APPENDIX A

Subdivision Certification Requirements - Draft Rev 3 – November 20, 2014

SUBDIVISION AND OFF-SITE SERVICING CERTIFICATION REQUIREMENTS

Rev 3 – November 20, 2014 (DRAFT)

(changed items highlighted)

I. CONSTRUCTION PREREQUISITES

1.0 Pre-construction Survey

A preconstruction survey of all existing infrastructure within the right of way (ROW) affected by the work must be submitted to the City prior to construction activity within the ROW. The survey must include photos and clearly identify and locate all pre–existing conditions.

2.0 Construction Schedule

A construction schedule must be provided to the City prior to construction within the existing ROW or future ROW. The construction schedule must identify the estimated start dates and duration of work for the following key construction activities:

- sewer and/or water main installation,
- sub-grade proof rolling,
- granular A and B placement,
- curb layout,
- base asphalt placement.

The City must be notified of any changes to the above start dates.

II. INITIAL ACCEPTANCE OF THE WORKS

1.0 Certification Packages Issued for Initial Acceptance

The following support documentation will constitute the minimum requirements for initial acceptance:

1.1. Watermain Certification

1.1.1. Certification

Provide a certification letter signed and sealed by a Professional Engineer to verify general conformance with the approved project drawings and specifications.

1.1.2. Bedding Gradation Analysis

A bedding gradation analysis must be provided from a certified lab to verify the bedding conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

1.1.3. Bedding Compaction

Bedding compaction results are not required to form part of the certification package.

1.1.4. CGS – Watermain Test Report / Procedures

A City of Greater Sudbury Watermain Test Report / Procedures form must be completed in full and submitted to both the Manager of Construction Services and the Chief Field Inspector prior to connection to the existing main. A copy of this report must also be sent to the Supervisor of Development Engineering for review and initial acceptance.

1.1.5. Water Quality Test Results

The certification package must include results of the water quality tests performed in conjunction with the CGS – Watermain Test Report/Procedures. These tests must indicate that the minimum requirements of the Ministry of the Environment – Ontario Drinking Water Objectives have been met. These results are to be forwarded to the Manager of Construction Services, the Chief Field Inspector, and the Supervisor of Development Engineering.

1.1.6. Tracer Wire Field Inspection Report

Submit the City's "Tracer Wire Field Inspection Report" which shall be completed by a third party.

1.2. Sanitary/Storm Sewer and Subdrain Certification

1.2.1. Certification

Provide a certification letter signed and sealed by a Professional Engineer to verify general conformance with the approved project drawings and specifications.

1.2.2. Bedding Gradation Analysis

A bedding gradation analysis must be provided from a certified lab to verify the bedding conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

1.2.3. CCTV Camera Inspection

Results of the CCTV camera inspection must indicate that the sanitary sewer, sanitary laterals, storm sewer and subdrain was placed on the proper alignment without damage, sags or debris.

Close circuit television (CCTV) camera inspections requirements (of sewer mains and lateral) are to follow:

- All digital data are to be coded following the WRc Manual of Sewer Condition Classification, WRc 4th edition, American Society of Civil Engineers or a comparable manual.

- All videos are to be coded utilizing WRc codes, and provided in .wmv format along with the database.mdb (or other approved .mxd) files.
- All photos are to be provided in .jpg and reports in .pdf.

All digital image recordings shall be of quality that all minor defects (hairline cracks, etc.) be clearly visible, and in the main sewers, the colour of the pipe inspected be true to the actual conditions.

Video files shall commence with a minimum 10 second data information screen including: data and time of inspection, location description, contractor and operator name.

Technicians assigned to data gathering shall have a minimum of three (3) years related experience in sewer inspection, using Closed Circuit Television Equipment and Data Collection and shall be capable of report all conditions using WRc defect codes.

The Engineer shall confirm they have reviewed the cctv reports and will provide their comments. Comments will verify the pipes are satisfactory and/or identify areas of damage, sags, debris etc. that should be discussed with City representatives prior to City acceptance.

1.2.4. Pressure Leakage Tests

Infiltration or exfiltration testing shall be completed and meet the requirements of OPSS 410. Where exfiltration testing is required, sanitary sewer test results shall be submitted. Where infiltration testing is required, storm and sanitary test results shall be submitted.

1.3. Roads / Curbs Certification

1.3.1. Certification

Provide a certification letter signed and sealed by a Professional Engineer to verify general conformance with the approved project drawings and specifications.

1.3.2. Backfill Material

A letter must be provided from the engineer stating that the backfill material conforms to City requirements and the site specific geotechnical report. This letter must also state that sufficient compaction was obtained on this material.

1.3.3. Base Material – Granular “B”

a. Gradation Analysis

A gradation analysis must be provided from a certified lab to verify the Granular “B” conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

b. Compaction Tests

Results of the compaction testing must indicate that the Granular “B” material has been compacted according to the requirements set out in GSSS 501 and Method A of OPSS 501.

Compaction testing must be performed at 15 meter intervals along the roadway in a 3-point cross section for each lift of material and all test results must be supplied to the City.

Please note that the material specified with the City approved construction drawings must be used. If an alternate type of Granular ‘B’ material is to be contemplated, this must be done as part of the construction drawing review process.

1.3.4. Base Material – Granular “A”

a. Gradation Analysis

A gradation analysis must be provided from a certified lab to verify the Granular “A” conforms to the minimum gradation requirements defined in Table 2A of GSSS 1010.

b. Compaction Tests

Results of the compaction testing must indicate that the Granular “A” material has been compacted according to the requirements set out in GSSS 501 and Method A of OPSS 501.

Compaction testing must be performed at 15 metre intervals along the roadway in a 3-point cross-section and all test results must be supplied to the City.

1.3.5. Asphalt Works

a. Materials Analysis

The analysis of the asphalt material must be provided from a certified lab to show that this material conforms to the minimum requirements defined in OPSS 1150 and the supplier’s mix design approved by the City.

b. Compaction Tests

Results of the compaction testing must indicate that the asphalt material has been compacted according to the requirements set out in GSSS 310 and OPSS 310.

Compaction testing must be performed at 15 meter intervals along the roadway in a 3-point cross-section for each lift of material and all test results must be supplied to the City.

1.3.6. Concrete works

a. Concrete Mix Design

Provide a copy of the concrete mix design and the applicable performance requirements as required to verify compliance with OPSS.MUNI 1350.

b. Slump, Air and Compressive Strength of Concrete

i. For concrete curb and gutter systems, concrete testing must indicate that the concrete used meets the requirements set out in OPSS 353.
ii. For sidewalk installations, concrete testing must indicate that the concrete used meets the requirements set out in OPSS 351.
iii. For any other concrete works, materials, construction, and testing must comply with the relevant GSSS, OPSS, GSSD, OPSD, and any additional requirements set forth on the City approved construction drawings.

The submitted compressive strength test results from a certified lab must meet the requirements set out within the relevant GSSS and OPSS (for example, if 28 day test results are the standard, the submitted results must meet this requirement).

1.3.7. Surface Features

All surface features that form part of the City approved construction drawings must be constructed prior to initial acceptance. This includes all fencing, noise berms, and drainage ditching (excluding rear yard swales), etc.

1.4. Stormwater Management Facilities

The certification package for stormwater management facilities (where applicable) must be in the form of a letter from the Developer's Engineer stating that these facilities have been constructed in compliance with the City approved construction drawings and the City approved Stormwater Management Report. This letter must be accompanied by all relevant materials testing data.

1.5. Additional Requirements

In addition to the above noted requirements, the following will form part of the initial acceptance package:

a. Digital photographs of the installation of each major appurtenance installed (maintenance holes, catchbasins, valves, hydrants) must be provided. These photographs must be clearly labeled and provide sufficient as-constructed information (number of grade adjustment rings, height of hydrant above grade, etc.).

b. A comprehensive listing of all infrastructure to be taken over by the City must be provided as part of the initial acceptance package. This includes, but is not limited to; lengths of mains, number and location of maintenance holes, catchbasins, valves, hydrants, curb stops, length of roadway, curbing, and sidewalk. A spreadsheet template will be provided at a later date by Infrastructure Services for your use. The location accuracy and coordinate system will be defined at that time.

c. A red-line drawing showing as-constructed data must be provided to the City as part of the initial acceptance package. The as-constructed plans (to City drafting standards) must be submitted to the City within 3 months of the initial acceptance date for the works.

2.0 Construction Approval and Inspection for Initial Acceptance

Upon the City's acceptance of the Initial Acceptance Package, the 2 year maintenance period will commence and the City will conduct an inspection of the works within 3 months (During the months of May through October). All "Major Deficiencies" identified in this inspection must be corrected within a time period as established by the City. A separate 2 year maintenance period will commence for these deficiencies and any affected surface works, upon the City's approval of the corrected "Major Deficiencies". The follow up inspection of the work will be conducted within 3 months (During the months of May through October).

A "Major Deficiency" is defined and identified by the city as any deficiency which affects the safety of the public, usability of the service, or is related to underground works, which to correct, requires the removal and replacement of any surface works.

The City will provide only one inspection at no charge during initial acceptance. A fee will be assessed, in accordance with City Council's Policy, for any subsequent inspections required to determine if the deficiencies have been rectified.

III. FINAL ACCEPTANCE OF THE WORKS

1.0 Certification Packages Issued For Final Acceptance

1.1.1. Certification

a. Once the maintenance period has expired, the Consultant's Engineer must attend the site and perform a final inspection of the works. This includes, but is not limited to; CCTV camera inspections completed in accordance with the Initial Acceptance requirements for sanitary mains, sanitary laterals, storm sewers, and subdrains, adjustment of appurtenances as required (valves, hydrants, curb stops), review of grading, sodding, and other surface features (swales, boulevards, fencing, walkways, easements, etc.), and a review of all concrete works.

b. A letter must be provided from the Consultant's Engineer stating that they have reviewed the site and verify the works are in general conformance with the City approved construction drawings.

2.0 Construction Approval and Inspection for Final Acceptance

Upon the City's acceptance of the Final Acceptance Package and the end of the 2 year maintenance period, the City will conduct a final inspection of the works within 3 months (During the months of May through October). All Deficiencies identified in this inspection must be corrected prior to the release of the Maintenance Deposit.

Uncompleted works deposits will be released for all works completed at the time of inspection.

Upon the City's acceptance of the sidewalk portion of the Certification Package a 2 year maintenance period will start for the sidewalk and 10% of the sidewalk construction cost will be withheld from the release of the uncompleted works deposit until the end of the 2 year sidewalk maintenance period.

The City will provide only one inspection at no charge during final acceptance. A fee will be assessed, in accordance with City Council's Policy, for any subsequent inspections required to determine if the deficiencies have been rectified or to confirm the completion of any remaining uncompleted works.

The City will provide only one inspection at no charge during the 2 year sidewalk maintenance inspection. A fee will be assessed, in accordance with City Council's Policy, for any subsequent inspections required to determine if the deficiencies have been rectified.

Rev 1 - 2013.03.08

- certification letter added for clarification
- tracer wire report added
- sanitary laterals added for clarification
- consulting engineer to review cctv added for clarification
- submission of concrete mix design added

Rev 2 – 2014.02.28

- clarification of cctv requirements at final acceptance

Draft Rev 3 – 2014.11-20 (changed items highlighted)

- construction prerequisites added
- construction approval and inspection policies for initial and final acceptance of the works added