APPENDIX F:
AS-RECORDED REQUIREMENTS

Town of Innisfil As – Recorded Drawing Requirements

1.1. Introduction

The as-recorded drawings and documents shall reflect the actual as-constructed conditions and must be sealed by a professional engineer after verifying their accuracy. The engineering drawings accepted by the Town shall be used to produce the as-recorded drawings. The consultant who stamped and sealed the accepted engineering drawings shall be responsible for producing the as-recorded engineering drawings unless otherwise directed by the Town.

All as-recorded AutoCAD files provided to the Town shall be georeferenced as per the Town's standard.

Underground Certificate As-Recorded Drawing Submission Package

2.1. General Requirements

All As-Recorded drawing submissions to the Town must comply with all of the general requirements listed below:

- One (1) hard copy of As-Recorded drawings shall be submitted to the Town for review. All As-Recorded drawings for the development are to be provided, except the Erosion and Sediment Control drawings.
- Provide a copy of all reports accepted by the Town of Innisfil.
- Once the drawings have been reviewed, one (1) final hard copy, one (1) digital copy set, including the AutoCAD file, are to be provided to the Town;
- Removal of all verbiage related to "temporary" items (temporary road barricades, temporary fencing, etc.);
- Side profile elevations on the plan and profile are to match the as-recorded drawings submitted by the developer;
- Legend should indicate difference between "proposed" and "as-recorded";
- The locations of maintenance holes/valves/hydrants, etc. which have been installed in significantly different locations from the original design will require updating on the plan and profile.

2.2. Cover Page

Cover page shall be labelled "As-Recorded" and shall refer to the Town file number and M-Plan number. The cover sheet shall have a list of all drawings submitted all drawings that are not included in the submission are to consist of a "strike through".

2.3. Plan and Profile Drawings

Sanitary Sewer

- Pipe Class and material type of sanitary sewer to be confirmed and provided on the plan and profile drawings;
- Sanitary sewer lengths and slope percentages to be updated on the plan and profile drawings;
- Sanitary sewer inverts to be provided on the plan and profile drawings (strike through techniques are to be utilized as a comparison between proposed and constructed);
- Service Record sheets must be provided within the submission and must include the following information:
- The registered plan number, lot number, municipal street address, service pipe size, service pipe length, and service pipe material type;
- Invert elevations at the main line, property line, and three (3) metre extension;
- Locations to be confirmed in relation to permanent structures and appurtenances (maintenance holes, gate valves, catch basins, etc.).
- GPS coordinates of the lateral at property line and the main line connection;
- Sanitary sewer bedding type to be provided on the as-recorded drawings in addition to the OPSD reference/class type;
- Tie-ins to any existing sanitary sewer to be displayed on plan and profile drawings with pipe lengths, pipe locations, location of sleeves, and type of backfill;
- Lateral extension to be drawn three (3) metres beyond property line on plan;
- Maintenance hole sizing is to be confirmed and noted on the plan and profile drawings;
- Legend to be provided for the “auto stable/selflevel” frame and cover and type to be confirmed as part of the plan and profile drawing set;
- GPS coordinates for all street furniture (sanitary laterals, sanitary maintenance holes, etc.) to be provided for input into the Town’s GIS system;
- Utilization of materials recommended by the geotechnical consultant during construction (example – geo-grid, filter fabric, stone wrapped in filter fabric, unshrinkable fill, etc.) should be noted on the drawings;
- Anti-seepage collar elevations, locations, and type to be provided on profile drawings;
- Plugs to be noted on the drawings. Any plugs that were removed during construction shall be updated on the drawings accordingly.

Storm Sewer

- Pipe Class and material type of storm sewer to be confirmed and provided on the plan and profile drawings;
- Storm sewer lengths and slope percentages to be updated on the plan and profile drawings;
- Storm sewer inverts to be provided on the plan and profile drawings (strike-through techniques are to be utilized as a comparison between proposed and constructed);

- Service Record sheets must be provided within the submission and must include the following information:
  - The registered plan number, lot number, municipal street address, service pipe size, service pipe length, and service pipe material type;
  - Invert elevations at the main line, property line, and three (3) metre extension;
  - Locations to be confirmed in relation to permanent structures and appurtenances (maintenance holes, gate valves, catch basins, etc.);
  - GPS coordinates of the lateral at property line and the main line connection;
- Storm sewer bedding type to be provided on the as-recorded drawings in addition to the OPSD reference/class type;
- Tie-ins to any existing storm sewer are to be displayed on plan and profile drawings with pipe lengths, pipe locations, location of sleeves, and type of backfill;
- Lateral extension to be drawn three (3) metres beyond property line on plan;
- Maintenance hole sizing is to be confirmed and noted on the profile drawings;
- Storm invert elevations for all rear lot catch basins to be provided at the mainline and at the rear lot catch basin;
- Storm invert elevations for all catch basin and double catch basin leads to be provided at the mainline and the structure;
- Utilization of materials recommended by the geotechnical consultant during construction (example – geo-grid, filter fabric, stone wrapped in filter fabric, unshrinkable fill, etc.) should be noted on the drawings;
- Anti-seepage collar elevations, locations, and type are to be provided on profile drawings;
- GPS coordinates for all street furniture (storm laterals, storm maintenance holes, catch basins, etc.) to be provided for input into the Town's GIS system;
- Legend to be provided for the "auto stable/selflevel" frame and cover and type to be confirmed as part of the plan and profile drawing set;
- Bulkheads to be noted on drawings.
- Plugs to be noted on the drawings. Any plugs that were removed during construction shall be updated on the drawings accordingly.

Watermain and Appurtenances

- Pipe Class and material type of watermain pipe to be confirmed and provided on the plan and profile drawings;
- Watermain bedding type to be provided on the as-recorded drawings in addition to the OPSD reference/class type;
- Top of watermain elevations to be provided for all appurtenances (mainline valves, tees, crosses, etc.) and at a minimum of twenty (20) metre increments. Profile drawing to either be adjusted to show the contours of the watermain or markers placed on the profile drawings to confirm elevations and location;
- Service Record sheets must be provided within the submission and must include the following information:

- The registered plan number, lot number, municipal street address, service pipe size, service pipe length, and service pipe material type;
- Obvert elevations at the main line and property line;
- Locations to be confirmed in relation to permanent structures and appurtenances (maintenance holes, gate valves, catch basins, etc.);
- GPS coordinates of the service at property line and the main line connection;
- Water service connections 100mm diameter and greater must show the pipe size and obvert elevation at property line on the plan view;
- Horizontal distances to be confirmed in the field between bends/valves/tees should be recorded on the as-recorded drawings;
- Restraints on the watermain should be accurately noted on the profile drawings for any engineer fill areas or as recommended by the geotechnical engineer;
- Restraints utilized out of tees, bends, valves, etc. should be accurately noted on the as-recorded drawings;
- Legend to reflect the hydrant manufacturer and model;
- Hydrant flange elevations are to be provided on the plan and profile drawings;
- Utilization of materials recommended by the geotechnical consultant during construction (example – geo-grid, filter fabric, stone wrapped in filter fabric, unshrinkable fill, etc.) should be noted on the drawings;
- Insulated water services to be noted on the as-recorded drawings;
- Water sampling stations to be noted on the plan and profile drawings and the legend;
- Watermain “tie ins” to be noted on the as-recorded drawings including pipe lengths, pipe location, type and location of sleeves, and type of backfill that has been utilized;
- If watermain appurtenances were not installed please “strike through” the text and reconfigure the alignment;
- Top of watermain elevations for vertical bends to be provided with vertical distances to adjacent infrastructure;
- GPS coordinates for all street furniture (water service laterals, water boxes, hydrants hydrant secondary valves, mainline valves, valve chambers, etc.) to be provided for input to the Town’s GIS system;
- Note on legend required for any “non-draining” fire hydrants.

Roads

- Right of way must be shown and will include road width from EP to EP on drawings;
- Base asphalt elevations to be provided and updated on profile drawings and utilization of “strike through” technique as required;
- Road structure matrix to be provided on the drawings in order to provide information;
- Sub-excavated areas of the road are to be identified on the plan and profile drawings;
- Utilization of materials recommended by the geotechnical consultant during construction (example – geo-grid, filter fabric, stone wrapped in filter fabric, unshrinkable fill, etc.) should be noted on the drawings with accurate chain age;

- Culvert invert elevations, grade, type, length, and location to be provided;
- Utility crossing locations to be noted on the plan and profile drawings.

Grading

- Grading plans need to show significant alterations to the grading design or changes in runoff;
- The grading plans are to be updated to reflect the as-recorded base asphalt grades at 20m intervals
- The centreline base asphalt grade slope and length are to be reflected on the as-recorded drawings
- Pre-grade elevations of the lots, parks, blocks, etc., are to be shown on the drawing.
- The plan and profile drawings are to be revised to reflect the as-recorded conditions of the base asphalt grades at 20m intervals. The as-recorded information in the grading and profile drawings must be consistent.

Drainage Plans & Design Sheets

- Pipe information shown on the drainage plans is to be updated to reflect the as-recorded pipe information.
- Design sheets are to be updated to reflect the as-recorded pipe information to confirm pipe capacities and velocities.

SWM Pond Drawings

- GPS coordinates of all street furniture within the SWM pond are to be provided;
- As-recorded invert elevations for all of the SWM pond structures including but not limited to, orifice plate/pipe, inlet/out pipes, maintenance pipes, overflow, weir walls, etc. are to be gathered and “strike through” technique is to be utilized;
- As-recorded storage volume and discharge calculations of the entire SWM pond are to be quantified and certified by a Professional Engineer to verify conformance with the approved drawings and SWM report. The table shall be provided on the pond drawing and compare the design requirements to as-recorded calculations;
- As-recorded elevations for all of the pond contours to be provided including, but not limited to, the access road elevations (elevations prior to pavement commencement and base and top asphalt elevations), permanent pool, extended detention, top of berm, 100-year water level, spillway elevation, forebay bottom, main cell bottom, etc;
- Access road pavement makeup is to be documented on the plan and profile drawings;
- Clarification of any pond products (cable mats, turf stone, concrete liner in forebay, etc.) to be included on the plan and profile drawings
- Pond details and sections are to be revised accordingly.

"Final Acceptance" – As-Recorded Drawing Submission Package

3.1. General Requirements

- Cover page with all of the required drawings from the "List of Drawings" and "List of Reports" from the subdivision agreement (and any amendments) are to be provided;
- All as-recorded lot, block, and street names should be noted as per the Registered M-Plan
- Revision block within the title block of all drawings shall have an entry indicating that the drawing is "As-Recorded" with the date;
- Provide a letter from the developer's engineer that all infrastructure meets Town standard "set back" requirements.
- Provide a copy of all reports accepted by the Town of Innisfil.
- Provide individual PDF files of the as-recorded drawings. The size of each PDF shall be approximately 2 MB or less.

3.2. Plan and Profiles

Sanitary Sewer

- Location of the sanitary lateral (at property line and main line connection) is to be reviewed by utilizing the GPS coordinates. The sanitary service lateral locations are to be revised based on the GPS coordinates. The depth to invert is to be confirmed and the lateral invert chart is to be updated. Alternatively, the lateral invert can be shown on each individual lot in a text box with a border;
- Top of grate elevations for the sanitary sewer maintenance holes to be gathered after top asphalt placement.

Storm Sewer

- Location of the storm lateral (at property line) is to be reviewed utilizing the GPS coordinates and depth to invert to be confirmed and the lateral invert chart is to be updated. Alternatively, the lateral invert can be shown on each individual lot in a text box with a border;
- Top of grate elevations are to be provided for the storm maintenance holes, all catch basins (including rear lots if applicable).

Watermain and Appurtenances

- Location of the water service lateral and waterbox (at property line and main line connection) is to be confirmed utilizing the GPS coordinates. The water service lateral and waterbox locations are to be revised based on the GPS coordinates;
- Locations of all mainline valves, hydrant valves, hydrants, valve chambers, air release chambers, etc. are to be confirmed and drawings are to be updated accordingly.

Composite Utility Plans

- Review all utility plans including electrical street lighting drawings for all above ground utilities, landscape features, driveways, sidewalks, mailboxes, utility boxes, street lights, hydro transformers, etc. to confirm locations and update drawings accordingly;
- GPS coordinates of all of the utility structures to be gathered and locations of proposed are to be confirmed and updated accordingly.

Roads

- GPS coordinates of the maintenance holes/catch basins to be gathered once the top asphalt has been placed;
- Top asphalt elevations are to be provided once works have been completed;
- Curb and gutter elevations to be provided and slopes to be compared with proposed on the plan and profile drawings

Landscaping

- Tree species and GPS coordinates to be provided;
- Record of planting dates to be provided (tracking device regarding planting history);
- Landscape/entry features to have a plant/tree inventory provided.

Grading

- Grading plans need to show significant alterations to the grading design or changes in runoff;
- The grading plans are to be updated to reflect the as-recorded centreline grades at 20m intervals
- The centreline road grade slope and length are to be revised to reflect the as-recorded conditions
- Spot elevations are to be revised based on the as-recorded conditions.
- The plan and profile drawings are to be revised to reflect the as-recorded conditions of the spot elevations, road grade slope and length, and centreline grades at 20m intervals. The as-recorded information in the grading and profile drawings must be consistent.
- Retaining Walls require clarification of type, length, height, and it should be noted if they were removed from the plan.

SWM Pond Drawings

- Pond survey along with the access road top asphalt and all street furniture, emergency spill way, and all other inlet/outlet structures and adjacent areas;
- As-recorded storage volume and discharge calculations of the entire SWM pond are to be quantified and certified by a Professional Engineer to verify conformance to approved drawings and SWM report. The table shall be provided on the pond drawing and compare the design requirements to as-recorded calculations;
- ➢ All of the trees within the SWM pond are to be identified by species along with GPS coordinates to be gathered as part of the tree inventory.
- Refer to section 4.9.11 Stormwater Management Pond Post-Cleanout of the Town Standards for additional requirements.