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# MUNICIPAL DEVELOPMENT STANDARDS

## SECTION 2 – PROCEDURES FOR DEVELOPMENT

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Planning & Engineering

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## 2 PROCEDURES FOR DEVELOPMENT

### 2.1 General

In addition to these Municipal Development Standards, the City of Lloydminster has several documents that Developers and/or their agents should be fully aware of in advance of undertaking the design of a specific subdivision or project:

- The City's Municipal Development Plan puts forward general policies and guidelines with respect to land development within the City;
- The design parameters and minimum requirements for development within the City that will accommodate future growth are set forth in the City's Water, Storm Water, Sanitary, and Transportation Master Plans, and must be adhered to;
- New developments within a neighbourhood must comply with the approved Area Structure Plans and Outline Plans that preceded it. Deviations from these higher-level plans must be justified and accepted prior to approval and may require an amendment to the Area Structure Plan or Outline Plan. If there is no approved Area Structure Plan or Outline Plan in place, the Developer must prepare one as per the City's current Area Structure Plan Policy; and
- The specific steps that need to be followed for land development are detailed in the City's publication *Municipal Planning Process: A Community Guide*, which can be found on the City's website at [www.lloydminster.ca](http://www.lloydminster.ca).

These Standards will largely outline only the steps and standards specific to the engineering requirements for submissions, and do not remove the responsibility of the Developer to familiarize themselves with and follow approved plans, policies and processes otherwise outlined by the City.

Any Developer constructing new water mains and/or sewage mains within the City of Lloydminster is to fully comply with the requirements of the Water Main and Sewage Main chapters of the current version of the Saskatchewan Environmental Code. Copies of any submissions, notifications, records or documents required by the Code must be supplied to the City.

The City encourages early preliminary meetings with Planning and Engineering staff to discuss various land development proposals and options.

Developments within the City of Lloydminster are broadly classified in two types:

- Those involving the construction of municipal improvements, requiring a Development Agreement; and
- Construction on single lots, requiring a Development Permit.

The primary focus of these Standards is concerning the design and construction of municipal improvements. The requirements pertaining to single lot developments are detailed in Section 11.

### 2.2 Submission and Approval

#### 2.2.1 Detailed Engineering Drawings, Specifications and Landscape Plans

The Developer must submit the following for approval to the City:

- One (1) set of design drawings and specifications in PDF format;
- Sanitary sewer, storm drainage and water distribution network diagrams, geotechnical report(s), and an Erosion and Sedimentation Control Plan; and
- A Certificate of Compliance, which is included in Appendix 2A and is to be provided with all design submissions.

These submissions may accompany the subdivision application, otherwise they must be submitted in a timely manner following approval of the subdivision application. Approval of these submissions will not be granted prior to conditional subdivision approval.

The review by the City is for the sole purpose of ascertaining conformance to the Municipal Development Standards, Municipal Development Plan, Land Use By-Law and other Municipal Plans, Master Plans, Standards and Guidelines. Approval of the submission does not relieve the Developer of their responsibility for errors or omissions or of their responsibility of meeting all requirements of the Municipal Development Standards and other Federal and Provincial Acts and Regulations.

Engineering drawings, diagrams and reports must be stamped by a Professional Engineer. Landscape plans are to be submitted with the detailed design drawings and be stamped by the Landscape Architect.

The Geotechnical Report must include information about:

- Suitability of the soil for the type of development proposed;
- Physical properties of soil;
- Mechanical properties of soil;
- Design parameters (including water tables, sulfates and frost zone); and
- Foundations, road structure and pavement design and any special construction requirements.

Other information required prior to construction:

- Design calculations;
- A copy of the Acceptance of Notification documents from the Water Security Agency of Saskatchewan, both for Sewage Main and Water Main chapters of the Saskatchewan Environmental Code;
- Traffic impact analysis if applicable;
- Concrete and asphalt mix designs; and
- Construction drawings and specifications.

### **2.2.2 Approval by the City**

The City will inform the Developer, within twenty (20) working days after receipt of the detailed design submission, whether the Developer's submission has been approved. Should the City not approve any part of the Developer's plans or proposals, they will be returned to the Developer for revision to the satisfaction of the City. The twenty (20) working day approval period will begin again on the receipt of any re-submission. Note this approval is of the design elements only and does not constitute approval to construct.

Subsequent design submissions requiring changes to the previous submission must follow the procedure outlined in Section 2.2.4.

### **2.2.3 Design Revisions after Approval**

Whenever it is necessary, for any reason, to make changes to the design drawings after they have been approved, the following procedure must be followed:

- Submit one (1) PDF format copy of each original drawing affected, with the proposed changes shown in red, accompanied by a letter outlining the reasons for the required changes must be submitted. The submission will be accompanied by a Certificate of Compliance, unless a deviation from the MDS is required, in which case the procedure outlined in Section 2.2.4 will be followed;
- The City will inform the Developer within five (5) working days after receipt if the proposed changes meet the approval of the City; and
- One (1) copy of the requested change will be signed and returned, accompanied by a letter authorizing the changes to be made to the original approved detailed design drawings.

No changes are to be made to any original approved drawings without following this procedure. The City may, at its sole discretion, opt to waive the requirement for revised drawings if, after reviewing the proposed changes, they are deemed to be minor.

#### **2.2.4 Municipal Development Standards and Master Plan Deviation Process**

The Developer must identify and provide justification for any deviations or non-conformances from the Municipal Development Standards or the City's Master Plans in the submission. Otherwise, the submission of detailed design drawings will be declared to be in accordance with the Municipal Development Standards and Master Plans by means of a Certificate of Compliance.

Upon Final Acceptance, the responsibility for the operation and maintenance of all Municipal Improvements, including any associated costs, is taken on by the City. Thus, the City has the obligation to set minimum standards, and is therefore the final authority as to whether deviations from the Municipal Development Standards and Master Plans are accepted or not.

Note that under no circumstances will a deviation from the Municipal Development Standards be considered by the City without the submission of detailed documentation demonstrating the justification for the deviation and the added benefit to the City.

#### **2.2.5 Compliance with The Saskatchewan Environmental Code**

The City of Lloydminster (the City) and its agents take no responsibility for the understanding and compliance with the Saskatchewan Ministry of Environment and the Water Security Agency (together referred to as the Ministry) for work associated with completing water mains and sewage (specifically sanitary sewer) mains within the City. The Developer assumes all responsibilities and indemnifies the City with respect to the compliance with the Ministry and all issues arising from noncompliance issues.

The following requirements shall apply to all water mains and sewage mains constructed within the City of Lloydminster regardless if the work is carried out in the province of Alberta or Saskatchewan.

The Developer must read, understand, and comply with the latest editions of the following documents:

- The Environmental Management and Protection Act (2010) - Chapter C.1.1 Water Main Code Chapter;
- The Environmental Management and Protection Act (2010) - Chapter C.2.1 Sewage Main Code Chapter;
- EPB 501 – Waterworks Design Standard;
- EPB 503 – Sewage Works Design Standards;
- EPB 560A – Waterworks Start-Up Standards;
- The Environmental Management and Protection (Saskatchewan Environmental Code Adoption) Regulations - Chapter E-10.22 Reg 2;
- The Waterworks and Sewage Works Regulations – Chapter E-10.22 Reg 3;
- ANSI/AWWA C651 – Disinfecting Water Mains; and
- The City of Lloydminster Municipal Development Standards.

The Developer is required to comply with the requirements of the above reference documents, and to provide all required documentation and notifications to the Ministry. Copies of all the required submissions and correspondence provided to the Ministry must also be submitted to the City. The following summarizes the submission requirements; however, it is the responsibility of the Developer to be fully aware of, and compliant with, the applicable code chapters and regulations in the process of development.

### **2.2.5.1 Acceptance of Notification**

In accordance with the Ministry's requirements, the Developer must submit the detailed design plans for the water mains and sewage mains along with Sewage Main Notification and/or Water Main Notification documentation to the Ministry to receive an Acceptance of Notification and notification number(s). Accompanying this will be the Qualified Person Certificate, which must be executed by the Developer and submitted to the Ministry. A copy of all submissions, together with the Acceptance of Notification numbers provided by the Ministry, must be supplied to the City. Receipt of the Acceptance of Notification numbers is required prior to execution of the Development Agreement, and these numbers must be identified on all relevant plans, documents, and records submitted to the City as required by Ministry as well as by these Standards. The Developer is responsible to provide a copy of the notification provided by the Ministry, as well as a copy of the applicable Water Main and Sewage Main code chapters, to the designer, contractor, and the person supervising the work. These documents are to be made available at the place of work where the applicable water main or sewage main is being constructed.

### **2.2.5.2 Reporting Requirements**

Notwithstanding the clauses and requirements set forth within the applicable code chapters and regulations, as well as those of the Acceptance of Notification, the Developer is required to provide the Ministry with the following:

- Notice of the date of when construction will begin, prior to commencing construction;
- Notice that construction is significantly completed after it is 75% complete and before it is 95% complete;
- As-constructed drawings within one (1) year of completing construction; and
- A certificate from a Qualified Person, pursuant to Clause 3-2(b) of the Water Main Chapter and Clause 3-2(1)(b) of the Sewage Main Chapter.

Note that these notifications and submissions must be carried out separately, where needed, for each chapter (e.g. if the water main were to be significantly completed before the sewage main). The City is to be copied on all notifications to the Ministry.

### **2.2.5.3 Certification of Design and Commissioning**

Prior to construction, in accordance with the notification documentation, the Developer must ensure that a Qualified Person has issued a certificate stating that, in their opinion, the design plan, if carried out in accordance with that plan, will satisfy the relevant sections of the Waterworks Design Standard (in particular 1.2.5, 5.1, and 5.3), and the Sewage Works Design Standard (in particular 1.2.1, 1.2.2, and 2), and all other relevant code chapters and regulations.

Prior to commissioning the sewage main, the Developer must ensure that a Qualified Person has issued a certificate stating that, in their opinion, the requirements of Part 3-2(1)(b) of the Sewage Main Chapter have been met.

Prior to commissioning the water main, the Developer must ensure that a Qualified Person has issued a certificate stating that, in their opinion, the requirements of Part 3-2(b) of the Water Main Chapter have been met. To accompany this, the City will also provide a supplemental certificate, executed by an appointed Qualified Person required by Part 3-2(b) of the Water Main Chapter; as the City will be responsible for completing the commissioning and integrity testing, in conjunction with the Developer, as per these Standards.

#### **2.2.5.4 Required Records**

The Developer must submit to the City, for their records, the following:

- Records of commissioning procedures used;
- Results of water main pressure integrity testing;
- Results of sewage main exfiltration testing and CCTV/visual inspection reports;
- Records of any action taken to correct failed test results respecting construction-related microbial or pressure integrity;
- Records of any departure from planned or accepted construction practices;
- Records of any environmental sampling, analysis or monitoring that had been conducted;
- Copies of all Code related information and correspondence;
- Copies of all design specifications, reports, and as-constructed drawings;
- Copies of all records related to the construction and inspection of the water and sewage mains;
- Copies of all analytical and testing procedures; and
- Copies of any certificate issued by a Qualified Person under the Code.

#### **2.2.6 Canada Post - Community Mailboxes**

Canada Post receives a copy of the plan of proposed subdivision as part of the external referral process of subdivision approval. Should Canada Post require a community mailbox to be installed, the Developer and the City are responsible to coordinate with Canada Post to determine the mailbox location. When a location is agreed upon, an easement covering the location of the mailbox will be placed along with the utility easements in the subdivision, if not placed within the road right-of-way.

#### **2.2.7 Approval by Other Agencies**

The Developer must submit supporting documents to the City that verify that permission has been received from appropriate authorities for the crossing of pipelines, railways, highways or other facilities, if such crossings are intended, at the time of detailed plan and specification submission, or soon thereafter.

### **2.3 Detailed Engineering and Landscape Drawings**

#### **2.3.1 Engineering Design**

The Developer must retain an Engineering Consultant and Landscape Consultant who will be responsible for the design and preparation of drawings and specifications for all services (except lighting, telephone, cable television, gas, and power) as required. All services must be designed in accordance with the Municipal Development Standards.

The design drawings must show all existing and proposed services. It will be the Engineering Consultant's responsibility to coordinate with the utility companies to establish the location of their existing and proposed services.

#### **2.3.2 Format for Engineering Drawings**

All design drawings submitted to the City in CAD format that pertain to Municipal Improvements must be prepared and formatted in the City's most current version of AutoCAD (or Civil3D, if available), and conform to the current edition of the City of Lloydminster Municipal Civil 3D and AutoCAD Standards, available from the City's website ([www.lloydminster.ca](http://www.lloydminster.ca)); some key items are included in the following sub-sections. All external references should be bound to the project drawing file. The drawing should be purged of all redundant blocks, layers, etc. Object(s) must not be on layer '0' and no working layers or layers with unnecessary objects must be contained in the digital file.

All PDF format drawings must be generated using AutoCAD's "DWG to PDF" function.



### **2.3.2.1 Coordinate System / Survey Control**

The horizontal datum to be used for all projects is the North American Datum 1983 (NAD 83), Universal Transverse Mercator (UTM) Zone 12 North Coordinate System expressed in metres. The vertical datum for all projects will be geodetic based on the same ellipsoid model used above. All elevations must be relative to geodetic datum.

### **2.3.2.2 Standard Files/Templates**

The following are available from the City's website ([www.lloydminster.ca](http://www.lloydminster.ca)):

- Drawing Templates (CoL-AutoCAD-2016.dwt);
- Civil 3D Drawing Template (CoL-C3D-2016.dwt);
- Civil 3D Plan Production Template (CoL-C3D-2016-PP.dwt);
- Master Layer Listing (CoL\_Layers - C3D-2016.pdf);
- Standard Symbol library (COL\_Symbols.dwg);
- Standard Title Blocks (COL\_TitleBlocks.dwg);
- AutoCAD/Civil 3D Plot Style file (COL\_PlotStyles.stb);
- AutoCAD/Civil 3D Linetype file (COL\_Linetypes.lin);
- Custom Linetype Display file (CoL\_Custom Linetypes.pdf);
- Civil3D Pipes Catalog (COL-PipesAndStructures.zip);
- Service Lateral Templates (Lateral Service Templates – Revision VI (Main to Property Line).pdf); and
- As-built Information Worksheet (COL\_AsbWorksheet.xls).

## **2.3.3 Drawing Standards**

### **2.3.3.1 General**

Drawings are to be drawn at a scale of 1:1 (1 unit=1 metre). Drawings must be orientated such that north points to the top or left-hand side of the page and lettering should be read from the bottom or right-hand side of the sheet, respectively.

### **2.3.3.2 Sheet sizes/title blocks**

Standard title blocks have been set up and must be used for all projects. The title block templates are included in the standard files/templates package that is available from the City's website, as indicated in Section 2.3.2.2. The standard sheet size for full-sized submitted drawings, unless otherwise specified, must be A1.

### **2.3.3.3 Stationing/Chainage**

Stationing/Chainage can run from either direction (left to right or right to left). A reference chainage must be made to existing/proposed property lines on all drawings. Chainage on a single street must be continuous across multiple plan and profile drawings, if they are required.

## **2.3.4 Required Drawings**

### **2.3.4.1 Cover Page**

The cover sheet must include the project name, the City's project number, notification number(s) from the Water Security Agency, description of the location of the project and/or legal description of lands involved in the project, a site location (key plan) showing the extents of the work, Developer's Consultant's logo, Developer's name/logo (if pertinent) and the year of construction.

### **2.3.4.2 Legend Page**

The Legend page must contain all symbols and linetypes used in the project, with definitions, and an index of all drawings contained in the set.

### 2.3.4.3 Site Plan

This drawing must include, but not limited to, the following existing and proposed information:

- The notification numbers from the Water Security Agency required by the Sewage Main Code and Water Main Code;
- Property lines;
- Street names, lot and block numbers;
- All easements and rights-of-way;
- Water, sanitary, storm information (pipes, valves, hydrants, catch basins, manholes, etc.);
- Curb lines, sidewalks, trails;
- Limits of contract;
- Drawing number references to plan/profile and plan details sheets;
- Community mailboxes; and
- Any existing vegetation, furniture or amenities that are to remain.

This drawing can be made into two (2) separate drawings, one containing all underground information and the other all surface related information.

A minimum of two (2) survey reference points are to be shown on this plan, complete with location and elevation information as per the coordinate system specified in Section 2.3.2.1.

### 2.3.4.4 Storm Water Management Plan

The Storm Water Management Plan must include the following:

- Show the site and surrounding area (400 m minimum outside of the development) showing roads and major features (1:2500 scale). A small location plan of the watershed is also to be included;
- Contours of the existing ground (0.5 m intervals);
- Major flood routing (1 in 100 year event); shown as arrows and indicate if in pipe (shaded or filled arrow) or on surface (open arrow);
- Hydraulic grade line for the Major System (1:100 year storm);
- Retention pond details, if applicable;
- Area, in hectares, of the development and the total area of the drainage basin;
- Directional arrows of the flow within the site and on surrounding areas;
- Sub-catchment boundaries, coefficients and areas;
- Pipe system calculations including size, grade, and minor and major flows including the percentage of pipe capacity utilized by those flows (a table may be utilized); and
- The subject development is to be highlighted.

This information can be shown on more than one drawing, if needed.

### 2.3.4.5 Sanitary Servicing Plan

The Sanitary Servicing Plan must include the following:

- The notification number from the Water Security Agency required by the Sewage Main Code;
- The site and surrounding area (400 m minimum outside of the development) including roads and major features (1:2500 scale);
- Area, in hectares, of the development and the total contributing area;
- Catchment boundaries and areas, including flows expected from future areas;
- Pipe system calculations including size, grade, and flows including the percentage of pipe capacity utilized by those flows (a table may be utilized); and
- The subject area is to be highlighted.

### 2.3.4.6 Water Servicing Plan

The Water Servicing Plan must include the following:

- The notification number from the Water Security Agency required by the Water Main Code;
- The site and surrounding area (400 m minimum outside of the development) including roads and major features (1:2500 scale);
- Area, in hectares, of the development and the total contributing area;
- Distribution boundaries and areas, including flows expected to provide service to future areas;
- Pipe system calculations including size, and the percentage of pipe capacity utilized by the areas serviced (a table may be utilized); and
- The subject area is to be highlighted.

### 2.3.4.7 Water-Sanitary-Storm Plan/Profiles

The plan/profile drawings must show all the detailed information of the underground utilities to be installed. Scales to be used are: 1:500 horizontal and 1:50 vertical. The drawing must include the notification numbers from the Water Security Agency required by the Sewage Main Code and Water Main Code.

The top half of a Plan/Profile sheet will show the plan view, and will show all the property lines (proposed, existing), legal description of all properties (Lot, Block, and Plan), as well as the location of catch basins, underground utilities such as sanitary sewer, storm sewer, water, telephone, television, power, cable, manholes, valves, hydrants, curb cocks, inspection chambers, etc.

The following must also be shown:

- Dimensions from all mains to property line. Dimensions must be to two (2) decimal places;
- Label all mains with the following: *Proposed or Prop. ###mm PVC Wtr/San/Stm* (e.g. Prop. 200mm PVC Wtr);
- Manhole details, including number, rim elevation, and invert elevation;
- Service/lateral diameter and material as well as inverts at the end of pipe;
- For San/Stm mains including service/laterals, pipe must be drawn in the direction of flow (for GIS integration) – upstream manhole to downstream manhole; and
- Existing franchise utilities with type and size (if applicable).

The bottom half of a Plan/Profile sheet must show the profile view and must show the following:

- Surface profiles of both the existing and design/proposed;
- Label all length, size, material, type, and grade of each main in the format *###m - ###mm PVC Wtr/San/Stm @ #.##%* (e.g. 47m - 200mm PVC San @ 1.23%);
- Show the invert and top of pipe (crown) of all sanitary and storm mains while only show the top of pipe for all water mains;
- Invert elevations at the inlet and outlet side of all manholes;
- Manholes are to be labelled with their respective number as well as the rim elevation;
- Franchise utilities with type, elevation, and size (if applicable);
- Bedding type, backfill, and surface restoration;
- Grades are to be to two (2) decimal places, while all invert, top of pipe, and rim elevations are to be to three (3) decimal places; and
- Chainage must be shown along the bottom of the profile and a station must be shown for all structures (Manhole, Valve, Tee, Cross, etc.) that are to be installed. Chainage must be tied to legal property corners (Proposed/Existing) on all sheets.

### 2.3.4.8 Surface Works (Transportation) Plan and Grade Slips

The surface works and lot grading sheet must show all detailed information as to the road design and area grading. This sheet(s) must be drawn at a scale of 1:500 and must include the following:

- Property line (proposed and existing);
- Legal dimensions of all properties;
- Legal description of all properties (Lot: ## / Blk: ## /Pln: #####);
- Property design lot elevations (two (2) decimal places). On split drainage lots, dimension the split point;
- Indication of lots that feature fill greater than one metre above stripped ground;
- Proposed garage locations and minimum garage slab elevations;
- Lot grade arrow and percent of slope;
- Hydrants, valves, manholes, catch basins, service shut-off valves and inspection chambers;
- Location of service pipe stubs;
- Sidewalk (separate sidewalk will show both sides of the walk while a monolithic walk will only show the back of walk);
- Face of curb (gutter) line with design/as-built elevations at grade changes, end of curb/back of curb, catch basins (three (3) decimal places);
- Edge of pavement line;
- Gutter grade percent (two (2) decimal places) with flow direction arrow;
- Area of pavement to be constructed or as-built must be hatched;
- All manholes must show their number and rim elevation (design/as-built); and
- Centerline elevations at critical locations (grade change, vertical curves, etc.).

Before a Development Permit can be issued for a subdivision, and in addition to the overall grading drawings, a Grade Slip must be prepared for each individual lot and updated to incorporate the final record drawing for surface design. These drawings must contain:

- Property lines;
- Legal dimensions of property;
- Indication if the lot features fill greater than one metre above stripped ground;
- Property design lot elevations to two (2) decimal places. Dimension all distances between elevation changes along property lines;
- As-built (measured) elevation of the CC stamp on the sidewalk;
- Proposed garage location and minimum garage slab elevation;
- Lot grade arrows and percent of slope;
- Location and dimensions of any easements on the property; and
- Adjacent hydrants, valves, service shut-off valves and inspection chambers;

The minimum garage slab elevation is calculated by adding 0.36 m to the design elevation of the adjacent property corner.

### 2.3.4.9 Traffic Control Plan

A separate plan must be prepared in all cases for road surface works. This plan(s) must detail all eradications, alterations, additions and new regulatory and advisory signage, line painting, and any other traffic control devices. The design must conform to Manual of Uniform Traffic Control Devices guidelines. The following information must be shown:

- Dimensions, lengths and color of proposed lane or curb markings, medians and crosswalks;
- Lane widths, median radii and taper ratios; and
- Dimensioned location and type of new or relocated signs.

### 2.3.4.10 Landscaping Plans

The landscaping sheet(s) must show all detailed information as to the landscaping of the development, and include “hard” landscaping (e.g. grading, trails, walkways, furniture, etc.) as well as “soft” landscaping (e.g. grassed areas, plantings). These drawings must show what is to be constructed or planted as well as what is to be removed. These sheets must be drawn at a scale of 1:200, 1:250, or 1:500. The roundabout landscaping drawings discussed by Section 3.16 will adhere to these requirements.

Drawing sets for hard landscape features must include the following:

- Landscape Layout Plans must indicate clearly the exact location and dimensions of:
  - Buildings/structures;
  - Signage;
  - Internal roadways;
  - Walkway systems;
  - Retaining walls, fencing and screens;
  - Underground services (both franchise and municipal), if required;
  - Site furnishings - benches, lighting, garbage cans, etc.;
  - Playground equipment; and
  - Existing features to be retained or preserved; and
  - Any other proposed amenities or features.
- Detail drawings will be required to explain the working details of the Landscape Layout Plan. These drawings are to include details for paving, benches, lights, fencing, walls, etc. Standard Drawings, where available, will be included; and
- Grading Plans must include:
  - Existing site grading, including contours, including spot elevations, boundary conditions, road elevations and drainage outlets for surface water;
  - Areas that are to be preserved or retained;
  - Proposed contours;
  - Proposed final spot elevations of strategic locations:
    - Corners of paved areas;
    - Top of curbs;
    - Top and bottom of steps, retaining walls and slopes;
    - Ground elevation of all structures; and
    - Drastic changes in grade;
  - Direction of proposed surface drainage and drainage districts; and
  - Cross sections and profiles where appropriate.

A list of approved species for tree plantings can be found in Section 8.1.2.3. Any deviation from this list must be approved by the City. All plantings must be suitable, as described in Section 8.1.2. Soft landscaping plans (Planting Plans) must include:

- Proposed grade contours;
- Location of existing and proposed trails, structures, furnishings, fences, bollards, gates and amenities;
- Location of any rights-of-way and buried utilities;
- Location of trees, shrubs and planting beds, including boulevard plantings, if any;
- Areas to be seeded, sodded or requiring special treatment;
- Naturalized areas, if any; and
- A list of plant materials giving:
  - Keys to planting plan;
  - Quantity of individual species;

- Botanical name and common name;
- Size of material - height and calliper; and
- Canadian Plant Hardiness Zone.

#### **2.3.4.11 Details**

The Detail Drawing(s) must show all specifications for construction which are not covered or specifically detailed in the Standard Drawings. Where there is a Standard Detail, it is expected to refer to the Standard Drawing Number. It is not necessary to include or provide linework for a detail for which there is a Standard Drawing, though the relevant Standard Drawings must be included in the Issued for Construction drawing set.

## **2.4 General Construction Requirements**

All work for construction of municipal improvements carried out by the Developer must be in accordance with all Federal, Provincial and Local Statutes, acts, bylaws and regulations and meet the general requirements contained within these Standards.

### **2.4.1 Occupational Health and Safety**

The Developer, Contractor, Consulting Engineer and Landscape Consultant must comply with the provisions of the Occupational Health and Safety Acts in either Alberta or Saskatchewan depending on the location of the worksite. All subcontractors at the worksite must also comply with the requirements of the Act. The Contractor will be the general representative and agent to the Developer for the purposes of ensuring compliance with safety regulations for both itself and subcontractors. The Contractor must bring to the attention of subcontractors the provisions of the Occupational Health and Safety Act.

### **2.4.2 Project Supervision**

The Developer will be responsible to provide adequate supervision (including layout, field surveys, inspection and approval of materials) of all improvement installations which are the responsibility of the Developer. The Developer or their authorized representative must always be on-site during the installation of lot services to certify that all improvements are in conformance with the approved plans and specifications.

In addition to supervision carried out by the Developer, the City may periodically inspect the work to verify compliance with these Standards. The City will bring the use of any unacceptable materials or practices to the attention of the Developer. If remedial action is not taken to the satisfaction of the City, a Stop Work Order will be issued, and all work will cease until the unacceptable work is corrected and/or replaced by the Developer.

### **2.4.3 Right-of-Way Documents**

Where easement or right-of-way documents are deemed necessary, they must be prepared according to the City's standard easement agreements by either a registered Land Surveyor or a lawyer at the Developer's expense. Easements or rights-of-way must be of sufficient size to allow access for maintenance purposes. All easements and rights-of-way must be registered in favour of the City of Lloydminster. A copy of the City of Lloydminster's Standard Utility Easement Agreement is available upon request.

### **2.4.4 Construction Approval**

For the Developer to commence the installation of Municipal Improvements, the following must be satisfied:

- submission of certified drawings, specifications and other required documentation;
- written approval of the same from the City; and
- execution and compliance with the conditions of a Development Agreement.

A copy of all approved drawings and specifications must be maintained at the construction site during the installation of Municipal Improvements. These issued for construction drawings do not need to include

additional design data (e.g. calculations) not required for construction. Any deviation from the design of installed or constructed improvements from those specified in the drawings must be noted on this set of drawings, and submitted as redline drawings, as described in Section 2.6.

#### **2.4.5 Pre-Construction Meetings**

Prior to commencement of any construction activities, the Developer's Consultant must administer a pre-construction meeting with representatives of the Contractor, Developer and City. The City would prefer to be included in the meeting minutes distribution list for subsequent progress meetings.

#### **2.4.6 Construction Commencement Notice**

The Developer must give the City at least one (1) week notice prior to commencing construction to allow for time to arrange for inspection staff.

#### **2.4.7 Stockpile Locations and Site Stripping**

The location and composition of all stockpiles on the City's property must be approved by the City.

At times, it is advantageous for the Developer to perform clearing, grubbing, stripping and rough grading of a site, prior to subdivision approval. The Developer may apply for a Development Permit to allow these activities to occur. The submissions required would include an interim grading plan showing how the site will drain, and an Erosion and Sedimentation Control Report, as described in Section 5.8.1.2.1 with supporting drawings and calculations, demonstrating how excessive erosion and the transport of sediment into the City's stormwater collection system will be prevented.

#### **2.4.8 Erosion and Sedimentation Control**

The Developer must have Erosion and Sedimentation Control (ESC) measures in place to prevent erosion and the transport of sediment from the development, or across stages of the same development. The Developer must comply with the Federal and Provincial acts, regulations, codes of practice, standards and guidelines that are applicable to development activities that result or could result in erosion, sedimentation and adverse effects on the environment. Developers must submit an ESC Plan for review by the City as part of the detailed design. An ESC Plan consists of a report, drawings, and supporting calculations. Details concerning the specific requirements for the ESC Plan are outlined in Section 5.8.

#### **2.4.9 Barricades, Guards and Safety Provisions**

The Developer is responsible to protect persons from injury and to avoid property damage. The Developer must place and maintain adequate barricades, construction signs, warning lights and guards during the progress of the construction work and until it is safe for traffic or pedestrian use. Whenever required, flag people must be provided to facilitate adequate traffic control.

#### **2.4.10 Traffic and Utilities Controls**

##### **2.4.10.1 Approvals**

At least five (5) working days prior to any work commencing within the Municipal road right-of-way, the Developer must obtain an Excavation Permit from Planning & Development, as well as a Road Closure Permit (if applicable) from Roadway Services (forms are available on the City's website, [www.lloydminster.ca](http://www.lloydminster.ca)).

##### **2.4.10.2 Responsibility for Existing Municipal Infrastructure**

The presence and location of underground utilities indicated on any pre-existing plans are not guaranteed. These locations must be investigated and verified in the field by the Developer. The Developer will be held responsible for any damage to, maintenance, and protection of existing municipal structures and utilities during construction. All existing boundary valves must be operated

by the City's Water Services staff and will not be operated at any time by the Developer or their agents.

#### **2.4.10.3 Traffic Disruption**

Excavations carried out within the roadway must be conducted to cause the least interruption to traffic. Hydrants under pressure, valve pit covers, valve boxes, curb stop boxes or other utility controls must be unobstructed and accessible during the construction period. All applicable permits must be obtained before work can commence.

#### **2.4.10.4 Utility Disruption**

Adequate provision must be made for the flow of sewers, drains and water courses encountered during construction. Valves, switches or other controls on the existing utility system must not be operated for any purpose by the Developer. If utility disruption is unavoidable, Water Services must have a written request for a temporary shutdown stating timelines for shutdown and a contingency plan for unforeseen problems. A minimum notice of five (5) working days will be required. A response will be given within one (1) working day to leave enough time to give affected residents and businesses a written notice a minimum of 72 hours before shutdown. In an emergency, Water Services is to be contacted immediately for further instructions. All costs incurred by the City will be the responsibility of the Developer.

#### **2.4.10.5 Traffic Accommodation Strategy**

For all work in or on collector or arterial roadways, or intersecting roadways adjacent to them, a Traffic Accommodation Strategy (TAS) must be submitted a minimum of fifteen (15) working days in advance of the commencement of construction for review and approval by the City. This TAS must comply with the requirements set forth in the latest edition of the Alberta Transportation document *Traffic Accommodation in Work Zones*. The requirement for a TAS may be waived at the sole discretion of the City.

#### **2.4.10.6 Utility Connections**

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 one (1) working day is required to request this inspection. On the day of the work, a minimum two hours' notice will be required. The inspection must take place prior to any backfilling.

#### **2.4.11 Temporary Water**

Should a water supply be required for construction, an application for Temporary Water Supply for Construction is available from the City's website, [www.lloydminster.ca](http://www.lloydminster.ca). If, during construction, temporary water service will need to be supplied to homes, businesses or a job site, the Developer must provide and maintain all connections from the temporary water source to those businesses and residences, coordinating with Water Services. All costs and labour associated with providing these temporary services will be borne by the Developer.

#### **2.4.12 Stop Work Order**

The City may issue a "Stop Work Order" to the Contractor due to non-conformance. Non-conformance includes:

- Unsafe practices;
- Imminent danger;
- Lack of traffic control;
- Construction not in accordance with approved drawings and specifications;



- Non-compliance with the development requirements; and
- Damage to existing facilities.

Should a “Stop Work Order” be issued, the Developer must immediately cease operation, rectify the non-conformance and obtain the City’s approval prior to proceeding.

### **2.4.13 Survey Monument Control**

The Developer will be responsible:

- To pay to the City a fee for extension of the survey control network for the Province in which the Development is located. Pursuant to the *Surveys Act* (Alberta) or *Land Surveys Act, 2001* (Saskatchewan), both as amended from time to time, the City will undertake to have the necessary plans and approvals prepared and arrange to undertake the field work to extend the survey control network into the development area. The density and location of survey control monuments must be mutually agreed upon through consultation with the City (suggested spacing +800 m); and
- To maintain, protect, and if necessary, replace such monuments as may be destroyed, damaged or removed by the operation of the Developer in carrying out the construction and installation of municipal improvements.

### **2.4.14 Dewatering Operations**

Should, during development, dewatering operations be required that will discharge into the storm sewer system, the Wastewater Collection Supervisor must be notified in advance of the commencement of pumping. The Wastewater Collection Supervisor can be contacted at the Operations Centre at 780-874-3700. Any operations involving the dewatering of existing bodies of water need to be approved by the Saskatchewan Water Security Agency or Alberta Environment and Parks prior to commencing.

## **2.5 Inspections for Construction Completion & Final Acceptance**

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. 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. 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 how any deficiencies will be remedied.

### **2.5.1 Underground Construction**

During Construction Completion inspections, Contractor 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 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;
  - 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.

### 2.5.2 Surface Works

At the time of the Construction Completion inspection, the elevation of certain appurtenances is checked in relation to the final elevation of landscaped areas. Since the landscaping is not complete at this time, the final elevation of landscaped areas within the road right of way will be assumed to be level with a string line extended between the back of curb and the front of walk in boulevards, and/or the extension of the sidewalk slope from back of walk to property line. During Final Acceptance inspections of the surface works, the gutter flow must be verified, as outlined in Section 9.8. For Final Acceptance, it is preferred that the concrete curbs be inspected and repaired prior to the placement of the final lift of asphalt, to prevent damage to the final lift in the event curb and gutter must be replaced. These repairs will be re-inspected as part of the inspection of the final lift of asphalt. In general, items visually inspected include, but are not limited to:

- **General:**
  - Street signs and traffic control signs in place;
  - Line painting completed, where required;
  - Barricades installed where appropriate; and
  - Gravelled temporary turn-arounds installed where appropriate;
- **Asphalt:**
  - Uniform, smooth surface, with no standing water; and
  - Free from segregation, cracking, or damage;
- **Concrete:**
  - Uniform, smooth surface, with no standing water;
  - Free from cracking, spalling or damage;
  - CC stamps placed corresponding with curb cocks;
  - Lip of gutter dropped to match bottom lift at catch basins (CCC);
  - Tooled grooves on curb ramps aligned with the direction of crossing(s); and
  - Backfilling behind curbs and walkways complete;
- **Manholes:**
  - Cover and frame free from damage and flaws;
  - Frame flush with road surface, and aligned with grade rings;
  - Grade rings intact and sealed;
  - Top step within 600 mm of the rim of the frame;
  - Channel with no standing water; and
  - Base clean of debris;
- **Catch Basins:**
  - Cover and frame free from damage and flaws, aligned with the opening in the slab top;
  - Grade rings intact;
  - Wick drains visible and appropriate length; and
  - Sump free of debris;
- **Valves:**
  - Cover and frame free from damage and flaws;
  - Frame 5-10 mm below the asphalt surface;
  - Rock guard present, and within 150-300 mm of the rim of the frame;
  - Casing plumb;
  - Stem straight; and
  - Base clean of debris;
- **Curb Cocks/Service Valves:**
  - Placed at expected final grade elevation;
  - Casing plumb;
  - Cap/frame/cover free from damage and flaws; and
  - Marker stake in place (CCC);
- **Hydrants:**
  - 50mm clearance from nuts on breakaway flange to final grade elevation;
  - Hydrant valve:
    - Minimum of 0.75 m from hydrant, centre to centre;
    - Cover and frame free from damage and flaws;
    - Cover and frame placed at final grade elevation;
    - Rock guard present;
    - Casing plumb;
    - Stem straight; and
    - Base clean of debris.

### 2.5.3 Landscaping

Parks staff and the Landscape Architect (or their representative) must be present for all inspections of landscaped areas. In general, items visually inspected include, but are not limited to:

- Grass:
  - 100% coverage of seeded or sodded area (CCC);
  - Mowed to a minimum height of 50 mm (FAC);
  - In general, well established and in an overall heathy growing condition (FAC); and
  - Free of weeds and thin, bare or dead spots (FAC);
- Plantings:
  - Planted as per the approved plans, and staked (if required); and
  - Exhibiting healthy growth:
    - Leaf development and growth specimen grade, true to form; and
    - Any disease or insect infestations under control, without deformation or damage.
- Walkway Systems:
  - Uniform, smooth surface;
  - Free from segregation, spalling, cracking, or damage; and
  - Gates installed at entry points
- Furniture:
  - In good general condition, free from damage or defects; and
  - Bollards or fences installed along adjacent roadways, in good condition;
- Drainage:
  - Grates in place over openings to inlets/outfalls;
  - Riprap in place where required;
  - Erosion control matting in place where required in ditch/channel beds; and
  - No standing water or evidence of saturation.

## 2.6 Record Drawings, Redline Drawings, and Other Documents

The Developer must submit to the City record drawings and other related information giving detailed measurements of the actual municipal improvements constructed. All record drawings must also include the location and elevation of all existing utilities and services encountered in the construction operation and the invert elevation at the end of all service connections. The submission of this data for record purposes is a condition of the execution of Final Acceptance Certificates by the City. For the purposes of satisfying the requirements for Construction Completion Certificates, redline drawings will suffice.

### 2.6.1 Underground Construction

After satisfactory completion of the sanitary and storm sewer systems, the water distribution system, and lot services, and as a condition of the execution of the Construction Completion Certificate for underground construction, the Developer must submit to the City the following information:

- Certification by the Consulting Engineer that all work has been completed in accordance with the plans and specifications, the Municipal Development Standards and that all work and deficiencies have been completed (Construction Completion Certificate);
- 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);
- As-built survey file as specified in Section 2.6.7;
- Video inspection results;
- An accurately completed As-Built Worksheet detailing the as-constructed bill of materials for the City's inventory database in Excel format; and
- Digital copies of all certificates and documentation concerning materials inspection and testing, lot service records (lateral service cards), compaction test results, successful pressure, disinfection, and

infiltration/exfiltration tests, required records as described in Section 2.2.5.4, and any other documentation as required by this document and by the City in PDF format.

### **2.6.2 Surface Construction**

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

- Certification by the Consulting Engineer that all work has been completed in accordance with the plans and specifications, the Municipal Development Standards and that all work and deficiencies have been completed (Construction Completion Certificate);
- 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);
- As-built survey file as specified in Section 2.6.7;
- An accurately completed As-Built Worksheet detailing the as-constructed bill of materials for the City's inventory database in Excel format; and
- Digital copies of all certificates and documentation concerning materials inspection and testing, mix designs, deflection tests, concrete strength tests, and compaction tests, and any other documentation as required by this document and by the City in PDF format.

### **2.6.3 Landscape Construction**

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);
- 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.).

### **2.6.4 As-built Bill of Materials**

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.

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.).

### **2.6.5 Seasonal Conditions**

Should seasonal conditions not permit the inspection, execution of the Construction Completion Certificate or Final Acceptance Certificate by the City will be delayed until appropriate conditions exist.

### **2.6.6 Record (As-Built) Drawings**

Record (as-built) drawings will be of the same format as the original construction drawings with all changes noted and the following information added:

- All original design data is erased and replaced with as-built data; and
- All hydrants, valves, curb stops, manholes, catch basins and commercial/industrial service stubs are to be dimensioned in two (2) directions referenced to property lines.

The Engineering Consultant must initial all record (as-built) drawings, to verify that they have been reviewed.

Record (as-built) drawings must include all the information required for the construction drawings as specified in these Standards and must be corrected upon completion of construction to note all works removed or abandoned during construction. This information must be retained in the digital file on specific layers as described in Section 2.2.6.2 of the Municipal Civil 3D and AutoCAD Standards, but not displayed on the final print.

All dimensions, elevations and inverts shown must reflect the as-built conditions of the construction and references to "Proposed" must be removed. As-built drawings must be to scale in accordance with the as-built dimensions shown.

### **2.6.7 As-built Survey**

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:

- 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.

### **2.6.8 Lateral Service Cards**

All service/lateral stubs must be surveyed and recorded on templates provided by the City in Section 2.3.2.2. The survey will consist of recording the invert of the sanitary, storm and/or water service at up to three (3) locations (main, property line and the end of pipe), as well as the horizontal location of the same. This survey information can be included with the above noted file(s).

## **2.7 Construction Completion Certificate (CCC)**

Upon completion of the project, and after a Pre-Inspection Checklist has been filled out, a construction completion inspection may be requested in writing. After the construction completion inspection has been conducted, all the noted deficiencies must be corrected to the satisfaction of the City. After all other required submissions have been received, as identified in Sections 2.6.1 to 2.6.3, the City will execute the Construction Completion Certificate submitted by the Developer and Consulting Engineer, notifying:

- Security on the portion of the work being reduced to maintenance levels;
- Acceptance of the portion of work by the City; and
- Commencement date of the warranty.

A copy of the Construction Completion Certificate is included in Appendix 2A for issuance by the Developer and the Consulting Engineer/Landscape Architect.

Separate Construction Completion Inspections and commencement of warranty periods may be issued for the following:

- Underground utilities;
- Surface works; and
- Landscaping.

## **2.8 Warranty Period**

Any defect, fault, or deficiency in the completed work during a minimum twenty-four (24) month warranty period is the responsibility of the Developer, and they must remedy it at their own expense.

Upon execution of the Construction Completion Certificate, the City will assume responsibility for regular summer and winter maintenance on paved streets within the occupied subdivision (snow removal and street sweeping, typically) and curbside collection of household waste. The Developer will remain responsible for any and all other maintenance and repair items, including any third-party damages, maintenance of street signs, flushing of sewer lines, thawing and flushing of watermains and maintenance of the landscaping.

If a significant defect, fault, deficiency or third-party damage is identified which requires immediate repair to prevent further damage, or effects the normal operation of an improvement, the Developer must remedy it within fifteen (15) calendar days. If the repair is not carried out in this time, the City may, after giving an additional fifteen (15) days' notice, take all necessary steps to have the work done, with the costs of doing such work paid by the Developer. In the event of an emergency repair, the City reserves the right to arrange for the immediate repair of the municipal improvement, with the costs of doing such work paid by the Developer. These timelines may be extended, at the discretion of the City, to allow for delays caused by seasonal issues.

## **2.9 Final Acceptance Certificate (FAC)**

Prior to the expiration of the warranty period, after a Pre-Inspection Checklist has been successfully completed, the Developer must make a written request for a final inspection. Separate Final Acceptance Certificates may be issued, upon correction of all deficiencies, for underground services, surface works, and landscaping, where applicable. A copy of the certificate is included in Appendix 2A for execution by the Consulting Engineer. The warranty will remain in effect until the Final Acceptance Certificate is executed by the City.

In addition to a satisfactory Final Acceptance Inspection, the following are required prior to the execution of the Final Acceptance Certificate:

- One (1) digital set of record drawings in PDF format as well as the City's current version of AutoCAD (or Civil3D, if available). These drawings must comply with Section 2.3. At this stage, the drawings must be marked as "Record (As-Built) Drawings" and initialled by the Engineering Consultant;
- Digital copies of reports summarizing the results of any additional testing, inspection, or other activities to be completed by the Developer for the FAC, in accordance with the Municipal Development Standards, Development Agreement, and/or by additional instruction from the City in PDF format;
- Any records required by Section 2.2.5.4 which have yet to be submitted; and
- Any Operation and Maintenance manuals (in both printed and digital PDF format), spare parts and lubricants.

## **2.10 Development Permits**

Development Permits will not be issued in the subdivision until:

- The subdivision plan, complete with easements, is registered;
- The Construction Completion Certificate has been executed for the underground utilities;
- All curbs and gutters are installed;
- The roads have a compacted gravel base and are considered all weather roads;
- The franchise utilities are installed;
- The final design drawings for the Lot Grading have been submitted; and
- A Grade Slip is provided for each lot.

The City may grant approval for Development Permits to be issued prior to all the above being submitted on a case-by-case basis.



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## **Appendix 2A - FORMS**

The following forms are available on the City's website, in a fillable format.

## 2A.1 Compliance Certificate



### CERTIFICATE OF COMPLIANCE

LLOYDMINSTER

The following form must be completed by the Developer's Engineering/Landscaping Consultant and submitted by the Developer with every submission for discussion or approval.

**Submitted For:**

Date: \_\_\_\_\_

- Development Brief
- Conceptual Review (Conceptual Drawings)
- Final Approval (Detailed Design)

Project Location and Brief Project Description: \_\_\_\_\_

\_\_\_\_\_

Water Security Agency of Saskatchewan Notification Number(s): \_\_\_\_\_

The plans, drawings, specifications, reports, and figures for the development are in accordance with the Municipal Development Standards, Area Structure Plan, and all other applicable standards and regulations:

YES

NO

If no, justification and added benefits for deviating from the standards must be attached.

**Developer:**

**Engineering / Landscaping Consultant:**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Consultant's Stamp

Permit to Practice

**City of Lloydminster**

Review Status:

- Revise and Resubmit
- Acceptable, proceed to next phase
- Approved for Development

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

## 2A.2 Construction Completion Certificate



### CONSTRUCTION COMPLETION CERTIFICATE

LLOYDMINSTER

The following certificate must be prepared and executed on behalf of the Developer by their Engineering or Landscaping Consultant for submission to the City of Lloydminster.

Date: \_\_\_\_\_

Brief Project Description: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Security Agency of Saskatchewan Notification Number(s): \_\_\_\_\_

**Developer:**

**Engineering / Landscaping Consultant:**

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

The final deficiency inspection was performed on \_\_\_\_\_, and all noted deficiencies have been rectified.

I, \_\_\_\_\_ of \_\_\_\_\_  
(Consultant's Name) (Consulting Firm)

hereby certify that the work for the above described project has been completed in general conformance with the Contract Documents, Approved Drawings, and the City of Lloydminster's Municipal Development Standards.

Engineer's Stamp

Company Permit Stamp

**City of Lloydminster**

Based on the above certification, the City of Lloydminster accepts that the project is complete and that the warranty period as it affects the City will commence on \_\_\_\_\_.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_



## CONSTRUCTION COMPLETION CERTIFICATE

LLOYDMINSTER

1. Once construction of the municipal improvements is complete, the Developer may request an inspection with the City in writing. Should seasonal conditions not permit an inspection, it will be delayed until appropriate conditions exist.
2. Separate Construction Completion inspections will take place, and commencement of warranty periods be issued, for underground utilities, surface works and landscaping.
3. The Engineering/Landscaping Consultant and all applicable contractors will attend the Construction Completion inspection(s) with the City's representative. The Engineering/Landscape Consultant must take the lead role in the inspections. The City will observe the inspection and only provide comments where necessary. The Engineering/Landscape Consultant is responsible to confirm that the project has been constructed in general conformance to the approved plans and the City of Lloydminster's Municipal Development Standards.
4. Where the Construction Completion inspection reveals deficiencies to be corrected, the Consultant must provide a list of such deficiencies to the Developer and City within two (2) weeks of the inspection date. The Developer will be responsible for promptly correcting such deficiencies and notifying the City when the work is complete. Another inspection will be conducted within thirty (30) days of such notification, weather and ground conditions permitting. Should any deficiencies be noted at subsequent inspections, the re-inspection cycle will repeat until all deficiencies are corrected to the satisfaction of the City. Where more than two re-inspections are necessary due to the Developer's inability to correct outstanding deficiencies to the satisfaction of the City, the City reserves the right to charge an inspection fee to the Developer to recover the costs to the City for excessive re-inspections.
5. When all deficiencies have been verified as corrected, the Developer may apply for a Construction Completion Certificate to be executed by the City. The warranty period will commence on the date of the final inspection.
6. The following information must be provided with this form:
  - 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);
  - Certification from the Engineering/Landscaping Consultant that all work has been completed in general accordance with the plans, specifications, and the Municipal Development Standards, and that all deficiencies have been completed (Construction Completion Certificate);
  - An as-built survey file using the City's point codes;
  - An as-built worksheet in Excel format; and
  - Digital copies of results or reports generated by any other special testing or requirements.
7. For underground construction, the following information must also be provided:
  - Digital copies of lateral service cards for each lot's services;
  - Digital copies of video inspection footage and report;
  - Digital copies of all materials testing results, including compaction tests;
  - Digital copies of successful pressure, leakage and disinfection tests; and
  - Digital copies of all records described in Section 2.2.5.4 of the Municipal Development Standards.All documentation for underground construction, including submitted drawings, must include the Water Security Agency of Saskatchewan Notification Number(s) for the project.
8. For surface construction, the following information must also be provided:
  - Digital copies of all certificates concerning materials inspection and testing (mix designs, deflection tests, concrete strength tests, compaction tests, and asphalt tests) as required by the Municipal Development Standards and the City of Lloydminster.
9. After all the required submissions have been received, the City will execute the Construction Completion Certificate submitted by the Developer and Consulting Engineer, indicating acceptance of the portion of the work by the City, and the commencement date of the warranty for that portion.

## 2A.3 Final Acceptance Certificate



### FINAL ACCEPTANCE CERTIFICATE

LLOYDMINSTER

The following certificate must be prepared and executed on behalf of the Developer by their Engineering or Landscaping Consultant for submission to the City of Lloydminster.

Date: \_\_\_\_\_

Brief Project Description: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Water Security Agency of Saskatchewan Notification Number(s): \_\_\_\_\_

**Developer:**

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Engineering / Landscaping Consultant:**

Name: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

The final deficiency inspection was performed on \_\_\_\_\_, and all noted deficiencies have been rectified.

I, \_\_\_\_\_ of \_\_\_\_\_  
(Consultant's Name) (Consulting Firm)

hereby certify that the work for the above described project has been completed in general conformance with the Contract Documents, Approved Drawings, and the City of Lloydminster's Municipal Development Standards and that all deficiencies have been rectified to the City's satisfaction.

Engineer's Stamp

Company Permit Stamp

**City of Lloydminster**

Based on the above certification, the City of Lloydminster accepts that the warranty period has expired effective \_\_\_\_\_ and that the City assumes responsibility for the development as it concerns the City.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

Date: \_\_\_\_\_



## FINAL ACCEPTANCE CERTIFICATE

LLOYDMINSTER

1. No more than thirty (30) days prior to the expiry of the warranty period, the Developer may request a Final Acceptance inspection with the City in writing. This request must be made with a minimum of one (1) week's notice, to allow time for the allocation of the appropriate City representative(s). Should seasonal conditions not permit an inspection, it will be delayed until appropriate conditions exist.
2. Separate Final Acceptance inspections will take place for underground utilities, surface works and landscaping.
3. The Engineering/Landscaping Consultant and all applicable contractors will attend the Final Acceptance inspection(s) with the City's representative(s). The Engineering/Landscape Consultant must take the lead role in the inspections. The City will observe the inspection and only provide comments where necessary. The Engineering/Landscape Consultant is responsible to confirm that the project has no deficiencies covered by the warranty, and that any work required to be completed prior to Final Acceptance has been constructed in general conformance to the approved plans and the City of Lloydminster's Municipal Development Standards.
4. Where the Final Acceptance inspection reveals deficiencies to be corrected, the Engineering/Landscaping Consultant must provide a list of such deficiencies to the Developer and City within two (2) weeks of the inspection date. The Developer will be responsible for immediately correcting such deficiencies and notifying the City when the work is complete. Another Final Acceptance inspection will be conducted within thirty (30) days of such notification, weather and ground conditions permitting. Should any deficiencies be noted at subsequent inspections, the re-inspection cycle will repeat until all deficiencies are corrected to the satisfaction of the City. Where more than two re-inspections are necessary due to the Developer's inability to correct outstanding deficiencies to the satisfaction of the City, the City reserves the right to charge an inspection fee to the Developer to recover the costs to the City for excessive re-inspections.
5. The warranty period will be extended indefinitely until all outstanding deficiencies are corrected by the Developer to the satisfaction of the City. When all deficiencies have been verified as corrected, the Developer may apply for a Final Acceptance Certificate to be executed by the City. The warranty period will be considered to have ended on the date of the final inspection.
6. The following information must be provided with this form:
  - One (1) digital set of record drawings in PDF format as well as the City's current version of AutoCAD (or Civil3D, if available). At this stage, the drawings must be stamped "Record Drawings", and initialled by the Engineering/Landscaping Consultant;
  - Reports summarizing the results of any additional testing, inspection, or other activities to be completed by the Developer prior to Final Acceptance, in accordance with the Municipal Development Standards, Development Agreement, and/or by additional instruction from the City; and
  - Any Operation and Maintenance manuals (in both printed and digital PDF format), spare parts and lubricants.
7. For surface construction, the following information must also be provided:
  - Digital copies of all certificates concerning materials inspection and testing (mix designs, compaction tests, and asphalt tests) as required by the Municipal Development Standards and the City of Lloydminster.
8. For underground construction, the following information must also be provided:
  - Digital copies of all records described in Section 2.2.5.4 of the Municipal Development Standards that have yet to be submitted.All documentation for underground construction, including submitted drawings, must include the Water Security Agency of Saskatchewan Notification Number(s) for the project.
9. Upon satisfactory completion of the Final Acceptance inspection and after all the deficiencies have been corrected and submissions received, the City will execute the Final Acceptance Certificate submitted by the Developer and Consulting Engineer, indicating acceptance of the portion of the work by the City, and the expiration date of the warranty for that portion.

## 2A.4 As-Built Worksheet



City of Lloydminster

### As-built Worksheet

Subdivision: \_\_\_\_\_ Phase: \_\_\_\_\_

Developer: \_\_\_\_\_

Development		Area of MR dedicated land		Area of Lots		
Total Area						
<b>Total No. of Lots</b>						
Residential						
Commercial						
Industrial						
<b>Parks</b>						
Area of Boulevard		Trees/Shrubs				
		Species	Quantity			
Area of Parks						
<b>Sanitary Sewer</b>						
Mains		Manholes		Services/Laterals		
Size & Type	Total Length	Total # of MH's	Total Vt. M	Size & Type	Length	Number
<b>Storm Sewer</b>						
Mains		Manholes		Services/Laterals		
Size & Type	Total Length	Total # of MH's	Total Vt. M	Size & Type	Length	Number
Catchbasins		Catchbasin Manholes		Culverts		
Type	Quantity	Total # of MH's	Total Vt. M	Size	Total Length	
<b>Swales</b>						
Size & Type		Length				
<b>Water Distribution</b>						
Mains		Valves		Services/Laterals		
Size & Type	Total Length	Size	Total # of Valves	Size & Type	Length	Number
No. of Hydrants		Fittings				
		Size & Type	Quantity			
<b>Transportation</b>						
Length of Sidewalk		Length of Curb & Gutter				
Type	Total Length	Size	Total Length			
Pavement Markings		Length of Road (C/L)		Traffic Signs		
Type	Total Length			Type	Quantity	
		No. of Streetlights				