



Underground Structures

Municipal Consent Drawing Standard

Updated: July 2024

Table of Contents

Introduction	3
Submission Package Requirements	3
Application Drawing Requirements	4
Base Information.....	4
Manitoba Hydro and Centre Gas Submissions	5
Fibre Optic and Conduit Submissions.....	5
Permanent Structures	5
Construction Proposal	6
WWD Clearances	7
Aqueduct and/or Feeder Main	7
Large Diameter Water Main > OR = 350mm	7
Standard Water Main and Sewer Main Clearance.....	8
Water Service Shut Off Valve	8
Hydrants	9
Catch Basin, Manholes or Water Valves	10
Pole or Pole bases.....	10
Vaults and/or Pedestals.....	10
Conduits	10
Completed Drawing Submissions / As-builts	11

Introduction

The City grants municipal consent to a utility or applicant to use a designated area within the municipal right-of-way. Established standard utility corridors and alignments help prevent conflicts during project planning by various utilities in the city's rights-of-way, minimizing the impact on nearby infrastructure.

The Underground Structures Branch provides support to the Underground Structures Committee. The responsibilities of the UGS Branch include:

- Underground infrastructure information provision;
- Underground infrastructure alignment approval;
- Records management;
- Reviewing/updating alignment standards;

The UGS branch coordinates the drawing review process for the approval of all drawings showing proposed underground and surface facilities on standard alignment (if general alignment and utility clearances are satisfactory). If a departure from standard alignment is shown and can be accommodated without interference with existing or proposed alignment/designs, marked up drawings and comments will be returned to the designer or submitter in a timely manner.

Submission Package Requirements

Provide the following information and attachments when submitting a drawing:

- Billing contact and address.
- Cover page with key map and proposed location of work. Additionally, we ask for adequate blank space for UGS review stamps.
- Scalable PDF drawings from a digital format (i.e.: AutoCAD), **scanned copies will not be accepted.**
 - Drawings should be a legible design, clear and concise, and at a size relevant to overall project (multiple pages may be required).
 - **Proposed construction drawings should be created by referencing multiple, reliable sources. These sources include: record/as-builts, other proposed utility works, WWD GIS data, AutoCAD, and site surveys.**
 - Refer to the City of Winnipeg's Manual for the Production of Construction Drawings for more information.

Application Drawing Requirements

Base Information

- Title Block must contain:
 - Utility name and/or logo
 - Project / Job file # / Plan #
 - Consultant name, if applicable
 - Location of proposed project
 - Designed by: name & phone #
 - Scale
 - Issue date, and if applicable, revision date
 - Manitoba approved Professional Engineer's seal.
- North arrow
- Street names and civic addresses (when available)
- Property lines
- Existing utilities in surrounding area of proposed work. Include: poles, guy wires and anchors, pedestals, vaults, etc.
- Legend (all symbols relevant to your design should provide complete written description).
- Nearby trees and offset distances from proposed work.
- Labelling of Parks and Easements.
- Display all pavement structures:
 - Curbs, sidewalks, AT paths, Transit stops, and relevant approaches.
- Display all WWD Infrastructure:
 - Water and sewer mains, water and sewer service lines, valves, manholes, hydrants, hydrant valves, valve pits, sewer chamber, catch basins, catch basin leads, curb inlets, and other miscellaneous water & sewer infrastructure in the vicinity of the proposed works.
- Display the water and sewer mains with an offset distance from the property line.
- Water and sewer service pipe connections will not be reviewed under the UGS process unless it has been deemed “non-conforming”.

Manitoba Hydro and Centre Gas Submissions

- Display pole locations and height with offset distances from the property line. For Deep Set (DS) poles, please include the proposed depth.
- Removal of text related to Overhead Distribution line or Pole-mounted transformer locations.
- Display Gas line locations with offset distances from the property Line.

Fibre Optic and Conduit Submissions

- Display Fibre Optic line and conduit locations with offset distances from the property line. Include contents & size of conduits.
- Drawings with complicated conduits must show a drawing of the conduit showing size & depth, in profile if necessary.
- Aerial cable not required to be shown, and is preferred removed to avoid clutter, unless aerial work is included in the submission.

Permanent Structures

Includes: surface vaults, pedestals, manholes, handholes, guywires, signs, bollards, piles, caissons, etc.

- Standard detail of proposed structure including: size of structure, loading assessment, and contact information with name of utility.
- It is recommended to install vertical, highly visible, and durable markers as approved by the City of Winnipeg, for vaults situated in areas with limited visibility such as ditches.
- Standard detail structure drawings require a Manitoba approved Professional Engineer's seal.
- New vault/manhole installations in concrete pavement shall include jointing plan.

Construction Proposal

- Proposed project clearly identified.
 - For monochrome drawings, proposal can be in any single color.
 - For drawings submitted in color, preference is proposal in **bold line weight**.
 - solid line → directional bore —————
 - dashed line → trenching — — — — —
- Be displayed at an appropriate scale for the drawing – preferred scale for Horizontal (Plan View) is: 1:100, 1:250, 1:500, or 1:1000. Please also include a 1:10 Vertical (Profile View).
- In the case of aerial photographs used as background images, ensure they are of high clarity, allowing for easy identification of water and sewer mains.
- Where feasible, place all above ground utilities 2.5m from back of curb and 0.5m from sidewalks. Additionally, maintain horizontal alignment with existing above ground utilities (ie: light standards, trees, etc.).
- Utilities shall try to maintain and use alignments consistent with Draft Transportation Standards manual.
- Dimensions to be in Metric and to surrounding utilities.
- Offsets to property lines, **offsets to curbs are not acceptable**.
- Construction notes to indicate 'PUSH' for road and/or driveway crossings.
- Notes on plan should provide explanation of proposed work – larger scaled detail plan may be used to clarify complex areas.
- Construction notes to indicate clearance to other utilities is maintained when proposed alignment is in vicinity of other utilities.
- Specify any planned reduced clearances from standard and the corresponding agency contact.
- **Should revision to submitted design be required, area of revision to be clearly identified with revision cloud.**

WWD Clearances

To assist with the design process, general clearance information is provided below by type of infrastructure. These should be considered a guide and not a guarantee of approval. Review and approval must take into consideration many factors including ongoing maintenance and future work.

Aqueduct and/or Feeder Main

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: AQUEDUCT AND/OR FEEDERMAIN

- CONTACT THE DEPARTMENT'S CONSTRUCTION SERVICES COORDINATOR AT 204 - 986-4289, 7 DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR AN INSPECTION.

- PRIOR TO ANY CONSTRUCTION, THE AQUEDUCT OR FEEDERMAIN MUST BE EXPOSED BY A SOFT DIG METHOD SO AS TO CONFIRM DEPTH AND LOCATION.

A MINIMUM CLEARANCE OF 1.0 METER MUST BE PROVIDED BETWEEN THE UNDERSIDE OF ANY EXISTING AQUEDUCT OR FEEDERMAIN AND THE TOP OF THE PROPOSED WORKS. THIS INSTALLATION BY TRENCHLESS METHOD ONLY.

A MINIMUM CLEARANCE OF 0.5 METERS MUST BE PROVIDED BETWEEN THE UNDERSIDE OF THE PROPOSED WORKS AND THE TOP OF ANY EXISTING AQUEDUCT OR FEEDERMAIN BY TRENCHLESS OR OPEN TRENCH.

- A SHAFT MUST BE EXCAVATED BY SOFT DIG METHODS 4.0 METERS FROM THE CENTRELINE OF THE AQUEDUCT AND/OR FEEDERMAIN TO CONFIRM THE ALIGNMENT AND ELEVATION OF THE DRILLING ROD BEFORE IT CROSSES OVER OR UNDER THE AQUEDUCT AND/OR FEEDERMAIN. THIS CONFIRMATION MUST BE WITNESSED BY A CITY REPRESENTATIVE.

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: AQUEDUCT AND/OR FEEDERMAIN

INSTALLATION EQUIPMENT FOR THE PROPOSED WORKS SHALL NOT CROSS OR TRAVEL ALONG EITHER SIDE OF THE AQUEDUCT AND/OR FEEDERMAIN WITHIN A LATERAL DISTANCE OF 5.0 METERS FROM THE CENTRELINE OF THE AQUEDUCT AND/OR FEEDERMAIN.

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: AQUEDUCT AND/OR FEEDERMAIN

DO NOT OPERATE VIBRATORY EQUIPMENT OVER OR WITHIN 3.0 METERS OF THE AQUEDUCT AND/OR FEEDERMAIN CENTRELINE.

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: AQUEDUCT AND/OR FEEDERMAIN

CONCRETE DEMOLITION AND REMOVAL WITHIN 3 METERS HORIZONTALLY OF THE AQUEDUCT AND/OR FEEDERMAIN SHALL BE COMPLETED BY SAWCUTTING AND REMOVAL, OR BY THE USE OF HAND HELD JACKHAMMERS. USE OF MACHINE MOUNTED CONCRETE BREAKERS ABOVE THE AQUEDUCT AND/OR FEEDERMAIN SHALL NOT BE PERMITTED.

Large Diameter Water Main > OR = 350mm

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: LARGE DIAMETER WATERMAIN

- CONTACT THE DEPARTMENT'S CONSTRUCTION SERVICES COORDINATOR AT 204 - 986-4289, 7 DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION TO ARRANGE FOR AN INSPECTION.

- PRIOR TO ANY CONSTRUCTION, THE LARGE DIAMETER WATERMAIN MUST BE EXPOSED BY A SOFT DIG METHOD SO AS TO CONFIRM DEPTH AND LOCATION.

A MINIMUM CLEARANCE OF 1.0 METER MUST BE PROVIDED BETWEEN THE UNDERSIDE OF ANY EXISTING LARGE DIAMETER WATERMAIN AND THE TOP OF THE PROPOSED WORKS. THIS INSTALLATION BY TRENCHLESS METHOD ONLY.

A MINIMUM CLEARANCE OF 0.5 METERS MUST BE PROVIDED BETWEEN THE UNDERSIDE OF THE PROPOSED WORKS AND THE TOP OF ANY EXISTING LARGE DIAMETER WATERMAIN BY TRENCHLESS OR OPEN TRENCH.

- A SHAFT MUST BE EXCAVATED BY SOFT DIG METHODS 4.0 METERS FROM THE CENTRELINE OF THE LARGE DIAMETER WATERMAIN TO CONFIRM THE ALIGNMENT AND ELEVATION OF THE DRILLING ROD BEFORE IT CROSSES OVER OR UNDER THE LARGE DIAMETER WATERMAIN. THIS CONFIRMATION MUST BE WITNESSED BY A CITY REPRESENTATIVE.

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: LARGE DIAMETER WATERMAIN

INSTALLATION EQUIPMENT FOR THE PROPOSED WORKS SHALL NOT CROSS OR TRAVEL ALONG EITHER SIDE OF THE LARGE DIAMETER WATERMAIN WITHIN A LATERAL DISTANCE OF 5.0 METERS FROM THE CENTRELINE OF THE LARGE DIAMETER WATERMAIN.

**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: LARGE DIAMETER WATERMAIN

DO NOT OPERATE VIBRATORY EQUIPMENT OVER OR WITHIN 3.0 METERS OF THE LARGE DIAMETER WATERMAIN CENTRELINE.

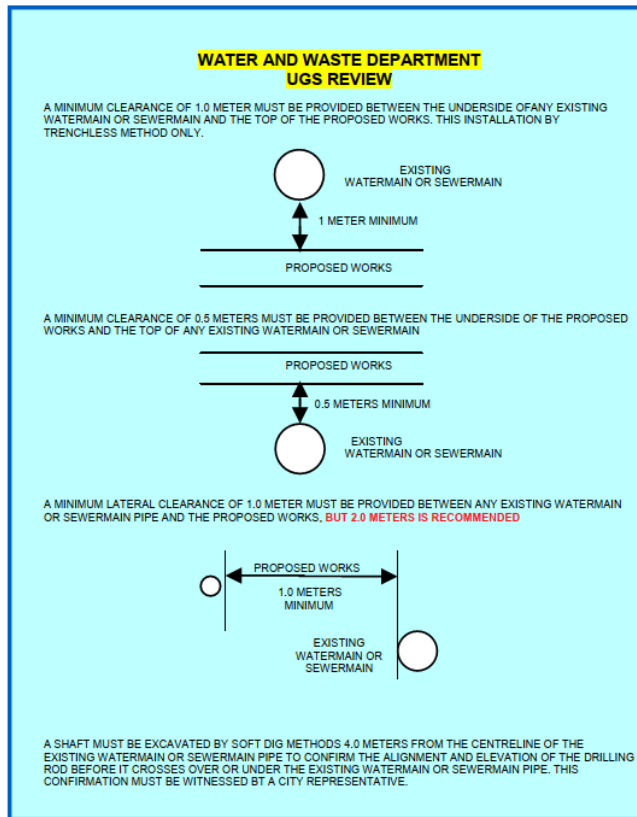
**WATER AND WASTE DEPARTMENT
UGS REVIEW**

CAUTION: LARGE DIAMETER WATERMAIN

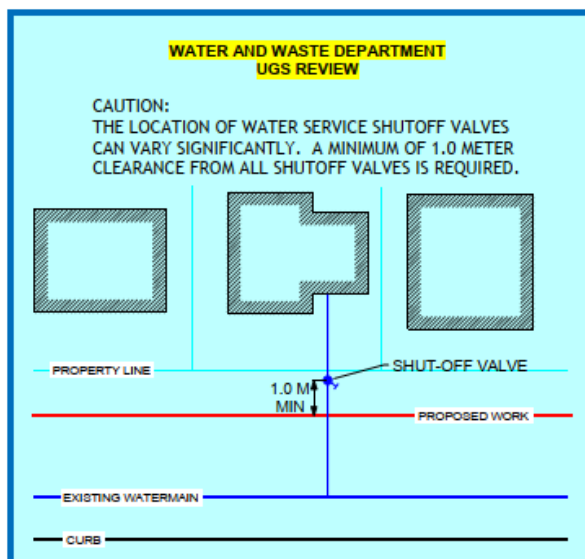
CONCRETE DEMOLITION AND REMOVAL WITHIN 3 METERS HORIZONTALLY OF THE LARGE DIAMETER WATERMAIN SHALL BE COMPLETED BY SAWCUTTING AND REMOVAL, OR BY THE USE OF HAND HELD JACKHAMMERS. USE OF MACHINE MOUNTED CONCRETE BREAKERS ABOVE THE LARGE DIAMETER WATERMAIN SHALL NOT BE PERMITTED.

Standard Water Main and Sewer Main Clearance

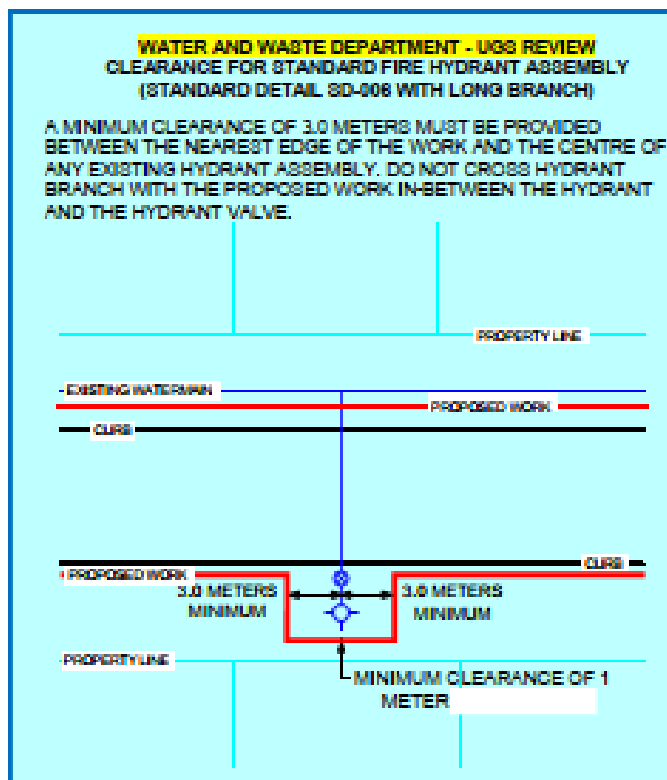
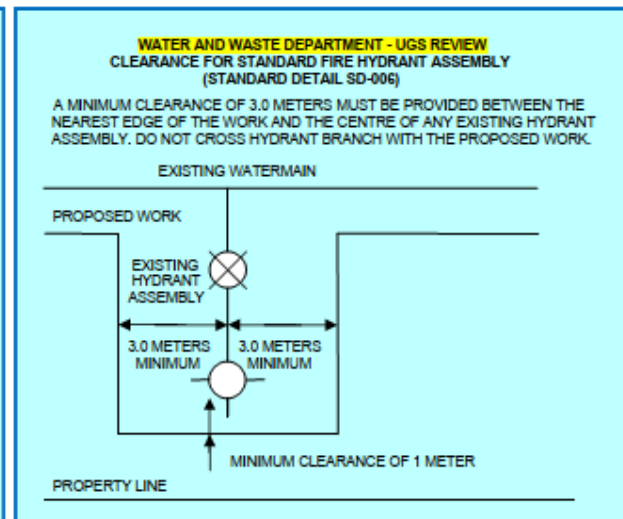
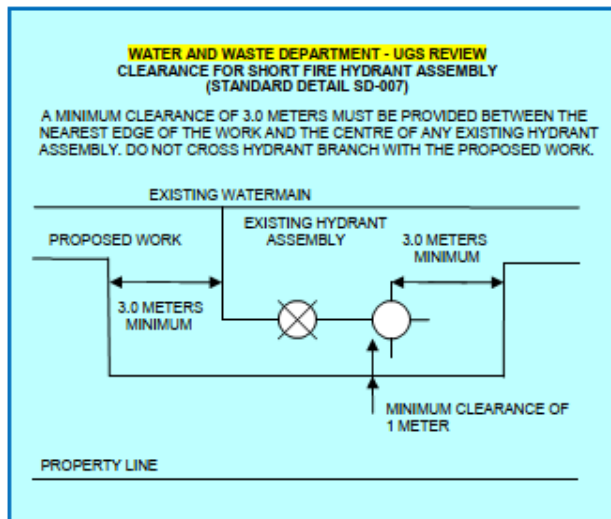
(for WM less than 350 and for all size sewer main)



Water Service Shut Off Valve



Hydrants



Catch Basin, Manholes or Water Valves

- Maintain a minimum 1m lateral clearance from CB, MH and or WV.

Pole or Pole bases

- Maintain a minimum 1m lateral clearance from the outer edge of pole to outer edge of existing pipe.

Vaults and/or Pedestals

- Maintain a minimum 1m lateral clearance from the outer edge of vault to outer edge of existing Water Main.
- Maintain a minimum 0.5m lateral clearance from the outer edge of vault to outer edge of existing Sewer Main (*Note: Feeder Main and or Aqueducts require 3m clearance).

Conduits

- Maintain a minimum 1m lateral clearance from the outer edge of conduit to outer edge of existing pipe (*Note: Feeder Main and or Aqueducts require 3m clearance).

Completed Drawing Submissions / As-builts

Drawing requirements for the UGS Branch:

(Drawings need to be submitted for all Utility (Gas, Electrical, Telecom, etc.), new Development, Street Works, etc. that involve installation within the City Right-of Ways).

As-constructed record drawings verifying the construction works are in accordance with these approvals and detailing approved modifications to these approvals, must be submitted to the Underground Structures Branch no later than **three months** after project completion. Please submit drawings to ugsas-built@winnipeg.ca.

Drawing requirements for the WWD Department:

(Drawings need to be submitted for all WWD, new Development and Street Works that involve Water, Sewer, and/or Land Drainage infrastructure installation within the City Right-of Ways).

WWD requires the submission of record drawings upon completion of work. The process for submission is as follows:

1. One set of preliminary digital PDF drawings will be submitted for review and comment.
2. Upon receipt of the preliminary review drawings, the submitter will prepare final record drawings, (including CAD & PDF), as per department comments. AutoCAD drawing files must be oriented to UTM projections NAD 83 DATUM Zone 14, with bound X-Ref's and PDFs files. The preliminary drawings and the final mylars (or paper copies) will be submitted care of the following:

The Supervisor of Drafting & Graphic Services Branch,
Engineering Division,
The City of Winnipeg
#110-1199 Pacific Avenue
Winnipeg, Manitoba, R3E 3S8

The WWD's CAD-GIS Drawing Standards are located at:
https://legacy.winnipeg.ca/waterandwaste/dept/cad_gis.stm

*****NOTE: SEALED MYLARS ARE REQUIRED FOR ALL TENDERS AWARDED
PRE MARCH 2023 AND SEALED PAPER COPIES AFTER THIS DATE*****

A copy of the APPROVED UGS construction drawings must be reviewed on-site prior to commencement of construction. Please contact **WWD Construction Services Coordinator at 204-986-4289**.

Applicant is responsible to notify other utilities of proposed work and obtain all necessary permits upon receiving Municipal Consent approval.