID OPPORTUNITY 723-2021

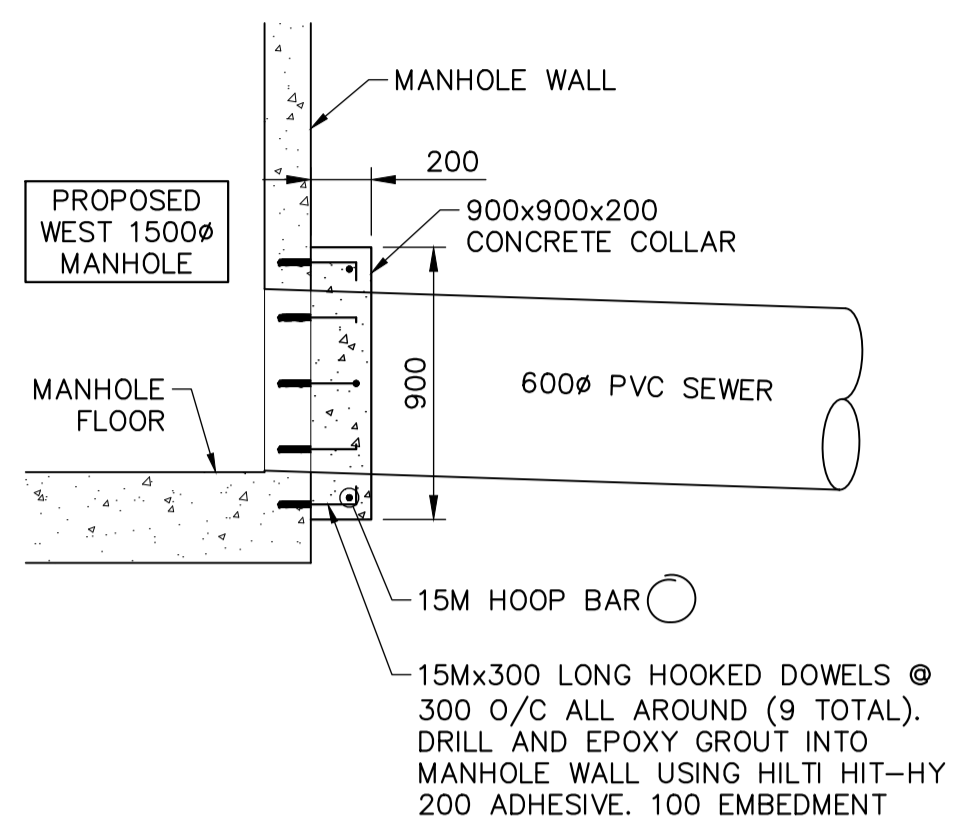


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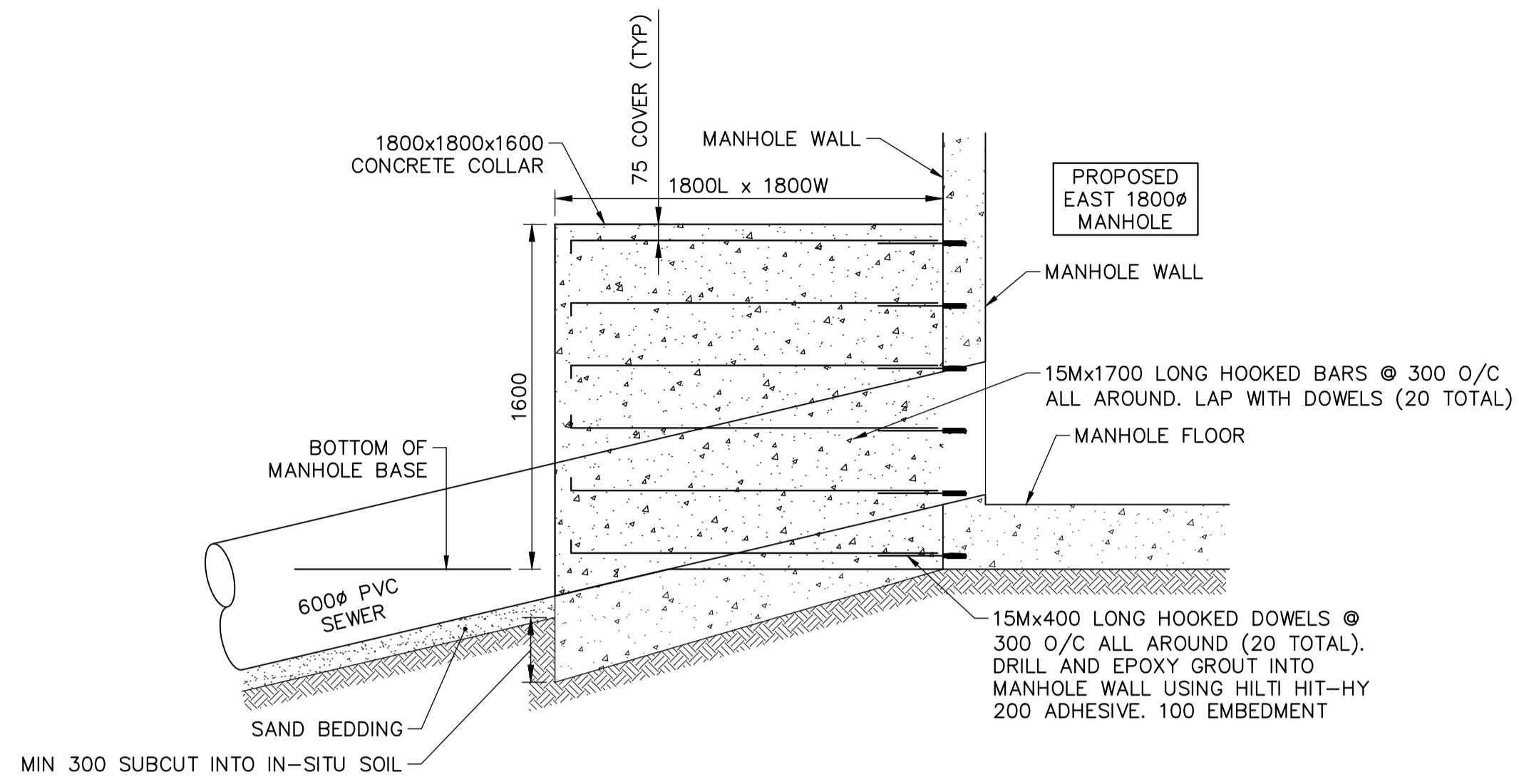
SHEET 1 OF 6
CITY DRAWING NUMBER



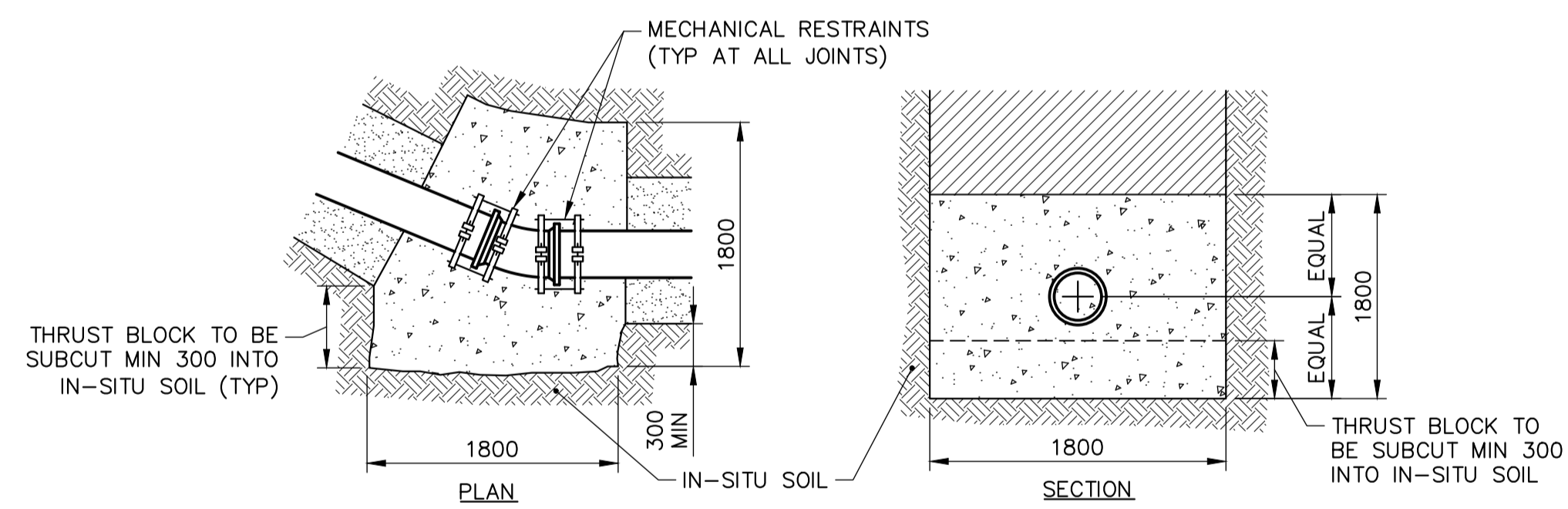
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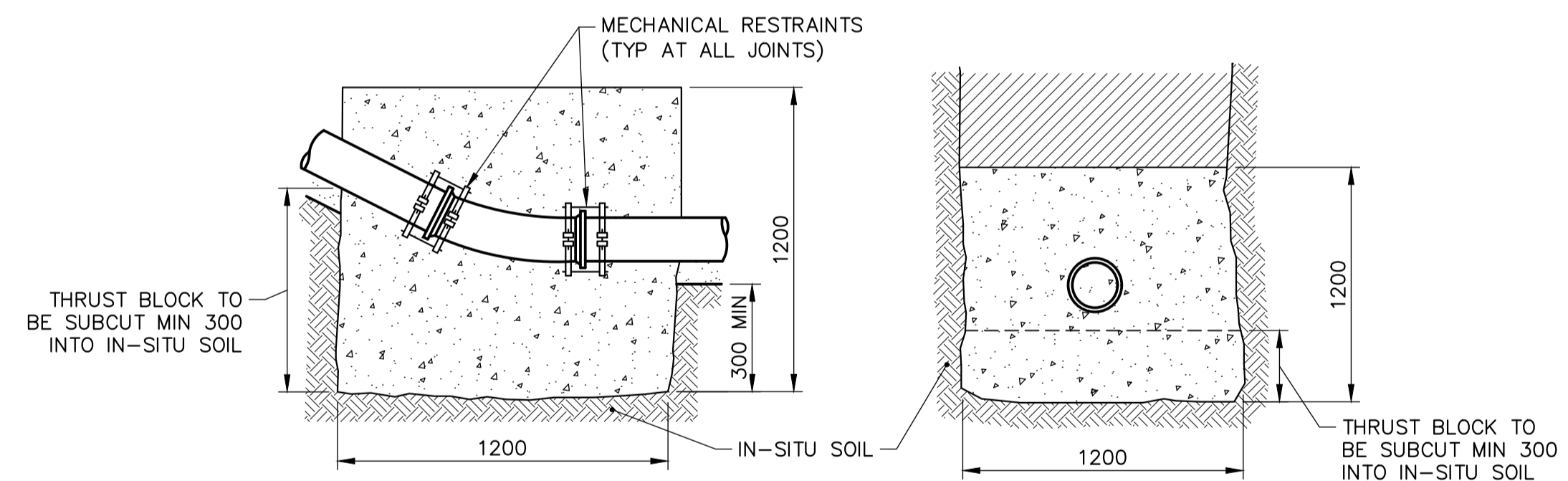
CONCRETE COLLAR AT 1500Ø MANHOLE
SCALE: 1:25



CONCRETE COLLAR AND THRUST BLOCK AT 1800Ø MANHOLE
SCALE: 1:25



11.25° AND 22.5° BEND THRUST BLOCK DETAIL
SCALE: N.T.S.



8.5° AND 13.25° VERTICAL BEND THRUST BLOCK DETAIL
SCALE: N.T.S.

ES ENGINEERS
GEOSCIENTISTS
MANITOBA
Certificate of Authorization
KGS Group
No. 245

FOR INDEX PAGE
SEE DWG 13025

METRIC
WHOLE NUMBERS INDICATE MILLIMETRES
DECIMALIZED NUMBERS INDICATE METRES

LOCATION APPROVED
UNDERGROUND STRUCTURES

SUPV. U/G STRUCTURES COMMITTEE DATE

NOTE:
LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL UTILITIES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. ELEV.	NO.	ISSUED FOR TENDER	DATE	BY
	0	ISSUED FOR TENDER	2021 11 22	RBO
		REVISIONS	DATE	BY

KGS GROUP	
DESIGNED BY NGV	CHECKED BY RBO
DRAWN BY GEL	APPROVED BY RBO
SCALE: HORIZONTAL AS NOTED VERTICAL NA	RELEASED FOR CONSTRUCTION
DATE 2021 11 22	DATE

ENGINEER'S SEAL

CONSULTANT DRAWING NUMBER
21-0107-12_13029

Winnipeg THE CITY OF WINNIPEG
WATER AND WASTE DEPARTMENT
ENGINEERING DIVISION

PORTAGE AVENUE INTERCEPTOR
SIPHON REPLACEMENT AT OMAND'S CREEK

MISCELLANEOUS DETAILS
SHEET 2

SHEET 6 OF 6
CITY DRAWING NUMBER
13029