1.0 INTRODUCTION

1.1 Purpose

1.1.1 This document defines the geospatial requirements and standards for the submission of record drawings and as-built documentation. It ensures that all data provided aligns with the City of Regina's Geospatial Solutions Branch CAD (Computer Aided Drafting) & GIS (Geographic Information System) standards, promoting consistency, accuracy, and interoperability across municipal infrastructure records.

1.1.2 All geospatial data must align with the City's spatial reference system, projection standards, and documentation requirements. This document provides clear instructions on how to format, submit, and validate as-built data, ensuring all stakeholders adhere to uniform guidelines. Users should refer to each section for specific requirements related to infrastructure components including water, sewers, and surface infrastructure.

1.2 Scope

1.2.1 This document applies to all engineers, surveyors, consultants, and contractors involved in the preparation of record drawings and as-built documentation for infrastructure projects with the City of Regina. It is intended for use by municipal staff responsible for reviewing and maintaining infrastructure records. Contractors and consultants working on City of Regina-approved projects can use these requirements for further definition of deliverables.

1.3 Roles and Responsibilities

1.3.1 *The Project Manager* of any project is responsible to make sure that this specification is complied with by all consultants and contractors that enter any kind of infrastructure development or upgrade contract with the City of Regina before final turnover of the project to the city.

1.3.2 *The Consultant* is responsible to follow this specification when creating all "As Built" or "Record Drawings". Design Drawings will not be accepted as Record Drawings.

1.4 Definitions

1.4.1 *As-Built Drawings:* Drawings that document the actual constructed conditions of infrastructure, including any deviations from the original design data. Also known as Record Drawings or Drawings of Record.

1.4.2 *Geospatial Data:* Digital data that represents geographical features, infrastructure, and spatial attributes within the City of Regina.

1.4.3 *NAD83 UTM Zone 13N:* The North American Datum 1983 (NAD83) Universal Transverse Mercator (UTM) coordinate system, Zone 13 North, which is the standard spatial reference system for geospatial submissions for the City of Regina.

1.4.4 *Portable Document Format (PDF):* A digital file format used to present and exchange documents reliably, ensuring layout integrity across different devices and software.

1.4.5 *AutoCAD:* A software application used for computer-aided design (CAD) and drafting, commonly employed for infrastructure planning and as-built documentation.

1.4.6 *Property Line:* A legally defined boundary of a parcel of land, used as a reference for infrastructure placement and geospatial dimensioning.

1.4.7 *Station Points:* Reference markers along a linear infrastructure element (e.g. pipes, roads, etc.) that include distances from a designated origin point.

2.0 GENERAL REQUIREMENTS

Overview - All GIS and CAD submissions must follow standardized formats and projections, ensuring consistency and accuracy in data representation. Required information, such as project details, scale, and revisions, must be clearly documented. Data should be referenced appropriately, with all design changes clearly marked. Submissions must adhere to established organizational or municipal standards for file structures, symbols, and metadata, ensuring interoperability and traceability of geospatial information. The following must be included with all submissions:

2.1 At minimum a digital PDF Sheet Set & an AutoCAD .dwg file (current release), including metadata, must be submitted for each phase and stage of each project.

2.2 The digital data must be in NAD83 UTM Zone 13N coordinate projection system. It is highly recommended that all design drawings, at each phase and stage, begin with the legal cadastral data for the City of Regina that can be acquired from ISC or from the Mapping Intelligence Team in the Geospatial Solutions Branch at the City of Regina. This prevents any discrepancy of property lines with the City's base drawings.

2.3 AutoCAD drawings must be drawn in 2 dimensions with all elevations set to zero.

2.4 All submitted drawing files must have all unused layers and other entities purged from the drawing file before it is submitted to the City of Regina.

2.5 Complex blocks and symbols with multiple components shall be drawn on a single layer, so they can be easily isolated.

2.6 The Title Block must clearly identify the name of the company(s) that created the drawings.

2.7 The Title Block must clearly identify the project name including subdivision name, phase, and stage if applicable.

2.8 The year of construction must be indicated on the drawings.

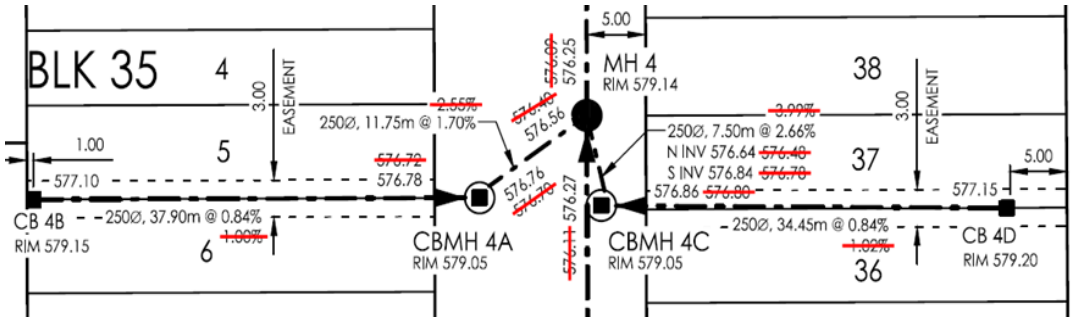
2.9 All drawings must be to scale, and the scale must be noted on the drawings.

2.10 A legend showing all symbols and line types must be provided on each drawing set.

2.11 Drawings must be labeled “Project Record Information” or “As Built” with a corresponding date and drafters initials in the revision box.

2.12 All lines that represent pipes must be snapped to the insertion point of the symbols. Lines shall not end at the edges of a symbol.

2.13 Design elements that have been revised must reflect as-built conditions and be clearly marked through with red lines and as-built annotation added as shown below.



2.14 All data submissions must follow the City of Regina’s geospatial CAD/GIS data standards (e.g., layers, symbols, properties, attributes, etc.). The Mapping Intelligence Team in the Geospatial Solutions Branch at the City of Regina can provide an AutoCAD Template (dwt) file and standard documentation with all the necessary layers, etc.

2.15 All location-based elements must be referenced to the nearest property line.

2.16 On record drawings, station points must be referenced to a property line (e.g. station 0+000, which could represent the starting point of a pipeline or feature, should be located at the pipe endcap and dimensioned to the nearest perpendicular property line as the centerline station point for the map sheet). Each map sheet must clearly indicate where station 0+000 is located in relation to the nearest perpendicular property line, ensuring the reference point is consistently understood for all drawings in the set.

2.17 Required metadata must accompany GIS files, if they are submitted, to document data origin, format, and projection.

3.0 WATER INFRASTRUCTURE DRAWING REQUIREMENTS

Overview – Water infrastructure must be accurately documented and referenced to property lines for consistency and alignment. Key elements such as water mains, connections, hydrants, valves, and pipe components require dimensioning, with materials, sizes, and elevations clearly recorded. Special considerations apply to irregular lots and cul-de-sacs, ensuring proper location referencing and survey ties for reliable infrastructure mapping.

3.1 Water mains must be dimensioned to a property line.

3.2 Curb boxes and water connections must be dimensioned relative to side property lines. Note – this is particularly important for corner and irregular lots.

3.3 Fire hydrants must be dimensioned to a side property line and include distance offsets into the right-of-way (ROW).

3.4 Curve dimensions must be to a property line where applicable.

3.5 All valves and connectors (e.g. water valves, elbows, tees, crosses, reducers, endcaps, etc.) must be dimensioned to a property line.

3.6 Pipe length, material, and diameter must be documented for all water mains and connections.

3.7 Top of pipe elevations at the property line must be shown for all water connections. Stubbed pipe end locations must be dimensioned to a property line.

3.8 Water mains in cul-de-sacs must be tied to at least two legal survey property pins. All water connections at these locations require dimensioning both at the curb box and at the water main. Any flushout chambers and/or valves must be tied into property lines.

3.9 Abandoned or removed infrastructure should be clearly identified and dimensioned.

4.0 SANITARY SEWER INFRASTRUCTURE DRAWING REQUIREMENTS

Overview – Sanitary sewer infrastructure must be accurately documented with reference to property lines. Key elements such as sewer mains, manholes, and service connections require precise dimensioning, including curve data, pipe lengths, materials, diameters, and invert elevations. Manholes must include rim and sump elevations. Special considerations apply to cul-de-sac sewer mains, requiring as-built documentation of service connections.

4.1 The sanitary sewer mains must be dimensioned to a property line.

4.2 Manhole locations must be documented with property line references.

4.3 Curve data must be included and dimensioned to a property line.

4.4 Pipe length, material, diameter, and flow direction must be documented for all sanitary sewer mains and connections.

4.5 Invert elevations must be shown for both ends of all pipe lengths with the exception of Force Mains which require Top of Pipe elevations.

4.6 Rim and sump elevations and diameter must be included for all manholes.

4.7 Domestic sewer mains terminating in a cul-de-sac must include a detailed as-built drawing showing service connection locations, following City of Regina Standard Construction Detail S-6. Dimensions must be provided at both the property line and the main.

4.8 Abandoned or removed infrastructure should be clearly identified and dimensioned.

5.0 STORM SEWER INFRASTRUCTURE DRAWING REQUIREMENTS

Overview – Storm sewer infrastructure must be accurately documented with reference to property lines. Key elements such as sewer mains, manholes, service connections, and catch basins require precise dimensioning, including curve data, pipe lengths, materials, diameters, and invert elevations. Manholes must include rim and sump elevations, with designated "Interceptor" manholes identified and detailed.

5.1 The storm sewer mains must be dimensioned to a property line.

5.2 Manhole and catchbasin locations must be documented with property line references.

5.3 Curve data must be included and dimensioned to a property line.

5.4 Pipe length, material, diameter, and flow direction must be documented for all storm sewer mains, connections, and catch basin leads.

5.5 Invert elevations must be shown for both ends of all pipe lengths with the exception of Force Mains which require Top of Pipe elevations.

5.6 Rim and sump elevations and diameter must be included for all manholes and catch basins.

5.7 Non-standard manholes and catch basins must include detail drawings and dimensions.

5.8 Abandoned or removed infrastructure should be clearly identified and dimensioned.

6.0 SURFACE INFRASTRUCTURE DRAWING REQUIREMENTS

Overview – Roadway, curb, gutter, and sidewalk features must be accurately dimensioned and aligned with property lines. Key elements include curb, gutter, sidewalk locations, curve data, pavement elevations, and right-of-way dimensions. Pavement structure, curb types, and drainage flow details must be documented to ensure proper grading and water management. Construction limits should be clearly defined with all measurements and alignments consistently referenced for accurate implementation.

6.1 Back of curb (BOC) and back of walk (BOW) must be dimensioned to property lines.

6.2 Radius dimensions must be tied to property lines.

6.3 Curve dimensions must be notated back to property lines.

6.4 Pavement elevations must be shown for all B/C (Beginning of Curve) and E/C (End of Curve) locations.

6.5 Right-of-way, traffic (including lanes, shoulders, and ditches where applicable), sidewalk, and median widths must be documented.

6.6 The pavement structure (composition and thickness) must be specified at each section/block of the roadway.

6.7 Curb type (rolled or barrier) must be identified for each section/block/median of the roadway.

6.8 Drainage flow direction arrows and slope percentages must be noted for all roads.

6.9 Limits of pavement construction must be clearly defined with respect to curb, sidewalk, and pavement construction.

6.10 All infrastructure features such as manholes, catch basins, valves, etc. must be noted with survey points in drawings.

6.11 Profiles views for each section/block of the roadway must be included with all elevations of surface and underground structures noted.

7.0 LANDSCAPING DRAWING REQUIREMENTS

Overview – Landscape, parks, and open space features must be accurately dimensioned. Key elements include hardscape surfacing (asphalt, concrete, paving stone, etc.), landscape or softscape surfacing (mulch, turf, sod, etc.), pathway widths and location, site furnishings and shade structures products and locations, plant material species and location, lighting products and location, grading and drainage data and irrigation systems. Limits of construction should be clearly defined.

7.1 **Demolition and Existing Conditions Plan**

7.1.1 Limit of work.

7.1.2 Existing site conditions include but are not limited to hardscape materials, softscape materials, existing trees and other plant material, existing irrigation system, existing site furnishings.

7.1.3 Identification of trees where tree protection measures were installed during construction per Section 01530 Temporary Tree Protection.

7.1.4 Sediment control measures employed.

7.1.5 Site/landscape features to be removed, site/landscape features to be retained and protected from damage.

7.2 **Site Plan**

7.2.1 Limit of work.

7.2.2 Final location, dimensions and material types of landscape surface material installed (e.g. turf, mulch, seeding etc.).

7.2.3 Final location, dimensions and specifications of hardscape surface materials (e.g. asphalt, concrete, gravel, crusher dust, pavers, retaining walls etc.).

7.2.4 Final location, dimensions and specifications for site furnishings and/or landscape structures (e.g. fencing, signage etc.).

7.2.5 Final location, dimensions and materials for safety surfacing and curb of playgrounds. Detailed playground design information to be submitted separately.

7.2.6 Center line of pathways, outside edges of pathways.

7.3 **Grading & Drainage**

7.3.1 Final surveyed grade elevations.

7.3.2 Final contours (0.5m intervals).

7.3.3 Drainage patterns, flow arrows, and slopes (actual).

7.3.4 French drains, catchbasins, turf drains/clean outs with flow direction, dimensions, length, diameter and rim and invert elevations.

7.4 **Plant Material**

7.4.1 Extent of seeded, sodded, mulch areas, if applicable.

7.4.2 Final locations of plant material labeled.

7.4.3 Plant material specification list for trees, shrubs, groundcovers including species and genus Latin names, common names, quantities, caliper and/or pot size.

7.4.4 All new tree locations shall include survey coordinates.

7.5 **Irrigation**

7.5.1 Pipe length, material, diameter and location for main line and laterals.

7.5.2 Head locations/configuration, types, nozzles, product name and size, etc.

7.5.3 Valve locations, type, zones, etc.

7.5.4 Controller location, type, product/model number etc.

7.5.5 Irrigation components shall include survey coordinates

Revision History		
Revision	**Date**	**Description**
01	December 2025	Document Issued