

Surveys and Mapping Initiatives

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Conventional Mapping Program*

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Continuous Improvement

- *Consult stakeholders*
- *Identify areas that need change*
- *Implement new procedures*

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5 Initiatives

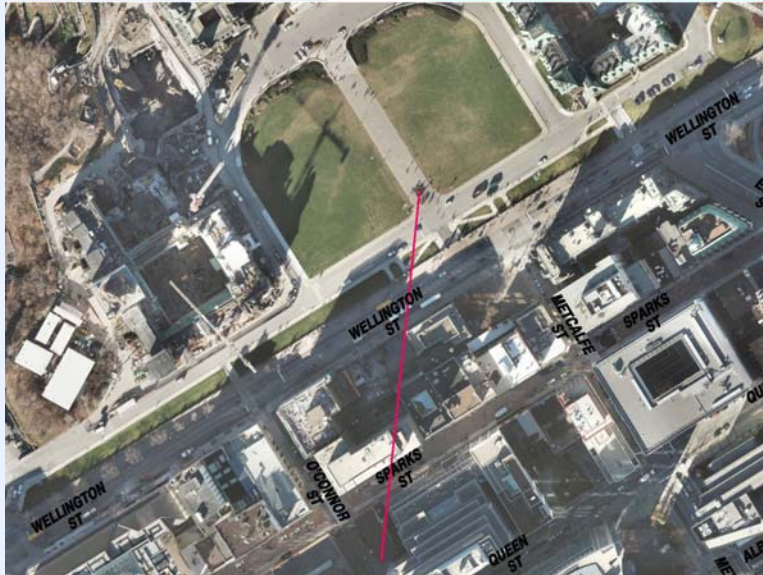
- *Moving from NAD 83 Original to NAD 83 CSRS*
- *Inventory and Protection of Survey Monuments*
- *Control Sketches*
- *Requirement to set up a Property Limit*
- *3-D CADD Files*

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Moving from NAD 83 Original to NAD 83 CSRS

- *How would this migration impact our partners? The City is working internally with our GIS staff, the Land Registry Office and others but would also like feedback from the Industry.*
- *Vertical Datum change from CGVD28 to CGVD2013*

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NAD27 to NAD83 Original

223m Northing 23m Easting

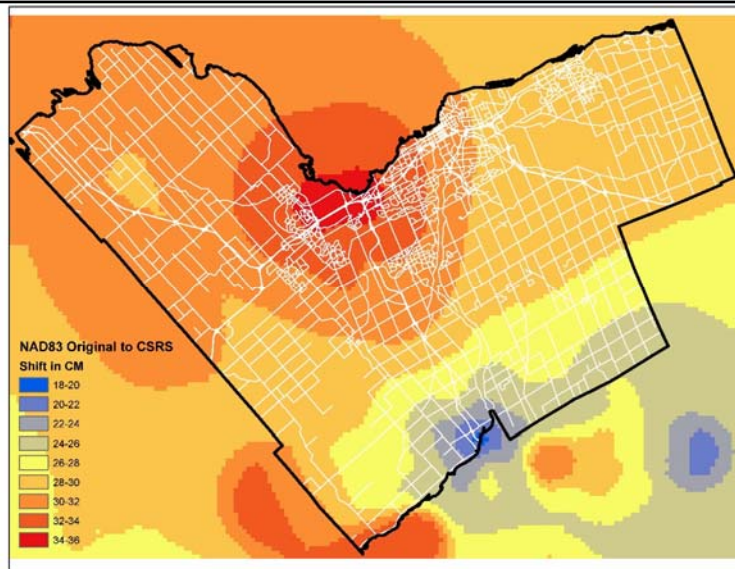
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NAD83 Original to NAD83 CSRS

Varies – on average 0.3m Northing 0.02 Easting

6



NAD83 Original to NAD83 CSRS

Varies – on average 0.3m Northing 0.02 Easting

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CGVD28 to CGVD2013

Today and in the future

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Inventory and Protection of Survey Monuments

- ***Even with coordinates, in the hierarchy of boundary retracement the monuments govern. A complete inventory of the City's monuments is being captured for each Capital build project. It is important for these monuments to survive construction and who's responsibility is it to reinstate them if they get destroyed?***

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SPECIAL PROVISION – GENERAL

No. – D-024

SUPPLEMENTALS

Contractor Survey

GC3.05 – Layout is deleted and replace with the following:

GC 3.05 Layout

.01 The Contract Administrator may provide 3 dimensional control information to assist in the layout of the general location, alignment, and elevation of the Work. The Owner shall be responsible only for the correctness of the information provided by the Contract Administrator.

GC7.02 – Layout is deleted and replace with the following:

GC 7.02 Layout

.01 Prior to commencement of construction, the Contract Administrator and the Contractor shall locate on site those 3 dimensional control points that are necessary to delineate the Working Area and to lay out the Work, all as shown on the Contract Drawings.

.02 The Contractor shall be responsible for the preservation of all property bars while the Work is in progress, except those property bars that must be removed to facilitate the Work. Any other property bars disturbed, damaged, or removed by the Contractor's operations shall be replaced under the supervision of an Ontario Land Surveyor, at the Contractor's expense.

.03 At no extra cost to the Owner, the Contractor shall provide the Contract Administrator with such materials and devices as may be necessary for the inspection of the Work.

.04 The Contractor shall provide qualified personnel to lay out and establish all lines and grades necessary for construction. The Contractor shall notify the Contract Administrator of any layout work carried out, so that the same may be checked by the Contract Administrator.

One week prior to any survey work being conducted, the Contractor shall submit a written description(s) of how the Contractor intends to undertake survey requirements on the contract including surveys, cross-sections, co-ordinates and general construction layout. The submission shall include, and not necessarily be limited to:

- Project Description including contract number;
- Names and qualifications of survey staff;

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- Description of the survey equipment to be used;
- Contractor quality control processes;
- Contract specific survey requirements;
- Compliance to contract layout requirements;
- Compliance to specified tolerances (i.e. CPSS 206)
- Submission and format of certificate grade checks requirements
- Description of how GPS integration to site coordinates will be carried out if GPS technology is used.

The Contractor shall submit one hard copy and one electronic copy (pdf) to the Contract Administrator. The Contractor acknowledges that revisions may be necessary, in consultation with the City.

The Contract Administrator shall submit the document to ISDsurveysubmission@Ottawa.ca for review and comment.

The Contractor shall notify the Contract Administrator of any change in the submission.

The City of Ottawa through the Contract Administrator will accept the submission. The acceptance and review of the submission by the City will make no representation and/or warranty that the document is accurate, complete, or compliant with all applicable legislation. Any errors, omissions or deficiencies will remain the sole responsibility of the Contractor.

.05 The Contractor shall install and maintain substantial alignment markers and secondary benchmarks as may be required for the proper execution of the Work. The Contractor shall supply one copy of all alignment and grade sheets to the Contract Administrator.

.06 The Contractor shall assume full responsibility for alignment, elevations, and dimensions of each and all parts of the Work, regardless of whether the Contractor's layout work has been checked by the Contract Administrator.

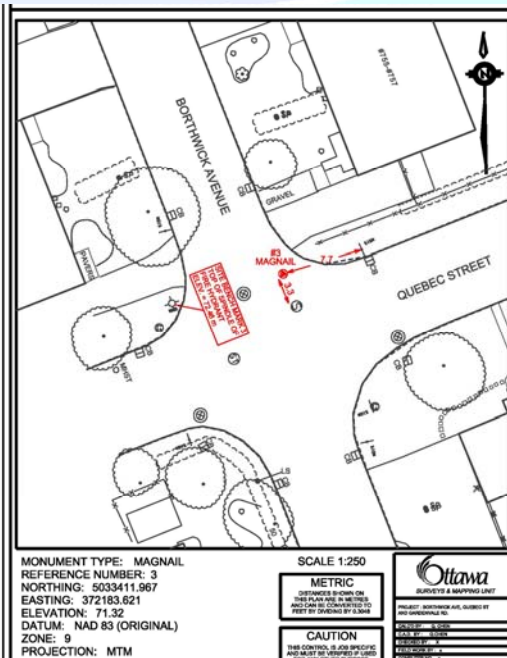
.07 All stakes, marks, and reference points shall be carefully preserved by the Contractor. In the case of their destruction or removal, such stakes, marks, and reference points shall be replaced at the Contractor's expense.

.08 Benchmarks and survey monuments identified in the Contract Documents shall be protected by the Contractor. In the case of their destruction or removal, such benchmarks and survey monuments shall be replaced by the Owner at the Contractor's expense.

Variations in Tender Quantities

GC8.01.02 – Variations in Tender Quantities is amended by the following:

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Typical Control Sketch

Control Sketches

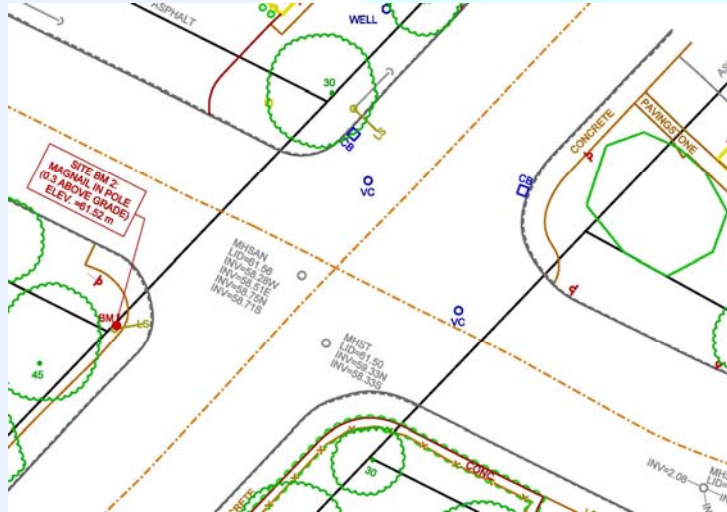
- *These are needed to confirm the location, even when using GPS. Surveys and Mapping is looking at doing a second perimeter set back in the event that they get in the way of construction.*

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Requirement to set up a property limit

- *This needs to be done by an OLS. It needs to be clear when a legal survey is necessary.*

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Mapping drawing

Teranet's "black line"

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3-D CADD Files

- Information provided by the City to Design Consultants is provided in 3-D. The information that is passed from the design consultant to the Contractor is usually being provided in 2-D. Surveys and Mapping want to understand why this is being done and if possible have 3-D models passed to Constructors.*

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Questions ???

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