LLOYDMINSTER

MUNICIPAL DEVELOPMENT STANDARDS

REVISION MEMORANDUM
EFFECTIVE JANUARY 1, 2022

December 14, 2021

Planning & Engineering

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REVISION MEMORANDUM

1.1 Introduction

The City of Lloydminster's (City) Municipal Development Standards (MDS) are a set of key documents that guide all development within the City, both subdivisions and single lots, as well as rehabilitation works in terms of design requirements and construction deliverables. As such, these documents are regularly reviewed and updated by City administration, to ensure alignment with current regulatory requirements, industry practices, and the City's current Master Plans and administrative processes. This Revision Memorandum details changes, clarifications, and adjustments to the MDS, and will be effective as of **January 1, 2022**. Stakeholders and users of the MDS may submit proposed changes to the documents and/or Standard Drawings using the Request for Changes to Publications Form on the City's website: https://forms.lloydminster.ca/Planning-Applications/Request-for-Changes-to-Publications.

Content that is considered to have been removed from the existing documents are indicated by ~~strikethrough text~~, and items that are added are indicated by **bold text**.

1.2 Errata and Addenda

1.2.1 Section 1.4 Definitions

The definition for Municipal Improvements is amended to read: "Municipal Improvements" means items of municipal infrastructure which are constructed by the Developer to service the development, and then become the property of the City following the conclusion of the warranty period. They include, but are not limited to, items such as: deep utilities, ~~shallow utilities,~~ franchise utilities, roadways, lanes, ~~street lighting,~~ and landscaping.

1.2.2 Section 2.5 Inspections for Construction Completion & Final Acceptance

The section is amended to read:

Prior to the application for any Construction Completion inspection or Final Acceptance inspection, the Engineering Consultant must complete a Pre-Inspection of the work to confirm readiness for inspection. All requests for inspections must be made in writing**, utilizing the City's Inspection Request Form**. Requests for ~~Final Acceptance~~ inspections must be made a minimum of one (1) week in advance, to allow for the scheduling of the appropriate City staff, and no more than thirty (30) days prior to the expiry of the warranty period. It will be the responsibility of the Developer to ensure that any surfaces or appurtenances to be inspected have been cleaned prior to inspection.

The Engineering Consultant must take the lead role in the inspections. **Where the Engineering Consultant will not be present, their representative must be designated in writing as the Engineering Consultant's representative for these inspections.** The Engineering Consultant is responsible to certify that the project has been constructed in general conformance to the approved drawings and the Municipal Development Standards. The City will observe the inspection and provide comments whenever necessary. The Contractor should be present for the inspection, to answer any questions about the work, and ~~explain~~ **propose** how any deficiencies ~~will~~ **would** be remedied. **It is the Engineering Consultant's responsibility to determine the most appropriate means of remediating deficiencies to propose to the City for consideration. Upon completion of the inspection, the Engineering Consultant will review the noted deficiencies with all participants, who will then sign the inspection notes. This will then form the official record of deficiencies for the inspection.**

1.2.3 Section 2.5.1 Underground Construction

The section is amended to read:

During Construction Completion inspections, ~~Contractor~~ **City** staff will turn all mainline valves ~~(apart from boundary valves)~~ and service valves to verify their operation, as well as operate all the hydrants and blow-off

valves, if any~~. During Final Acceptance inspections~~, ~~City staff must~~ and verify these appurtenances are operational to their satisfaction. Safety platforms in manholes must be opened immediately prior to the start of the inspection and closed immediately after the inspection is complete. In general, items visually inspected include, but are not limited to:

- General:
  - Grates installed on exposed inlets and outfalls;
  - Riprap installed where required;
  - Erosion and Sedimentation Controls in place;
  - Culverts free of damage;
  - 2 inch quick connect coupler installed on permanent blow-offs;
  - Sanitary inspection chambers and manholes appropriately located;
- Manholes:
  - Cover and frame free from damage and flaws;
  - Grade rings intact;
  - No infiltration;
  - Pipe mortar intact;
  - Channel benching smooth, with no standing water;
  - Cul-de-sac service benching completed as per Standard Drawing 7-106;
  - Base clean of debris; and
  - Steps aligned vertically, and no more than 400mm between steps;
- Catch basins:
  - Cover and frame free from damage and flaws, aligned with the opening in the slab top;
  - Grade rings intact;
  - Filter fabric installed; and
  - Sump free of debris;
- Valves:
  - Cover and frame free from damage and flaws;
  - Rock guard present;
  - Casing plumb;
  - Stem straight; and
  - Base clean of debris;
- Curb Cocks/Service Valves:
  - Placed at final grade elevation;
  - Casing plumb;
  - **Extension and cap tightened;**
  - Cap/frame/cover free from damage and flaws; and
  - Marker stake in place;
- Hydrants:
  - Painted yellow;
  - Breakaway flange located below the hydrant flange;
  - Pumper nozzle perpendicular to the roadway;
  - Drains after operation; and
  - Hydrant valve:
    - Minimum of 0.75 m from hydrant, centre to centre;
    - Cover and frame free from damage and flaws;
    - Rock guard present;
    - Casing plumb;
    - Stem straight; and
    - Base clean of debris.

1.2.4 Section 2.6.3 Landscape Construction

The section is amended to read:

Development of landscaped areas in a neighbourhood should be staged, such that park spaces aren't broken up, and instead are developed in contiguous areas. Where this is unavoidable, the site grading must be completed, and grass established to prevent erosion. Maintenance of these incomplete grassed areas will be the responsibility of the Developer until the landscaping improvements can be completed.

After satisfactory completion of landscaping improvements and as a condition of the execution of the Construction Completion Certificate for landscaping, the Developer must submit to the City the following information:

- A Construction Completion Certificate (CCC) stamped by a Landscape Architect, confirming the improvements have been constructed in accordance with the plans and specifications, the Municipal Development Standards and that all work and deficiencies have been completed;
- One (1) digital set of redline drawings in PDF format as well as a copy of the construction issue drawings in the City's current version of AutoCAD (or Civil3D, if available)**. This drawing will include as-constructed topography, including drainage patterns**;
- Reports summarizing materials testing results in PDF format;
- An as-built survey file as specified in Section 2.6.7; and
- An accurately completed As-Built Worksheet detailing the as-constructed bill of materials for the City's inventory database in Excel format.

Following the execution of the CCC, the two-year warranty period commences on the date of the final inspection. The City accepts responsibility for general maintenance (e.g. snow clearing, sweeping) of the trails. The Developer remains responsible for maintenance and deficiencies (e.g. maintenance of grassed areas, watering of trees/plantings, deterioration of the trails, etc.).

1.2.5 Section 2.6.4 As-built Bill of Materials

The section is amended to read:

The as-built bill of materials must detail all improvements, facilities and landscaping installed for the work, including but not limited to:

- Roadway length summary;
- Walkway length summary;
- Curb and gutter length summary;
- Lot service length summary by diameter and material;
- Water main length summary by diameter and material;
- Hydrant summary, total public and private;
- Water main fitting totals by type;
- Water main valve total by type;
- Water service curb stop total;
- Sanitary sewer main length summary by diameter and material;
- Sanitary sewer manholes total number and vertical length;
- Storm sewer main length summary by diameter and material;
- Storm sewer manholes total number and vertical length;
- Catch basin manholes total number and vertical length;
- Catch basins total number by type;
- Swale length summary;
- Culvert length summary by diameter; ~~and~~
- Trees and shrubs by species~~.~~**;**
- **Fencing length summary by type;**
- **Bollards and gates by type and number; and**

- **Park furniture (benches, garbage receptacles, picnic tables, etc.) by type and number.**

An as-built worksheet template can be found in Appendix 2A, also a spreadsheet can be found in the Standard Files detailed in Section 2.3.2.2. This worksheet must be completed and submitted as a digital spreadsheet file in Excel format with the other required record file(s) for the Construction Completion Certificate. All the quantities pertaining to the project are to be recorded in this worksheet (length of pipe, number of valves, etc.).

1.2.6 Section 2.6.7 As-built Survey

The section is amended to read:
A coordinate file (PNEZD-comma delimited) containing as-built (as-constructed) locations and elevations of all surface structures must be included with the project redline (and record, if elevations have changed) drawings.

This coordinate file must be referenced to the coordinate system identified in Section 2.3.2.1 and include ties to at least two (2) survey control monuments or an alternate approved by the City. The horizontal accuracy for this survey must be less than or equal to 0.050 m and vertically less than or equal to 0.025 m. The City's survey point codes must be used in the submitted file. A list of these codes is available upon request.

The following must be included in the survey **data**:

- Manholes;
- Valves;
- Pipe Fittings (Elbow, Cross, Tee, Plug, etc.), at a minimum all plugs must be captured;
- Clean outs;
- Catch basins;
- Inlet / Outlet Structures;
- Service shut-off valves (CCs);
- Hydrants;
- Hydrant Valves;
- Face of Curb, Edge of Pavement, Front and/or Back of walk, Centerline. These must be surveyed at grade change points and at least every 20 m along the feature; ~~and~~
- Lot corners and design side lot grade breaks~~.~~**;**
- **Surface topography of landscaped areas;**
- **Edge of trails at a minimum of 20 m intervals along the trail;**
- **Trees, shrubs, and perimeter of planting beds;**
- **Park furniture (benches, garbage receptacles, picnic tables, etc.); and**
- **Fences, bollards, and gates.**

1.2.7 Appendix 2A.4 As-Built Worksheet

Worksheet amended to reflect changes to Section 2.6.4, as attached.

1.2.8 Add Appendix 2A.5 Inspection Request Form

Inspection Request Form added as attached.

1.2.9 Appendix 6A.1.7 Service Connections

The section is amended to read:
See Section 7 (Service Connections) of the Standard Drawings for service connection installation details. Water service installations must conform to the following:

- Water and sanitary services in a common service trench must have the following minimum horizontal separation, based on the water service diameter:

- 0.3 m for 50 mm diameter or less;
- 2.0m for greater than 50 mm to less than 100 mm diameter; and
- Separate trenches required for services 100 mm diameter or larger.

- Locate water service curb stops as per Standard Drawings 7-101, 7-102 and 7-103.
- **Tighten set screws on curb cock extensions, and the curb cock cap.**

1.2.10 Add Appendix 6A.1.10 Mains in Casings

Added section reads:

Drilling and mud pressure in the borehole should not exceed that which can be supported by the overburden to prevent heaving or hydraulic fracturing of the soil ("Frac-out"). A sufficient number of pre-reams shall be utilized as to avoid heaving while enlarging the hole to the desired diameter. If a drilled hole beneath an artificial surface must be abandoned, the hole shall be filled with grout or bentonite to prevent future subsidence. Pipe installation should be performed in a manner that minimizes over-stressing and straining of the pipe.

During back-reaming, the conduit must be sealed at either end with a cap or lug to prevent water, drilling fluids and other foreign materials from entering the pipe. Pipe rollers, skates or other protective devices should be used in the installation of products 150mm outside diameter or larger. Where possible, and unless otherwise approved by the City, the product pipeline will be fused, welded or connected into one string prior to commencement of the pull-back operation.

Excess drilling mud slurry shall be contained in a lined pit or containment pond at the exit and entry points until recycled or removed from the Site. Entrance and exit pits shall be of sufficient size to contain the expected return of drilling mud and spoils. When working in an area of contaminated ground, the slurry shall be tested for contamination and disposed of in a manner that meets all regulatory requirements, or as directed by the City. Precautions shall be taken to keep drilling fluids out of the streets, manholes, sanitary and storm sewers, and other drainage systems including streams and rivers. Recycling drilling fluids is an acceptable alternative to disposal, provided the material is not contaminated.

In addition to as-constructed drawings, the Developer shall provide a directional drilling log identifying the station of the reading as well as the depth from the original ground surface to the pipe to be installed. The frequency of the readings shall be at a minimum of every 15 metres, unless otherwise directed by the City. Under no circumstance does the City take responsibility for costs associated with the removal and re-drilling of the pipe if the requirements of the applicable technical specifications with respect to depth and grade are not adhered to if identified through the review of the directional drilling log.

1.2.11 Section 7.2.1 Location of Utilities

The section is amended to read:

Unless otherwise approved by the City, all gas, power, telephone and cable television distribution lines and service connections must be installed in preferred locations as per the standard cross section details. Proposed alignments are not to be under the road surface, except for crossings. Crossings will be perpendicular to the road centreline, or as close to perpendicular as possible**, and not located within the curb radius of intersections or under curb ramps**. Proposed alignments should not be under sidewalks, unless no other location within the boulevard is feasible. In the event an alignment must be under, or cross, a sidewalk, it must be placed at a depth of 1.5-1.8 m **perpendicular to the centerline of the walkway**, in order to avoid conflicts with services and future replacement of the sidewalk. **A minimum of 0.3 m separation the edge of any municipal concrete structure must be maintained.**

For all urban applications, power must be underground. For isolated rural applications where the installation of buried power may not be practical, above ground power may be acceptable to the City.

All distribution cables for primary and secondary power, telephone, cable television and street light feeders, may be installed in one common 300 mm wide trench at the required alignment.

Street lights must be placed at locations not interfering with proposed driveways and services and be located in line with the extensions of common property lines between two lots.

The face of any structure (e.g. posts, poles, pedestals, vaults, and transformers) must be at least 1.0 m clear of the face of the curb, **0.5 m clear from the edge of walkways (with a preferred separation of 0.75 m),** and 1.5m clear of any driveway, approach or apron.

1.2.12 Section 7.2.2 Separation from Other Utilities

The section is amended to read:

The franchised utilities must be separated from the deeper municipal utilities (i.e. water and sewer) by not less than 3.0 m laterally**, including lateral service connections**. A minimum separation of 2.0 m laterally from any surface structure (manholes, catch basins, valves, etc.) must be maintained, with a separation of 3.0 m preferred.

~~A separation of 1.2 m from other franchised utilities is also required, with the exception of common (three-party) trench installations.~~

A separation of 1.2 m from any City of Lloydminster owned fibre optic line is required. All crossings must be exposed by hydro-vac to verify depth prior to work commencing.

1.2.13 Section 7.2.5 Design Drawings

The section is amended to read:

Design drawings for franchised utility installations must **be submitted in PDF format (preferably plotted using a "DWG to PDF" option),** and conform to the following criteria:

- Scaled and dimensioned in a standard metric scale;
- All text of a size and shade as to be clearly legible;
- All existing and proposed linework, line types, blocks and hatching clearly identified in a legend;
- North arrow;
- Utility company name, design company name (if different), and project number(s) provided in a title block;
- Show all municipal infrastructure (utility mains, manholes, hydrants, valves, etc.);
- Show all existing and proposed franchised utility alignments and infrastructure, including method of installation (e.g. boring, trenching, etc.);
- Show dimensions between proposed alignments/structures and municipal infrastructure;
- Indicate total length of proposed installation in lineal metres;
- Show property lines, easements, rights of way and setbacks;
- Show street name(s), lot and block number, and civic address of properties; and
- Show curb lines, sidewalks, and trails.

The location and alignment of municipal infrastructure can be found on the City's interactive GIS map, www.lloydminster.ca/citymap. **CAD exports of the City's GIS data for infrastructure may be requested from the City conditional upon the requesting party entering into a Data Sharing and Usage Agreement. Submissions that do not meet the City's submission requirements may be rejected.**

1.2.14 Section 9.4 Roll Testing/Proof Rolling

The section is amended to read:

A roll test must be performed on all roadways after the desired compaction has been achieved, for both the clay subgrade and the granular base. All roll tests must be witnessed by representatives of the City and the Consulting Engineer. **The Consulting Engineer's representative must be a Professional Engineer, or designated in writing as the Consulting Engineer's representative for tests of this nature.** Roll tests must utilize a single axle dual wheeled truck with a load of 9100 kg on the rear axle, with tires inflated to a minimum of 275 kPa (40psi); any other equipment used must be approved in advance by the City. The vehicle will be driven slowly along the road surface, with those monitoring the test watching for any deflection in the road surface, for sufficient passes to cover the entire surface. Deflections are only permitted on the clay subgrade at the discretion of the City representative; no deflections are permitted on the granular base. Any areas with unacceptable deflection will be removed and re-compacted and another roll test will be conducted. **The Consulting Engineer may propose alternative solutions for consideration by the City representative(s).** This process will be repeated until such time as the surface shows no deflections beyond allowable.

The clay subgrade must be approved before the granular base can be installed and the base must be approved before asphalt pavement can be installed. If there is significant rainfall between when the base is approved and the installation of asphalt, the base may need to be tested again before the installation of asphalt, at the discretion of the City.

1.2.15 Section 9.8 Verification of Gutter Flow

The section is amended to read:

During ~~the Final Acceptance~~ inspection**s** for surface works, **both Construction Completion and Final Acceptance,** the gutters must be tested to verify their function. The Developer will machine-clean the roads, and where necessary manually clean the gutters prior to inspection so that they are free of debris or any material that may impede flow. Utilizing a water truck, water is directed onto the gutter ahead of the inspectors. Any areas of ponding **in excess of 10 mm** may indicate an issue with gutter grade. The Developer must arrange for any such areas to be checked for proper grade and replace deficient segments as necessary.

1.2.16 Section 11. Foreword

The section in amended to read:

Engineering review by the City of design drawings for Development Permits is required for all lots apart from new (greenfield) single family residential lots. The City's review and approval constitutes only an indication of acceptance by the City that the plans are compliant with the requirements of the City's Municipal Development Standards (MDS). The ultimate responsibility for the design of the plans, their implementation, and their effectiveness rests solely on the Applicant. Additionally, the Applicant must be able to demonstrate that the City's infrastructure (transportation, water, sanitary sewer, and stormwater management networks) has the capacity to accommodate the new development. In any case, all construction activities must be compliant with the requirements of the MDS and Standard Drawings. **Where there is a discrepancy between this Section and the requirements of any other applicable section of the MDS, the most recent or most stringent requirement will prevail.**

The City's Land Use Bylaw puts forward a list of permitted and discretionary uses for each land use district, in addition to defining numerous design parameters. Any development carried out on a single lot must also be compliant with the Land Use Bylaw.

1.2.17 Add Section 11.5.4 Major Developments

Added section reads:

Any development classified as a Major Development may, at the discretion of the City, be subject to enhanced requirements. These requirements typically include the provision of as-constructed

drawings of the site servicing and lot grading, and any supplementary design reports, testing, or other submissions as identified by the City as necessary to adequately evaluate the design of the development. These enhanced requirements will be communicated following the pre-development meeting described in Section 11.3 and/or following review of the design submissions.

1.2.18 Section 11.7.1 Grading and Drainage Plans

This section is amended to read:

These drawings must include, at a minimum, the following existing and proposed information:

- Curb lines, sidewalks, trails;
- Location of existing approaches or driveways of adjacent properties, including those on the opposite side of the roadway;
- Limits of construction;
- Limits and material of all surfaces;
- Existing lot elevations as measured by a topographic survey**. This information will be presented in a separate drawing from the grading design**;
- Location of the site benchmark, if used;
- Design lot elevations, including lot corner elevations and building corner elevations;
- Finished floor elevations of all buildings;
- Slope arrows indicating the direction and slope of surface drainage. The slope of these arrows must be supported by design elevations at both ends;
- Swales, if used, will include both the channel slope and the side slopes to the channel, and bottom width;
- Centreline slope of all approaches, including residential driveways;
- Curbs, if used, will include both face of curb elevation and height of curb;
- Depth and extents of any ponding occurring during a 1:100 year or surcharge event (e.g. service pipe to the main has become blocked);
- Major overland flow path during a 1:100 year or surcharge event, from each trapped low spill point to the exit point from the property. It is preferred this exit point be located at an approach; and
- Both temporary and permanent elements of the ESC plan, including, but not limited to, rock riprap, berms, ditches, dykes, and synthetic materials provided for overland discharge points.

Should a Surface Works and Lot Grading Plan not exist for the area, the Licensed Professional must prepare a drawing showing the existing surface elevations at property corners, as well as surface elevations along shared lot lines to determine the existing side lot slopes, including any points of a change in slope. In addition, the geodetic elevation of a site benchmark (preferably the CC stamp on the sidewalk, unless the services are being replaced) will be identified.

1.2.19 Section 11.7.1.1 Lot Grading Design

This section is amended to read:

Lot grading plans are required for most property developments involving building construction or surface improvements and are a requirement of a development permit or pursuant to requirements of bylaws, regulations, other approvals or agreements.

The following criteria must be used when creating a lot grading plan:

- Each lot must be graded to drain to the municipal storm drainage system, independently of adjacent lots, where possible;
- In a redevelopment area, if the existing grading condition accommodated drainage from an adjacent property, the grading and drainage plan must accommodate this drainage;
- Areas around buildings must be graded away from the foundations to prevent flooding:

  - For residential properties, at a minimum 5% slope for at least 3 metres from the sides (or to the property line, if it is closer than 3 metres), and at a 10% slope for at least 1.5 metres from the rear. See Standard Drawings 8-100 and 8-101 for typical residential lot grading requirements;
  - For commercial properties, at a minimum of 0.5% slope for hard surfaces (e.g. concrete, asphalt), 1.0% slope for compacted gravel, and 2.0% for landscaped areas;
- The garage slab elevation for single family residential properties on the Surface Works and Lot Grading Plan indicates a minimum elevation (0.36 metres higher than the design elevation of the adjacent property corner). This elevation may be increased as needed to achieve the minimum 5% side lot slope. The preferred maximum slope of the driveway is 8.3%, to conform to the Alberta Transportation Design Guidelines for Pedestrian Accessibility. Driveway slopes more than 10.0% will require approval from the City;
- The final surface elevations at property line must match those on the Surface Works and Lot Grading Plan, or the existing elevations in the case of an infill development;
- On single family residential lots, all other interior slopes, including concrete driveways, sidewalks and patios, must be a minimum of 2**.0%**, with the exception of swales~~%~~;
- Where swales are used:
  - Concrete swales must have a minimum slope of 0.6% and a maximum slope of 25%;
  - Grassed swales must have a minimum slope of 1.5% and a maximum slope of 25%;
  - Swales should be aligned as straight as possible and sudden or sharp deflections of greater than 45° should be avoided;
- Where storm sewer services are available, commercial **and multifamily** lots must drain internally to catch basins within the property;
- Buildings must be above the Major System hydraulic grade line for a 100-year storm event (or the spill elevation of ponding areas) plus a freeboard generally of 0.3 m but a minimum of 0.15 m. Note: this may not apply to replacement of structures/developments within existing flood plains. In these areas, suitable precautions, such as mounting electrical panels above the 1:100 year level, must be taken; and
- Ponding of water may be of a depth up to 300 mm. This may be permitted to be increased to up to 450 mm, at the City's discretion, in locations where there is limited risk of persons entering the ponding area(s).

1.2.20 Add Section 11.7.1.4.3 Major Development Considerations

Added section reads:

Approaches for developments classed as Major Developments will be reviewed and approved by the City on an individual basis. Generally, these approaches must be designed in such as fashion as to not resemble a continuation of the City's roadway network, however consideration as to volumes of traffic generated, classes of vehicles utilizing the development, and the design of adjacent existing accesses will be considered.

1.2.21 Section 11.7.3 Site Servicing Plans

Section is amended to read:

These drawings must include, at a minimum, the following existing and proposed information:

- Location, diameter, material and invert elevation of existing service stubs;
- Alignment, diameter, length, material, slope and invert elevations of all proposed service pipes;
- Vertical separation distance between all service pipe crossings;
- Location and surface elevation of all service structures, including manholes, catch basins, valves, curb cocks and sanitary inspection risers;
- Configuration and connection details of any sump connected to the sanitary sewer service;
- Size, material and connection details of any internal roof leaders;
- A note that the service installation(s) must be inspected by the City prior to backfilling;

- Rationale and Manning calculations for storm water runoff, if not submitted separately; and
- Water daily demand and peak hour demand calculations.

Profiles of the service pipes must also be provided for review if ~~the proposed development is classified as a Major Development, or~~ it is required as part of the pre-development meeting.

See Section 7 (Service Connections) of the Standard Drawings for service connection installation details.

It is important to note that while the City reviews servicing design, and inspects lateral service installations, the City accepts no responsibility for the construction or maintenance of the services beyond the property line. Where new service connections to the main are required for whatever reason, all costs of the construction of those services and any associated surface restorations will be borne by the Applicant.

1.2.22 Section 11.7.3.2 Sanitary Sewer Services

The section is amended to read:
The design and construction of sanitary sewer service connections must conform to the City's Sewer Use Bylaw, as well as the following:

- Roof leaders, stormwater sump pumps, and weeping tile must not be connected to the sanitary sewer system. Where there is new development of existing areas where roof leaders and weeping tile are connected to the sanitary system, these connections must be removed;
- Trenching requirements:
    - In separate trench if larger than 200 mm; and
    - In a common trench with water service and stormwater sewer service laterals if smaller than 200 mm;
- The minimum size of sanitary sewer service connections to a single family dwelling is 100 mm;
- Sanitary sewer service connections for commercial, industrial, multi-family or institutional areas, must be 100 mm or greater based on required flows. The receiving system must have the capacity to accommodate the new flows**. Existing system capacity data can be found in the City's Sanitary Sewer Master Plan. The City's sanitary sewer modelling data is available upon request, conditional upon entering into a Data Sharing Agreement with the City**;
- Changes in pipe size must be made either within a manhole, or by utilizing an eccentric reducer;
- Sanitary sewer service connections to single family dwellings from the main to property line must be designed for gravity flow with a minimum grade of 2.0%. All sanitary sewer service connections must provide a minimum of 2.85 m of cover from top of pipe at property line. If the sanitary sewer service minimum depth cannot be achieved, a servicing plan showing proposed insulation installation in conformance to Standard Drawing 4-101 must be submitted to the City for approval;
- All sanitary sewer service connections to a single family dwelling from property line to the house may not feature more than two bends, or a total deflection of greater 45°. The service must be sloped with a minimum grade of 2.0%, and a maximum grade of 10.0%;
- Any curved service pipes must not exceed the maximum allowable deflection as identified by the manufacturer;
- Sanitary sewer service connection materials must be polyvinyl chloride (PVC) SDR35 building service pipe conforming to CSA specification B182.2, latest revision thereof;
- Risers must be employed where the service connection at the main is 4.0 m or deeper;
- An inspection chamber located at 0.5 m inside the road right-of-way will be required on multifamily lot service connections, see Standard Drawing 7-202. If the inspection chamber is to be located within a hard surface, it must be protected with a metal driveway box (Royal Pipe Systems 71A08 or approved equivalent), see Standard Drawing 7-204;
- An inspection manhole located at 1.0 m inside the road right-of-way will be required on industrial and commercial sewer service connections, see Standard Drawing 7-203. This manhole may be either 900

mm or 1200 mm in diameter**. Where this inspection manhole does not currently exist it must be provided, and where there is an existing inspection chamber or cleanout it must be removed and replaced with an inspection manhole**;

- Roof leaders and building foundation drains must not be connected to the sanitary sewer system;
- Any one lot may only have one sanitary sewer service connection to City mains. At the time of installation of new services to a building, any unused sanitary sewer service stubs on the lot must be abandoned at the main as per Section 10 of the MDS;
- In a redevelopment area, any existing services that are not PVC pipe must be upgraded to PVC pipe back to the main. Existing PVC services must be replaced unless they can be demonstrated to be in good repair and acceptable to the City, as well as certified by the Applicant's consultant as having the capacity to meet the requirements of the new development;
- All food processing establishments, shopping centres, service stations, vehicle washes, hotels/motels, manufacturing, equipment servicing and cleaning facilities, institutions (churches, schools, etc.) and any other facility that is expected to discharge sediment and/or oil/grease must install and maintain devices (e.g. grease traps, oil/grit separators) to prevent the entry of these deleterious substances into the sanitary sewer system; and
- Any facility that makes use of and/or will be discharging contaminants listed within the Sewer Use Bylaw (including, but not limited to: cleaning agents, food scraps, pharmaceutical drugs, dental amalgam, and petroleum-based products) is strongly encouraged to participate in a pre-application meeting; in any case this information must be disclosed when applying for a Development Permit. Common facilities that may be subject to this requirement include vehicle washes, restaurants and food services/processing, oil field services, manufacturing, vehicle servicing, dry cleaning, laboratories, medical facilities, recreation facilities, and photographic and printing operations.

1.2.23 Section 11.7.3.3 Stormwater Sewer Services

Section is amended to read:

Stormwater sewer services must discharge to a storm sewer system. Sump pumps in basements must have a pressure discharge connection to a stormwater sewer service riser pipe at the outside of the building foundation and a stormwater sewer service connection pipe from the riser connection at the house to the property line are required, see Standard Drawings 7-302 and 7-303. The pressure discharge connection to the gravity stormwater sewer service riser pipe must be provided with a clean out and an overflow discharge to a concrete splash pad. In areas without storm sewers, the discharge must be directed to a splash pad, as detailed in Standard Drawings 7-304 and 7-305. Installation and maintenance of these on-lot components are the responsibility of the property owner. Roof leaders of single family residential properties must not be connected to the stormwater sewer service riser pipe. All stormwater discharge must conform with the requirements of the Sewer Use Bylaw. **Refer to MDS Section 5.3 for discussion and tables pertaining to the calculation of design flows.**

The following criteria must be used in the design and construction of stormwater sewer services:

- A stormwater sewer service must not be discharged to the sanitary sewer system under any circumstances;
- All stormwater sewer service connections to a single family dwelling from property line to the riser may not feature more than two bends, or a total deflection of greater 45°. The service must be sloped with a minimum grade of 2.0%, and a maximum grade of 10.0%;
- Preferably the depth of the stormwater sewer service should match that of the sanitary sewer service at the property line, 2.85 m from invert to proposed finished grade. Otherwise the stormwater sewer service must be a minimum depth of 1.5 m from top of service pipe to finished grade at the property line. If the stormwater sewer service minimum depth cannot be achieved, a servicing plan showing proposed insulation installation in conformance to Standard Drawing 4-101 must be submitted to the City for approval;

- Size the stormwater sewer services to be able to accommodate the 1:5 year storm event, with a minimum size of 100 mm for residential properties and 150 mm for commercial or industrial properties. The receiving system must have the capacity to accommodate the new flows**. Existing system capacity data can be found in the City's Stormwater Master Plan. The City's stormwater modelling data is available upon request, conditional upon entering into a Data Sharing Agreement with the City**;
- Changes in pipe size must be made within a manhole, catch basin, or by utilizing an eccentric reducer;
- Any one lot may only have one stormwater sewer service connection to City mains. At the time of installation of new services to a building, any unused stormwater sewer service stubs must be abandoned at the main as per Section 10 of the MDS;
- Pipe materials must be restricted to PSM type PVC SDR 35 or PVC profile with a 320 kPa pipe stiffness;
- In a redevelopment area, any existing services that are not PVC pipe must be upgraded to PVC pipe back to the main. Existing PVC services must be demonstrated to be in good repair and acceptable to Wastewater Services, as well as for the requirements of the new development;
- All fuel stations, oilfield service operations, and any other facility that is expected to discharge sediment (such as those with large gravelled yards) and/or oil/grease must adhere to the Sewer Use Bylaw with respect to their discharge. The prevention of the transport of sediment may require an oil/grit separator, the sump of which is to be cleaned regularly; and
- Any facility that may potentially discharge contaminants listed within the Sewer Use Bylaw is strongly encouraged to participate in a pre-application meeting; in any case this information must be disclosed when applying for a Development Permit. The design of the discharge must include the measures taken to maintain the effluent quality described within the Sewer Use Bylaw and prevent the introduction of contaminants into the environment. Common facilities that may be subject to this requirement include vehicle washes, food processing, oil field services, manufacturing, and vehicle servicing.

1.2.24 Section 11.7.3.4 Water Services

Section is amended to read:
The design and construction of water service installations must conform to the following:

- Water service pipe:
  - Approved Materials are listed in Section 6.15;
  - Flexible pipe service connections must be Q-line. For service connections 37 mm to 50 mm, high density polyethylene (HDPE) is permitted;
  - Service connections larger than 50 mm must be PVC;
  - Couplings must be Standard Brass, compression type;
  - Dwellings without sprinklers 19 mm or 25 mm for services less than 30 m in length;
  - Sprinklered dwellings 37 mm minimum;
  - Multi-family/commercial sized accordingly;
- Water service fittings:
  - Approved materials are listed in Section 6.15; and
  - Curb stop will be stop and drain type;
- Water and sanitary sewer services in a common service trench must have the following minimum horizontal separation, based on the water service diameter:
  - 50 mm diameter or less: 0.3 m
  - Greater than 50 mm to less than 100 mm diameter: 2.0 m
  - Separate trenches required for services 100 mm diameter or larger
- Water service connection pipes must have minimum 2.85 m cover at the property line. If the water service minimum depth cannot be achieved, a servicing plan showing proposed insulation installation in conformance to Standard Drawing 4-101 must be submitted to the City for approval;
- Locate water service curb stops as per Standard Drawings 7-101, 7-102 and 7-103;
- Any one lot may only have one water service connection to City mains. At the time of installation of new services to a building, any unused water service stubs must be abandoned at the main as per Section 10

of the MDS, and the curb cock must be replaced prior to removal of the water meter. The cost of this replacement will be borne by the Applicant;

- Where there is more than one serviced building on a lot, each building will be connected separately to the lot's water service;
- Where the service is flexible pipe, it is to be one continuous piece from the union at the curb cock to the water meter; and
- If the daily demand exceeds 200 m^3 and/or the peak hour demand exceeds 50 m^3 per hour, justification for the high demand must be provided, and the Applicant must demonstrate there is capacity within the distribution network to support these demands**. Existing system capacity data can be found in the City's Water Distribution Master Plan. The City's water distribution modelling data is available upon request, conditional upon entering into a Data Sharing Agreement with the City**.

1.2.25 Section 11.7.4 Detail Drawings

Section is renumbered to 11.7.5.

1.2.26 Add Section 11.7.4 Erosion and Sedimentation Control Plan

Added section reads:

Drawings supporting the Erosion and Sedimentation Control Plan described in Section 11.10.2 will include the following:

- **Existing and final site contours at an interval and scale sufficient for distinguishing runoff patterns before and after soil disturbance;**
- **Existing vegetation, such as grassy areas or vegetative buffers, that may reduce erosion or off-site sedimentation;**
- **Limits of clearing and grading;**
- **Critical areas within or near the project areas, such as streams, lakes, ponds, wetlands, highly erodible soils, public streets, and residences;**
- **Locations and types of ESC measures, with dimensions; and**
- **Detailed drawings of ESC structures and measures, showing dimensions, materials, and other important details.**

1.2.27 Section 11.11.6 Utility Connections

Section is amended to read:

A City representative is to be present to witness and inspect all connections to existing City mains, prior to the connection being made. A minimum notice of 24 hours is required to request this inspection. On the day of the work, a minimum two hours' notice will be required. All service pipes up to the building envelope must also be inspected, and these inspections must take place prior to any backfilling. **In the case of Major Developments, the City may waive the requirement to inspect all service pipes to the building envelope, instead inspecting only the connection to the main/service stubs. In this instance, the Applicant must provide as-constructed drawings of the service installation for the City's records within thirty (30) days of construction of the private servicing infrastructure being completed.**

1.2.28 Standard Drawings

Standard Drawing 1-301 has been updated as attached.

INSPECTION REQUEST FORM

LLOYDMINSTER

The following form must be completed by the Developer's Engineering/Landscaping Consultant and submitted by the Developer with every request for an inspection of municipal infrastructure.

Submitted For:

☐ Construction Completion
☐ Final Acceptance
☐ Underground Works ☐ Surface Works ☐ Landscaping

Project Location and Brief Project Description: _____

_____

_____

Water Security Agency of Saskatchewan Notification Number(s): _____

Requested date(s) for inspection: _____

Developer:

Name: _____
Address: _____

_____

_____

Phone: _____ Fax: _____

Engineering / Landscaping Consultant:

Name: _____
Address: _____

_____

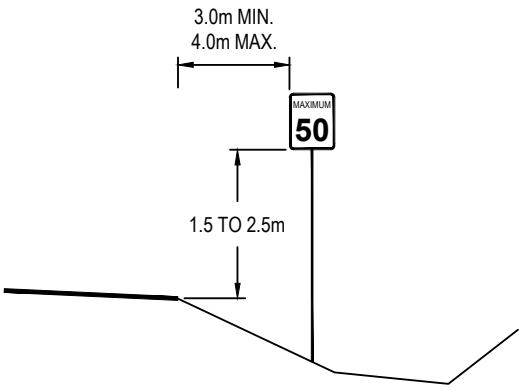
_____

Phone: _____ Fax: _____

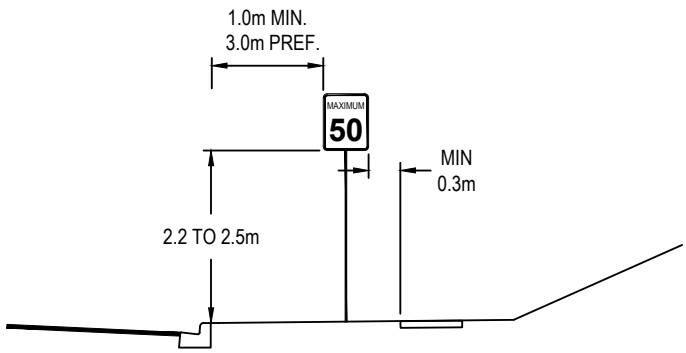
I, the undersigned, declare that construction of the municipal improvements described above have been completed in general accordance with the Municipal Development Standards and the approved construction drawings **OR** that the warranty period for the municipal improvements described above will end within the next thirty (30) days, and that the development has been verified as ready for inspection as set forth in Section 2.5 and the relevant subsection(s) of the Municipal Development Standards, including cleaning of all appurtenances and surfaces to be inspected.

Name: _____ Signature: _____

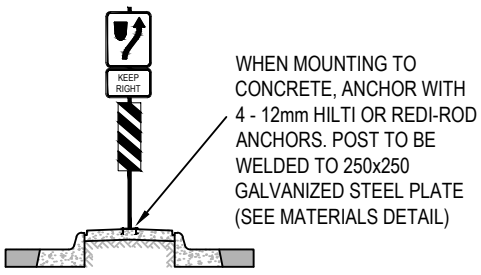
Date: _____



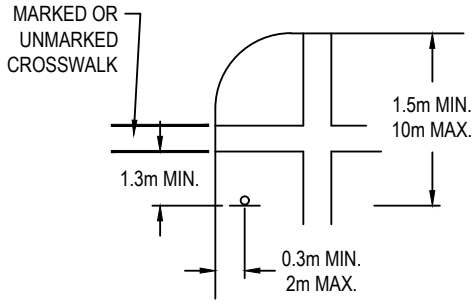
RURAL / INDUSTRIAL



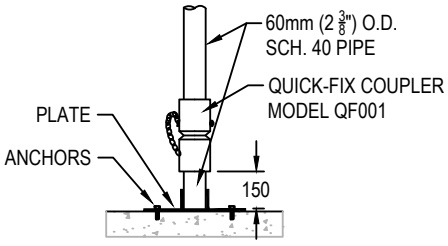
ARTERIAL ROADWAY



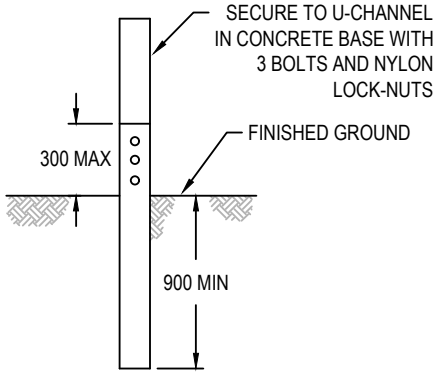
MEDIAN / CONCRETE DETAIL



INTERSECTION DETAIL



MATERIALS DETAIL
ROUND POLE



MATERIALS DETAIL
U-CHANNEL

NOTE:
1. SIGNS MOUNTED ON U-CHANNEL POLES EXCEPT WHEN INSTALLED IN CONCRETE.

NO.	DATE	REVISION
8		
7		
6	10/12/21	Changed Materials Details
5	29/06/20	Changed Materials Details
4	23/06/20	Changed Pipe Dia.
3	27/02/20	Changed Notes
2	03/21/18	Revised U-channel note.
1	08/04/14	Added U-channel note.

The City of Lloydminster

Checked by: | Approved by: | Drawn by:

Scale: N.T.S.

Date: Feb. 22, 2011

TRAFFIC SIGNAGE

Drawing #: 1-301