



September 6, 2016

Via: Email

Ms. Gae Kruse
Planning Associate
Township of Guelph/Eramosa
P.O. Box 700
Rockwood ON N0B 2K0

Dear Gae:

**Re: Zoning By-law Amendment ZBA 01/16 (D14 TO)
Draft Plan of Subdivision D12 23T-16001
2nd Submission
Bonnarrow Meadows – Rockwood
Project No.: 300035946.0000**

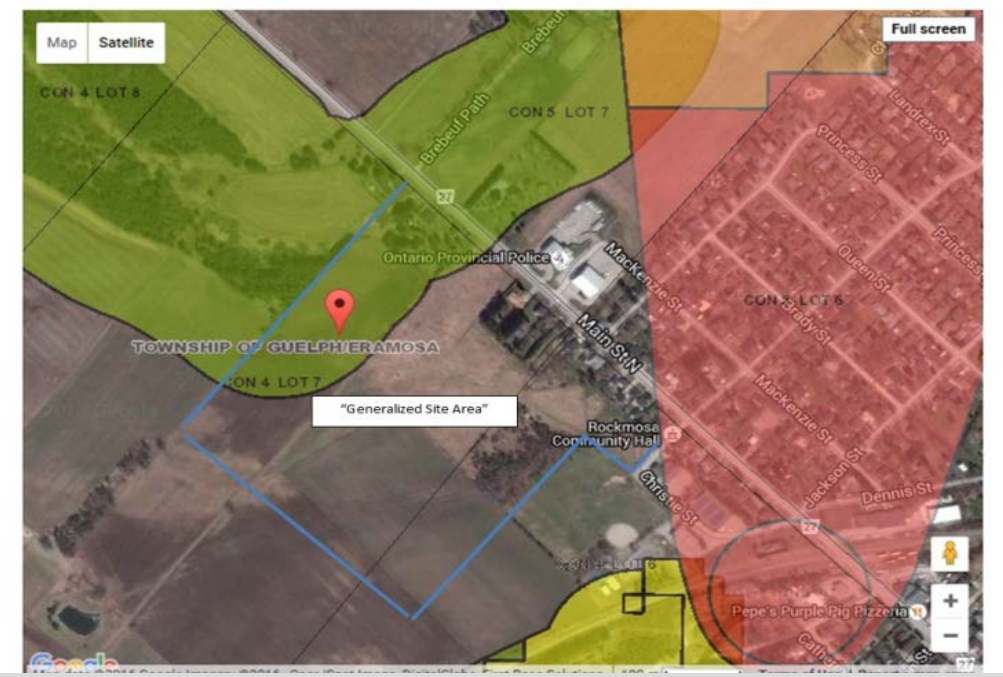
We have reviewed the above noted application along with the following documentation:

- Preliminary Hydrogeological Assessment, prepared by Banks Groundwater Engineering Limited, dated July 21, 2016;
- Phase 1 Environmental Site Assessment, prepared by Chung and Vander Doelen, dated July 18, 2016;
- Environmental Impact Study, prepared by Natural Resource Solutions Inc., dated July 2016;
- Response letter, prepared by Natural Resource Solutions Inc., dated July 20, 2016;
- Traffic Impact Study, prepared by Paradigm, dated July 2016;
- Response letter, prepared by Paradigm, dated July 28, 2016;
- Response letter and enclosures, prepared by Braun Consulting Engineers, dated July 26, 2016;
- Draft Plan of Subdivision, prepared by Astrid J. Clos, July 19, 2016.
- Noise Feasibility Study, prepared by HGC Engineering, dated July 29, 2016.

Our current submission comments are listed in the table below (the “Re” refers to the number in previous submission. Comments on a drawing should be reflected on all drawings.

No.	Re	Comment
General		
2.1	1.1	<i>Sewage allocation is limited to the servicing capacity in Rockwood. The Township should review and confirm sewage allocation prior to draft plan approval.</i>
		After further discussions with the Township we note that sufficient treatment capacity is available to service the proposed unit subdivision. It will be the applicant's responsibility to ensure that the conveyance of this sewage will not exceed the piping capacity downstream of the subdivision.
2.2	1.2	<i>Access to Block 172 SWM pond and its outlet will be required. Access can either be gained through conveying Lot 99 to the Township or by re-evaluating the easement length and width shown on the west of the development. This easement could be extended (grading permitting) to the boundary with Rockmosa Park where access can be gained to the SWM block and outlet.</i>
		Access to the pond has been improved. Further consideration to the accessing the forebay will need to be reviewed at the detailed design stage. The width of the easement required for the outfall sewer is a function of the sewer depth. A cross-section of the sewer should be provided to ensure that maintenance can be performed on the sewer within the easement limits.
2.3	1.3	<i>In the pre-consultation meeting it was requested to have the 20 m ROW extends north to the limit of the townhouse block 163. Please review. It should also be noted that a new typical 18 m ROW detail will need to be established since the Township currently does not have one. Particular attention will need to be made to tree placement in relation to services.</i>
		The 20 m ROW was extended to the north limit of the townhouse block 163. Further discussions have taken place with the Public Works department and we are suggesting using the City of Burlington Dwg. No. S-18 as an example of an 18 m wide ROW. See attached.
2.4	1.4	<i>The Street naming should be reviewed.</i>
		Further discussions with the Township and emergency services should take place prior to finalizing naming conventions. Renaming of existing streets may be required.

No.	Re	Comment
2.5	1.5	<p><i>Sidewalk layout should be shown on the drawings. Consideration should be given to:</i></p> <ul style="list-style-type: none"> • <i>Need for linkage along Christie Street, both to connect to County Road 27 via the north leg of Christie Street and to connect through the municipal parking areas to the south; and</i> • <i>Need to extend linkages on County Road 27 between the school driveway and Street A.</i>
		<p>Sidewalk connections into Rockmosa will depend on road configuration. Further review of intersection of Christie St. and Rockmosa driveway should be completed. The applicant has acknowledged the extension of the sidewalk on County Road 27 between the school driveway and Street A.</p>
2.6	1.6	<p><i>Lots 56 and 57 are located very close to County Road 27. These lots should be re-evaluated with respect to distance to County Road 27, driveway location, queuing and noise.</i></p>
		<p>Driveway locations for lots 57 and 58 should be placed on the west side of the property (furthest away from the County Road).</p>
2.7	1.7	<p><i>What is the condition of the existing culvert crossing County Road 27 at the north end of the site?</i></p>
		<p>It is our recommendation that the condition assessment be completed now, in order to plan for any improvements that may be required.</p>
2.8	1.8	<p><i>The ultimate stormwater outlets for the subdivision are to municipal drains. Homeowners should be advised that their properties may be assessed for future drain improvements or repairs.</i></p>
		<p>The Municipal Drainage Act will dictate who is assessed should future drain improves of repairs be required.</p>
2.9	1.9	<p><i>The northeast portion of the property (behind lots 57-59) should not be filled or altered as this may negatively affect the lot to the north. Planting plans should consider the tile running through this area.</i></p>
		<p>Applicant has acknowledged this comment. The lots noted above refer to lots 58 to 60 in the second submission.</p>
2.10	-	<p>House sumps should be connected to the storm sewers. This can be addressed during detailed design. A detail has already been provided to Braun Engineering.</p>

No.	Re	Comment
Hydrogeological Assessment		
2.11	1.10	<p><i>It is recommended that the applicant's technical staff consultation with the County of Wellington Risk Assessment Officer, Mr. Kyle Davis on specific Source Water Protection requirements.</i></p> <p>Acknowledged and addressed.</p>
2.12	1.11	<p><i>Prepare fill management plan (FMP) in accordance with the MOECC's 2014 "Management of Excess Soil – A Guide for Best Management Practices" to ensure the environmental quality of the soils being imported onto, or exported from, the property are appropriate.</i></p> <p>Acknowledged and agreed that a plan will be prepared once a source of fill has been identified.</p>
2.13	1.12	<p><i>In association with the FMP, provide details on the type of material to be imported and possible effects on the shallow groundwater flow system and recharge to the Gasport Formation bedrock aquifer.</i></p> <p>Addressed. The selection of fill should include review of fill testing data and approval of fill material by the Township staff.</p>
2.14	1.13	<p><i>As shown in green, a portion of the property is located within an Intake Protection Zone (IPZ) and the site is located less than 300 m from the Station Street Rockwood Wells 1 and 2.</i></p> 

No.	Re	Comment
		<i>Although the site is not specifically located within a well head protection area (WHPA), a Source Water Impact Assessment and Management Plan should be completed to evaluate (and mitigate) negative effects on recharge from fill importation on to the Site and the use of road salt and landscape fertilizers / pesticides.</i>
		The intake protection zone noted for the subject site applies to the City of Guelph Arkel water supply source. This intake area should be addressed with Guelph source protection staff. Signage at each of the SWM blocks noting the area is a Drinking Water Protection Zone is recommended. The North pond could have the standard MOE sign posted and the south pond could have an information board explaining/defining the IPZ.
2.15	1.14	<i>Mapping should be revised to show the site on same map as the local WHPA and IPZ.</i>
		The Arkel IPZ should be shown on a figure in the revised report.
2.16	1.15	<i>Review should address quality and quantity.</i>
		Addressed.
Environmental Site Assessment		
2.17	1.16	<i>There is a 200 m² shed located on the northern portion of the property at 5156 Wellington Road 27. During the Phase One ESA the use of the shed was not documented and it does not appear that the interior of the shed was examined. This is considered a data gap which should be addressed.</i>
		Addressed.
2.18	1.17	<i>Based on the age of the house, CVD indicate that designated substances (asbestos, lead, mercury) may be present. In accordance with the Ontario Health and Safety Act, a pre-demolition designated substance audit should be completed to identify and address any hazardous substances.</i>
		Addressed.

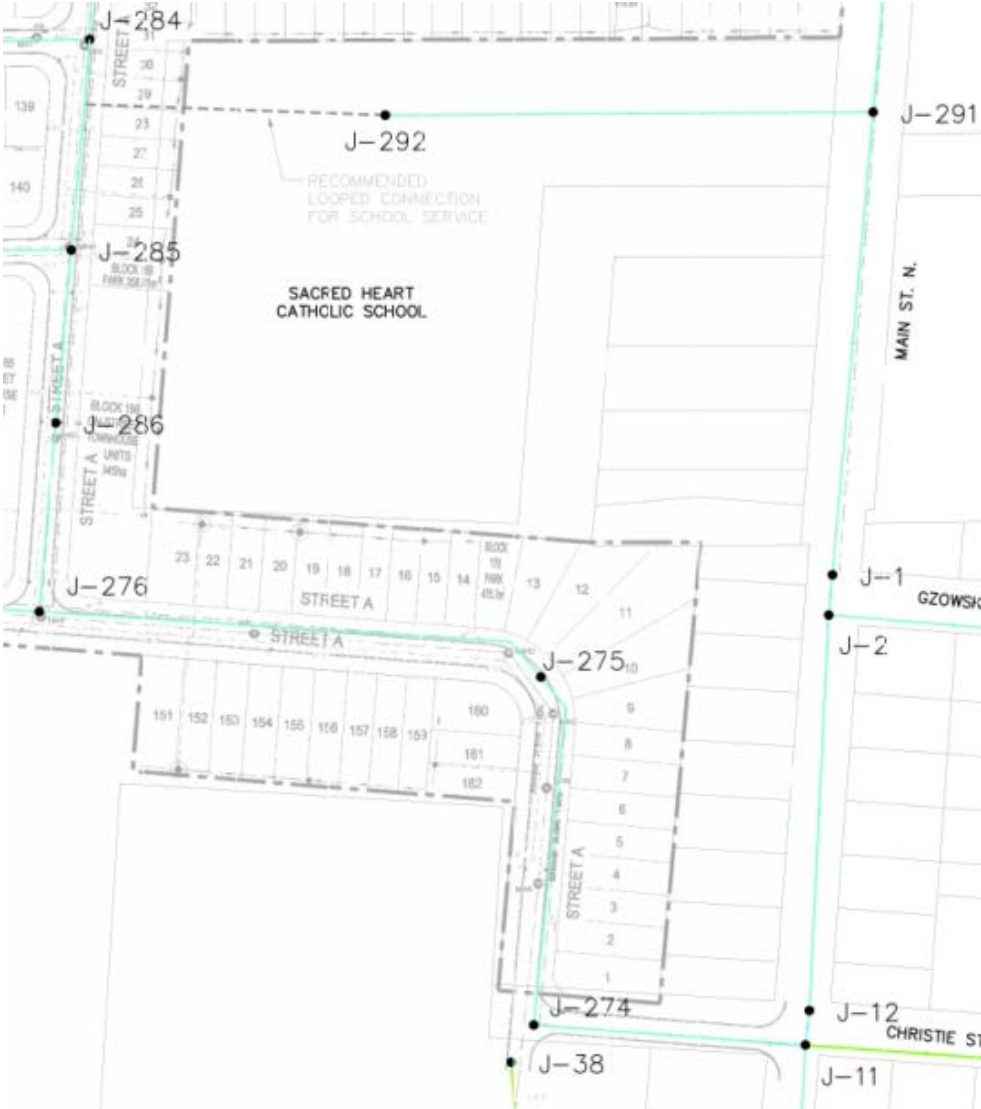
No.	Re	Comment
2.19	1.18	<p><i>The storage of fuel oil in an above ground tank is considered an environmental concern. There were no pictures of the tank or supplemental information on the age, condition or construction of the tank. It does not appear that the interior of the house was inspected as part of the Phase One ESA. This is considered a data gap which should be addressed.</i></p> <p><i>Given the presence of a storage tank and associated use of fuel oil for heating purposes, the basement of the house should be considered an Area of Potential Environmental Concern (APEC). Section 32 of Regulation 153/04 indicates that a Phase Two ESA is required when an APEC has been identified at the property. Burnside recommends that:</i></p> <ul style="list-style-type: none"> <i>• An inspection of the house and fuel oil tank be completed and documented.</i> <i>• A soil and groundwater study be completed to assess conditions in the vicinity of the fuel oil storage tank.</i> <p>Addressed.</p>
2.20	1.19	<p><i>During the demolition process the water supply well located north of the house at 5156 Wellington Road 27 should be decommissioned in accordance with Ontario Regulation 903.</i></p> <p>Acknowledged by applicant.</p>
2.21	-	<p>Section 4.3.3 of the report indicates the potential source of fill material could be from road re-construction activities. Pieces of metal, wood, plastic bags and asphalt could be considered waste materials. Although these materials constitute a minor amount of the overall fill a plan to deal with this materials prior or as part of the development should be prepared / discussed.</p>
Environmental Impact Study		
2.22	1.20	<p><i>Section 5.3.1. This section notes that the MEMM4 community was cleared of trees recently. Was this done by the proponent and was an approval/permit obtained for this?</i></p> <p>Addressed. It is noted that the trees were cleared by Charleston Homes' contractor and that the area cleared was not covered under the Forest Conservation By-law.</p>

No.	Re	Comment
2.23	1.21	<p><i>Section 5.4.1. This section notes that barn swallow were observed on-site and that any fields within 200 m of a nest are protected. However, it is not clear whether any potential barn nesting sites are present within 200 m of the property. Please confirm whether any roadside surveys identified barns in close proximity to the property.</i></p> <p>We are satisfied with NRSI's response subject to acceptance by MNR.</p>
2.24	1.22	<p><i>Section 8.4. This section notes that fencing and dense plantings should be considered. This should be changed to state that these are required.</i></p> <p>Addressed. Report partially updated. Changes were made to requirements for dense plantings but it still references fencing 'should be' considering instead of required. No further action required as fencing requirements can be addressed as part of a draft plan condition.</p>
2.25	1.23	<p><i>Section 8.1 (incorrect numbering). This Recommendations section should include all recommendations listed in the previous sections. It seems to only include a select few and this could lead to confusion during detailed design and construction as to which are actually required. For example, measure to protect the woodland along the dripline and timing windows for birds should also be include, among others.</i></p> <p>Addressed. It is noted the numbering has been updated and all recommendation provided in Section 8.5.</p>
2.26	-	<p>Given the minimal buffer proposed along the Significant Woodland, further tree protection measures (i.e. tree protection fencing/hoarding) should be used along the woodland buffer limit to ensure there is no inadvertent harm to trees during construction; and,</p>
2.27	-	<p>It is suggested that plantings around the constructed wetland include plantings on the south side as much as possible to provide maximum shading.</p>
Traffic Impact Study (TIS)		
2.28	1.24	<p><i>The accesses to this subdivision (Street A and Christie Street) intersect with County Road 27, which is under the jurisdiction of the County of Wellington. Comments should be received from the County.</i></p> <p>Addressed. County of Wellington has had the TIS report peer reviewed by Triton.</p>

No.	Re	Comment
2.29	1.25	<p><i>TIS notes that the speed on County Road 27 changes from 50 km/h at a location about 50 m to the north of the proposed intersection of County Road 27/Street A. We note that imagery from 2014 appears to show the speed change at approximately the location of the Street A intersection. However, we are uncertain as to whether works related to the new school in this area may have subsequently resulted in an adjustment to the location of this speed change. In any case, we suggest that the speed change location be relocated further to the north, to be more effective in moderating speeds in the area of the Street A intersection.</i></p> <p>Addressed. Applicant has agreed to the relocation of the speed limit sign.</p>
2.30	1.26	<p><i>Section 3 of the TIS notes that no traffic is assigned to access the subdivision by turning at the County Road 27/Christie Street/Jackson Street intersection, since this is through the access to the library, Community Centre and park. While we agree that this route is not the preferred route, it will likely attract some traffic. We suggest that the Street A/Christie Street intersection be configured, in the detailed designs, to promote access via the County Road 27/Christie Street (north leg) intersection, as the safest route (i.e., negating the need to travel through the parking area of the community facilities).</i></p> <p>We are not satisfied with the proposed T-intersection near the entrance to Rockmosa Park. A more detailed review of the design of Christie Street (including entrance to the park) from County Road 27 into the subdivision should be completed prior to draft plan approval (including placement of sidewalks).</p>
2.31	1.27	<p><i>The trip generation from the proposed school on County Road 27 is based on 280 students (initial development), whereas the previous TIS for that project is based on 350 students (ultimate development). In addition, previous planning work in this area suggests that the park area may be redeveloped to include a significant expansion of the recreational fields in this area. Further considerations of these factors should be made in the trip generation forecasts from background developments.</i></p> <p>Addressed.</p>

No.	Re	Comment
2.32	1.28	<p><i>Section 5.2 of the TIS reviews the sight distances along County Road 27, however does not comment on the daylighting sight triangle requirements at the intersections. We note that vegetation at the southwest corner of the intersection of County Road 27/Christie Street is currently restricted by vegetation that appears to encroach onto the road right-of-way at this location. Consideration should be given to clearing this vegetation to improve this sight triangle.</i></p> <p>Addressed.</p>
2.33	1.29	<p><i>The TIS does not address the phasing or emergency access requirements associated with the development (i.e., assuming the subdivision is to be phased). Detailed designs should provide further consideration of these factors.</i></p> <p>The TIS recommends Street A as the construction access and that the entire subdivision would be built out in one phase, within 5 years. We suggest that, at a minimum, a reasonable timeframe or unit count number that will trigger the need for completion of a second access, be determined to ensure that an inordinate number of units do not rely on a single emergency access. Our preference would be to provide two accesses at all times.</p>
2.34	1.30	<p><i>Section 3.2 of the TIS assigns 50% of the trips to the north access and 50% of the trips to the south access. We suggest that this may over-estimate the trips to the north access (particularly for the trips to/from the south). The trip distribution in Section 3.2 also appears to over-estimate the trips to/from the north, considering the location of this development relative to Rockwood and Highway 7, as well as the trip distribution from the existing residential developments in this area (i.e., using the Christie Street and Jackson Street accesses from the east). We suggest that the trip assignment and distribution be reviewed.</i></p> <p>Addressed.</p>
Functional Servicing Report		
2.35	1.31	<p><i>Sewer from Lot 51 to Lot 62 bypasses the forebay. Confirmation from GRCA should be received outlining this is acceptable.</i></p> <p>Addressed.</p>
2.36	1.32	<p><i>Section 4.2: 100 Year pipe from south pond – pipes are prone to blockage (ice, debris) and also have finite capacity. An overland flow route is preferred for emergency conditions. Major system to have Regional Storm capacity or 100 Year, whichever is greater.</i></p> <p>The outfall needs to have capacity for the greater of the 100 Year or Regional</p>

No.	Re	Comment
		storm. The easement needs to be sufficiently wide to accommodate equipment in the event of repairs or replacement in the future. Details in support of the proposed easement width should be provided.
2.37	1.33	<p><i>Section 4.3: Is there sufficient separation between the base of the infiltration trenches and either the high groundwater or bedrock?</i></p> <p>It is our opinion that groundwater monitoring should be initiated immediately. One measurement in the spring does not necessarily constitute the 'seasonally high groundwater levels', particularly in a year with below-average snowfall. The more groundwater information that can be collected, the more reliable the long-term predictions will be. If it is determined, for example, that the watertable is higher than expected, it may impact the Water Balance calculations or influence where the Infiltration Trenches are located.</p>
2.38	1.34	<p><i>Section 4.7 (Water Budget): It is not clear why the recharge rate is higher for post development pervious areas without infiltration trenches (220 mm/yr.) than the natural recharge rate (180 mm/yr.). We would argue that post development pervious areas (largely backyards) have lower infiltration capacity than farm field due to the level of activity in a back yard.</i></p> <p>The MOE SWMP Manual (2003) suggests that an 'urban lawn' has lower infiltration capability than a 'pasture' with the same soil type (See example on Page 3-5). We cannot support an increase in infiltration capability following development without further data.</p>
2.39	1.35	<p><i>Further to above, it is agreed that there is less evapotranspiration from impervious surfaces (i.e., rooftops) that are directly connected to a trench. This, in turn, results in more runoff available for recharge. In order to include all this additional runoff as 'recharge' however, it must be demonstrated that the trenches will be completely drained between rain events. If they do not drain completely, they may be subject to overtopping.</i></p> <p>The draindown time for the infiltration trenches should be provided for the in-situ soils. If the soil conditions change as a result of the importation of fill, they can be provided again but it is our experience that the grades at the infiltration trenches do not change significantly as they are located at or near the property line.</p>
2.40	1.36	<p><i>Water modeling will be required for the watermain sizing and pressure assessment. Burnside will conduct this modelling and share the results with Braun for detailed design.</i></p> <p>The results calculated from the hydraulic analysis suggest that the proposed Bonarrow Meadows Subdivision will receive adequate pressure under average</p>

No.	Re	Comment
		<p>day, maximum day, and peak hour demand scenarios; however limited fire flow will be available due to the distance from the standpipe, and the diameter of the existing trunkmain located along Main St. We recommend the addition of a looped connection from the watermain servicing the school, through to Street A to improve the available flow to the new development by eliminating the dead end watermain. We also recommend that the watermain be connected from nodes J38 to J274 on Street A.</p> 
2.41	1.37	<p><i>There is a large amount of RYCBs. It is recommended that grading be reviewed to minimize the number required.</i></p> <p>Addressed.</p>

No.	Re	Comment
2.42	1.38	<p><i>Infiltrations trenches are used throughout the site. Has the placement of these trenches taken into account the surrounding soils (i.e., are these placed for grading convince or to optimize infiltration)?</i></p> <p>We are requesting that preliminary groundwater elevations be obtained and draindown times be calculated to ensure that the infiltration trenches being proposed will function as intended.</p>
2.43	1.39	<p><i>Currently the stormwater outlet is to an existing pond on Mrs. Bonner's property. It is unclear as to what the responsibilities for maintenance are. It is understood that an easement will be provided for access but clarification on ownership and responsibilities should be confirmed by Township solicitor.</i></p> <p>Because the effluent from the South Stormwater Management Facility will discharge to a private pond as opposed to a watercourse or municipal collector, it is our opinion that there should be a Drainage Agreement between the proponent and the downstream landowner that describes the nature of the effluent, during and following development, and the future maintenance expectations of the outfall channel.</p>
2.44	1.40	<p><i>We have reviewed the size (15 m x 25 m) of the Block 173 for the sewage pumping station (SPS) and find it smaller than typical. Please review and comment. Illustrating how all works can be accommodated on site would be beneficial.</i></p> <p>We note the applicant has increased the size of the sewage pumping station block.</p>
Noise Report		
2.45	-	Warning Clauses A & B appear to be the same. It is assumed Clause A is incorrect as it corresponds to outdoor living areas and no mitigation measures are suggested for these lots (Lots 56 and 59)
2.46	-	We agree with warning clause recommendations
2.47	-	A 2 m high acoustic barrier is recommended for lots 57 and 58. The extent of the barrier should be clarified as it is not clear whether the barrier stops at the house or extends any further.

Summary

We do not recommend approval of the zoning by-law amendment or draft plan until the above noted comments are addressed.

Yours truly,

R.J. Burnside & Associates Limited

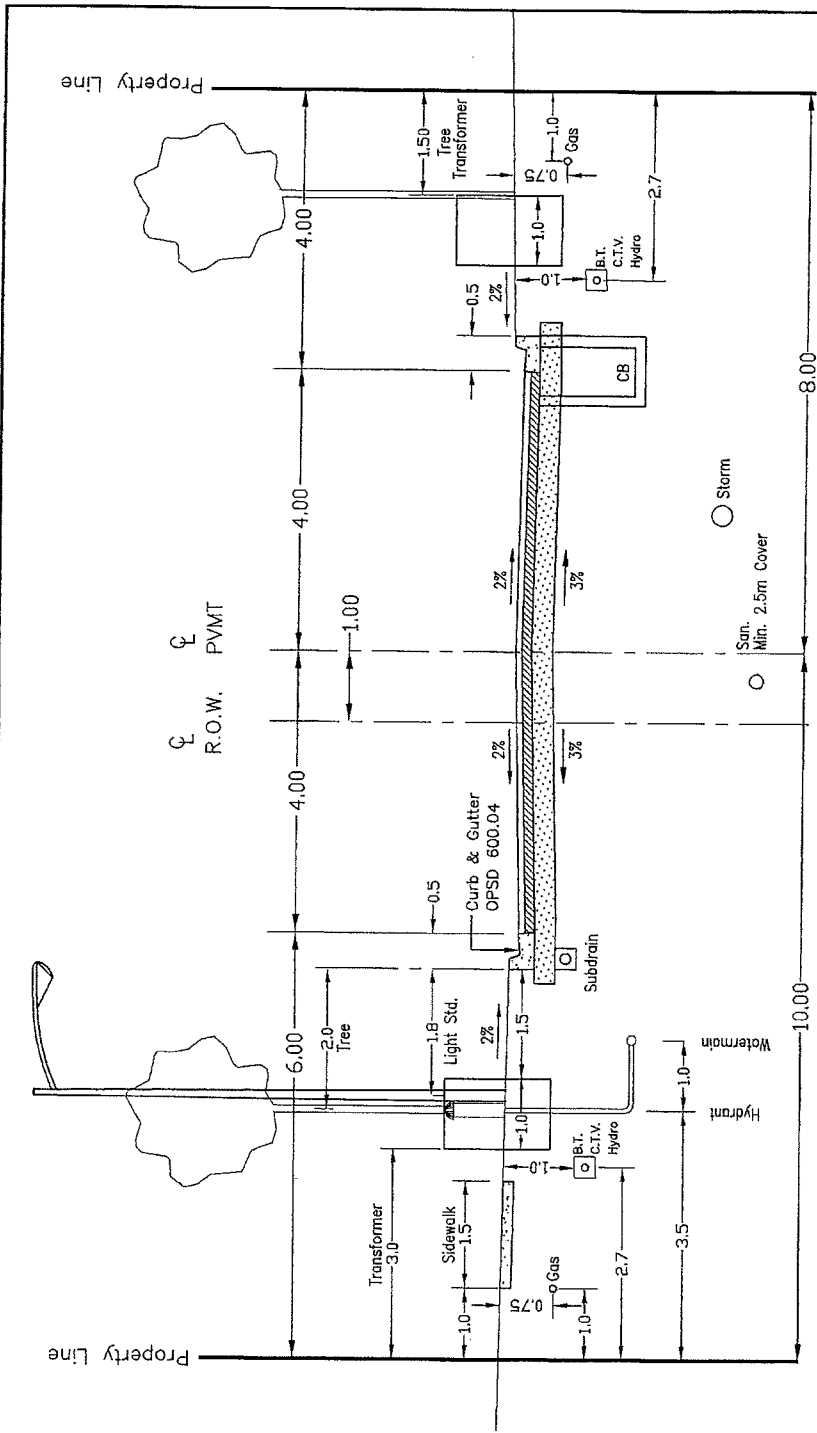
A handwritten signature in cursive script that reads "Jackie Kay". The signature is written in black ink and is positioned below the company name.

Jackie Kay, P.Eng., MBA
JK:mp

Enclosure(s) Example of 18 m wide ROW

cc: Harry Niemi, Township of Guelph/Eramosa (Via: Email)
 Meaghen Reid, Township of Guelph/Eramosa (Via: Email)
 Dan Currie, MHBC Planning (Via: Email)
 Mitch Avis, MHBC Planning (Via: Email)

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Alternate Locations this side of Street
 CTV - .3m off Property line, .6m deep
 B.T. - 1.8m off Property line, .75m deep
 WM - 4.5m off Property line

NOTES

1. Roadbase to be Min.:
 40mm HL3 Top Asphalt
 60mm HL8 Base Asphalt
 150mm Granular A
 200mm Granular B Type II
2. Min. 100mm Topsoil and No.1 Nursery Sod to be used for Boulevards
3. Min. Cover over Storm Sewer: Up to 450mm Dia. Pipe = 1.25m
 Above 450mm Dia. Pipe = 1.00m
4. For Utility Pedestal Locations see Std. S-117 & S-117A.

DIMENSIONS IN m EXCEPT AS NOTED.

APPROVED  DIRECTOR OF ENGINEERING DATE: May 6/05	CITY OF BURLINGTON ENGINEERING DEPARTMENT	METRIC SCALE: N.T.S.
STANDARD ROADWAY SECTION FOR 18m ROAD ALLOWANCE - SIDEWALK ONE SIDE		DWG. NO. S-18