RESIDENTIAL INFILL GRADING AND SERVICING (RGS) APPLICATION INFORMATION PACKAGE

The RGS application is for the redevelopment of residential properties with 10 units or less. For land severances, a new municipal addresses must be officially registered for the subject lot(s) before RGS applications can be initiated.

Application Types:

Type	Description	Plan	Fee [A]
Type-I	New detached infill residential construction of any size involving proposed grading and/or servicing works	Grading and servicing plan (1 Plan)	$350 + HST
Type-II	Residential addition[B] of 50 m^2 or more	Grading plan required	$350 + HST
Type-V	Service connection only (May be combined with any of the types above)	Servicing plan required	$0
Type-VI [C]	Revision application – **Only for previously accepted applications**	As per application type	To be determined

Type-II applications can be combined with Type-V when new service connection(s) are requested with an addition.

Residential redevelopment is subject to Markham's Site Alteration By-law and Site Alteration Permit process. The RGS application is structured for residential properties that can be fully exempt from Markham's Site Alteration By-law, resulting in a more simplified process with fewer requirements for redevelopment of individual residential lots. In accordance with Markham's Site Alteration By-law (2011-232) Section 4, to be fully exempt from the Site Alteration Permit process as well as all provisions of the Site Alteration By-law, the following must be provided:

i. Impacted lands of the subject site (the work area) is less than 1 acre (0.405 ha).
ii. Impacted lands of the subject site are not within 30m of a Natural Heritage Network[D]
iii. No more than 300mm of fill or elevation increase is proposed for any given spot (checklist item #4).
iv. The elevation of land within 600mm of any property line is not changed (checklist item #27).
v. The alterations proposed for the site does not in any way affect the land drainage of the abutting properties.
vi. There is no change in the location, direction, or elevation of any natural or artificial Watercourse, open channel, swale, or ditch used to drain land.
vii. There is control of any sediment runoff.
viii. Quantity of topsoil added or removed in any one lot does not exceed five (5) cubic meters.

An application which is unable to comply to any one (or more) of the above criteria, (i) through (viii), is subject to the provisions of the Site Alteration By-law and may be required to obtain a Site Alteration Permit.

[A] *The application fee must be paid immediately when creating the application. The Service Connection Fee and associated cost of works is determined separately upon acceptance of the RGS Application in accordance with By-law 2002-276 and is not included in the application fee for review. Where Waterworks is required as a reviewer on a RGS application an additional review fee as per By-law 2002-276, will be applied and collected by Markham's Contact Centre when one or both of the following is proposed :*

- *A new water service larger than 25mm in diameter will require Waterworks to conduct hydraulic assessment.*
- *Re-use of existing sanitary and/or storm service connection(s). Waterworks to conduct a condition assessment review.*
  Note: Fee for Waterworks review will be waived if owner requests for Waterworks to perform CCTV inspection. The review is included in the fee for the CCTV inspection, as per By-law 2002-276.

[B] *Any addition that impacts 50% or more of the original or existing exterior walls or foundations will be subject to Type I (grading and servicing requirements) in accordance with By-law 2014-71.*

[C] *This application type is for revisions after a RGS Acceptance was previously issued. It is NOT for re-submissions of an active application. The fee for the revision subtype may vary based on the nature of the revision. The revised plan must be uploaded at the time of application. A notification will be sent to the applicant regarding the required fee subsequent to application prescreening. A revision application is not suitable where the corresponding building permit application, if applicable, has been closed and received occupancy. Any content proposed after occupancy is to be submitted as a new undertaking through the applicable permit application process.*

[D] *Natural Heritage Network (as defined in 2011-232) means lands defined as part of the Natural Heritage Network in the City of Markham Official Plan, as amended. It includes Wetlands, Significant Wetlands, Woodlands, Significant Woodlands, Significant Wildlife Habitat, Fish Habitat, Habitat of Endangered and Threatened Species, Valleylands, Significant Valleylands, Areas of Natural and Scientific Interest, permanent and intermittent Watercourses, and other lands (including vegetation protection zones and hazardous lands) as defined in the City of Markham Official Plan;*

When preparing for a RGS submission, it is important that the homeowner and their consultant refer to the RGS requirement checklist. Applications submitted that do not include all required supporting documents or meet the checklist requirements will be returned to the applicant without being reviewed. This is to minimize the number of reviews during the application process. The checklist includes only key elements required for a RGS plan. All design for grading and servicing shall be in accordance with all applicable City of Markham By-laws and Engineering Design Criteria and Standard Drawings.

Relevant Regulation and Criteria Applicable to Residential Redevelopment:

Applicable Provincial or Federal Regulation, as amended (including but not limited to):

• Ontario Building Code & Act	• Drainage Act	• Planning Act

Applicable Municipal By-laws and criteria or specifications, as amended (including but not limited to):

• Sewer Use By-law (2014-71)	• Fees By-law for Services Done by the City (2002-276)	• Site Alteration By-law (2011-232)
• Building By-law (2023-177)	• Comprehensive Zoning By-law (2024-19)	• Property Standards By-law (2017-26)
• Parking Standards By-law (28-97)	• Tree Preservations By-law (2023-164)	• Road Occupancy By-law (2018-109)
• Stormwater Management Guidelines & LID Guidelines	• Markham's Engineering Design Criteria; including but not limited to: Sections E, F, J, L, M	
• Soil Excess Policy	• Markham's Engineering Standard Drawings; including but not limited to: Sections MR, ML, MS, MW	

Required Pre-Application Consultation:

The homeowner and their designated representatives are required to participate in a pre-application consultation meeting with city staff to determine all requirements for the application and to provide transparency to owners with respect to the RGS application process.

Step 1: Once the new RGS application for the property is submitted, it will enter the pre-screen process. An email will be sent to both the owner and applicant to schedule a consultation meeting, which the owner is required to attend.

Step 2: The pre-consultation meeting is to discuss the RGS review and development process, the City of Markham's submission requirements and expectations, any required supporting documents necessary for detailed review, review timelines, service construction process, construction schedules, and estimated costs for service connections (if applicable).

Step 3: After the pre-consultation meeting, any incomplete applications will be returned to the applicant. The application shall be accepted into the first detailed review cycle once all items on the checklist have been completed and all supporting documents have been included. If the new application is deemed to be complete by City of Markham Engineering Review Staff, the RGS application will be circulated into the first review cycle.

ePlan Submissions

The RGS application is to be submitted via ePlan. Prior to making an ePlan submission, the applicant must have a registered account in ePlan. A RGS Quick Reference Guide and other ePlan Guides and Tutorials can be found on the City's website. For assistance, contact DSC@markham.ca. For more information regarding the RGS application process, visit our website.

Required Supporting Documents for RGS Application Submission:

- Grading and/or servicing plan
- Signed RGS requirement checklist
- Stormwater Management Brief (see checklist #23)
- Utility locate records (see checklist item #39)
- Servicing locate records (see checklist item #40)
- CCTV inspection video (see checklist item #42)
- Plumbing data form (see checklist item #50)
- Topographic survey of existing site conditions (see checklist item #20)
- TRCA accepted plan & clearance letter (see checklist item #33)
- York Region acceptance for all properties adjacent to Regional right-of-ways (see checklist item #7)
- Heritage permit, if applicable (see checklist item #3)
- TAPP and arborist report (see checklist items #6)

Required supporting documents must be submitted with the new RGS application. The application cannot be accepted into 1st detailed review without all required supporting documents. Refer to each specified checklist item # for more information and to determine if this supporting document applies to your project.

Important General Information about RGS Review Process & Timeline:

- Please note that the $350 application fee includes 3 review cycles. The City will return each review cycle within 30 days of when it is submitted to the City. This is the back-and-forth discussion between applicant and all City reviewers to ensure the plan is prepared that is acceptable to City management as well as fully compliant with all City criteria, standards and RGS Checklist. Please plan for this time for City review as well as time it will take you to complete revisions. The best opportunity to ensure the quickest acceptance is to ensure all City comments by all reviewers are fully resolved and the plan is compliant with RGS checklist and City's Engineering Criteria. Applicants should target to obtain acceptance within 3 review cycles by resolving all comments by all reviewers to minimize time spent with the City for application review and acceptance. It is the responsibility of the homeowner and their consultant to fully resolve all City comments.

- The City requires up to 30 days to complete each review cycle. This is the necessary time for all reviewers to complete their reviews. All reviewers (Engineering, Operations, Tree Preservations, Waterworks, and Development Engineering Manager) complete their reviews as soon as possible with consideration of the other applications currently waiting for the City's formal response within their 30-day windows, in addition to other work tasks. We must process all applications in order which they are received to avoid adding unnecessary delay to other applicants and residents. We are unable to accommodate expedited reviews and approvals due to the volume of requests from all applicants. The City's formal response will be released as soon as all reviewers have completed their checks.

- Please note, Engineering is unable to provide informal reviews or discuss comments between review cycles. This enables Engineering to respond to all applicants who have formally submitted and prevents delays for those waiting for City's formal response within their 30-day windows. All information you require is within the City comments provided to you. City workers can only confirm if your proposed plan does or does not conform with City Engineering Criteria. City workers cannot guide consultants to complete designs that the City workers are responsible for approving to avoid conflicts of interest. For Engineering approval, all City comments must be fully resolved. It is the responsibility of the homeowner and their consultant to fully resolve all City comments.

- To request a meeting with RGS staff, please provide your specific questions in writing to the RGS Engineer (rde@markham.ca). The RGS Engineer will assess and direct you to the appropriate City staff or arrange a meeting time with relevant parties. To be most fair and most efficient for all applicants, meetings cannot be arranged for informal reviews as defined above to discuss comments with reviewers as duplicated reviews lead to delays for other applicants waiting for City's formal response within their 30-day windows.

RESIDENTIAL INFILL GRADING AND SERVICING REQUIREMENTS CHECKLIST

Part I: General Information (For Type-I, Type-II & Type-V)		
1.	☐	This is a new RGS application. There are no previous RGS applications that are currently under review. A revision application can be initiated after engineering acceptance has been obtained for a RGS application.
2.	☐	This lot is NOT under a Severance Application where the severance process has not been completed. *(DO NOT submit for RGS application if severance process is not complete. Severance process is "complete" when all lots have been formally registered with the Land Registry Office and new municipal addresses have been established for each lot.)* - *Planning Act, R.S.O. 1990, c. P.13*
3.	☐	For a property within a designated Heritage District, the Heritage Permit Application has been deemed "complete" prior to initiating a RGS application. Include a copy of Heritage Permit with the RGS application.
4.	☐	The lot grading and site servicing plan meets all the required criteria to be exempt from the Site Alteration By-law and Permit process, to qualify for the RGS application process. These criteria are listed on page 1 of this information package (items i through viii). If any of these criteria are not met, the project is subject to the Site Alteration By-law. - *Section 4, Markham's Site Alteration By-law, 2011-232*
5.	☐	For all Type-I applications, the City's Parks Planning division will determine if conveyance of parkland or payment in lieu of parkland for new infill residential construction is required in accordance with Section 42 of the Planning Act. Parkland conveyance or payment in lieu of parkland is applicable law under the Ontario Building Code. Where parkland conveyance is required, the failure to enter into a 'Parks and Open Space Agreement' will prevent the issuance of a Building Permit. Where payment in lieu of parkland is required, a land value appraisal to determine development land value may be required. For further information, please contact the Planning and Urban Design department by email at DSC@markham.ca to coordinate with Parks Planning as needed. - *Planning Act, R.S.O. 1990, c. P.13*, *Building Code O. Reg. 332/12*
6.	☐	A Tree Assessment and Preservation Plan (TAPP) and an arborist report. *(See Tree Preservation Requirements to determine if this is required for your RGS application.)* On the grading and servicing plan, show tree protection fences matching the TAPP accepted by the City's Tree Preservations technicians. *Drawing shall include Markham's Tree Preservation Details Drawing T1. Include any tree preservation note as required by City Tree Preservation. - Tree Preservation By-Law 2023-164*
7.	☐	Provide acceptance letters and/or plans for all authorities with jurisdiction of adjacent right-of-ways (ROW) and/or easements including but not limited to York Region, City of Toronto, Toronto Regional Conservation Authority (TRCA), telecommunications utilities, electric utilities, and gas utilities.
8.	☐	Title block (per MR001). Ensure the following required information is included: a) Municipal address of property b) Legal description of property c) Scale and scale bar d) Name and address of the firm preparing the drawing, e) RGS application number and a revision notes box with all formal submission dates and revision dates
9.	☐	Plan is prepared on a 24"x36" paper size and includes all contents of Markham Standard Drawing ML2. Plan is a vector-based PDF file, to a 1:150, 1:200, or 1:250 metric scale. Provide 3"x5" blank white space in top right corner of plan.
10.	☐	Show key plan, showing site location with respect to the City's major street network. Include north arrow on key plan.
11.	☐	Show north arrow on plan and key plan.
12.	☐	Show legend for existing and proposed information, including all line types and symbols, as required. If not identified in legend, features must have a clear callout or label.
13.	☐	Show all Markham Standard drawings and notes applicable to plan; including but not limited to: • MR35BB / MR36A / MP5 / MP11 / MS7 / MS17 - show all applicable Standard Drawings on plan or a separate Detail sheet and provide appropriate reference on plan.
14.	☐	Clear identification of property lines and ROW limits. *(Including any proposed road widening, sight triangles and 0.30 m reserve blocks, adjacent to the subject property, along with existing lot corner elevations.)*
15.	☐	Show full extent of ROW (from street line to street line on both sides of the road) including abutting roads, easements, and the location of all existing surface features. Identify the authority with jurisdiction or

		ownership of the ROW or easement. *(Including but not limited to ROW property lines, road centre lines, walkways, vehicle accesses and driveways, ramps, edges of pavement and shoulders, bike lanes, curbs, traffic islands, existing road line painting, utility poles and pedestals, transformers, streetlight poles, hydrants, bus shelters, mailboxes, sidewalks, watercourses, swales, ditches, grassed areas, culverts, catch basins, maintenance holes, valve boxes, curb stops, embankments and overhead utilities, on both sides of the road.)*
16.	☐	All existing access/driveway entrances to the subject property, adjacent properties and the opposite side of the road, including widths (within private property and within City ROW.)
17.	☐	Show all existing and proposed above ground features within the private property, including but not limited to buildings, structures, fences, trees and bushes.
18.	☐	All drawings are stamped, signed, and dated, by a Professional Engineer of Ontario or an Ontario Land Surveyor. Digital seals must be of the same size and shape as original rubber stamp issued by the associated authority.

Part II: Lot Grading Information and Stormwater Management (For Type-I & Type-II)		
19.	☐	Provide a geodetic survey datum, derived from City of Markham benchmarks. Benchmarks used must be identified on the RGS plan. *(Contact City of Markham Operations department – Mr. Benjamin Kihara at bkihara@markham.ca)*
20.	☐	Provide a topographic survey including but not limited to existing elevations, grading features, easements, trees, and sealed by an Ontario Land Surveyor. Identify all ROW(s) and easement(s) adjacent to and/or within the property, and whom they are in favor to. *(Topographic survey must be completed no longer than 1 year prior to submitting the RGS Application.)*
21.	☐	Include existing house boundary on the subject property and adjacent property(s) showing the building footprint, facade, exterior walls, and features.
22.		A minimum of 0.15 m is provided between the highest finished grade adjacent to the house and the top of foundation wall elevation.
23.	☐	A stormwater management (SWM) brief will be required for any of the following cases: • A well-defined swale of 0.15m in depth is not provided along the side and rear lot lines outside of the 0.60m undisturbed strip discharging to an outlet that is acceptable to the City of Markham. • Proposing sub-surface storm infrastructure (ie: infiltration galleries, trenches, soakaway pits.) • If a condition of the consent and/or minor variance application(s) requires the submission of a SWM brief then it will be reviewed during the RGS review. (All consent and minor variance applications must be complete before initiation a RGS application). • Accessory buildings (attached or detached from primary dwelling), including but not limited to: garden suite, garden home, and garages as defined by Markham's Comprehensive Zoning Bylaw. • Revision applications for increased impervious area from the originally accepted plan. The content requirements for a SWM brief are defined in Markham's Stormwater Management Guidelines (2016), Appendix A (page 79). Where a SWM brief is required, it is to be prepared and sealed by a Professional Engineer demonstrating that post-development flows are controlled to the allowable release rate. Increased runoff resulting from post-development conditions is NOT permitted to be directed to City's stormwater infrastructure or towards adjacent properties. Post-development flows must be controlled on-site to the designated allowable release rate specified in Markham's Stormwater Management Guidelines (2016), Section 5.3.2.1 and Figure 5.3 through low-impact development (LID) devices in accordance with Section 4.1 of Markham's LID Guidelines (2018). Drainage paths to any control or outlet implemented must be well-defined and shown on plan. Proposed drainage swales must comply with Section F: Lot Grading of the Engineering Criteria. Any SWM solutions or controls specified in the SWM Brief shall be shown on the lot grading and servicing plan.

24.	☐	Provide existing spot elevations (every 10 m, minimum): *a)* Within project site, *along the property lines* and including *5 m (minimum) into adjacent properties. Include the doorstep elevation and finished floor elevations of adjacent properties.)* b) Within the City ROW, and at features as listed in checklist item #15. Existing slope gradients at all critical locations and changes of slope shall be illustrated on the plan.
25.	☐	Identification of any existing swales, ditches, culverts (including size), creeks, watercourses, ravines, and drainage easements/routes complete with elevations, inverts and flow arrows indicating the surface drainage direction in accordance to Engineering Standards.
26.	☐	Clearly specify all existing and proposed ground-types (grass/sod, hardscape, etc.) and include surface drainage arrows and slopes labels in % (between 2-5%; per Engineering Criteria Section F) to indicate the direction of overland flow within the site. Where ground-type is not specified City's expectation is softscape (grass, sod, etc.) or to remain the same as existing ground surface. Where slopes exceed 5%, "terracing" must be utilized. Terracing includes 3 parts: a) A grade of 2-5% must be used around the building footprint for 5m horizontally (minimum) b) Transition to 3H:1V for 5m horizontal (maximum). c) Alternate between parts a) and b) above until you reach the existing elevation.
27.	☐	Show the 0.60 m (minimum) undisturbed strip along the side and rear property lines of the site abutting adjacent properties. The undisturbed strip shall be maintained at all times until all final grading and construction is completed. No works or temporary controls of any kind are permitted within the 0.60m undisturbed strip. Impacts within 600mm of property line may be subject to all provisions of Site Alteration By-law and/or requirement to obtain a Site Alteration (SALT) Permit. - *Section 4, Markham's Site Alteration By-law, 2011-232*
28.	☐	Proposed spot elevations: - At all high/low points (including but not limited to swales), top and bottom of slopes along swales and embankments, slope gradients, all critical locations, changes of slope, building and structure corners, etc. - Top and bottom of retaining walls (bottom elevations on both sides of the wall shall be provided.) Provide cross sections to better illustrate design intent, as required. *(Retaining walls, curbs or decorative perimeters shall terminate within the subject site, a minimum of 0.60 m away from the property line. Wall ends to be tapered to maximum 0.15 m in height. Retaining walls higher than 0.90 m must have structural drawings sealed and signed by a qualified Structural Engineer (P.Eng) in Ontario.)*
29.	☐	House siting elevations included on the plan: Basement slab elevation(s), garage slab elevation(s), finished floor elevation of the ground floor and entrances to all buildings, elevations of underside of footings (USF) and top of foundation wall elevation. Identify all levels with different elevations. *(Where top of foundation wall elevation changes or reverse veneer is used, the limit of the sections and the different top of foundation wall elevations must be identified.)*
30.	☐	Well-defined drainage paths are required along the side and rear yards; that discharge to an outlet that is acceptable to the City of Markham. Driveways are not permitted as outlets for drainage swales. Well-defined swales, as defined in Engineering Criteria Section F, are a standard acceptable solution to convey and control surface storm flows within the subject site, shall include: a) longitudinal slope of 2% (minimum) to 5% (maximum) b) swale depth of 0.15 m (minimum) to 0.30 m (maximum) c) swale side slopes of 3H:1V on both sides d) swale elevations and slope labels: i) along the entire length of swales at regular intervals ii) at bottom of swale iii) at top of swale elevations on both sides iv) at high-points v) matching to existing elevations Where well-defined swales cannot be illustrated clearly in plan view, site specific cross-section at all proposed building corners, pinch points, and critical swale locations are required. Cross-sections shall include both the existing and proposed ground surfaces, as well as the location the proposed surface matches to the existing, so the City can assess the extent of site alteration.

		An inability to provide well-defined drainage paths or the use of infiltration galleries will be required to obtain a SWM brief per checklist item #23.
31.	☐	Proposed roof downspout locations and direction of flow. a) Downspouts must be directed to the front or rear of the property and away from the dwelling of neighboring properties. b) Downspouts must be discharged at grade and not connected underground.
32.	☐	Erosion and sediment control measures are to be used before, during, and after construction (as per Standard Drawing MP11). Silt fence shall be placed at the limit of construction and away from shared property lines. Silt fence is not required at locations where tree protection fence is required. Please note that the homeowner shall be responsible for keeping the municipal ROW clear of mud and debris as per Markham's Road Occupancy Bylaw (2018-109).
33.	☐	Locations of any regulatory flood lines or development limit lines (i.e. setback and slope stability limits). *(Properties within the TRCA regional storm limit, engineering floodline, or Screen Zone 166 -06 require TRCA clearance prior to RGS acceptance. Submit TRCA-stamped grading plan and clearance letter to the Engineering department.)*
34.	☐	For sites without City services available in the ROW: Location of septic tanks, outline of tile beds, wells, and holding tanks for firefighting shall be shown.
35.	☐	Details of the proposed driveway and/or vehicular entrance to the subject property shall include, but not limited to: - Proposed elevations at the garage and at all proposed slope changes along the driveway - *Driveway elevation must match existing elevation at the property line.* - *Slopes of driveway within private property shall be between 2-8% (as per Engineering Criteria)* - *Existing driveway slope within the City ROW shall be maintained* - *For driveway aprons that are proposed to be relocated, the slope* - *Slope of relocated driveway aprons within the City's ROW shall be interpolated between the existing elevation and do not have to be the same* - Show limit of garage door opening. - Identify the size of garage (1-, 2- or 3-car). - Provide dimension of driveway apron in ROW as well as within private property, if different. - *Ensure minimum offset of 1.2 m to boulevard furniture - light and utility poles, pedestals, transformers, hydrants, mailboxes, trees, bus shelters; and features within City ROW to remain unchanged.* - *Existing sidewalk elevation not permitted to be altered to accommodate driveway.* - *The standard driveway surface within the City ROW shall be asphalt, as per the Engineering Standard Drawing MR35AA.* - *The standard driveway surface within the City ROW shall be asphalt (200mm compacted depth 20mm crusher run limestone, and 75mm compacted depth HL-3), as per the Engineering Standard Drawing MR35AA.* *Please refer to the Extended Driveway by-law, Engineering Design Criteria Section B, and Section 5.3 of the Comprehensive Zoning By-law for additional requirements pertaining to driveway and vehicular entrances for residential properties.*
36.	☐	Identify all existing culverts *and ditches. Specify any proposed ditch and or culvert modifications including all relevant details such as culvert diameter and length. All proposed ditches shall match the depth and width of existing adjacent ditches. Culverts shall extend a maximum of 0.60m beyond the driveway edge.* For any culvert modifications, indicate on the drawing that new culverts are to be installed by the owner's contractor at owner's expense, under City supervision. The Owner shall apply for and obtain a Culvert Modification Permit prior to the start of construction. *https://www.markham.ca/permits-licences-taxes/permits/road-permit/culvert-modification-application*
37.	☐	Identify all existing curbs. Specify any proposed curb cut (removal) or fill (installation). For any proposed curb works, indicate on the drawing that curb modifications are to be carried out by the City at the owner's expense. The owner shall apply for and obtain a Curb Modification Permit prior to the start of construction. *https://www.markham.ca/permits-licences-taxes/permits/road-permit/curb-modification-application.)*
38.	☐	Show catch basin sediment traps and Standard Detail MP5. Note on drawing that: during construction all catch basins within 50m of site are to be fitted with sediment trap at each catch basin.

Part III: Lot Servicing Information (For Type-I & Type V)		
39.	☐	Submit a record of locates for existing utilities within City-owned ROW. Locates within private property are not required for municipal servicing. Locate records are to include sketches of all utilities and connections on both sides of the road, within the frontage of the subject property. *(Requests for utility locates can be obtained from Ontario One Call website. Alternatively, the applicant may submit locate records prepared by qualified private subsurface utility consultants retained by the applicant. If existing utility feeds have been decommissioned, locate record indicating "all clear" shall be submitted. Include locate records information onto the grading and servicing plan. Include the gas feed, hydro feed, etc. into the property.)*
40.	☐	Submit a record of locates from the City's Waterworks department, for existing service connections. Locate records are to include a tie-in sheet of all service connections on both sides of the road, (within the frontage of the subject property) with tie-in distances, material and size of service connections. *(Locate requests via Ontario One Call usually include servicing locates from the City of Markham Waterworks department, but will not have sufficiently detailed information. Applicants may submit requests via City's Contact Centre (905-477-7000 ext5530) or email to waterworks.locates@markham.ca. Specify in request the purpose of locates is for RGS Applications with the Engineering department. Incorporate information on locate records onto the grading and servicing plan, including location and size of connections, etc.)*
41.	☐	Show all existing and proposed above ground servicing infrastructure within the City-owned ROW. This includes, but is not limited to: - Maintenance holes, storm (STM) and sanitary (SAN) sewers, water mains (include identification of all pipe material, diameter, slope, direction of flow and maintenance hole inverts), all existing service connections to adjacent properties, catch basins, valve boxes, chambers and hydrants, etc. - Existing above and underground utility features within the boulevard; including but not limited to gas meters, light poles, pedestals, transformers, and all underground and overhead utility lines and/or poles (hydro, gas, telecommunication, cable). *(Plan and profile drawings and as-Built drawings can be used as reference only and can be requested via an online Drawing Request Form on the City's website.)*
42.	☐	Show location and details of all existing service connections to City mainline infrastructure, as per locate records and field observations (for subject site and adjacent properties on both sides of the street). Indicate if any existing services are to be re-used or decommissioned. If the existing SAN and/or STM service connections are proposed to be re-used, existing invert elevation at property line must be obtained and shown, along with pipe size and pipe material. Note on the drawing that the invert elevation at street line is verified by the OLS or P.Eng sealing and signing the drawing. A CCTV inspection video of the existing SAN and/or STM service connection shall be submitted with the application for condition assessment during the initial submission. **Any submissions proposing re-use of existing SAN and/or STM service connection(s) that do not include locates and CCTV video inspection files will be returned as an incomplete submission.** For the review of CCTV videos prepared by other contractors, a review fee will be charged by Environmental Services, as listed in *By-law 2002-276*. The City of Markham recommends the re-use of existing services whenever possible to reduce homeowner's costs and impact on existing City infrastructure. The Waterworks department can provide CCTV services at a cost to the homeowner, as listed in *By-law 2002-276.* Please contact Contact@markham.ca with the subject line *"Pre-RGS Application – CCTV Condition Assessment"* to request for a CCTV of existing services. This request can be submitted at the same time as the servicing locate request. Video inspection of existing municipal services shall be free of any structural or operational defects, compliant with current material specifications, and capable of servicing the building by gravity drainage. The reuse of the existing SAN and STM service connections is determined at the sole discretion of the City. *(Note: Existing wye SAN connections and all clay connections are not permitted for reuse in accordance to the Sewer Use By-law 2014-71).*

		If an existing wye service is to be decommissioned, please use the following note and customize to suit: *"Existing SAN service for #XX (subject site municipal number) to be decommissioned as per City's Design Criteria Section M. Existing SAN service for #XX (adjacent property municipal number) shall be maintained as well as remain operational and in good condition at all times."* If a cross-connection (SAN and STM service connected to wrong pipes at the property line) is discovered at the time of the CCTV inspection, it shall be rectified at the homeowner's expense.
43.	☐	For each proposed service connection, include: a) Distance from the proposed mainline connection point (SAN/STM) to closest maintenance hole with known invert information. This dimension must be shown on plan to scale or dimensioned accordingly. *b)* Invert and obvert of mainline sewer where the service lateral connects to mainline (SAN/STM). *c)* Invert of service connection where it connects to mainline (SAN/STM). *Invert of proposed service connection shall match the obvert of the existing mainline sewer (minimum).* d) Invert of service connection at property line (SAN/STM). e) Identification of proposed pipe length from mainline to property line, pipe material, diameter & slope (SAN/STM/WATER). f) Pipe crossing labels wherever a SAN/STM service connection crosses a mainline sewer or watermain. Include obvert of lower pipe and invert of upper pipe and ensure a minimum vertical separation of 0.5m between pipes; or as per MS17.
44.	☐	A STM service connection with sufficient frost cover, at minimum depth at the property line (as per Section M), where possible, is required if a STM sewer mainline is available within municipal property or easement that is immediately adjacent to the subject property. *(STM connections shall not be connected to private or City catch basins or maintenance holes. A STM service connection is for foundation drains only, not for surface drainage. Private rear lot CBs are not permitted for infill developments).* *A sump pump that discharges to the surface in the rear yard of the house and onto a concrete splashpad is required where no STM sewer is available for the foundation drain. Where the STM connection invert at property line is not sufficiently below the USF, a sump pump discharging to the municipal STM sewer shall be required. The use of a sump pump is subject to review and acceptance by the Building Standards department. Where possible, the proposed underside of footing shall be adjusted to permit a gravity-draining connection. It is the applicant's responsibility to coordinate with the Building Standards department on this subject matter.)*
45.	☐	A SAN service connection at minimum depth at the property line (as per Section M), where possible, is required if a SAN sewer mainline is available within municipal property or easement that is immediately adjacent to the subject property. *(SAN connections shall not be connected to maintenance holes).* *A sewage ejector pump is to be used if the SAN service connection invert at property line is not sufficiently below the USF. An ejector pump must discharge into a SAN service connection. The use of a sewage ejector pump is subject to the review and acceptance by the Building Standards department. Where possible, the proposed underside of footing shall be adjusted to permit a gravity-draining connection. It is the applicant's responsibility to coordinate with the Building Standards department on this subject matter.)*
46.	☐	Place proposed STM and SAN connections in a common trench where possible, with a 0.5 m horizontal separation.
47.	☐	Provide a minimum 2.5 m horizontal offset between SAN or STM service connections and water-related infrastructure including but not limited to active water service connections, hydrants, chambers, valves, etc.
48.	☐	Provide a minimum of 1.0 m horizontal offset between proposed service and existing service connection or decommissioned connection. Consider checklist item #47 for offsets from water-related infrastructure.
49.	☐	Water box must be located outside of the driveway. Water connection shall be connected to water main at right angle, where possible.
50.	☐	A residential water service connection shall be a minimum diameter of 19 mm except when the length of the connection from the main to the building setback exceeds 30 m, then the minimum diameter shall be 25 mm. For residential infill developments, the available diameters for new water service connections are 19mm, 25mm or 38mm. Proposed water service connections shall be at minimum depth at the property line (as per Section M). Requests for new water services greater than 25mm is subject to review and acceptance by Environmental Services. For new proposed water service connections greater than 25 mm, please complete the City's **Plumbing Data Form** and include with all required supporting documents. *(Allowing new residential water service connection greater than 25 mm within the ROW is at the sole discretion of the City.)*

51.	☐	If the existing SAN sewer mainline contains a cast-in-place pipe liner (CIPP liner), it must be labelled on the grading and servicing plan and a new SAN connection at a new location is not permitted. The applicant must choose one of the following options and show the design on plan. This information should be provided with your servicing locate package obtained from checklist item #40. Please consult Markham Waterworks to ensure this information is included with your servicing locates request. **Option 1: Re-use Existing SAN Connection -** Provide CCTV for condition assessment to confirm re-usability per checklist item #42. Provide existing invert elevation at streetline that has been verified by the OLS signing and sealing the drawing. Add note to indicate invert has been verified by OLS. Considering that the existing tee at mainline sewer is typically installed with an upward 45-degree angle from the mainline sewer, provide invert elevation at streetline accordingly. If the existing connection is not re-usable, go to Option 2. **Option 2: Re-use Existing SAN Tee -** Disconnect existing SAN connection upstream of tee at mainline sewer. Install new SAN connection in the same alignment as old. Label drawing accordingly. Considering that the existing tee at mainline sewer is typically installed with an upward 45-degree angle from the mainline sewer, provide invert elevation at streetline. **Option 3: New SAN Service Connection -** Only where the existing service is a wye connection with the adjacent property that is connected to a CIPP lined sewer, the existing wye cannot be re-used. A new single residential SAN service connection shall be proposed in accordance with checklist item #43. If existing service is found to be a wye connection, use the following note and customize to suit: *"Existing SAN service for #XX (subject site municipal number) to be decommissioned as per City's Design Criteria Section M. Existing SAN service for #XX (adjacent property municipal number) shall be maintained as well as remain operational and in good condition at all times."*
52.	☐	Show the area of asphalt restoration for all trenches of proposed services and decommissioning of existing services within the roadway, in accordance with MR36A, MR36B, and Annex 5 of the Engineering Design Criteria. Label asphalt restoration area in square meters. **Asphalt Restoration Area Criteria** - Show the asphalt restoration area 1.6m offset on both sides from the centreline of the proposed STM and SAN services along the entire length of the proposed service within the roadway (assuming 2m wide trench and 0.6m lap joint for surface course asphalt from trench) - Show the asphalt restoration area 1.6m offset on both sides from the centreline of the proposed water services at the connection point to the watermain within the roadway. (assuming 2m wide trench and 0.6m lap joint for surface course asphalt from trench) - Show the asphalt restoration area 1.6m offset on both sides from the centreline of all existing service connections to be decommissioned at the connection point to the mainline within the roadway. (assuming 2m wide trench and 0.6m lap joint for surface course asphalt from trench) - Full lane-width asphalt restoration shall be required as a minimum. - Should the excavation area (including lap joints) extend into multiple lanes, asphalt restoration to the full lane-width of all affected lanes shall be required. - Asphalt restoration areas less than 2.5m apart shall be combined into a single area.

I, _____ (print first and last name), declare that:
The information contained in this residential infill lot grading and servicing application is true to the best of my knowledge. Work described in this residential infill lot grading and servicing application has not commenced. I understand that the lot grading and servicing plan may be returned to the applicant without being reviewed if the above requirements are not met to the City's satisfactory.

Signature: _____ Date: _____