Underground Structures

Municipal Consent Drawing Standard

Updated: March 2026

Table of Contents

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.
- 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 to be created by referencing multiple, reliable sources. Including: record/as-builts, other proposed utility works, WWD GIS data (WWD GIS data is not to be used to create UGS drawings), AutoCAD, and site surveys.**
    - Refer to the City of Winnipeg's Manual for the Production of Construction Drawings for more information.
    - **Drawing submissions requiring a Servicing Report (ex: new development or in-fill housing) shall only be submitted after the Servicing Report has been approved.**

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.

Private Access (Commercial Approaches & Walks)

Prior to UGS submission, contact PWD Private Access to start application.

- Submission should be one page showing existing and/or proposed approach(es), immediate surrounding area, and property address.
- **Label approach(es) to be removed, ROW to be reconstructed (include Standard Details referenced), and approach surface.**
- Show nearby utilities (WWD infrastructure, vaults, hydro poles, guywires, etc.) that may be impacted.
    - Include isolations around WWD infrastructure and/or changes.
- Any traffic signs to be relocated.
- Dimension proposed approach(es), this includes:
    - Width at property line.
    - Radii.
    - Indicate grade slope through approach and sidewalk portion.
    - Obstructions (hydrants, trees, hydro poles, guywire, etc.) to the closest point of the approach.
        - Trees require a minimum 2.0m clearance.
        - Obstructions require a minimum 1.5m clearance.
    - Distances from existing transit bus stop platforms.
    - To the nearest intersection **and** neighbouring lot line.
    - If multiple approaches, include distance between at property line.
- If portion of City sidewalk or a private walk is being constructed, include cross section with slope grade.
- For culverts include the following:
    - Proposed and existing (**show cross culverts if nearby**).
    - Invert elevations for proposed and nearby culverts (to ensure proper flow).
    - Distance from the center line to property line.
    - Distance between existing and proposed.
    - Ditch flow directions.
- For modifications to medians/islands, add surface area measurement.
- For approaches within the Exchange District, include detectable paving bands on the drawing (as per the Exchange District Design guide).

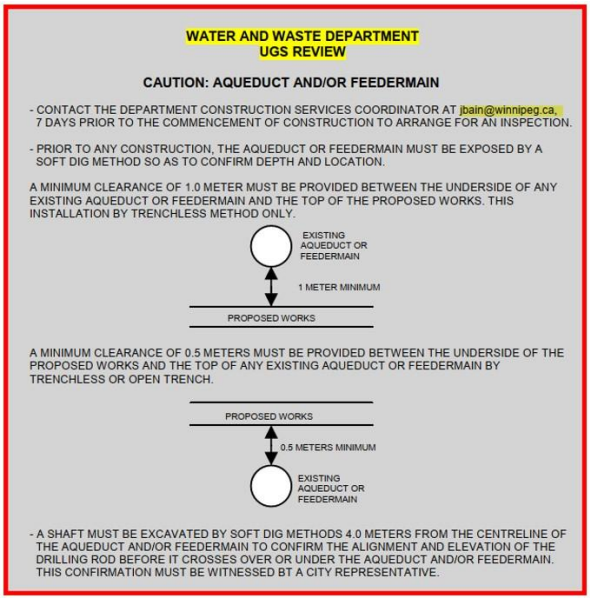
Construction Proposal

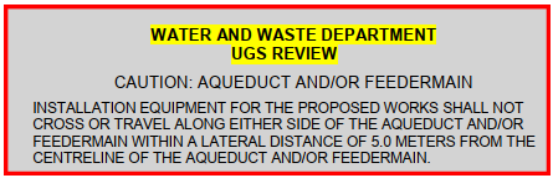
- Proposed project clearly identified.
    - For monochrome drawings, proposal can be in any single color.
    - For drawings submitted in color, preference is proposal in **bold line weight**.
    - solid line → directional bore ————————
    - dashed line → trenching ─ ─ ─ ─ ─
- Be displayed at an appropriate 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.**

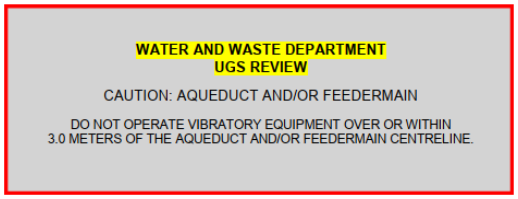
WWD Clearances

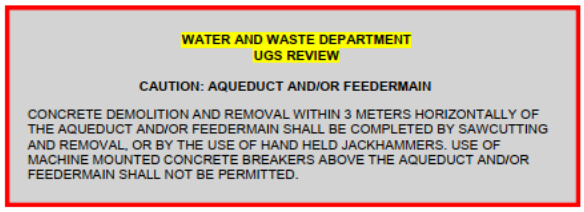
To assist with the design process, general clearance information is provided below by type of infrastructure. These should be considered a guide and not a guarantee of approval. Review and approval must take into consideration many factors including ongoing maintenance and future work.

Aqueduct and/or Feeder Main

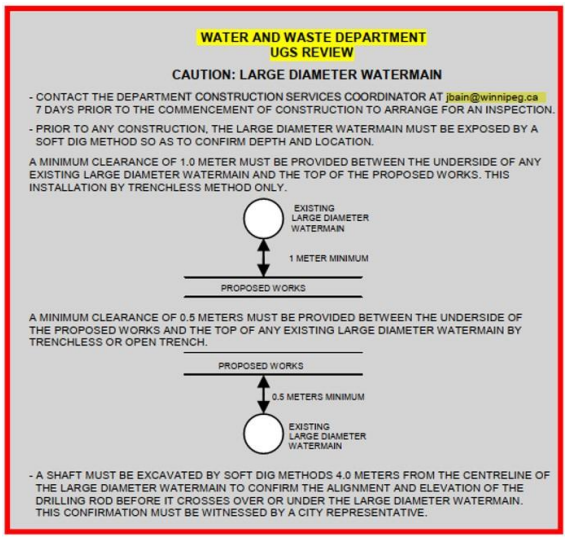


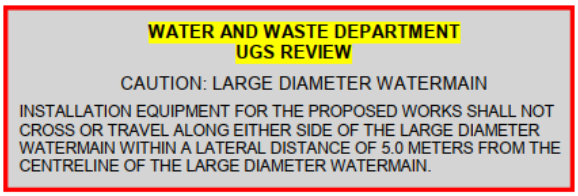


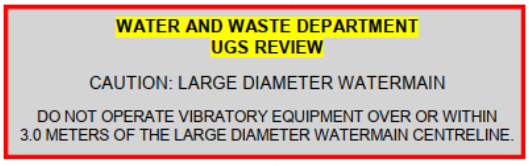


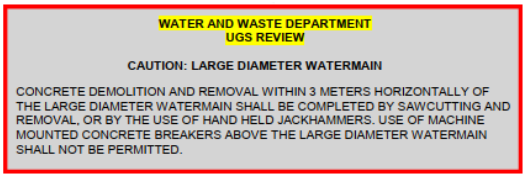


Large Diameter Water Main > OR = 350mm



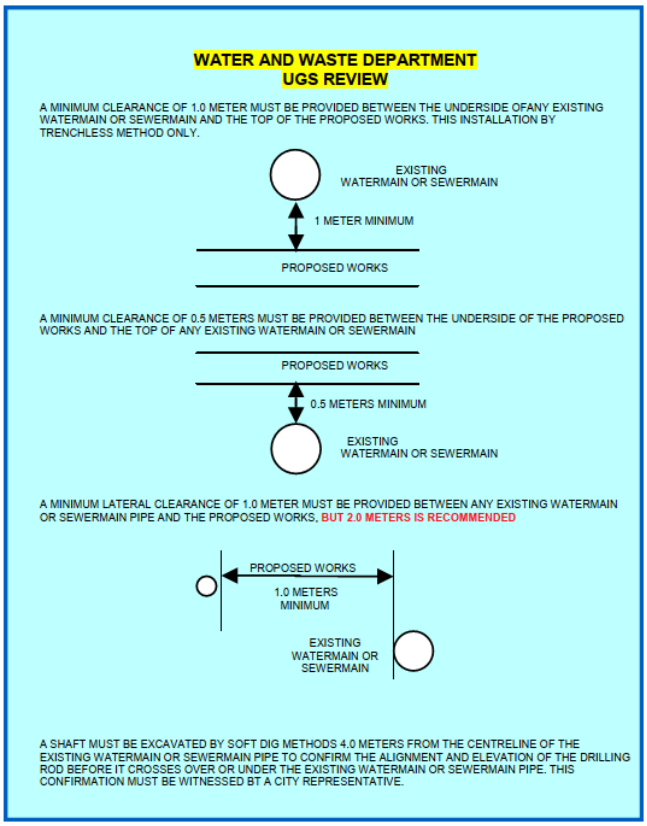




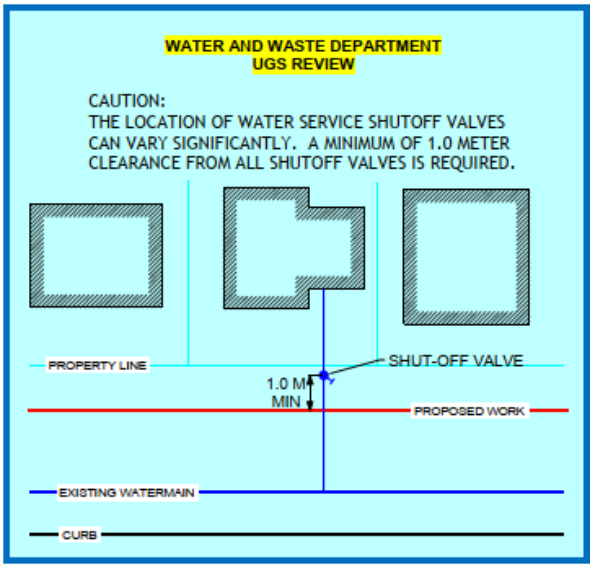


Standard Water Main and Sewer Main Clearance

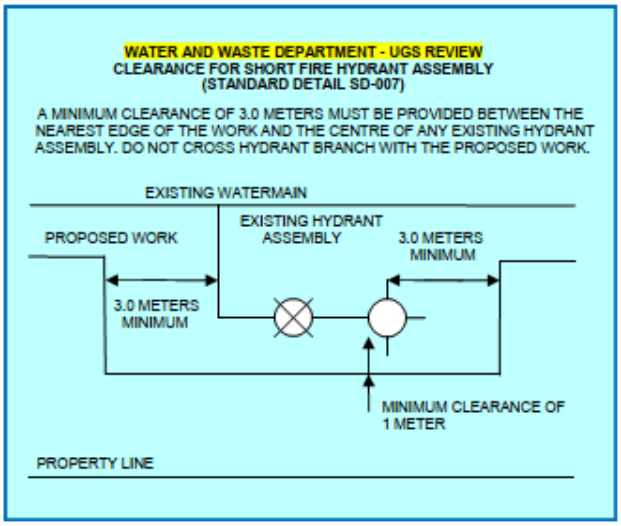
(for WM less than 350 and for all size sewer main)

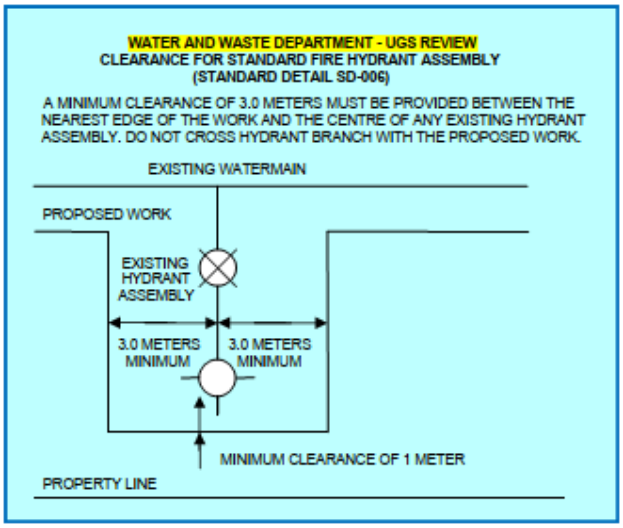


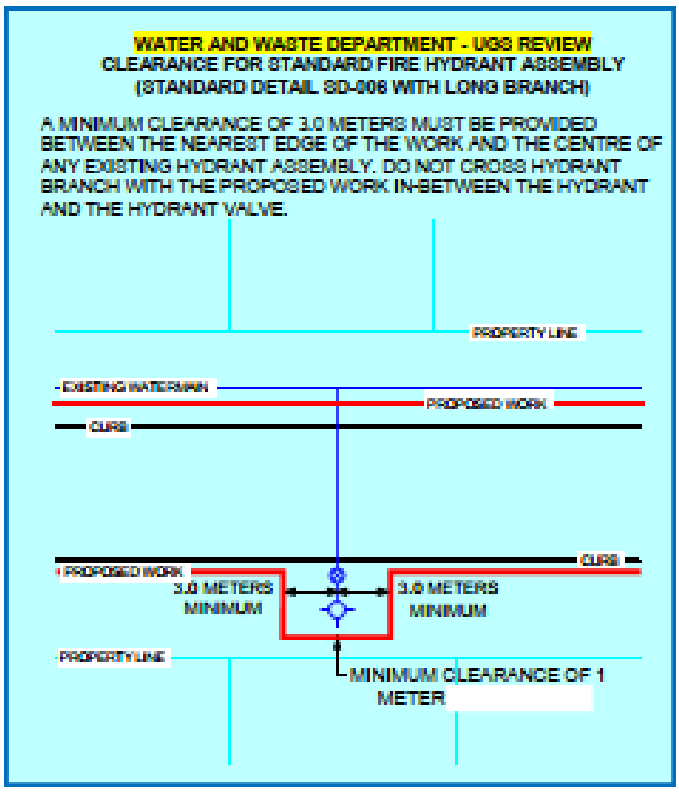
Water Service Shut Off Valve



Hydrants


WATER AND WASTE DEPARTMENT - UGS REVIEW
CLEARANCE FOR SHORT FIRE HYDRANT ASSEMBLY
(STANDARD DETAIL SD-007)
A MINIMUM CLEARANCE OF 3.0 METERS MUST BE PROVIDED BETWEEN THE NEAREST EDGE OF THE WORK AND THE CENTRE OF ANY EXISTING HYDRANT ASSEMBLY. DO NOT CROSS HYDRANT BRANCH WITH THE PROPOSED WORK.
EXISTING WATERMAIN
PROPOSED WORK
EXISTING HYDRANT ASSEMBLY
3.0 METERS MINIMUM
3.0 METERS MINIMUM
MINIMUM CLEARANCE OF 1 METER
PROPERTY LINE


WATER AND WASTE DEPARTMENT - UGS REVIEW
CLEARANCE FOR STANDARD FIRE HYDRANT ASSEMBLY
(STANDARD DETAIL SD-006)
A MINIMUM CLEARANCE OF 3.0 METERS MUST BE PROVIDED BETWEEN THE NEAREST EDGE OF THE WORK AND THE CENTRE OF ANY EXISTING HYDRANT ASSEMBLY. DO NOT CROSS HYDRANT BRANCH WITH THE PROPOSED WORK.
EXISTING WATERMAIN
PROPOSED WORK
EXISTING HYDRANT ASSEMBLY
3.0 METERS MINIMUM
3.0 METERS MINIMUM
MINIMUM CLEARANCE OF 1 METER
PROPERTY LINE


WATER AND WASTE DEPARTMENT - UGS REVIEW
CLEARANCE FOR STANDARD FIRE HYDRANT ASSEMBLY
(STANDARD DETAIL SD-008 WITH LONG BRANCH)
A MINIMUM CLEARANCE OF 3.0 METERS MUST BE PROVIDED BETWEEN THE NEAREST EDGE OF THE WORK AND THE CENTRE OF ANY EXISTING HYDRANT ASSEMBLY. DO NOT CROSS HYDRANT BRANCH WITH THE PROPOSED WORK IN-BETWEEN THE HYDRANT AND THE HYDRANT VALVE.
PROPERTY LINE
EXISTING WATERMAIN
PROPOSED WORK
CURB
CURB
PROPOSED WORK
3.0 METERS MINIMUM
3.0 METERS MINIMUM
PROPERTY LINE
MINIMUM CLEARANCE OF 1 METER

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 John Bain at jbain@winnipeg.ca**.

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